

Office of Water Management
Indiana Department of
Environmental Management

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What is the WATER COLUMN?

The WATER COLUMN is the quarterly newsletter of the Indiana Clean Lakes Program. In it you will find techniques for lake management, news of lake association activities around Indiana, information about state and federal programs affecting lakes, answers to your most-often asked lake management questions, and just about anything else concerning our Indiana Lakes.

The WATER COLUMN is your newsletter. We want it to be a forum for communication of information about lakes, particularly Indiana lakes. This communication can be from lake associations, individuals, local and state agencies, university researchers, or anyone else. If what you have to say will be of interest and use to others who are working with lakes, we'd like to hear from you.

Like a water column in a lake, the WATER COLUMN newsletter will go to great depths to turn over and bring to the surface, news and information about managing Indiana lakes. To do this, we need to improve our circulation, so tell your friends about WATER COLUMN and have them write to the address on the back page to get on our mailing list.

Indiana Clean Lakes Program Launched

The Indiana Department of Environmental Management has recently expanded its lake activities to create the Indiana Clean Lakes Program (ICLP). The program is being implemented through a contract to Indiana University's School of Public and Environmental Affairs (SPEA).

The ICLP has five major elements:

1. Public Information and Education—to enhance the public's knowledge and understanding of lake and watershed processes through the WATER COLUMN newsletter, information factsheets and an annual lake management conference. Availability of these items will be announced in future issues of the WATER COLUMN.

2. Technical Assistance—to assist lake associations and local governments in diagnosing lake problems and recommending feasible management techniques. The ICLP will also work with local groups to help identify sources of state and federal financial assistance.

3. Volunteer Monitoring Program—to get lake property owners involved in studying their own lakes by measuring water transparency with a Secchi disk and by recording lake water levels. A brochure describing the Volunteer Monitoring Program is being prepared.

4. Trend Monitoring—to conduct water quality studies on Indiana lakes to detect water quality changes and to update the Indiana Lake Classification System and Management Plan (see article in this issue). This past summer, ICLP staff conducted water quality studies on 36 Indiana lakes. More lakes will be monitored next year.

5. Coordination with Other Lake Programs—ICLP staff are working with other Indiana state agencies to coordinate lake activities. A committee composed of representatives of the Indiana Department of Natural Resources Lake Enhancement Program, the DNR's Fisheries Division, IDEM and SPEA is meeting regularly to accomplish this. The ICLP is also the state contact agency for the U.S. Environmental Protection Agency's Clean Lakes Program, the largest source of lake management funds in the U.S.

Indiana Lakes Studied by the ICLP in 1988

Allen Co.:	Cedarville Reservoir
Elkhart Co.:	Indiana Lake Simonton Lake
Fulton Co.:	Bruce Lake
Henry Co.:	Summit Lake
Howard Co.:	Kokomo Reservoir #2
Kosciusko Co.:	Big Chapman Lake Dewart Lake Silver Lake
LaGrange Co.:	Adams Lake Big Long Lake Big Turkey Lake Dallas Lake Olin Lake Oliver Lake Pretty Lake Westler Lake Witmer Lake
Martin Co.:	West Boggs Creek Reservoir
Noble Co.:	Waldron Lake
Ripley Co.:	Bishoff Reservoir
Starke Co.:	Bass Lake
Steuben Co.:	Charles Lake Clear Lake Gage Lake Lake James Jimmerson Lake Little Center Lake Long Lake Marsh Lake McLish Lake Silver Lake Snow Lake
Sullivan Co.:	Lake Sullivan
Whitley Co.:	Loon Lake Shriner Lake

IDEM Administrative Actions

State Water Quality Report Submitted to U.S. EPA

Section 305(b) of the Federal Clean Water Act requires each state to assess the quality of its waters, determine trends in the water quality of its lakes and streams, and to describe various programs carried out by the state water pollution control agency. An important section in the 1986-1987 305(b) report prepared by the Office of Water Management of the Department of Environmental Management (IDEM) was a statewide lake water quality assessment. A state is not eligible to receive federal clean lakes monies (Sec. 314) until its assessment is approved by the EPA. In October, the IDEM was advised by the EPA Regional Administrator that its assessment had been approved. In November the IDEM filed a grant application with EPA for clean lakes monies to increase the size of its lake data base.

A copy of the Indiana 305(b) Report has been sent to each county library for public review.

For more information contact the Water Quality Surveillance and Standards Branch of IDEM at (317) 243-5012.

Indiana Lake Classification System and Management Plan

The Indiana Lake Classification System and Management Plan classifies public lakes and reservoirs according to their trophic or productivity status, places each lake in one of seven basic management groups and provides a generic management plan for each group. This document was adopted as part of a statewide water quality management plan in 1980. The Indiana Department of Environmental Management (IDEM) updated the classification system and management plan in 1986 to include new data. Although there are not enough copies of the report to distribute generally to the public, one or more has been sent to each county library for public use.

For more information contact the Water Quality Surveillance and Standards Branch, IDEM, at (317) 243-5012.

Review and Revisions of Water Quality Standards

The Office of Water Management of the Indiana Department of Environmental Management (IDEM) and the Indiana Water Pollution Control Board are in the process of reviewing and revising

all water quality standards for the state. This process has taken two years and has provided representatives of the regulated community, environmental groups, colleges, and universities, and various state offices an opportunity to comment extensively on each section of the standards. It is anticipated that the proposed revisions will be preliminarily adopted by the Board at its December 14, 1988 meeting. Several public hearings will be held to provide additional opportunity for public participation. Final adoption of revised standards is expected in the spring.

The proposed revisions will include a change in the bacterial indicator organism for recreational waters; both numerical and narrative standards for toxic, bioconcentrating and carcinogenic substances, as well as other provisions which will offer extraordinary protection for lakes and reservoirs.

For more information call the Water Quality Surveillance and Standards branch of IDEM at (317) 243-5012.

International Society Helps Manage Lakes

The North American Lake Management Society (NALMS), formed in 1981, is the only national organization devoted solely to protecting and managing lakes. The NALMS membership, which numbers nearly 1,500, is composed of lake managers, government officials, university researchers and citizens like yourself who are concerned about our lakes.

The Society sponsors an international symposium and several regional workshops each year. It also publishes a bi-monthly newsletter, lake management brochures, and a peer-reviewed journal. NALMS has worked hard to keep the federal Clean Lakes Program funded.

Basic membership dues are minimal. Write to Bill Jones, SPEA 347, Indiana University, Bloomington, IN 47405, for more information.

First Annual Indiana Lake Management Conference Scheduled

The first annual Indiana Lake Management Conference has been tentatively scheduled for late April, 1989 in Warsaw. This will be the first of many opportunities for lake associations, local governments and individuals interested in lakes

to get together to share ideas and experiences. The preliminary agenda includes discussions of state and federal lake assistance programs, state lake activities, experiences at the local level, and lake management techniques. Look for more information in the spring issue of WATER COLUMN.

Telephone Locator for Lake Assistance

If you have questions or problems concerning your lake, here are the people to call in Indiana government:

County Health Department

- Septic tank problems or complaints

Indiana State Board of Health

- Swimming Beaches: Jim Barry (317) 633-0214 or local health department
- Fish Consumption Advisories: Mary Anne Cox, Public Information Officer (317) 633-0852

Indiana Department of Environmental Management

- Water Quality Regulations: Surveillance and Standards Branch, Dennis Clark (317) 243-5037
- Wetlands: Marty Maupin (317) 243-5035
- Clean Lakes Program: Surveillance and Standards Branch, John Winters (317) 243-5028 or School of Public and Environmental Affairs, Indiana University, Bill Jones (812) 855-4556
- Stream Water Quality Surveys: Surveillance and Standards Branch, Steve Boswell (317) 243-5029
- Toxic Chemical Monitoring: Surveillance and Standards Branch, John Winters (317) 243-5028
- Non-Point Source Pollution: James Ray (317) 243-5038

Indiana Department of Natural Resources

- Fisheries Surveys: Division of Fish and Wildlife, Bill James (317) 232-4092
- Dam Inspections: Division Water (Water Office), George Bowman (317) 232-5661
- Lake Enhancement Program: Division of Soil Conservation, Gary Doxtater (317) 494-8383
- Lake Shoreline Modifications: Division Water, Robert Darfus (317) 232-5661
- Streambank Modifications: Division Water, John Stolz (317) 232-5660
- Aquatic Chemical Application: Division of Fish and Wildlife (317) 232-4018

Fish Tissue and Sediment Monitoring in Indiana

Lakes and reservoirs are settling basins for sediment and other materials that may be carried in by tributary and overland flows. Persistent substances may concentrate in bottom sediments and some may become more concentrated in animal tissue as the substances move up the aquatic food chain. This process is referred to as

biomagnification. PCBs and certain pesticides have been found in the tissues of fishes in some Indiana waters at levels that would be potentially hazardous to persons that might consume them over an extended period. Waters where fish consumption should be limited or avoided entirely are listed in advisories that are issued by the State.

To date, the Indiana Department of Environmental Management has collected fish tissue samples from 55 public lakes and reservoirs for analysis for a long list of contaminants. Many of

these sampled waterbodies were selected because known or suspected sources of contaminants were present in their watersheds. Although a few of these tissue samples remain to be analyzed, consumption advisories are only in effect for Lake Michigan and the twelve-acre Decatur County Reservoir near Greensburg.

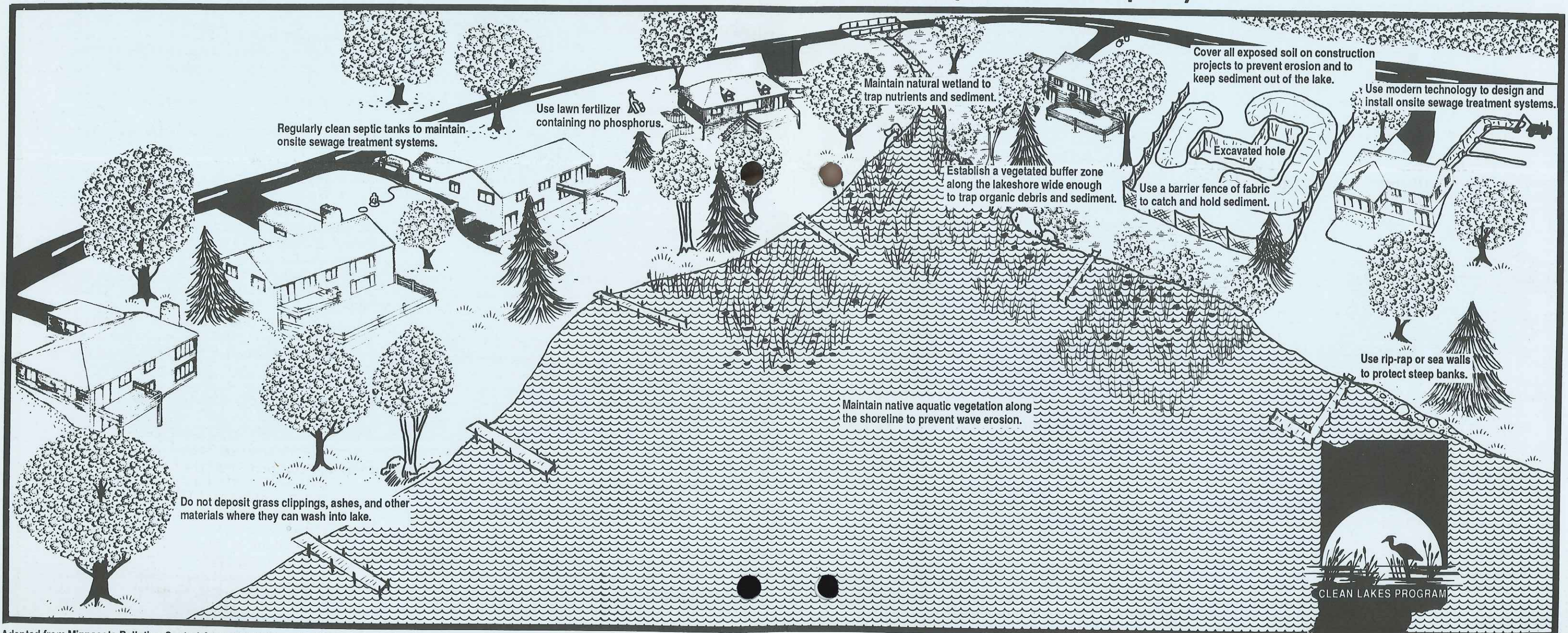
At the time fish tissue samples were collected, composite samples of lake bottom sediments were also collected for analysis for most of the priority pollutants. Results will be used to identify those

lakes and reservoirs that are receiving either point or nonpoint contributions of contaminants. Although no lakes or reservoirs have been found to have alarming concentrations of contaminants in their sediments, it is the objective of the Indiana Department of Environmental Management to locate and reduce or eliminate all discharges of persistent and bioconcentrating materials into Indiana waters.

For more information, contact the Surveillance and Standards Branch, (317) 243-5028.

A Lake is a Reflection of its Watershed

Use the following management practices to protect water quality



Indiana DNR's Lake Enhancement Program

Indiana's Lake Enhancement Program is one part of "T by 2000," a new comprehensive state funded program to reduce soil erosion and the resulting sedimentation of lakes and reservoirs. The program, administered by the Indiana Department of Natural Resources, Division of Soil Conservation, is funded by a portion of the cigarette tax which generates \$300,000 annually for lake enhancement activities.

The "T by 2000" Lake Enhancement Program is intended to ensure the continued viability of Indiana's public-access lakes, with the goal of controlling inflows of sediment and associated nutrients. The program combines efforts to coordinate upstream land treatment with in-lake sediment and nutrient control. To accomplish these goals, the program provides technical and financial assistance to local governments, lake associations, and other local entities for qualifying projects. Assistance is available for feasibility studies, design plans and project implementation. Local cost-sharing is required for implementation projects and recommended for feasibility studies and design plans.

For more information contact: Gary Doxtater, Division of Soil Conservation, Indiana Department of Natural Resources, West Lafayette, IN 47907, (317) 494-8383.

Questions from Readers

Q. Do fertilizers from farming harm fishing?

A. Agricultural fertilizers do not harm fishing directly. If runoff from fertilized fields enters a lake, it will increase the concentration of nutrients (nitrogen and phosphorus) available for plant and algal growth.

Increased plant and algal growth may harm fishing in a lake in two ways. First, the increased plant growth can provide smaller fish with sanctuaries from predation by larger fish. Big predatory fish (bass, walleye, pike) cannot move through dense weeds very easily, thus the big predators don't grow well and the panfish become abundant but stunted in size. The plants will also make it more difficult for fishermen to catch fish which are hiding among the plants. Second, as the plants and algae die, their remains sink to the lake bottom and decompose. Decomposition, assisted by bacteria, consumes oxygen dissolved in the water. If there are

large plant and algal populations in a lake, as there would be in a lake receiving fertilizer additions, the decomposition of the dead plants and algae could remove most of the oxygen from the water. Without sufficient dissolved oxygen, the fish will die off. Low dissolved oxygen concentrations will only support "rough" fish, such as carp and bullheads.

Q. How do I get my neighbor to repair his septic system so it doesn't stink and drain into the lake?

A. Your county Health Department is responsible for enforcing septic tank regulations. The county health department may also be contacted for bacteriological testing of drinking water and bathing areas. A container and instructions for collecting a water sample for bacteriological analysis may be obtained for a small fee from: The Environmental Laboratories Division, Indiana State Board of Health, 1330 W. Michigan Street, Indianapolis, IN 46206.

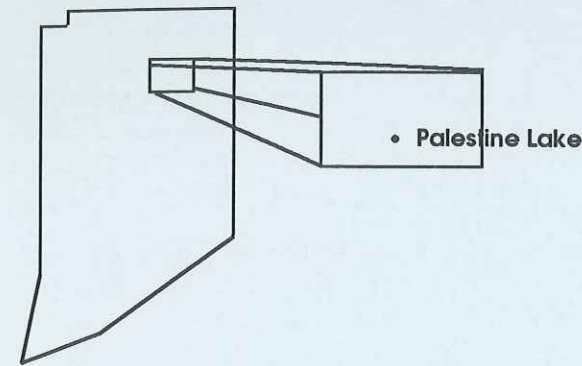
Q. Who is responsible for getting garbage and trash out of our lake?

A. Local lake residents or associations usually must bear the burden of cleaning up trash such as cans, paper, plastic and bottles. The same is true for fish, dead limbs, and piles of aquatic weeds. At some lakes, the Boy Scouts or other civic groups hold regular fall and spring lakeshore clean-ups. Sometimes the county will haul collected lakeshore trash away if it is placed in a central collecting area.

A Renovation Plan for Palestine and Caldwell Lakes

Palestine and Caldwell lakes are an important source of recreation for lakeside residents and others who come to fish the waters. Unfortunately, a decline in the lakes' fisheries and problems with the dam forming Palestine Lake have eliminated the quality of the area as a recreational site. The Department of Natural Resources has developed a plan to repair the deteriorating dam and restore good fishing in the lakes.

Since repair of the dam and restoration of the lakes' fish population are best done with the lake lowered, the two projects have been closely coordinated. Major repairs were necessary to ensure the safety of the dam, including construction of a new section of the dam and a new retaining wall be-

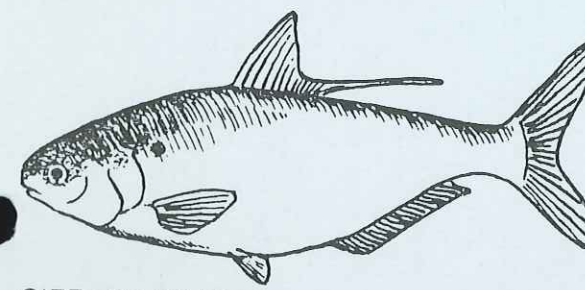


tween the new section and the old mill foundation. This work was begun with the lake drawdown last July. When these repairs were completed in early fall, a fish eradication and restocking project began.

Carp and gizzard shad had a stranglehold on the Palestine Lake fishery and were threatening to dominate at Caldwell lake as well. Unfortunately, this imbalance of rough fish and the low-quality sport fishing it creates is not a self-correcting problem. For fishermen, this means a bleak future, limited primarily to catching carp and small, slow-growing crappies. Most Indiana fishermen desire good fishing for game fish, with largemouth bass and bluegill at the top of their list. For many anglers in the Kosciusko County area, the situation at Palestine Lake represented a significant loss of recreational fishing opportunity.

A total fish eradication and restocking project was the only solution for Palestine and Caldwell lakes. This project involved the application of a chemical fish toxicant, rotenone, to both lakes and incoming tributaries. Within a month after treatment, fish restocking got underway. Because of the presence of carp and shad in Caldwell Lake, a successful fish restoration program at Palestine Lake is dependent upon including Caldwell Lake in the program.

About a month after treatment, 190,000 bluegills, 168,000 redear sunfish, 38,000 largemouth bass and 17,000 channel catfish fingerlings were restocked in Palestine and Caldwell lakes. Adult bass, salvaged prior to the rotenone treatment were also restocked so they can spawn



GIZZARD SHAD

in the spring of 1989.

Black crappies, northern pike and more channel catfish may be stocked in 1990, a couple of years after the fish stocked in the fall of 1988 have had a chance to grow and establish populations. Fish stocked into Palestine and Caldwell lakes will be produced at Indiana state fish hatcheries.

Beginning in 1989, fishery biologists will conduct annual surveys for several years to monitor the developing fish populations. It is very important that the bass and bluegills get off to an excellent start.

Because of this project, which was funded from the DNR's Fish and Wildlife Fund and from the U.S. Fish and Wildlife Service, a safer dam will now contain the waters of Palestine Lake and the lake's fisheries will once again be in balance.

FREE! Guide to Lake and Reservoir Restoration

The first edition of *The Lake and Reservoir Restoration Guidance Manual* has been published and is available without cost. The manual was prepared by the North American Lake Management Society for the Office of Research and Development, Corvallis, Oregon, and for the Office of Water, U.S. EPA, Washington, D.C. (EPA 440/5-88-002).

The manual is available by writing to: Clean Lakes Program, Non-Point Source Branch (WH-585), USEPA, 401 M. Street, S.W., Washington, D.C., 20460 or NALMS, 1000 Connecticut Ave. N.W., Suite 202, Washington, D.C. 20036.

WATER COLUMN

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Meetings

April 23-26, 1989—Making Non-Point Pollution Control Programs Work, A National Conference. Clarion Hotel, St. Louis, Missouri. Sponsored by: National Association of Conservation Districts, U.S. EPA, North American Lake Management Society, Soil and Water Conservation Society, Soil Conservation Service and others. Contact (202) 547-6223.

May 18-19, 1989—Enhancing the States Lake and Wetland Management Programs. Blackstone Hotel, Chicago, Illinois. Sponsored by U.S. EPA, North American Lake Management Society and Northeastern Illinois Regional Planning Commission. Contact Bob Kirschner, (312) 454-0400.

May 18-20, 1989—Restoration and Preservation of Great Lakes Coastal Ecosystems. Indiana University Northwest, Gary, Indiana. Contact Dr. Ken Cole, Indiana Dunes National Lakeshore, 1100 N. Mineral Springs Road, Porter, Indiana 46304.

May 22-23, 1989—Ohio Lake Management Society Annual Conference. Kings Island Inn, Cincinnati, Ohio. Contact Bob Mason, OLMS, P.O. Box 14, Struthers, Ohio 44471, (513) 791-3872.

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