

# THE MICHIGAN RIPARIAN

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

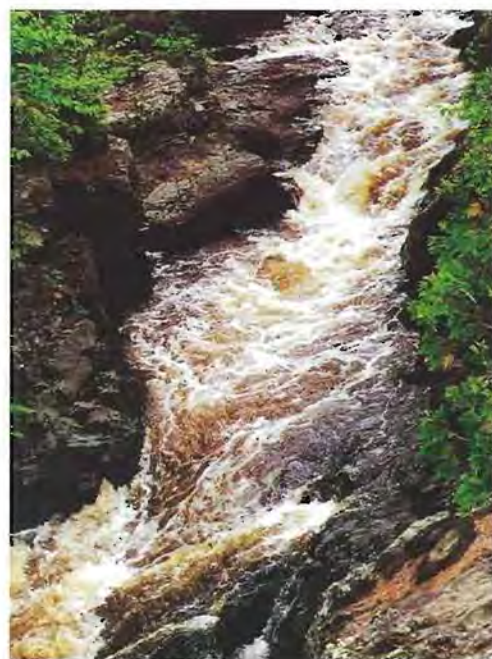
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*RIPARIAN* (r-'per-EE-n) adj. Relating to or living or located on the bank of a natural watercourse, such as a river, or of a lake or a tidewater.



## Michigan WATERFALLS

photos by Don Winne



Top left, falls in the Presque Isle River in Gogebic County; top right, Bond Falls on the Ontonagon River in Ontonagon County; bottom left, Ocqueoc Falls in the lower peninsula's Presque Isle County; and bottom right, falls on the Silver River in Baraga County.

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## FROM THE PUBLISHER



Don Winne

### Upland channeling: a step backward

In May 1977, the Natural Resources Commission of Michigan adopted Policy No. 4507 that identified the serious effect upland channeling may have on the land and water resources of the state. (See page 17 of this issue for the entire policy language.)

Impacts identified were: severe disruption of ground-water systems, over-crowding of recreational water areas, health and sanitation problems, and water safety considerations.

The Department of Natural Resources adopted a general policy to coincide with the NRC position. The DNR policy stated that "The department shall not abet, support, promote or give encouragement to, and shall oppose by any legal means, the creation of any upland channel development anywhere in the state that will threaten the capacity of our land and water resources to sustain a quality environment for the citizens of the state." (Read the entire policy on page 17 of this issue.)

Upland channeling not only impacts lakes and streams as identified in the first paragraph, but it also removes shoreline habitat needed by microscopic plant and animal life, often leading to erosion and silt deposits on adjoining properties. Attempts to prevent the erosion on nearby properties often fail.

Protecting our water resources should be a priority of the Michigan Department of Environmental Quality. It should re-establish the policy of no upland channeling.

PUBLISHER DON WINNE

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# MSU Extension answers lawn and garden questions

The growing season may have just wound down, but gardening questions are plentiful. Michigan State University Extension specialists field queries on lawn weeds, vegetable and flower gardening, and landscape ornamentals.

**Q. I'm thinking about getting a potted evergreen of some sort for a Christmas tree and then planting it outdoors. How do I do this so that the tree survives?**

**A.** Keep the root ball moist and the tree cool until you're ready to bring it indoors. Do that at the last minute, and take it out again as soon as possible so the warmth doesn't cause it to break out of its dormant state. While it's inside, keep it in a cool area and out of warm drafts from hot air registers or heat-producing appliances and fireplaces. After the holiday, you can either store the tree until spring, in an area where the temperature rarely goes below freezing but never goes above 48 degrees, or plant it outdoors. If you choose to plant the tree right away, be sure to prepare the planting site ahead of time and mulch it with 6 to 10 inches of peat, wood chips, leaves or straw to keep the soil from freezing. Mulch the tree after planting. Protect it against drying sun/wind by erecting a shade of canvas/burlap around it.

**Q. I'm replacing silver maples planted near a busy road that's salted/plowed in the winter. Any ideas on salt-tolerant species?**

**A.** If you want to go with another maple, both hedge maple (*Acer campestre*) and trident maple (*Acer buergerianum*) are moder-

ately salt-tolerant. Red maple (*Acer rubrum*), on the other hand, is salt-sensitive. Other possibilities with at least moderate salt tolerance include ginkgo (*Ginkgo biloba*), thornless honeylocust (*Gleditsia triacanthos inermis*; highly salt-tolerant), London planetree (*Platanus x acerifolia*), sawtooth oak (*Quercus acutissima*) and Japanese pagodatree (*Sophora japonica*). Other salt-sensitive trees to avoid near salted roadways include linden or basswood (*Tilia Americana*), swamp white oak (*Quercus bicolor*), American hophornbeam (*Ostrya virginiana*; very salt-sensitive) and tulip tree (*Liriodendron tulipifera*).

**Q. I usually have significant quantities of green tomatoes in the garden when the first frost arrives. Can I save them?**

**A.** You can pick green tomatoes and ripen them indoors to extend the fresh tomato season for 4-6 weeks. Pick mature green tomatoes carefully and place them gently into shallow containers. Any with minor blemishes or injuries should go into the "eat right away" pile - they won't keep. Any with major problems should go straight into the compost pile. Wrap them in newspaper/waxed paper or place them in a single layer on open shelves in a dark area at 55 to 75 degrees F. Temperatures below 50 degrees will damage them, and they'll break down and rot rather than ripen. They'll ripen slowly at temperatures below 60 degrees and more rapidly as temperatures approach 75 degrees. If your storage area maintains temperatures in the 50s, regularly move a few into a warmer area to speed ripening.

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# Great Lakes shoreline grooming: curse or blessing?

## BACKGROUND

Early in the first session of the Michigan 92nd Legislature, House Bill No. 4257 was introduced by 25 members of the House for the purpose of amending Parts 303 and 325 of Act #451, Public Acts of 1994, Natural Resource and Environmental Protection Act. The purpose of the House Bill was to permit owners of Great Lakes shoreline property permission to groom their beaches.

The Executive Director of Michigan Lake & Stream Associations reported to the ML&SA Board of Directors at its regularly scheduled meeting at Coral Cables (Lansing) on April 3, 2003 that he thought the Bill, if passed into law, would be damaging to the Great Lakes. Board member Kathy Miller, Vice-president of Region 2, proposed a Resolution to allow Don Winne to offer a position statement opposing House Bill 4257. The motion was seconded by Cecile Kortier and motion carried.

House Bill 4257 was approved by the House by a vote of 64 in favor and 43 opposed on April 10, 2003. The Bill would allow owners of beachfront property on the Great Lakes to maintain their shorelines by manual or mechanized leveling of sand, mowing, and removal of vegetation and grooming of the top 4 inches of soil between the water's edge and the ordinary high-water mark without obtaining permits.

Similar legislation in the Senate (SB244) is sponsored by Sen. Jim Barcia, Bay City. Low lake levels for several years have exposed far more beach area than normal. Environmental groups have been worried that the legislation would adversely affect the beach environment by hindering native vegetation and normal sand movement. The Granholm administration opposed the Bill. Both Bills were approved by a majority in both houses and approved by the Governor on June 4, 2003, and filed with the Secretary of State on June 5, 2003. These Bills became Act 14 and became effective on June 5, 2003.

## PROVISIONS OF ACT 14:

Beach grooming included the following: "Beach maintenance activities ... in the area of Great Lakes bottomlands lying below the ordinary high-water mark and above the water's edge." The "ordinary high-water mark" is defined in PART 325, Section 32502 of the GREAT LAKES SUBMERGED 3 LANDS and is stated as follows: "For purposes of this part, the ordinary high-water mark shall be at the following elevations above sea level, International Great Lakes Datum of 1955: Lake Superior, 601.5 feet; Lakes Michigan and Huron, 579.8 feet; Lake St. Clair, 574.7 feet; and Lake Erie, 571.6 feet."

Riparian property owners in Saginaw and Grand Traverse Bay were authorized to remove vegetation from shoreline areas.

These activities have been tracked by DEQ to accumulate impact

data for a report to the legislature and the Governor by January 1, 2006. Requests from riparian property owners for grooming permits totaled 18 in 2003, 48 in 2004 and 24 in 2005.

**Submitted by Don Winne**

Publisher

*The Michigan Riparian*

## DEQ REQUESTS ASSISTANCE FROM UNIVERSITY PROFESSORS

The DEQ requested the assistance of Dr. Thomas Burton, MST; Dr. Dennis Albert of the Michigan Natural Features Inventory, MSU Extension; and Dr. Donald G. Uzarski of Grand Valley State University to provide an objective, scientific evaluation of the impacts of beach maintenance and vegetation removal ... The Department entered into an agreement with this research team to carry out agreed upon studies with a focus on Grand Traverse Bay and Saginaw Bay ... The overall goal of studies carried out during the summers of 2004 and 2005 was to explore the impact of wetland fragmentation on the chemical and physical characteristics of the shore, and biological communities (plants, fish, and invertebrates) ... Some sites in Northern Lake Huron were also included in the study to evaluate the impact of wetland fragmentation from other activities, such as establishment of boat channels through the marshes. A total of 68 sites on Saginaw Bay, 7 sites on Grand Traverse Bay, and 23 sites in northern Lake Huron were evaluated by the research team.

## SUMMARY OF RESULTS

1. Removal of vegetation disrupted the normal physical and chemical conditions of the wetlands.
2. Plant diversity is much higher in undisturbed areas with no active management. Plant diversity in previously disturbed sites tends to be low, and non-native or nuisance species, in particular phragmites (common reed), are included in the plants that do occur.
3. Invertebrate animals (both micro and macro) are critical to the overall ecology of the Great Lakes ... The conversion of wetland plant areas to open water beaches by raking, disking or other means - results in very large and statistically significant decreases in the numbers of invertebrates present and also in the diversity of organisms that compose the invertebrate community. The number of individual organisms collected adjacent to undisturbed beaches was 29 times greater, on the average, than the number collected in raked zones.
4. In summary, it is clear that the impact of vegetation removal on larval fish extends well beyond the point where vegetation has been removed. Fragmentation of the marsh can thus have a very serious impact on fish production in the Great Lakes.

## OVERALL CONCLUSIONS AND RECOMMENDATIONS

The observations of DEQ permit staff, and the findings of the

*... continued on page 13*



## Debunking myths: Part II

**By Clifford H. Bloom, Esq.**

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[The first half of this column, featuring myths 1-5, appeared in the August 2006 issue of *The Michigan Riparian* and can be read online at [www.mlswa.org](http://www.mlswa.org) – this is a continuation of that column.]

\*\*\*\*\*

There are long-standing myths about inland lakes in Michigan. In the continuation of this column, we confront some of the remaining most common myths.

**6. Myth: Absent local anti-funneling regulations, I can create new lake access easements across my property for backlots and I can allow backlot owners to moor their boats on my lakefront.**

Even without an anti-funneling provision, if the local municipality has a zoning ordinance and the lakefront property at issue is zoned for single-family residential use, it is highly likely that new lake access easements could not be created and that the lakefront property owner cannot permit others to keep boats at his/her frontage, as that would be a violation of the single-family zoning restrictions (i.e., those uses would constitute prohibited multi-family uses). See *Soupal v Shady View, Inc*, 469 Mich 458 (2003) and *City of Au Gres v Walker* (an unpublished decision decided February 11, 1993, Michigan Court of Appeals Case No. 140101).

**7. Myth: If I am a lakefront property owner, I can prevent fishermen and swimmers from congregating in the waters over my bottomlands.**

Generally, that is not the case. Once a person gains access to a lake, they have the right to swim, fish, boat, and float anywhere on the surface of the lake, so long as they do not touch the bottomlands or dock of another without permission. One exception to this is temporary anchoring for swimming and

fishing, so long as it occurs for limited periods of time and the anchoring does not involve an empty boat. Of course, under unusual circumstances, legal action by the riparian property owner could potentially be undertaken if the otherwise allowable activities get out of hand (for example, disturbing the peace, creating a nuisance, extreme cases, etc.).

**8. Myth: I can fill a wetland next to the lake, put sand in the lake, and dig out the bottomlands without any governmental permit or approval, so long as I utilize a hand shovel.**

Not true. Under the Michigan Wetlands Protection Act and the Inland Lakes and Streams Act (both of which are now combined under the Michigan Environmental Code), permits are required prior to any such activities occurring, even if the work involves a hand shovel.

**9. Myth: For purposes of determining my bottomlands, my side yard property lines are extended at the same angle toward the center of the lake.**

In fact, except in rare circumstances, that is almost never the case. Riparian bottomlands boundary lines almost never follow the same angle as side lot lines do on dry land.

**10. Myth: My neighbor cannot install a fence or add on to her house in such a way that it would block my view of the lake.**

In Michigan, there is no "right to a view," although there may be local zoning regulations which help preserve views.

**11. Myth: I have the right to install a dock, permanently moor boats, and sunbathe at my lake access easement.**

Actually, that is almost never the case, unless the lake access easement language expressly provides for such uses and activities. See *Dyball v Lennox*, 260

Mich App 698 (2003).

**12. Myth: My surveyor has determined where the underwater boundaries are to my bottomlands, so that settles the matter.**

Only a Michigan county circuit court can definitively determine lake bottomlands boundaries (i.e., how property lines radiate from a lakefront property to the center of the lake, and what constitutes the center of the lake). An opinion by a surveyor or engineer is just that—an opinion, even if the work is referred to as a riparian survey or a bottomlands survey. Although such opinions or surveys might be used in an attempt to persuade a neighbor or a court, they are not binding.

**13. Myth: The private park [or road right-of-way, walkway, etc.] located next to my lakefront property which was created by the plat no longer exists and is now my property, since the township gave me a quit-claim deed to that property.**

This one comes up a lot. The only way to extinguish or otherwise alter a road right-of-way, park, walkway, or other common area (whether public or private) created by a plat is by a formal lawsuit in the county circuit court where the property is located. Furthermore, it is up to the circuit court judge to decide whether or not to grant the relief requested.

These platted properties cannot be altered or title transferred by simply having the municipality give a quitclaim deed to the adjoining property owners or anyone else. Such a deed would be of no effect unless to carry out the decision of a circuit court plat vacation proceeding.

## Join us: 2007 forms are now online for Cooperative Lakes Monitoring Program



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Michigan's unique geographical location provides its citizens with a wealth of freshwater resources including over 11,000 inland lakes. In addition to being valuable ecological resources, lakes provide tremendous aesthetic and recreational value for the people of Michigan.

As more and more people use the lakes and surrounding watersheds, the potential for pollution problems and use impairment increases dramatically. Reliable information, including water quality data, levels of use, and use impairment, are essential for determining the health of a lake and for developing a management plan to protect the lake. As the users and primary beneficiaries of Michigan's lake resources, citizens must take an active role in obtaining this information and managing their lakes.

The Cooperative Lakes Monitoring Program (CLMP) is a partnership between the Land and Water Management Division of the Department of Environmental Quality (DEQ) and the Michigan Lake and Stream Associations, Inc. (ML&SA). The primary purpose of this cooperative program is to help citizen volunteers monitor indicators of water quality in their lake and document changes in lake quality over time.

Lake quality is influenced by many factors such as the amount of recreational use it receives, shoreline development, watershed runoff, and water quality. Lake water quality is a general term covering many aspects of lake chemistry and biology. The health of a lake is determined by its water quality. Problems most commonly cited by lake residents, such as excessive plant growth, algal blooms, and mucky bottom sediments, are caused by water quality factors that lead to increased lake fertility or productivity. Productivity refers to the amount of plant and animal life that can be produced within the lake. Excessive productivity can significantly shorten the life of the lake. The gradual increase of lake productivity over time is a natural process called eutrophication, or lake aging. A primary objective of most lake management plans is to slow down eutrophication by reducing the input of plant nutrients, such as phosphorus, and sediments to the lakes.

Lake scientists have developed a variety of numerical indexes based on water quality data to express lake productivity on a continuous numerical scale. The widely used Carlson Trophic State Index (TSI) incorporates water clarity, or transparency, as measured by a Secchi disk; the algal plant pigment chlorophyll a; and total phosphorus as indicators of lake productivity. The CLMP was designed to provide data on these parameters. The CLMP provides sampling methods, training, workshops, technical support, quality control, and laboratory assistance for volunteers to monitor their lake for these indicators of lake productivity. Volunteers may then classify their lake according to its level of productivity, or trophic state, using Carlson's TSI. Long-term monitoring of these parameters on a consistent and regular basis provides the data needed to recognize changes or trends in lake productivity. Take an active role in protecting your lake. Join us in determining the health of your lake. 2007 APPLICATIONS ARE ONLINE AT [WWW.MI-WATER-CMP.ORG](http://WWW.MI-WATER-CMP.ORG).



... continued from page 10

research team support the same conclusion – THE ALTERATION OF VEGETATED AREAS ON THE GREAT LAKES COAST BETWEEN THE ORDINARY HIGH-WATER MARK AND THE WATER'S EDGE HAS A SIGNIFICANT ADVERSE IMPACT ON THE ECOLOGY OF THE GREAT LAKES.

#### THEREFORE THE DEQ RECOMMENDS:

1. Vegetation removal by a letter from the DEQ DIRECTOR be allowed to sunset on June 5, 2006.
2. Permits for vegetation removal be issued on a case-by-case basis.
3. Issuance of a limited General Permit for removal of vegetation from a 6-foot-wide walkway to allow access to open water.
4. That exemptions for beach maintenance activities, including raking, mowing, leveling of sand, and establishment of raised paths continue only until November 1, 2007, as specified in Act 14.
5. Issuance of a new General Permit as of November 2007 to cover certain beach maintenance activities, such as: mowing veg-

etation twice per season; mechanical leveling of sand in unvegetated beach areas above the current water's edge, maintenance of a temporary path 6 feet wide in bottom width to provide access to open water.

6. a) An individual permit would be required for other beach maintenance activities, including; grading or leveling of sand that would alter the natural shoreline;
- b) mechanical raking or disking of beach areas that will result in loss of vegetation or degrade habitat quality on the beach or in adjacent waters; and
- c) large-scale or frequent mowing that would significantly impact vegetation.

(The information source of the above is taken from Report on the Impacts of Beach Maintenance and Removal of Vegetation under Act 14 of 2003, Michigan Department of Environmental Quality, March 2006)

## Update from the Michigan Association of County Drain Commissioners (MACDC) Legislative Committee

In recent months, the Michigan Legislature introduced several bills and a resolution relating to condemnation. The package of bills was a response to the Michigan Supreme Court's decision in *Wayne County v Hathcock*, 471 Mich 445 (2004), in which the Court overruled its prior decision in *Poletown Neighborhood Council v City of Detroit*, 410 Mich 616 (1981). The *Poletown* decision allowed public agencies to condemn private property for purposes of transfer to a private entity for redevelopment. In *Hathcock*, the Court held Wayne County could not condemn property near the Detroit Metropolitan Airport for redevelopment because condemnation for that purpose did not constitute a "public use." The Supreme Court delineated the following circumstances in which a taking could be considered a public use: 1) when public necessity of the extreme sort requires collective action; 2) when the property remains subject to public oversight after transfer to a private entity; and 3) when the property is chosen due to facts of independent significance rather than the interests of a private entity.

The United States Supreme Court addressed similar issues in *Kelo v City of New London*, 125 SCt 2655 (2005), holding that condemnation of private property by the City of New London, Connecticut,

to redevelop and create jobs, generate tax revenue and revitalize the community was a permitted "public use." In that case, the Court specifically provided that a state could place further restrictions on the state's taking power and noted that the *Hathcock* decision was an example of a state's imposition of further restrictions.

Senate Joint Resolution E subsequently passed both the Michigan House and Senate and was filed with the Secretary of State. Under the Joint Resolution, private property cannot be taken for the purpose of transfer to a private entity for the purpose of economic development or tax revenue enhancement. The Resolution also provides that, if private property consisting of an individual's principal residence is taken for public use, the public agency must pay the individual 125% of the property's fair market value. Finally, the resolution provides that the burden of proof is on the condemning authority to demonstrate by a preponderance of the evidence that the taking of the private property is for a public or, if the condemnation action involves a taking due to blight, the condemning authority must demonstrate by clear and convincing evidence that the taking is for a public use. The Resolution will go to a vote of the people on the November ballot.

The House of Representatives introduced House Bills 5817-5821 and House Bill 5060; all were passed out of the House of Representatives and sent to the Senate Committee on Transportation in early June. On June 13, 2006, the Transportation Committee sent the bills to the Senate Floor.

As you know, Drainage Districts frequently condemn property for purposes of establishment, construction, maintenance, or improvement of a drain. As a result, the MACDC is working closely with members of the Legislature to ensure that the condemnation package clearly defines legislative intent. Legislators have been cooperative and helpful in listening to and addressing concerns of the MACDC. Specifically, Drain Commissioners are concerned with the definitions of "principal residence" and "residential dwelling" as they appear in the bills and in the resolution. Some of the procedural amendments in the package are also of concern. The MACDC seeks to ensure that Drain Commissioners can continue to perform the statutory duties of their office, including condemnation proceedings, without being subject to the provisions of these bills and the Senate Joint Resolution.

— compiled by Michelle Brya, Hubbard Law Firm

# Monitoring the quality of recreational waters

The responsibility for protecting the health of swimmers who may be exposed to microbial hazards at our nation's beaches falls on state, municipal, or community authorities. They accomplish this by measuring a microorganism called *E. coli* in beachwater samples. We call these microorganisms *indicator bacteria* because they indicate to us something about the quality of the water. If there are too many of the *E. coli* in the water sample, the beach water is determined to be unsuitable for swimming.

Although we see the names *E. coli* and *indicator bacteria* in the newspapers and on television, and we know that it is not good to find this microorganism in food or water, there are many misconceptions about why this bacterium is measured and what it means to find it in water.

## WHAT ARE INDICATOR BACTERIA AND WHY DO WE USE THEM?

Indicator bacteria are used to tell us something about the quality of the water that we swim in. An oversimplified definition of

an indicator bacterium would be "an organism that's measured when you cannot measure what you really want to measure." In the case of recreational waters, it would be desirable to measure the pathogenic microbes that present a risk to swimmers, such as viruses, protozoa and some bacteria.

Unfortunately, these pathogens do not occur in bathing waters on a consistent basis, and they are very difficult

pathogens at a rate of two to 10 million per gram of feces. If that discharge occurs from a reasonably large population, the indicator bacterium approach should work quite well.

The characteristics of a good indicator bacterium of fecal contamination are the following: The indicator should be exclusively and consistently associated with feces. They should be easy to measure and they should be harmless to humans. They should occur in higher numbers in surface waters than pathogens. They should not grow in aquatic environments and they should be applicable to all types of water. Last, the number of indicator bacteria in water should correlate with health effects in swimmers. If an indicator bacterium had all of these characteristics it probably would be a good indicator, but not an ideal indicator.

The ideal indicator would be one that was able to separate and identify risks associated with water contaminated by humans from that contaminated by animals. Furthermore, the ideal indicator bacterium should be measurable using a very rapid method (instantly would be ideal), so that results are obtained in a couple of hours instead of 24 hours or more. Results that are obtained long after the sampling event are not useful for limiting health risks of humans exposed to contaminated water that is not in compliance with local regulations.

Therefore, rapid methods would likely reduce and ease risks for swimmers. The ideal indicator is not available to us yet, but scientists are continuously pressing forward to develop better indicators of fecal contamination, and faster and more inexpensive methods for measuring recreational water quality.

## WHY DO WE USE E. COLI TO MEASURE WATER QUALITY?

We use *E. coli* today because it has served public health purposes for over a century. Late in the 19th century, typhoid fever and cholera, two severe gastrointestinal diseases, were quite common in the world. In 1855, John Snow in London showed that water was one means for transmitting cholera. He believed that feces from ill people somehow got into the water supply and these, in turn, were swallowed in the drinking water, thus perpetuating the disease. Today we call this the fecal-oral route of transmission of disease. He proved his case by simply removing the handle from the pump of a central contaminated well and the illness rate was immediately lowered.

A means of measuring the quality of water was not available until 1885, when a researcher named Escherich described a microorganism he isolated from infant feces. Escherich named the microorganisms *Bacterium colicomune* which was later short-



to detect and count. They usually occur when a substantial portion of the population that discharges its waste through a sewage system to surface waters is ill. That's why one pathogen can't be used to tell us about the presence of another pathogen. To get around this problem, we measure the presence of fecal material. This is done by measuring a bacterium that's always found in feces and in very high numbers. High numbers are needed in order to follow the great dilution and dispersion that occurs when feces reach surface waters. A common number of indicator bacteria in a gram of feces is about a million. Therefore, if that gram is diluted a million times to about one-millionth of a gram, testing can still measure one indicator bacterium that was associated with the original gram of feces. When individuals become ill with a microbial gastrointestinal disease, they usually discharge

**By Alfred P. Dufour**

U.S. Environmental Protection Agency  
National Exposure Research Laboratory

... continued on page 15



... continued from page 14

ened to *Bacterium coli*. Other scientists were soon showing that the microorganism was always found in feces. Another scientist, whose name was Schardinger, suggested in 1892 that if this microbe was found in water, it indicated the presence of fecal contamination and, therefore, the potential presence of enteric pathogens. This was the beginning of the use of *E. coli* as an indicator.

As more and more organisms resembling *Bacterium coli* were being discovered, they were described as coliform, that is, having the form of coli. Many of these bacteria had a common characteristic, the ability to ferment lactose, a common sugar. One of the end products of this fermentation was hydrogen gas, which was easily captured in a small tube inverted in the

liquid medium used to grow the coliform bacteria. This simple means of detecting coliforms in water led to their widespread use for measuring fecal material in water environments. Today it is well-known that the coliform group consists of multiple types of bacteria. Some of these types, such as the *Citrobacter* and *Enterobacter*, are found in the soil.

Another type called *Klebsiella* is found in many environments such as water, wood, and industrial wastes. The significance of these non-*E. coli* bacteria is that water environments would frequently be misclassified. If the source of the contamination was a septic tank, *E. coli* could make up over 95% of the coliforms. If the contamination source was forest runoff, the *E. coli* might make up only 10% of the coliforms. This lack of consistency with regard to source led to a search for new indicators.

In the early 1940s, many researchers were pointing out that coliforms had many sources not associated with fecal material. In order to improve the source specificity of coliforms, they grew coliform bacteria at a temperature of 44°C instead of 35°C. Only one or two organisms of the coliform bacteria could grow at the higher temperature. The main microorganism, but not the only one, was *B. coli*, which was by now called *Escherichia coli* (*E. coli*) in honor of its discoverer. This new, smaller group of coliform bacteria that could grow at an elevated temperature were called fecal coliforms because of their greater specificity for fecal material.

Fecal coliforms have been used since the 1940s to measure water quality. This bacterial indicator group contains at least two genera that can grow at 44°C, *E. coli* and *Klebsiella pneumoniae*. *Klebsiella*, how-

... continued on page 21

## Michigan Lakes & Streams Foundation

YOUR GIFT LIVES FOREVER.

FOR 45 YEARS, MLSA HAS PROVIDED ALL OF THESE BENEFITS AND RESOURCES TO ITS MEMBERS AND THE CITIZENS OF MICHIGAN ON A LIMITED BUDGET - RELYING ALMOST ENTIRELY ON VOLUNTEERS. IF WE ARE TO CONTINUE TO BE EFFECTIVE AS THE LEADER IN THE STATE IN PROTECTING OUR WATER RESOURCES FOR FUTURE GENERATIONS AND CONTINUE TO BE YOUR VOICE IN LANSING AND CONTINUE TO DEFEND YOUR RIPARIAN RIGHTS ...

... WE NEED YOUR SUPPORT!

### WHAT IS THE MICHIGAN LAKES & STREAMS FOUNDATION?

The Michigan Lakes & Streams Foundation is a 501(c)(3) nonprofit, charitable organization which was established in 2004 by Michigan Lake & Stream Associations, Inc. (MLSA) to provide a vehicle (an endowed fund) for developing a stable and permanent financing source to help support MLSA's many programs and initiatives.

### WHY AN ENDOWED FUND?

An endowed fund ensures the principal from all gifts will always be there in the future to help provide funding to MLSA. Only the interest earned will be utilized. The principal will remain untouched. Thus, the more we are able to expand the principal, the greater the dollars available each year.

### WHY SUPPORT MLSA?

MLSA's membership consists of more than 300 Lakes & Streams Asso-

ciations statewide, representing more than 100,000 members interested in protecting the future of Michigan's water resources. For 45 years, Michigan Lake & Stream Associations, Inc., has labored on your behalf - most likely without you even knowing about it. On a national, regional and state level, MLSA represents its members through involvement in a variety of programs and issues involving state waters. Some of the key issues MLSA is currently dealing with include:

- Riparian rights.
- Lake and stream water quality.
- Controlling invasive species.
- Lake/stream watershed management.
- Other MLSA activities - MLSA is actively supporting numerous programs; MLSA is also your voice in Lansing, representing you.

### HOW CAN I CONTRIBUTE?

There are 4 ways you can make a difference in the future of Michigan's lakes

and streams:

1. You can leave a percentage of your estate through your will to the Foundation. No matter what kind of assets are in your estate, and regardless of the value, the percentage you specify will be given by your personal representative.
2. You may also wish to name a fixed-dollar amount or other specific property as your gift. This ensures a definite gift regardless of other bequests.
3. After bequests are made to other heirs, you can leave whatever is left from your estate to the Foundation. This assures that others are taken care of first, but that something goes to the Foundation that is important to you.
4. Make a cash contribution any time.

Consult with your own attorney or accountant for further ideas on the most appropriate way to make your bequest. FOR MORE INFORMATION, contact Franz Mogdis, President of the Board of Directors of the Foundation, at 989-831-5261; or Pearl Bonnell, Treasurer of the Foundation, at 989-257-3583.



# LOVE MY LAKE ...

"Love My Lake" is a new feature of The Michigan Riparian. In each issue, we invite subscribers and readers to tell us why they love their lake and to share one or two photographs. If you'd like to feature your lake in a future issue, please follow the format you see below to answer the nine sets of questions and submit them via e-mail to [editor@churchill3c.com](mailto:editor@churchill3c.com) or via "snail mail" to: Love My Lake c/o Jennifer Churchill, P.O. Box 44, Carson City, MI 48811. Please also e-mail a large-format (300 dpi) jpg or tiff photo of your lake, or snail mail a regular photo. Photos will not be returned, so please mail us a copy. We look forward to hearing about your lake!

## Virginia Himich loves living on Lake Chemung

**1 What is your name and MLSA affiliation (association you belong to)?**

Answer: Virginia Himich, Lake Chemung Riparian Association.

**2 What is the name of your lake and where is it located (county and general region of Michigan)?**

Answer: Lake Chemung-Livingston County (half-way between Brighton and Howell, Michigan)

**3 How long have you lived on lakes? How long have you lived on this particular lake?**

Answer: I have lived on a lake for approximately 40 years. I spent summers on Lake Fenton at our family cottage while growing up and I have lived on Lake Chemung since the early 1980s.

**4 How would you describe your lake? Very rural? Developed? A village or town feeling, or more remote?**

Answer: Lake Chemung is highly developed.

**5 What do you love most about living on a lake? What do you love most about this particular lake that you now live on?**

Answer: The peacefulness of sitting and enjoying a waterfront environment. The wildlife, the sound of the waves, the ability to walk out

my door and go boating/swimming, the friendship and joining together of neighbors. What I love most about this particular lake is the neighborhood fun and friendliness – everyone knows one another. Activities on the lake abound and everyone joins in and has a wonderful time. The neighbors on the lake truly care about one another and they are willing to lend a helping hand in times of need.

**6 How is life on a lake different from a "non-riparian" lifestyle?**

Answer: Folks living on the lake are bound together by the lake. Riparians have a common goal ... to protect their lake. Yes, I think the quality of life is better and I feel more in touch with nature and seasonal cycles.

The pros of living on a lake include the accessibility to water-related activities – all you have to do is walk out your door and fishing/boating/swimming is right there. Lake neighbors tend to get to know one another and to participate in common activities ... picnics, parties, lake-sponsored activities. Community spirit is great amongst lake neighbors. Sunrises and sunsets are beautiful over the lake. And, peace can be found when the lake is quiet ... watching nature, listening to the waves, sitting in the yard and watching the water.

**7 What riparian-related advice would you give to someone think-**

**ing about moving to a lake, or who has just recently moved to a lake?**

Answer: Educate yourself on water-related issues.

Learn the "do's and don'ts" to protect your lake. Become involved ... join your lake association, talk to your neighbors, participate in activities. It is the responsibility of those living on the lake to protect their valuable resource ... if they don't, no one will do it for them.



**8 What types of activities do you and family members do on your lake? Kayaking? Fishing Birding?** Answer: Swimming, boating, fishing.

**9 Do you find that family members visit more frequently when you live on a lake than when you don't? Do you have any funny anecdotes to share?** No.





# Statement of Ownership, Management, and Circulation (Requester Publications Only)

## DNR, NRC policies referenced on page 8

(NOTE: See the publisher's editorial on page 8, which explains more about why these two policies are so important to riparians.)

### DEPARTMENT OF NATURAL RESOURCES UPLAND CHANNEL GENERAL POLICY

"The Department shall not abet, support, promote or give encouragement to, and shall oppose by any legal means, the creation of any upland channel development anywhere in the State that will threaten the capacity of our land and water resources to sustain a quality environment for the citizens of the State.

Upland channel projects on the inland lakes and streams will not be approved if the proposed development will cause overcrowding or overuse of the adjacent waters, it is not in conformance with local zoning and land use controls, or if it is likely to injure the public trust or interest in wildlife and fish, or the riparian rights of owners of the affected water.

Those projects involving a major controversial development will require the preparation of an Environmental Impact Statement.

Permits that are issued by the Department shall specify conditions that will insure conformance to this policy."

### NATURAL RESOURCES COMMISSION POLICY NO. 4507 (OF 1977)

Preamble: "The practice of upland channeling, for any purpose, can have a serious effect on the land and water resources of the State.

Some effects are readily apparent and occur at once, others are not and may take years to become evident. It is recognized that channeling may sometimes improve the attractiveness of residential building sites for citizens of the State and aid in making the water resources of the State more readily available to the general public.

These amenities, however, must be carefully weighed against the possible severe disruption of groundwater systems, overcrowding of the recreational water areas, health and sanitation problems, increased dredging and maintenance of waterways at public expense, and water safety considerations.

Upland channeling can only be accomplished under a permit issued by the Department, which may specify conditions."

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PS Form 3526-R, September 2006 (Page 2 of 3)

# NEWS FROM LAKES AROUND THE STATE

## Non-phosphorous fertilizers

**WHITE LAKE ASSOCIATION**

**Muskegon County**

*Phil Dakin, President*

Muskegon County commissioners voted last month to make Muskegon County the first in Michigan to ban the use of fertilizers containing phosphorous. Phosphorous is the nutrient most responsible for rampant growth of algae and aquatic plants in lakes and streams. The ban will take effect on Jan. 1, 2007, to give time for retailers of fertilizer with phosphorous to deplete their inventory. Phosphorous content in fertilizer is the middle number on the bag. The ordinance makes an exception for phosphorous fertilizer for farming and the starting of new lawns; however, a soil analysis test and permit will be required for purchase. This process is still being worked out. In a related matter, a bill has just been introduced in the Michigan Senate for a state-wide ban; however, stalled for now. The association has informed Senator Van Woerkom that it is against this bill because it still allowed for the use of lawn fertilizer with phosphorous if only so much was used per square area of lawn. This would not be practical. However, the association would like a state-wide ban patterned after Muskegon County that would be effective at the retail sale of fertilizer.

## No power loading

**BARRON LAKE ASSOCIATION**

**Niles, Michigan**

*Emery Hirschler, President*

Boaters should winch their craft onto boat trailers instead of powering their boat onto the trailer. Boat ramps throughout the state of Michigan are being badly damaged by boaters who power their boats onto the boat trailer. The strong current created by the boat's propeller causes severe erosion and washout at the end of the ramp. This condition, in turn, can also cause damage to boat trailers. The Department of Natural Resources is attempting to repair as many of the damaged ramps as possible, but the best solution to the problem lies with the boater who refrains from this practice.

## Geese create too many challenges for lake

*The Michigan Riparian*

**LAKE OF THE WOODS IMPROVEMENT ASSOC.**

**Decatur, Michigan**

*Wayne Potter, President*

There are two opinions regarding the geese population on Lake of the Woods. You either love them for their natural beauty or hate them for their "unsolicited deposits" on your lawn. The board recently appointed Joe Hillyer as chair of the Waterfowl and Fish Resources Committee to research what can be done to control the nuisance factor of the geese and yet respect their environmental integrity. Members should not feed geese. In Michigan, the goose hunting season is limited, and hunting around a residential lake is limited. The DNR has suggested breaking all but one egg in a goose nest to limit population growth, but scouting and screening the nests takes manpower and time. Please contact Hillyer if you have legal suggestions or to volunteer help with the committee.

## All about the lake

**LAKE MARGRETHE PROPERTY OWNERS**

**ASSOCIATION**

**Grayling, Michigan**

*Joe Porter, President*

Lake Margrethe was named Portage Lake until it was renamed in honor of Margrethe Hanson, the wife of Rasmus Hanson, who deeded the property south of the lake to the State of Michigan, allowing the formation of Camp Grayling. Lake Margrethe's birthday is September 13, 1917. Lake Margrethe has about 2,000 acres of surface water and about 10 miles of shoreline. Secchi Disk transparency ranges from 10 feet to 29 feet with a median of 12 feet.

## Boating regulation violations

**BIG BROWER LAKE IMPROVEMENT ASSOC.**

**Rockford, Michigan**

*Gale Satterlee, President*

Board members are receiving an increasing number of complaints about lake residents in power boats failing to observe state boating regulations. The numerous boating accidents that have occurred this summer on surrounding lakes and rivers should serve as a reminder that boats used improperly are very dangerous instruments. If you are pulling a tuber or skier, you must have an observer.

Boats, as well as the skiers and tubers being pulled, must remain at least 100 feet from docks, rafts, shore and swimmers. Boaters towing skiers must travel counterclockwise.

## Keyholing

**BYRAM LAKE ASSOCIATION**

**Linden, Michigan**

*Jack Schoeppach, President*

The membership addressed the board concerning the issue of "keyholing," a word used when a watercraft (power boat, personal watercraft, row boat, canoe, etc.) is launched into a private lake by someone other than the owner of the riparian property. Fenton Township's Article 4, Section 4.01, tries to explain the regulation as "The intent of this section is to prevent non-riparian owners or occupiers or their invitees from engaging in riparian uses using riparian lots owned by others." The regulation defines the riparian owner as one functional family unit. The board acknowledged that Byram Lake is one of the last lakes in the area NOT to be infested with zebra mussels and attributed this accomplishment to boats not being transported on and off the lake.

## Beach project

**DODGE LAKE PROPERTY OWNERS ASSOC.**

**Harrison, Michigan**

*Dorothy Saucier, President*

President Dorothy Saucier has been working to get help restoring the beach area as the erosion there has reached the point of being a safety problem. It's been suggested that the Eagle Scouts might work on a project like this.

## Managing your shoreline

**M&M ENVIRONMENTAL ASSOCIATION**

**Sand Lake, Michigan**

*Colleen Bent, President*

If properly managed, your shoreline can be an efficient natural buffer system between the lake and the surrounding landscape. In fact, shorelines are the most important tool you have to protect your lake. Some specific steps you can take are to:

- Leave an unmowed buffer strip along the lake 20-feet wide.
- Set your lawn mower to leave the grass



# NEWS FROM LAKES AROUND THE STATE

two or three inches long.

- Plant steep banks with native vegetation that binds the soil and traps water.
- Terrace steep banks when possible to further slow water and sediments.
- Don't tamper with existing wetlands.

## **Personal watercraft issues**

**PORTAGE BASE & WHITEWOOD OWNERS ASS.**

**Dexter, Michigan**

*David Spielman, President*

Washtenaw County Sheriff Deputy John Conlin addressed the laws on personal watercraft (PWCs). One of the reoccurring questions is about the date of birth requirements that state if you were born after December 31, 1978, you have to have a Boating Safety Certificate to operate a PWC. No provision is made for the fact that you might be 27 years old. It is good advice for anyone driving a PWC to attend a boating safety class.

## **DNR geese banding operation**

### **SILVER LAKE IMPROVEMENT ASSOCIATION**

**Traverse City, Michigan**

On June 28, 2006, the DNR captured and banded 10 adult geese and 16 goslings on Silver Lake. This is part of a statewide tracking program. By the time they reached Silver Lake, they had already banded 210 geese from Fremont, Oceana County, Cadillac and Logan's Landing, exceeding their goal of 200. They indicated this is a good time to band because the young cannot fly yet, and the adults will not abandon them.

## **Clearwater Arch**

**LAKES PRESERVATION LEAGUE**

**Manitou Beach, Michigan**

*Arlen Miller, President*

The project to restore the arch to its original 1930s structure and appearance is underway and will last until the end of September. Melinda LoPresto, Frontier Rustic Sculpting, is known for her work in concrete sculpting. Private individuals

and the League have made donations to help fund the cost of this project.

## **Hydro-Lab purchased by WLTC**

**WALLOON LAKE ASSOCIATION**

**Petoskey, Michigan**

*Gene Thompson, President*

This year, it was necessary to replace the Walloon Lake Association Water Quality Committee's HydroLab, which has been utilized in excess of 15 years. A HydroLab is a multiprobe instrument used onsite to measure a variety of parameters. Our HydroLab measures depth, temperature, dissolved oxygen, conductivity, pH and turbidity. These measurements are taken biweekly in the summer season at the deepest points in all four basins and at a variety of depths. The historical data that has been collected over the years helps to spot any changes in the lake and predict any trends. This latest version of the HydroLab is a sleek machine, is less than half the weight of the previous model,

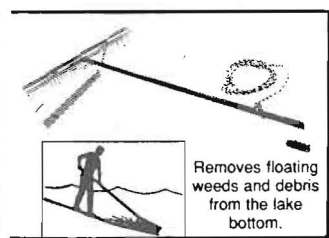
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## **Another riparian victory in the Michigan Court of Appeals**

The decision by the Michigan Court of Appeals in *Chauvette v Owczarek* (unpublished decision decided October 26, 2006; case No. 262473) is another setback for backlot property owners and a victory for riparians. In *Chauvette*, a plat created a private road which ended at Mullet Lake. The plat dedicated the private road only to lot owners within the subdivision. The trial court held that backlot property owners were not riparians and could not utilize the private road end at the lake for shorestations, boat cradles, permanent boat mooring, sunbathing, lounging, or similar activities. The private road could be utilized for travel purposes only. The trial court did allow one non-exclusive dock that could be used by any property owner within the plat, but it could not be used for permanent boat mooring or anchoring. (This is a different result than for private access easements. For access easements, no dock is normally allowed, in addition to the prohibited other uses. However, the courts have apparently drawn a distinction between road ends, whether private or public, whereby one non-exclusive dock is allowed, and private access easements where no dockage is normally allowed.) On appeal, the Michigan Court of Appeals upheld the decision of the trial court. The Court of Appeals agreed that the private road end could not be used for permanent boat mooring, shorestations, multiple docks, sunbathing, lounging, and similar activities. The courts also rejected the backlot owners' arguments that they should be allowed to continue their prohibited uses due to prescriptive easement or acquiescence theories.



# NEWS FROM LAKES AROUND THE STATE

and employs some of the latest technology, at a total cost of \$8,100.

## **Weed report**

**HOUGHTON LAKE LAKE ASSOCIATION**

**Houghton Lake, Michigan**

*Keith A. Stiles, Sr., President*

The H.L.L.B. is in its fifth and final year of the weed control program. For Houghton Lake, the targeted species was Eurasian watermilfoil that populated approximately 10,000 acres. At this time (June 2006), some Eurasian milfoil has returned and will be spot-treated with herbicides.

## **Lake foam ... again**

**THREE LAKES ASSOCIATION**

**Bellaire, Michigan**

*Bob Bagley, President*

Lakeshore property owners sometimes become concerned about lake foaming. However, most foam observed in lakes and streams is a product of nature; foam

is not necessarily an indicator of pollution. Small trout streams, for example, often have naturally occurring pools of foam where fish will hide. The foaming of surface waters on lakes is not a new phenomenon. It is a natural process. Foam is created when the surface tension of water (attraction of surface molecules for each other) is reduced and the air is mixed in, forming bubbles. Man-made agents such as soaps and detergents can also reduce surface tension. All lakes contain organic matter, such as algae and plants, and when these decompose they release cellular products (surfactant) into the water, which lessens the surface tension. When the wind blows, the waves on the lake agitate this surface agent, thus transforming it into sudsy white foam. Currents and boats also mix air with the organic compounds present in the lake to produce foam. Natural foam has a somewhat earthy, fishy aroma and may have an off-white, tan or brown color. Detergent foam in contrast will have a

noticeable perfume smell, and is usually whiter in color.

## **Severe windstorms**

**PENTWATER LAKE ASSOCIATION**

**Pentwater, Michigan**

*Jerry Saylor, President*

*Newsletter Editor, Charlotte Lindstrom -*

The afternoon of July 17, I was sitting in our house looking out over Pentwater Lake watching storm clouds come rolling in and the sky darken. Soon, high winds were rocking the tree trunks and blowing off branches, then the power went off. The storm did not last long; only a few minutes later it was light and calm again. Our power stayed off until early the next afternoon and the damage on our property was light; we were the lucky ones. Along the lake and in the village, large trees were uprooted; homes, cars and campers were damaged; streets were blocked; power lines were down; and many (reportedly 1,642 customers) were without power for several days.

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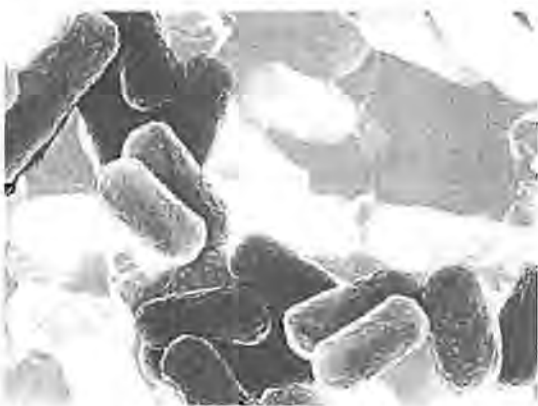
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ever, can grow in pulp mill and textile mill wastes, as well as in other industrial wastes. Since *Klebsiella* frequently indicated the presence of feces when, in fact, fecal material was not present, its role and the role of fecal coliforms as an indicator of fecal contamination was severely compromised.

In the mid-1970s, a membrane filter procedure for *E. coli* was developed for measuring the quality of surface waters and, shortly thereafter, a multiple tube fermentation test was introduced. These methods, because they measure only the presence of *E. coli*, are more specific for measuring feces from warm-blooded animals in recreational waters. Although *E. coli* is generally accepted as an indicator of the presence of fecal contamination, it is not universally used in the United States for measuring the quality of recreational waters. Many states and local jurisdictions



in the U.S. still prefer to use fecal coliforms and one or two use total coliforms to measure water quality in spite of the lack of specificity of coliforms and fecal coliforms for fecal wastes.

#### **E. COLI USED TO MEASURE WATER QUALITY IS NOT A PATHOGEN**

Many people believe that the *E. coli* that we use to measure water quality can cause illness in humans. This misconception has probably occurred because of the great publicity given to outbreaks of disease associated with food and especially uncooked hamburger meat, that are caused by *E. coli*. There are only a few of these types of *E. coli* pathogens that cause outbreaks of enteric disease. These pathogenic *E. coli*, unlike the regular *E. coli* that are always found in the gastrointestinal

tract of humans, occur quite rarely in feces and the environment.

The *E. coli* that we measure to determine the quality of recreational waters is not pathogenic and does not cause disease in swimmers. The *E. coli* that are counted in water samples tell us only about the level of fecal material in the water and the potential presence of pathogens that may cause disease.

#### **E. COLI AND SWIMMING-ASSOCIATED RISKS**

The mere detection of *E. coli* in recreational waters is not a useful measure with which to draw conclusions about the quality of water and make decisions with regard to the risk posed to swimmers. The approach used to determine if *E. coli* would be a useful measure of recreational water quality that could be related to illness risk was to conduct a series of epidemiological studies at freshwater beaches. The intent of these studies was to measure the water quality while individuals were in the water, and then to follow volunteers for nine to 10 days to see if they became ill because of their exposure to the water. Since it was important to determine if any illnesses were associated with swimming, it was necessary to also follow up volunteers who were at the beach but had not entered the water. The swimming associated illness rate could then be calculated by subtracting the illness rate in non-swimmers from the illness rate in swimmers.

This approach required large numbers of swimmers because the illness rates in swimmers and nonswimmers was very low, usually less than 4% to 5%. Another important element of the studies was that it was not known what pathogen might affect the swimmers and, therefore, all study participants were asked in a follow-up telephone call to report if they had any symptoms of gastrointestinal respiratory, eye, or skin infections.

In this way, a specific set of symptoms could be associated with swimmers and then related to the quality of the swimming water. Another key factor in the studies was that they should be conducted at beaches where the quality of the water was not the same from summer to summer. This would allow a gradient of beach water qualities, each averaged over a sum-

mer, to be compared with the illness rates over a summer. When *E. coli* was measured at four beaches over three summers the water quality gradient was between a low of 19 *E. coli* per 100 mL to a high of 236 *E. coli* per 100 mL. The results of the epidemiological studies showed that the swimming-associated illness rate increased from about 1 per 1,000 to 15 per 1,000 as the numbers of *E. coli* in the water increased. This relationship served two very important purposes. First, it validated once more the well-established fecal-oral route of exposure for gastrointestinal illness. Second, it provided information for beach managers through which they could set meaningful risk levels for bathing waters and also a means to monitor the waters to assure that acceptable risk levels were not exceeded. The guideline for *E. coli* recommended by the U.S. Environmental Protection Agency suggests that a log mean for *E. coli* calculated from five water samples taken over a 30-day period should not exceed 126 *E. coli* per 100 mL.

This level of *E. coli* in the water will limit the number of gastrointestinal illnesses to 19 or less per 1,000 swimmers. Some authorities choose to sample their recreational waters more frequently, sometimes even daily. The recommended upper limit for *E. coli* in a single sample is 235 per 100 mL. The higher limit for single samples does not imply a less stringent limit or an allowance of more illnesses. It does recognize that there is more uncertainty involved with taking a single sample and the higher number allows for this uncertainty.

*E. coli* and the methods for measuring this organism have progressed over the last 100 years from a crude indication of the presence of feces to an analytical tool which is instrumental in helping to protect the health of swimmers and other recreationists who use natural waters to fill some of their leisure time activities. It has served us well and it is likely to continue doing so until that ideal indicator of water quality is discovered.

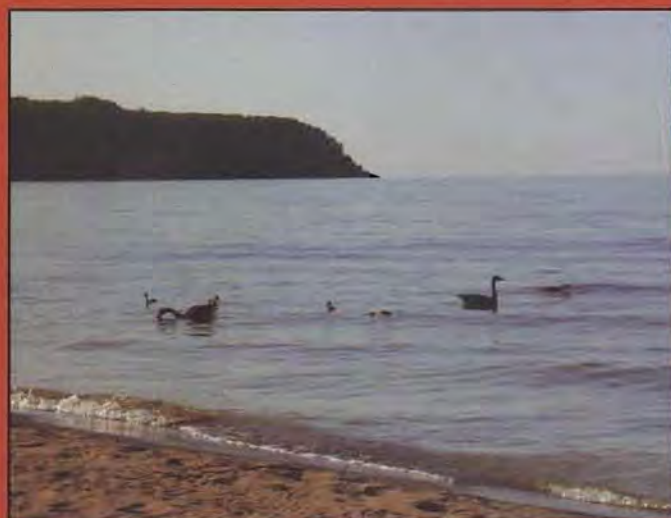
*Dr. Dufour is a Senior Research Microbiologist with the U.S. EPA National Exposure Research Laboratory in Cincinnati. He has been with EPA for 25 years and has over 40 years experience in microbiology with, among others, Yale University and the Medical College of Pennsylvania. He has published numerous papers, book chapters, and books, including this article which appeared in the Summer 2003 Lakeline publication.*





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