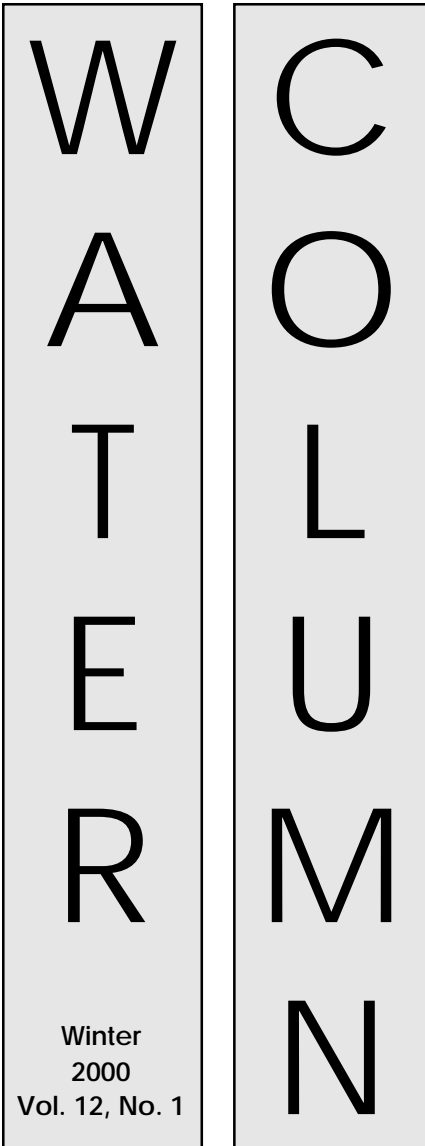




Office of Water Management
Indiana Department of
Environmental Management



Lakes Management Work Group Recommendations

As a direct result of the public interest and outpouring demonstrated at two public meetings held in Angola in 1996, the Indiana General Assembly established the 26-member Lakes Management Work Group in 1997 to take public comments and develop solutions for problems affecting Indiana lakes. Work Group members represented a broad base of lake and reservoir organizations, users, and researchers from across the state, including Senator Robert Meeks (R-LaGrange), Senator Katie Wolf (D-Monticello), State Representative Dennis Kruse (R-Auburn), and State Representative Claire Leuck (D-Fowler).

This diverse group met nearly every month over the past two years. Most meetings, all of them open to the public, took place in Indianapolis. For five of the meetings, the Work Group went “on the road” to reach out to the public at different locations around the state.

The 82-page final report includes 48 recommendations, each including an issue/problem statement and recommended course of action. We can’t list all of the recommendations here but here is a sampling:

- that IDEM revise existing water quality standards to include parameters that are indicative of lake eutrophication;
- that local health departments, in cooperation with the Indiana State Department of Health, issue full body contact advisories for impaired waters of lakes that exceed water quality standards;
- that county drainage boards and the IDEM clarify or establish and exercise their authority to prevent livestock from violating State Water Quality Standards in all public waters;
- that septic system design and operating condition be added to the real estate disclosure process and septic system inspections be required prior to the transfer of property;
- that drainage boards implement all possible best management practices as indicated in the *Indiana Drainage Handbook*;
- that the State Soil Conservation Board develop criteria/policies for use of LARE money for limited dredging projects in public lakes;
- that the state develop and implement a joint application and single point of contact for submitting permit applications for construction activities related to water resources under the jurisdiction of the DNR, IDEM, and the ACOE;
- that the number of full-time Conservation Officers be increased by 25% over the next four years;
- that the IDNR and other entities continue to acquire, develop, and maintain public access to public freshwater lakes;
- that the IDNR have rulemaking authority to establish zones in which the use of watercraft may be limited or prohibited for the purposes of fish, wildlife or botanical resource management, or for the protection of users;
- that local units of government receive assistance in developing county planning and zoning, county ordinances, and building codes that protect lake shorelands;
- that authority to regulate fishing tournaments be modified to include all reservoir waters; and
- that public funds be made available to help local communities control non-native, invasive, aquatic plants in public lakes having a comprehensive aquatic plant management plan.

Nine of the final recommendations have already been drafted as either Senate or House bills. The full report is currently being published in quantities to allow broad distribution. Another important product of the Work Group is the establishment of a comprehensive Internet Web site that will contain all the state contacts for lake information and permits, and links to lake management organizations and information. We will include information on how to access these sources in the next issue of *Water Column*.

DNR to Provide Funds for Control of Invasive Lake Plants

The Indiana Department of Natural Resources will provide \$100,000 in cost-share grants to lake associations for controlling exotic aquatic plants in public access lakes. Applications for spring funding are due by March 1. Grants will reimburse lake associations for up to 25 percent of the actual cost of removing Eurasian watermilfoil and other non-native (exotic) plants from lakes with public access.

Use of state funds for aquatic plant control was one of several important recommendations of the Indiana Lakes Management Work Group (see article above).

When exotic species are transported from other parts of the world and rapidly spread in new locations, they can become a form of biological pollution. Eurasian watermilfoil is a local example of an aggressive invader in Indiana lakes. The plant is used in the aquarium industry and was first documented in the United States in 1942 in a pond in Washington, D.C. Since then, the plant has become established in 44 states and three Canadian provinces and is still spreading. Eurasian watermilfoil is not native to North America. It thrives in colder waters and sprouts earlier in the spring than most native plants. Milfoil rapidly grows to the surface, shading out native species competing for nutrients in the water and quickly crowding out beneficial lake plants that were providing food and habitat for native fish and wildlife.

The plant looks like a long green bottlebrush with feather-like leaves arranged in whorls on the stem. A pink flowering spike protrudes above the water. Infestations of the plant form mats across the lake surface that tangle in boat motors and fishing lines and impede swimming. The problem in Indiana lakes is extreme. According to DNR reports, Eurasian watermilfoil has been reported in over 27 percent of the 616 lakes in northern Indiana. In comparison, the Wisconsin DNR describes less than 5 percent of its lakes as affected.

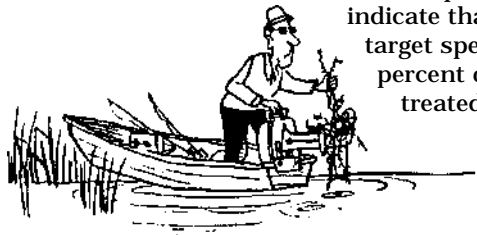
A recent analysis by DNR suggests that lake residents are currently spending more than \$800,000 per year on aquatic plant control in Indiana lakes. Permits

issued for plant control indicate that milfoil was the target species in over 80 percent of the lake area treated in Indiana.

These costs have been borne exclusively by private

residents and lake associations around publicly accessible lakes.

Control of Eurasian watermilfoil can be very difficult. Mechanical harvesting cuts the plant into pieces, each of which can drift and root in new areas if the cut pieces are not carefully collected during harvesting. Chemical control can bring relief but is expensive, may usually require several years of consistent treatment, and leaves decaying plant material in the lake where they can release nutrients and consume oxygen. Certain native insects (weevils) feed exclusively on milfoil, so the DNR's



Lake and River Enhancement program has also provided funding to pilot test use of native weevils to biologically control these exotic plants. The 2000 Indiana Fishing Guide provided by the DNR's Division of Fish and Wildlife contains more information on proper cleaning of equipment and reporting of exotic species.

Because aquatic plant control is a complex process, lake residents should develop a long-term aquatic plant strategy for managing local lakes. For further assistance in aquatic plant management or other lake-related issues, call your DNR district fisheries biologist, the DNR Lake and River Enhancement program or a professional plant control specialist.

More information can be obtained from:

- Lake and River Enhancement, (317) 233-3070
- Division of Fish and Wildlife, (317) 232-4080

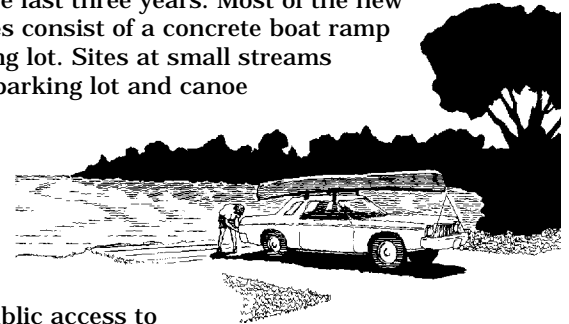
New Public Access Sites Available in Indiana

The Indiana DNR Division of Fish and Wildlife has constructed public access sites at six rivers and four lakes in the last three years. Most of the new access sites consist of a concrete boat ramp and parking lot. Sites at small streams include a parking lot and canoe launch. In

addition, four new properties were acquired that will provide public access to

three streams and one lake once the sites are developed in 2000. Five existing access sites were renovated and made accessible to people with disabilities.

The DNR Division of Fish and Wildlife initiated the public access program in 1953 to provide free access to Indiana waters for anglers, hunters, trappers, and wildlife viewers. The demand for fishing in Indiana is very high. According to Indiana's 1994 Outdoor Recreation Plan,



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more than 1.5 million Hoosiers fished at least once during the year.

To date, the Division of Fish and Wildlife has funded the construction of 319 public access sites, which include 182 sites in northern Indiana and 137 sites in southern Indiana. Of these sites, 185 have been developed on lakes and 134 on streams.

Public Access Additions 1997 through 1999

<u>Site Name</u>	<u>County</u>
Maumee River *	Allen
St. Mary's River	Allen
Patoka River	Dubois
Wabash River	Fountain
West Fork White River	Gibson
Muscatatuck River	Jackson
Muscatatuck River	Washington
Kankakee River	Lake
Dixon Lake	Marshall
Iroquois River *	Newton
Wabash River	Parke
Salt Creek *	Porter
Big Otter Lake	Steuben
Jimmerson Lake	Steuben
Lake Shafer	White
Goose Lake	Whitley

* indicates the site has been acquired but not constructed.

For more information, contact Gary Hudson, fisheries supervisor at (219) 691-3181.

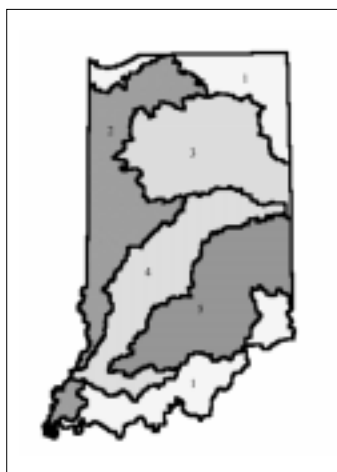
Early Watershed Assessment Results are Encouraging

In the East Fork of the White River near Milport in Washington County, IDEM scientists made an exciting discovery last year: endangered harlequin darters, never before documented in this reach of the river. Nearly as significant, samples from the Whitewater River basin included endangered variegate darters, which haven't been found there for decades.

At four locations on the West Fork of the White River, from Winchester to Petersburg, they discovered that levels of polychlorinated biphenyls (PCBs), pesticides, lead, and other contaminants in carp tissues have declined since 1979.

"These are encouraging developments, but we can't necessarily say that they mean water quality in Indiana is improving," said Ronda Dufour, an environmental manager in the Indiana Department of Environmental Management's water assessment branch. "There are any number of explanations for them. We're just beginning to look at the data."

The studies are an outgrowth of the federal Clean Water Act, a section of which requires each state to determine the quality of its rivers, streams and lakes. IDEM divided up Indiana into six watersheds that will be



sampled on a rotating basis. The watersheds are the West Fork White River-Patoka River, East Fork White River-Whitewater River, Upper Wabash River, Lower Wabash River-Kankakee River, and Great Lakes and Ohio River basins.

"The purpose of our rotating watershed assessment program is to establish baseline information on water quality," said IDEM senior environmental manager Jim Stahl. "We can use

the information not only to determine current water quality but to rate future successes and failures." Samples have been collected from four of the six watersheds thus far.

The watershed assessment program involves cooperation between state and federal agencies, including IDEM, Indiana Department of Natural Resources, Indiana State Department of Health, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service and U.S. Geological Survey.

Sampling sites are randomly selected by the EPA lab in Corvallis, Oregon. IDEM scientists then sample fish and insect populations, water chemistry, stream sediments, fish tissues, and other water quality measures. The samples and resulting data are analyzed and organized into reports that can be used for comparisons.

Studies by IDEM, EPA, and other agencies using similar sampling methods began in 1990, Dufour said. Scientists are able to compare earlier findings with the most recent.

As the rotating watershed program continues, data collected within each watershed will be evaluated for environmental health trends.

(Reference: Indiana Environment & Materials Exchange)

12th Annual Indiana Lake Management Conference

Don't forget to attend the 12th Annual Indiana Lake Management Conference on April 7-8. This year's conference will be held at the Oakwood Inn on Lake Wawasee, Indiana's largest natural lake. Room rates are \$75 (for up to 4 people per room). Reservations can be made by calling the Oakwood Inn at (219) 457-5600.

The conference is held in conjunction with the annual meeting of the Indiana Lakes Management Society (ILMS), which is a chapter of the North American Lake Management Society (NALMS). The conference is co-sponsored by ILMS and the Indiana Department of Environmental Management. Contact: Tina Hissong, phone: (219) 842-3686; e-mail: lmec@culcom.net.

Preventing Winterkill

The drought of 1999 has left many lakes and ponds two to three feet below normal water levels going into the winter. The low water levels will make many ponds and lakes, especially small shallow ones, vulnerable to *winterkill*. Winterkill refers to low oxygen conditions beneath winter ice that may kill fish and other aquatic organisms.

Oxygen is necessary to sustain life in the water. Dissolved oxygen in the water comes from the air and photosynthesis of plants. Once a pond or lake freezes over, the ice cover prevents the transfer of oxygen from the air to the water. Plants (primarily single-celled algae) can still produce some oxygen on sunny days as long as the ice is clear and free of snow cover. Once snow covers the ice, light is reduced to where plant photosynthesis and growth is not possible. However, plants still respire and use oxygen. Dead organic matter on the bottom also consumes oxygen. All the fish and other animals in the water must survive on what dissolved oxygen is in the water before the snow cover until the ice thaws and oxygen transfer from the air occurs again.

The amount of dissolved oxygen available to sustain the pond during the period of snow cover is dependent on the volume of water. The more water volume available, the more dissolved oxygen available. That is why in northern Indiana, we recommend that ponds be constructed to be at least eight to ten feet deep. That is usually enough water volume to sustain the fish population through a normal winter. Most natural lakes are deeper than ten feet and aren't at as much risk. However, the drought has left many private ponds with less than eight feet of water. Those ponds are at great risk of winterkill if they freeze over and have snow cover for an extended period of time. Ponds that had extensive weed growth through the summer are at the greatest risk as those plants die in the fall and contribute a large amount of organic matter that will decompose over winter.

Preventing winterkill requires planning before ice cover. There are two practical ways to prevent winterkill: keep snow off the ice or install an aeration system. Keeping snow off the ice can require a lot of labor if snowfall is frequent and heavy. You also have to be careful that the ice is thick enough to support your weight or your equipment before venturing out on the ice to clear the snow. The second option, aeration, is less work but more expensive.

Several types of aeration systems are available on the market. Surface fountains are popular and function very well during warm weather. When the weather turns cold however, the fine spray produced by a fountain will freeze, coating the fountain motor with ice. In the worst case, the ice can build up enough to capsize or sink the fountain. Heating elements for fountains can be added at extra cost and are expensive to operate.

The most efficient aerators are small bubble diffusers that sit at the bottom of the pond. A compressor sitting in a shelter on shore forces air through tubing to the diffuser continuously. The small bubbles rising through the water column provide a lot of surface area for oxygen transfer to the water and circulate a lot of water. This

keeps an area of the pond open through the winter allowing oxygen transfer from the air for additional oxygenation besides from the bubbles. The compressors for diffuser systems are designed to run continuously for long periods of time (months) and are relatively maintenance-free once installed. Power outages are the main problem encountered with these systems. Home air compressors available at the local hardware store are not suitable for aeration systems. They are not designed to run continuously or for long periods of time. It also takes high pressure to force air to the bottom of the pond and through the diffuser.

Wind-powered aerators have been on the market for some time. They work fine as long as the wind is blowing, but when the wind stops, like on a very cold night, they can freeze in solid. Wind power is not a good choice in Indiana.

Aerators should be turned on before the pond freezes and remain running until after ice season to be effective.

For more information on preventing winterkill, contact the district fish management office nearest you or your county extension agent.

(Source: Ed Braun, Indiana DNR)

Meetings

March 31-April 1, 2000. *Combined Stream Monitoring and Water Quality Curriculum Teachers Workshop.* Indiana State FFA Center, Trafalgar, Indiana. Sponsored by: Hoosier Riverwatch and Water Watchers of Indiana. Registration, meals, and lodging—free. Contact: John Rouch, phone: (219) 658-9108; e-mail: jrouch@npcc.net

April 7-8, 2000. *12th Indiana Lake Management Conference.* Oakwood Inn, Syracuse, Indiana. Contact: Tina Hissong, phone: (219) 842-3686; e-mail: lmec@culcom.net

April 15, 2000. Project Learning Tree Workshop. Indiana Dunes State Park Nature Center, Chesterton, Indiana. Contact: Wendy Smith, phone: (219) 926-1390.

April 25-27, 2000. *National Monitoring Conference: Monitoring for the Millennium,* Austin, Texas. National Water Quality Monitoring Council. Phone: (405) 516-4972; e-mail: jeff@gwpc.site.net; web page: www.nwqmc.site.net

April 26-28, 2000. *13th Annual National Conference: Enhancing the States' Lake Management Programs.* Chicago, IL. Contact: Bob Kirschner, phone: (847) 835-6837; fax: (847) 835-1635; e-mail: bkirschn@chicagobotanic.org

June 26, 2000. **Project WILD Advanced Workshop—Ice Age Wildlife.** Indiana State Museum, Indianapolis, Indiana. Contact: Warren Gartner, phone: (317) 549-0348; e-mail: indianaprojectwild@ameritech.net

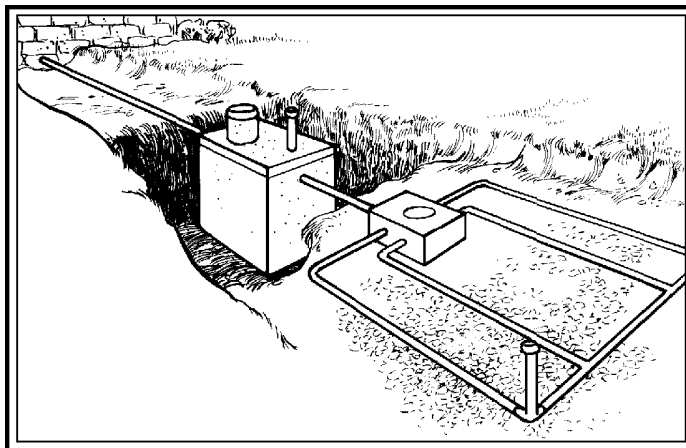
Managing Shoreline Property to Protect Water Quality—Septic Systems

If you live along a lake or stream, you have a special responsibility to prevent pollutants from entering the water. Since many activities you do around your property can impact water quality, you can significantly improve what happens along the shore in front of your home.

Michigan State University Extension has prepared information and a self-assessment so homeowners can assess the risks associated with their activities. In this issue, we present a simple method to assess, and ultimately reduce, the risks from shoreline septic systems.

Use the table below to generate a numeric value of risk for each of the five categories. For example, for each category, determine if the risk posed by your system is low (1 point), medium (2 points) or high (3 points). Then total the points for your overall risk. If your total is 5 points or less, the risk associated with your septic system is likely low; if you total 6-10 points, the risk is medium; risk totals of greater than 10 points represent a high risk.

If you calculate a medium or high risk for your septic system, please contact your local extension office or health department. They have information to help you reduce the risk of septic system failures so you can do your part to keep your lake clean.



	1. Low Risk	2. Medium Risk	3. High Risk	YOUR RISK
Distance of drainfield to ground water	Water table always more than 4 feet below drainfields	Water table sometimes less than 4 feet below drainfield	Water table often very close to or above the drainfield.	
Distance to shoreline	Septic system located more than 50 feet from shore	Septic system located between 10 and 50 feet from shore	Septic system located less than 10 feet from shore	
Soil type	Loam or sandy loam soils	Loamy sand soils	Sandy or clay soils	
Home conversion or expansion (bedrooms or baths added)	Home has been converted from season to year-round use or expanded; septic system upgraded	Home has been converted from season to year-round use or expanded; septic system maintained and monitored	Home has been converted from season to year-round use or expanded without any changes to septic system	
Presence of shoreline algae or excessive weeds	No unusual algae blooms or excessive weeds near shore	Occasional increased algae or weeds near shore	Frequent algae blooms or excessive growth near shore	
			TOTAL RISK SCORE	_____

Source: Home *A* Syst Program

Online Help for Environmental Nonprofit Organizations

Whether you are involved in organizing a local monitoring program or a local lake association or managing an existing nonprofit environmental group, accessing a new web site called EarthDreams might help you to manage your efforts more effectively. This free site promises to include regular updates and articles on sometimes-difficult issues about management and fundraising for nonprofit activities/groups. This site is designed by folks with over 25 years of wide-ranging experience with all kinds of nonprofits.

In coming months the site will be providing regularly updated resources and articles on: aspects of management and leadership, fundraising, board recruitment and development, staff development, public relations and other topics you can help choose.

The site is updated regularly. Each update will address a new theme, an original fundraising article, a profile of an environmental nonprofit group, and an online poll on the current month's topic. Also offered through the site is a free consulting help via e-mail to staff with more than 20 years experience for help with management questions and development issues.

The address for this useful site is:
www.EarthDreams.net

Water Facts

- Industries as well as people need water. It takes on average 39,090 gallons of water to manufacture a new car and its four tires.
- 62,600 gallons of water are needed to produce one ton of steel; 1,500 gallons to process one barrel of beer; and 9.3 gallons to process one can of fruit or vegetables.
- On average, 50-70% of household water is used outdoors (watering lawns, washing cars).
- The average American uses over 183f gallons of water per day; the average residence uses over 100,000 gallons during a year.
- Americans drink more than 1 billion glasses of tap water per day.
- One gallon of water weighs 8.34 pounds.

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PERSPECTIVES



“ Like a slumbering white giant waking by degrees, the lake responds to the morning sun after a hard, cold night by rumbling and groaning as it contracts and cracks.

The force is considerable. This morning I even saw little slivers of ice kicked up in this grinding process, and I was reminded of the gigantic earth movements that periodically arrange and rearrange the topography of our planet, of the implacable movement of glaciers chiseling out mountain cirques and lake hollows, inch by inch. What powers give shape to our supernatural natural Earth! And what power resides in our unique ability to conceive of them!”

— Edward Lueders in *The Clam Lake Papers*,
Festival Books

Correction

In our Summer 1999 issue of *Water Column*, we incorrectly identified Eviroline as the IDEM number for environmental emergencies. Enviroline is an automated system that provides general, pre-recorded information on a variety of environmental topics 24-hours a day. The telephone numbers for this service are: (800) 451-6027 or (317) 232-8603.

The Environmental Emergency or Spill Reporting Hotline is another 24-hour telephone line. The numbers to call are (888) 233-7745 (toll free) or (317) 233-7745. These numbers are staffed by IDEM Emergency Response staff at all hours.

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