

Office of Water Management
Indiana Department of
Environmental Management

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WINTER 1990
Vol. 2, No. 1

Second Indiana Lake Management Conference Scheduled

The Second Annual Indiana Lake Management Conference will be held at the Culver Military Academy on Lake Maxinkuckee in Culver, Indiana on April 27-28, 1990. This year's conference will begin at 1:00 p.m. on Friday, April 27 with a technical session on research conducted on Indiana lakes. Saturday's program includes: updates on the past year's activities of the Indiana Clean Lakes Program, the Lake Enhancement Program, and the U.S. EPA Clean Lakes Program; a session on lake shoreline protection and management; and tours of the Lake Maxinkuckee wetland treatment systems. There will also be an organizational meeting for the purpose of forming a statewide Indiana lake management association. Exhibition space will be available for commercial displays of lake management products and services.

A conference announcement with registration material and a preliminary program will be forthcoming.

Lake Water Quality Assessment

The Indiana Department of Environmental Management has been awarded a \$100,000 lake water quality assessment grant from the U.S. Environmental Protection Agency. The grant money is being used by the Indiana Clean Lakes Program to update the Indiana Lake Classification System and Management Plan, which was originally based on lake water quality assessments conducted in the 1970s on nearly every public lake and reservoir in Indiana over 50 acres in size.

Water quality in nearly 200 lakes and reservoirs will be assessed using the grant funds. During July and August, 1989, 95 lakes were sampled and analyzed by Indiana University's School of Public and Environmental Affairs. An equal number of lakes will be assessed during 1990. The updated Lake Classification System and Management Plan will rank the state's lakes according to their water quality status and their lake management needs.

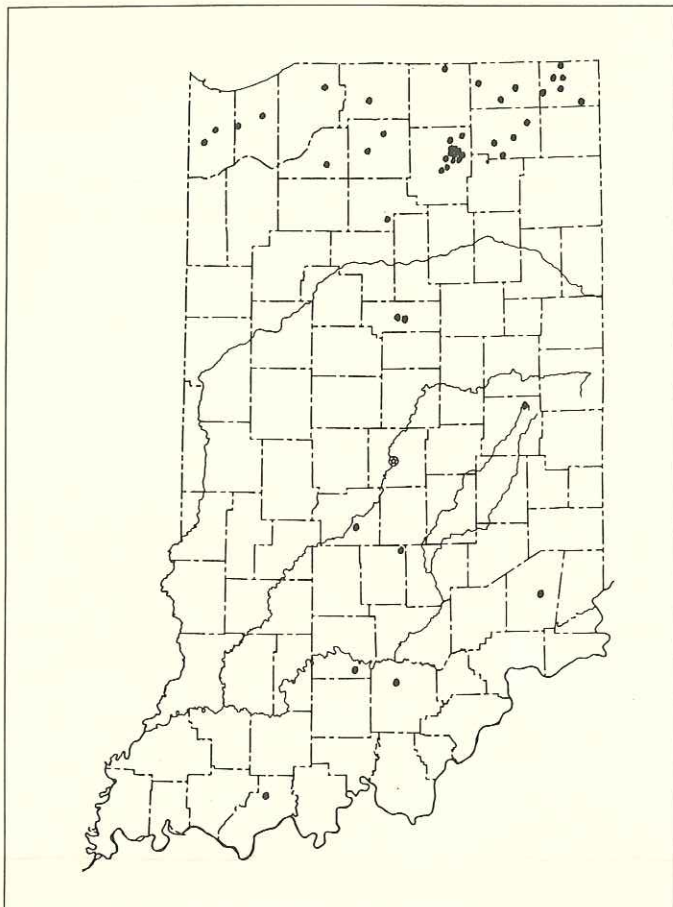
Data collected under the grant will also be incorporated into IDEM's biennial water quality assessment report to the U.S. EPA. This report is required by Section 305(b) of the Clean Water Act.

Volunteer Monitoring Program Finishes First Year

The Volunteer Monitoring Program, conducted through IDEM's Clean Lakes Program has completed its first year. The program, in which citizen volunteers were given Secchi disks and trained by CLP staff, is designed to help IDEM monitor long-term trends in the transparency of Indiana's public lakes.

During 1989, 52 lakes were monitored and a total of 372 individual measurements were made. The large amount of data collected is now being organized by CLP staff at Indiana University. A one-page summary of the results is being prepared for each lake and all of the summaries will be combined into an annual report.

(See *MONITORING*, continued on page 2)



Location of lakes participating in Volunteer Monitoring Program

For 1990, additional Secchi disks will be available for new volunteers. If you are interested in becoming a volunteer monitor, contact Bill Jones at SPEA 347, Indiana University, Bloomington, IN 47405.

WATER COLUMN

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Indiana's Water Quality Standards Revised

For the past three years, the Indiana Department of Environmental Management has been reviewing and working on revisions of the state's Water Quality Standards. On December 13, 1989, the Indiana Water Pollution Control Board made a final adoption of revisions that would make these standards the most sweeping in the history of the state. They will become effective when they are approved by the Attorney General and signed by Governor Evan Bayh.

Both Governor Bayh and Lieutenant Governor Frank O'Bannon had endorsed the proposed revisions and urged the Board to make the final adoption.

Features of the newly adopted water quality standards rule which are considered improvements include the following:

1. Combines all four of Indiana's current water quality standards rules into one rule.
2. Sets forth goals of the state with regard to water quality and toxic substances (327 IAC 2-1-1.5).
3. Incorporates Indiana's portion of Lake Michigan and waters in Indiana Dunes National Lakeshore as State Resource Waters (327 IAC 2-1-1(2)).
4. Prohibits mixing zones in lakes for most substances and allows commissioners to deny mixing zones in any waters (327 IAC 2-1-4).
5. Incorporates numerical water quality criteria to protect aquatic life and human health from acute, chronic and carcinogenic effects for all toxic substances for which EPA has determined criteria (327 IAC 2-1-6). These would apply to all waters.
6. Changes bacteriological indicator organism from fecal coliform to *E. coli* which is much better correlated with incidence of human illness (327 IAC 2-1-6(d)).
7. Designates all waters for full body contact recreation (327 IAC 2-1-3(A)1).
8. Upgrades use designation of Grand Calumet River and Indiana Harbor Ship Canal.
9. Provides procedures for calculating criteria to protect aquatic life, terrestrial organisms, and humans from acute, chronic and carcinogenic effects (327 IAC 2-1-8.2 through 8.6).
10. Provides procedures and reasons for obtaining variances from water quality standards.

For more information contact IDEM at (317) 243-5012.

Indiana's Nonpoint Source Pollution Assessment and Management Plan Approved

The state's nonpoint Source Pollution Assessment and Management Plan which was recently amended and submitted to the U.S. EPA was fully approved on January 11. Now the Indiana Department of Environmental Management will be eligible to receive federal grant monies to generate more data regarding the nature and extent of the nonpoint source problem in this state and to begin implementing portions of the management plan.

Initial efforts will be concentrated in the areas of pesticide and sediment monitoring and a statewide bioassessment.

For more information contact Mr. James Ray of IDEM at (317) 243-5145.

Glander Joins DNR Soil Conservation "T by 2000" Lake Enhancement Staff

Paul A. Glander has joined the Division of Soil Conservation, Indiana Department of Natural Resources (DNR), as lake management biologist for the statewide "T by 2000" lake enhancement program. He succeeds Gary D. Doxtater, who was appointed DNR deputy director in late August.

Glander previously served as district fisheries biologist at the Patoka Fish and Wildlife Area in Pike Co. Prior to that, he was a research technician at Fish and Wildlife's Avoca Fish Hatchery in Lawrence Co.

Additional Lake Enhancement Program Projects

Five more projects have been approved in addition to those listed in the summer issue of the newsletter. The State Soil Conservation Board approved these projects at their August meeting:

Lake	County	Type of Project
Bischoff	Ripley	Feasibility Study
Beaver	Dubois	Feasibility Study
Clear	LaPorte	Feasibility Study
Cedar	Lake	Feasibility Study
Prides Creek	Pike	Design Plan

First Lake Enhancement Program Construction Projects Begin

Construction projects to limit sediment and nutrient inputs to Koontz Lake and Lake Maxinkuckee began in the fall of 1989. These projects represent the first "dirt moving" funded by the T by 2000 Lake Enhancement Program. A wetland area for nutrient and sediment control is being constructed on a tributary to Lake Maxinkuckee and a sediment trap is being built on a stream feeding into Koontz Lake. Both lakes are in Marshall County.

Questions from Readers

Q: How do fish get oxygen to breathe under the ice in winter?

A. When ice forms on lakes in the winter, oxygen from the air can no longer diffuse into the water like it does during the ice-free period. If the ice is clear and thin enough, some light can penetrate to permit limited photosynthesis by algae under the ice. Photosynthesis releases oxygen into the water.

Oxygen is consumed under the ice by fish and other aquatic organisms, and by bacteria decomposing the dead plant (algae and macrophytes) and animal matter formed during the previous growing season. Because oxygen consumption is greater than oxygen production under the ice, oxygen concentrations in the water usually decline in lakes over the winter. If lakes are very productive or eutrophic, the decomposition process can be great enough to consume most of the available oxygen. This can stress the fish and result in "winter kill."

The best long-term way to avoid winter kill in ice-covered lakes is to reduce plant productivity in the summer, and therefore oxygen-consuming decomposition, by controlling nutrient (phosphorus and nitrogen) concentrations in the water.

Planning Continues for Forming an Indiana Lake Management Association

A small group of individuals are currently working to develop by-laws and other organizational materials to create a statewide Indiana lake management association. Similar associations exist in neighboring states where they have been used to

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encourage the support and development of local, state, and national lake management programs; to provide a forum for sharing information and experience; and to assist in the development of local lake management activities.

The program of the upcoming Indiana Lake Management Conference will include time to vote on whether to form a statewide association in Indiana, to approve bylaws, and to elect officers. For more information or to submit any comments, contact:

Karen Dehne
Lake Maxinkuckee Environmental Fund, Inc.
106 North Main Street
Culver, IN 46511
(219) 842-3686

Hybrid Striped Bass

Wipers . . . stripers . . . wipes . . . or hybrid striped bass—the new fish on the block in Indiana. Since 1983, Indiana Division of Fish and Wildlife personnel have been stocking this fish into selected waters around the state.

The wiper is a cross between a female striped bass of East Coast origin and a male white bass commonly found in many rivers and reservoirs in the eastern half of the United States. The fish assumes the physical and behavioral characteristics of both parents, and proper identification between the white, striped, and hybrid is difficult.

Common belief is that the fish term “wiper” came from the “wi” in white and the “iper” in stripers; however, one old salty fisherman from the East Coast insists that the name stems from the fighting qualities of the fish. Every time he gets one hooked, he claims it “wipes” out his tackle. Hence the name.

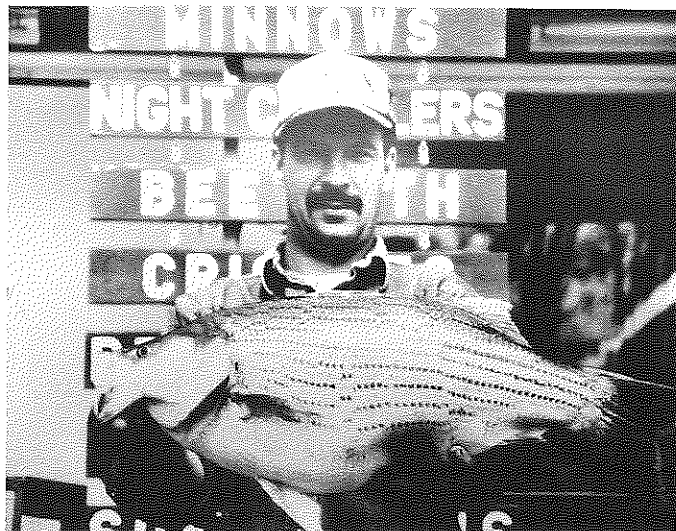
In Indiana, hybrid striped bass are produced at the East Fork State Fish Hatchery near Montgomery, Indiana. Up to 500,000 eggs may be produced by a female striped bass. Even with production losses, it takes only a few good fish to cover all the stocking needs requested by the district fisheries biologists. Growth from the small, pinhead-sized egg to the two-inch, stocking-sized fingerling takes about six weeks. This, of course, is dependent upon proper handling, diet and disease control in the hatchery. In late June, the fish are stocked and may grow another 12 inches before winter sets in. Early reports show growth rates varied but may reach up to two pounds per year after the first year. That's a much faster growth rate than the white bass, as well as another popular fish, the largemouth bass.

Fishing methods are varied. Jigs, plugs, spinners, and spoons that resemble baitfish (primarily gizzard shad) work well, and effective live bait would include minnows and worms. The principal concern, however, is locating the fish. They typically cruise the open water areas in schools chasing baitfish. They are continually moving, and action may be fast and furious for several minutes and then quit.

The Indiana Division of Fish and Wildlife has maintained good fishing populations at the following locations: Lakes Freeman and Shafer, near Monticello; Lake Monroe, near Bloomington; and Eagle Creek Reservoir, northwest of Indianapolis. Some loss of fish through the outlets may provide a hybrid striped bass fishery downstream. Stocking programs are also underway at Cagle's Mill Reservoir near Cloverdale; Cedar Lake in Lake County; Pleasant and Riddles Lakes in St. Joseph County; and Gibson Lake near Princeton.

The rules and regulations for hybrid striped bass are included in the white bass regulations. This was done to avoid identification problems, since they look very similar. The white bass and hybrid striped bass have a daily catch limit of 12, singly or in aggregate, of which no more than two may exceed 17 inches. No closed season exists, and the possession limit is twice the daily bag limit.

So far this year, the hybrid striped bass state record has been broken three times. The current record holder is Ryy Carter of Lake Village, Indiana who landed a 14-pound-4-ounce whopper May 14 below Lake Shafer. Carter's big fish was one of six monsters that he and two buddies caught in the space of only an hour-and-a-half! The *smallest* of their six fish weighed 11 pounds! The hybrid striped bass is truly adding a new dimension to Hoosier angling.



Ryy Carter, with his record hybrid striped bass.

Purdue Lake Survey Updated

A study of Indiana lakes was recently completed by Dr. Anne Spacie and associates at Purdue University, through a grant provided by Monsanto. Fifteen lakes were monitored periodically over the past 16 years in an effort to document typical rates of eutrophication in the state. The lakes, listed below, were originally surveyed by the U.S. EPA in 1973-74, in cooperation with the state water pollution control agencies, as part of the National Eutrophication Survey. Later Purdue studies were completed using the same lake sites and field techniques. The results show little change in most lakes. One of the lakes, Sylvan, has become less eutrophic since a variety of management strategies was undertaken.

The results of the study were presented on August 15 at the Congress of the International Society of Limnology in Munich, West Germany, where a special workshop on eutrophication was held. Further reports of the results will be released later this year.

For more information, contact Dr. A. Spacie, Department of Forestry and Natural Resources, FPRD, Purdue University, West Lafayette, IN 47907.

<i>Lakes Surveyed</i>	<i>County</i>
Bass	Starke
Cataract	Owen, Putnam
Crooker	Steuben
Dallas	LaGrange
Geist	Hamilton, Marion
Hamilton	Steuben
Long	Steuben
Marsh	Steuben
Maxinkuckee	Marshall
Monroe	Brown, Monroe
Sylvan	Noble
Tippecanoe	Kosciusko
Wawasee	Kosciusko
Webster	Kosciusko

Pressure-Treated Lumber and Docks

From *Waterworks*, NY's Newsletter

As many lake residents know, a dock is not forever. The constant exposure to harsh lake and weather conditions often results in dock stability suitable only for tightrope walkers. With the rise of prices for cedar, redwood, and other naturally resilient woods, many concerned dock owners

have turned to pressure-treated lumber. Pressure treatment can increase the life expectancy of lumber more than fivefold.

The three pesticide chemicals most frequently used in the pressurizing process are inorganic arsenicals (compounds of arsenic), creosote (referring to several coal tar derivatives), and pentachlorophenol.

There is legitimate concern about the fate of these chemicals in lakes and ponds. The U.S. Environmental Protection Agency (EPA) has determined that leaching may occur when these pesticide-treated woods come into contact with water. Given the suspected tumor-causing nature of these chemicals, the EPA concluded in a 1984 position document that pesticide-treated wood should not be used where it may come into direct or indirect contact with public drinking water except for uses involving incidental contact such as docks and bridges.

The statement regarding "incidental" contact refers to pressure-treated wood which is not in continual contact with the water, but may by chance or inference contact the water, such as rainwater running from the deck of a dock. Therefore, it was concluded that any part of the dock which is either submersed, immersed, or in contact with drinking water (such as the vertical support posts of the dock) should not be pressure-treated with pesticides.

Pesticide-treated lumber should not be used for docks contacting lakes used for a drinking water source, and also should not be recommended for use in lakes used as an irrigation water source.

Using lumber not treated with pesticides (either through pressure or non-pressure treatment methods) is the best way to avoid pesticide contamination of lakes. As noted earlier, there are a number of more naturally resistant woods which can provide some protection against pests and weathering. Other materials such as steel, plastic, or concrete may have applications for support posts.

Everyone wants their dock to last forever. Unfortunately, a permanent dock brings its side effects. It may be somewhat of a burden to occasionally replace dock posts and to pay a little extra for the effort, but this effort will lead to improved water quality free from pressure-treatment pesticides.

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Upcoming Meetings

March 8-9, 1990—The River and Stream Management Symposium, Horizon Convention Center, Muncie, IN. Co-sponsored by: the Indiana Chapter of the American Fisheries Society, the Indiana Chapter of the Wildlife Society, and the Hoosier Chapter, Soil and Water Conservation Society. Contact: Ann Kily, (317) 342-5527.

April 1-4, 1990—International and Transboundary Water Resources Issues. Holiday Inn Downtown, Toronto, Canada. Co-Sponsored by: American and Canadian Water Resources Associations. Contact: AWRA, (301) 493-8600.

April 10-13, 1990—Midwest Pollution Control Biologists Meeting, The Midland Hotel, Chicago, IL. Sponsored by the U.S. Environmental Protection Agency Region V. Contact: Danielle Gordon, (312) 372-2441.

April 27-28, 1990—Second Annual Indiana Lake Management Conference, Culver Military Academy, Culver, IN. Sponsored by the Indiana Department of Environmental Management. Contact: Bill Jones, (812) 855-4556.

May 16-18, 1990—Water Works!—1990, a bi-national conference on Great Lakes waterfront development, Milwaukee, WI. Co-sponsored by the Center for the Great Lakes and the cities of Milwaukee and Montreal. Contact: Cindy Benjamin, (414) 223-5700.

July 14-19, 1990—The Aral Sea Crisis: Environmental Issues in Central Asia, Indiana University, Bloomington, IN. Co-sponsored by the School of Public and Environmental Affairs and the Research Institute for Inner Asian Studies. Contact: Randall Baker, (812) 855-0738.

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