

Office of Water Management
Indiana Department of
Environmental Management

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Third Indiana Lake Management Conference

The 3rd Indiana Lake Management Conference will be held on April 19-20, 1991, at Tri-State University in Angola, Indiana. The conference, sponsored by the Indiana Department of Environmental Management, is an opportunity for people from Indiana to get together to talk and learn about lakes. The preliminary agenda includes: a Technical Session Friday afternoon where results of research studies of Indiana lakes and watersheds will be presented; a General Session on Saturday with a theme of local lake protection initiatives; and an exhibit area for lake management products and services. A field trip to visit a local lake management project is also planned. More information and a preliminary program will be sent out in late February. Mark your calendar now!

Section 319 Grant

Earlier this year, the State received a \$565,000 grant which was authorized by Section 319 of the Federal Water Pollution Control Act. Portions of the grant are being distributed by IDEM to fund a variety of nonpoint source (NPS) water pollution control activities. Some of the money is being used by IDEM to fund a study of agricultural pesticides in surface waters, and another portion is being used to fund the evaluation of construction projects that might pollute lakes, streams, or wetlands. Several different groundwater studies are also being funded. The majority of the money, though, is being used to fund projects performed by other agencies or universities, as follows:

- IDNR's Division of Reclamation will conduct an abandoned mine land demonstration project which will eliminate a source of acid drainage.
- Indiana University will evaluate the effects of NPS remediation effects at selected lakes.
- DePauw University is evaluating the effects of NPS pollution on the Eel River and its tributaries.
- A groundwater and surface water data base is being developed to assist in documenting NPS controls in the USDA Upper Tippecanoe River Hydrologic Unit project.
- 319 funds will help the LaGrange County Soil and Water Conservation District develop a model farm in the Martin-Olin-Oliver watershed.
- IDNR's Division of Forestry will develop a demonstration area to illustrate timber harvesting practices that will limit NPS pollution.
- The Lake County SWCD will evaluate the origins of urban NPS pollution in the Grand Calumet River watershed, to "target" priority areas and to propose appropriate BMPs.

(See GRANT, continued on page 2)

(GRANT... continued from page 1)

• Purdue University will further develop the computer software used by local governments to design and permit individual on-site waste disposal systems.

If you would like further information about IDEM's NPS control efforts, you can speak with Jim Ray at (317) 243-5145.

Lake Enhancement Scorecard

1. Eleven projects have been completed since June, bringing the total number of projects completed to 20. Projects completed this summer include:

—Feasibility Studies at:

Fish Lake, LaPorte County
Sylvan Lake, Noble County
Nyona & South Mud Lakes, Fulton County
Bixler Lake, Noble County
Bruce Lake, Fulton County
Big & Little Turkey Lakes, LaGrange County
Clear Lake, LaPorte County

—Design projects at:

Lake Maxinkuckee, Marshall County
Lake Manitou, Fulton County
Prides Creek Reservoir, Pike County

—Construction project at:

Lake Maxinkuckee, Marshall County

2. Eleven new projects have been initiated since June. They are:

—Feasibility studies at:

Lake Lemon, Monroe & Brown Counties
A chain of 10 lakes (Atwood, Adams, Dallas, Hackenberg, Martin, Messick, Olin, Oliver and Westler) in LaGrange County
West Otter Lake, Steuben County
Lake of the Woods, Marshall County
Cedar, Little Cedar, Round and Shriner, Whitley County
West Boggs Creek Reservoir, Daviess and Martin Counties
Loon and Goose Lakes, Noble and Whitley Counties
Crooked Lake, Noble and Whitley Counties

—Design studies at:

Hamilton Lake, Steuben County
Sylvan Lake, Noble County

—Construction project at:

Prides Creek Reservoir, Pike County

3. In total, since January 1988, the Lake Enhancement Program has provided financial assistance for 52 projects involving a total of 90 lakes in 21 counties.

Land Treatment Cost-Share Element Added to Lake Enhancement

The State Soil Conservation Board at its August meeting adopted policy revisions for T-by-2000 lake enhancement that establish a lake watershed land treatment cost-share program. This action allows many sediment and associated nutrient inflow problems to be vigorously addressed at their source—the land above an affected lake.

The program, to be carried out locally by Soil and Water Conservation Districts in cooperation with the Division of Soil Conservation, provides "cost-sharing assistance to landusers for applying practices (agronomic or structural) that reduce sediment and nutrients from agricultural sources entering a project lake." Such assistance is applicable where studies show that those sources are indeed contributing significantly to the lake's problems.

The State Soil Conservation Board annually will determine qualifying practices and their maximum cost-share rates (presently set at 80% within a mile of a project lake or half-mile of a perennial stream, and 65% beyond those distances). Landusers must apply/install the practices according to Field Office Technical Guide standards and specifications and must operate or maintain them for their prescribed lifespan.

Application for cost-share assistance must be made by the local SWCD. Funding will be on a project rather than practice basis, with the amount allocated to any one project determined by fund availability. (These monies come from T-by-2000's lake enhancement program allotment, not from its cropland erosion control cost-share program.) The new program is scheduled to begin after the first of the year.

Glander Replaces Lake as Division AD for Lake Enhancement

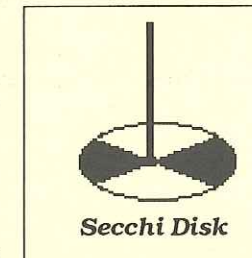
Citing family considerations, Jim Lake resigned as Division assistant director for lake enhancement, effective September 1, to return to his previous position as Area II Extension soil conservation education specialist. He will again work out of the Area II SCS office in Huntington, assisting with information/education efforts related to all aspects of T-by-2000, including the new watershed land treatment element of lake enhancement.

Selected to replace Lake is Paul Glander, the Division's lake management biologist. As AD for lake enhancement, he will be responsible for promotion and leadership of the program, coordination of services, and supervision of the five-person staff.

Glander joined the Division last October, succeeding Gary Doxtater, who is now IDNR deputy director. Previously, Glander was a fisheries research technician, then fisheries biologist with IDNR's Division of Fish & Wildlife. He holds B.A. and M.S. degrees from Millersville (PA) State and Ball State, respectively; is a member of the Indiana Academy of Science; and is past president of the Indiana Chapter, American Fisheries Society.

Did You Know?

The use of a white disk to measure water transparency seems to have originated with a casual observation by a certain Captain Berard who observed a dish contained in a net at a depth of 40 meters while on a voyage through the Indian Ocean. However, it was only after Commander Cialdi of the Papal Navy commissioned the services of Professor P.A. Secchi to conduct observations of the disk in 1866, that the disk achieved the fame it now has. Professor Secchi's work established the experimental procedure for measuring transparency and today, the disk bears his name—the Secchi disk.



DNR Hires Clemens as Shipshewana Lake Enhancement Project Manager

A water quality specialist with the Elkhart County Health Department has joined the Division of Soil Conservation, Indiana Department of Natural Resources (DNR), as manager of the T-by-2000 lake enhancement project for Shipshewana Lake in LaGrange Co.

Larry J. Clemens, 28, assumed the newly created position April 30. His job will be to coordinate all activities associated with the four-year, \$2.4 million lake restoration effort, which is being financed through the Build Indiana Fund.

T-by-2000 is a DNR-administered program aimed at significantly reducing soil erosion and resulting sedimentation throughout Indiana by the year 2000. Its lake enhancement component provides technical and financial help to control sediment and associated nutrient problems in public-access lakes, such as Shipshewana.

Clemens is a 1984 Huntington College graduate. He served four years as environmental coordinator with the St. Joseph County Soil & Water Conservation District (SWCD) before joining the Elkhart County Health Department, where he dealt with surface and groundwater quality-related problems.

As Shipshewana project manager, Clemens will work out of the LaGrange County SWCD office, 400 Union Street, LaGrange.

Septic System Planning Software

On-site treatment design and instructional software has been developed by Purdue University and USEPA Region V, for use on IBM or compatible PC's. The design software assesses lot conditions (size, slope, surface and subsurface soil texture, depth to groundwater, hydraulic load), makes a preliminary technology selection and designs a conventional or mounded drainfield, calculating the amount of gravel and backfill needed. The instructional program uses more than 77 high-resolution color graphics screens and some animation to explain the principles of on-site treatment. Both are available at no charge (send one DSDD and two HD disks) from the author at EPA Region V. For further information contact:

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WATER COLUMN

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Words for Thought . . .

Before 1866, the government of the United States had asked Chief Seattle, leader of the Suquamish Indians, about purchasing tribal lands for use by new settlers. The following is Chief Seattle's letter in reply:

"The President in Washington sends word that he wishes to buy our land. But how can you buy or sell the sky? The land? The idea is strange to us. If we do not own the freshness of the air and the sparkle of the water, how can you buy them?

"Every part of this Earth is sacred to my people. Every shining pine needle, every sandy shore, every mist in the dark woods, every meadow, every humming insect. All are holy in the memory and experience of my people.

"We know the sap which courses through the trees as we know the blood which courses through our veins. We are part of the Earth, and it is part of us. The perfumed flowers are our sisters. The bear, the deer, the great eagle, these are our brothers. The rocky crests, the juices in the meadow, the body heat of the pony and man all belong to the same family.

"The shining water that moves in the streams and rivers is not just water, but the blood of our ancestors. If we sell you our land, you must remember that it is sacred. Each ghostly reflection in the clear water of the lakes tells of events and memories in the life of my people. The water's murmur is the voice of my father's father.

"The rivers are our brothers. They quench our thirst. They carry our canoes and feed our children. So you must give to the rivers the kindness you would give to any brother.

"If we sell you our land, remember that the air is precious to us. That the air shares its spirit with all the life it supports. The wind that gave our grandfather his first breath, also receives his last sigh. The wind also gives our children the spirit of life. So if we sell you our land, you must keep it apart and sacred, as a place where man can go to taste the wind that is sweetened by the meadow flowers.

"Will you teach your children what we have taught our children? That the Earth is our mother? What befalls the Earth befalls all the sons of the Earth.

"This we know: the Earth does not belong to man, man belongs to the Earth. All things are connected like the blood that unites us all. Man did not weave the web of life, he is merely a strand in it. Whatever he does to the web, he does to himself.

"One thing we know: our God is also your God. The Earth is precious to him, and to harm the Earth is to heap contempt on its creator.

"Your destiny is a mystery to us. What will happen when the buffalo are slaughtered? The wild horses tamed? What will happen when the secret corners of the

forest are heavy with the scent of many men, and the view of the ripe hills is blotted by talking wires? Where will the thicket be? Gone. Where will the eagle be? Gone. And what is it to say goodbye to the swift pony and the hunt? The end of the living and the beginning of survival.

"When the last Red Man has vanished into his wilderness, and his memory is only the shadow of a cloud moving across the prairie, will these shores and forests still be here? Will there be any of the spirit of my people left?

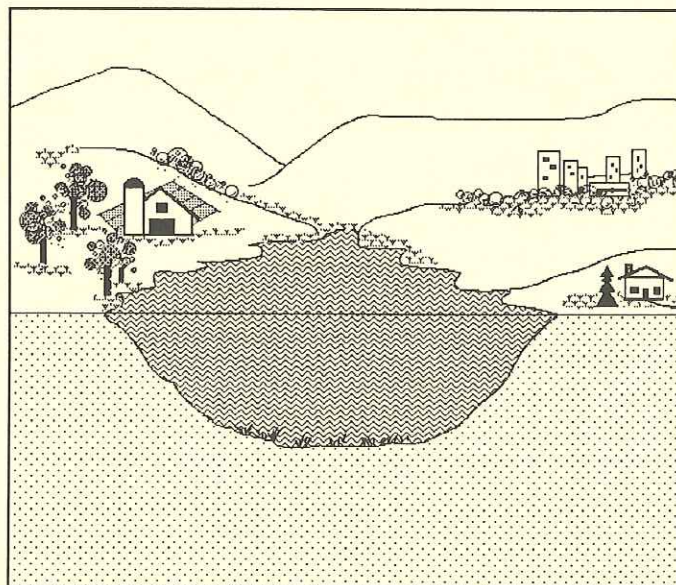
"We love this Earth as a newborn loves its mother's heartbeat. So if we sell you our land, love it as we have loved it. Care for it as we have cared for it. Hold in your mind the memory of the land as it is when you receive it. Preserve the land of all children, and love it as God loves us all."

Reprinted from: *Lake Line*, Vol. 10, North American Lake Management Society, 1990.

Best Management Practices

Lakes are products of their watersheds. By this we mean that land use activities in the watershed help determine water quality in the lake. For example, poor timber or farming practices can allow nutrient-laden runoff, pesticide residues, and eroded soil to contaminate a lake far downstream. Likewise, proper land use management upstream can help protect a downstream lake. For this reason, we say that lake management begins in the watershed.

While it is unrealistic to expect that all watershed sources of pollution can be eliminated, best



management practices (BMPs) can be used to minimize the problems from nonpoint sources of pollution. BMPs were originally designed to control agricultural soil losses but they are now applied to urban, forestry, and construction activities as well. Managers of lakes and streams focus on BMPs to control four primary, interactive processes: (1) erosion control, (2) runoff control, (3) nutrient control, and (4) pesticide or toxic controls.

In this issue of *Water Column*, we begin a regular feature which will focus on a different best management practice in each issue. This month's BMP is conservation tillage.

To receive free quarterly issues of WATER COLUMN, send your name and address to:
WATER COLUMN
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Best Management Practices

Conservation Tillage: A farming practice that leaves stalks or stems and roots intact in the field after harvest. Its purpose is to reduce water runoff and soil erosion compared to conventional tillage where the topsoil is mixed and turned over by a plow. Conservation tillage is an umbrella term that includes any farming practice that reduces the number of times the topsoil is mixed. Other terms that are used instead of conservation tillage are (1) minimum tillage where one or more operations that mixed the topsoil are eliminated; and (2) no-till where the topsoil is left essentially undisturbed.

CRITERIA	REMARKS
1. Effectiveness	
a. Sediment	Fair to excellent, decreases sediment input to streams and lakes. (40-90% reduced tillage, 50-95% no till)
b. Nitrogen (N)	Poor, no effect on nitrogen input to streams and lakes.
c. Phosphorus (P)	Fair to excellent, can reduce the amount of phosphorus input to streams and lakes. (40-90% reduced tillage, 50-95% no till)
d. Runoff	Fair to excellent, decreases amount of water running off fields carrying sediment and phosphorus.
2. Capital Costs	High, because requires purchase of new equipment by farmer.
3. Operation and Maintenance	Less expensive than conventional tillage. Potential increase in herbicide costs. Potential increase in net farm income.
4. Longevity	Good, approximately every five years the soil has to be turned over.
5. Confidence	Fair to excellent
6. Adaptability	Good, but may be limited in northern areas that experience late cool springs, or in heavy, poorly drained soils.
7. Potential Treatment Side Effects	Potential increase in herbicide effects and insecticide contamination of surface and groundwater. Nitrogen contamination of groundwater.
8. Concurrent Land Management Practices	Consider fertilizer management and integrated pesticide management.

Source: *Lake and Reservoir Guidance Manual*, EPA 440/5/880-2. U.S. EPA, 1988.

Questions from Readers

Q. *There are a lot of Canada geese camped out on our lawn by the lake. They make a big mess on the grass but I was wondering if they also affect the nutrient levels in the lake?* J.S., Barton Lake

A. The Canada goose is a grazing animal. Well-fertilized lawns provide a convenient supply of nourishing grasses and clover for the geese. The dramatic increase in Canada geese in recreational lakes is directly related to the easy living conditions provided by humans.

Information prepared for the Lake Washington Project in Massachusetts states that the phosphorus contributions from 150 non-migrating geese are equivalent to the phosphorus in domestic waste from one human. While this may not significantly affect your lake's nutrient budget, goose waste is extremely high in bacteria. The average bacterial contribution from a single goose in a 24-hour period is 5-50 times greater than that of a single human!

According to Dave Caithamer, Waterfowl Biologist with the Indiana Department of Natural Resources, health officials have temporarily closed several swimming beaches on Indiana lakes due to high bacteria counts caused by geese. The DNR has trapped and removed excessive concentrations of geese from a number of small lakes and ponds, particularly urban stormwater and decorative ponds. Remember, geese are protected by the federal Migratory Bird Act and by state laws. Therefore, do not take any action yourself. People concerned with large populations of geese on lakes and ponds should contact their DNR District Biologist for guidance. The District Biologist in northeastern Indiana is Al VanHoeve in Kendallville, (219) 347-2945.

If you have a lake-related question, send it to Water Column and we will do our best to answer it.

Federal Clean Lakes Program Receives Funding

The Federal Clean Lakes Program, authorized by Section 314 of the Clean Water Act and administered by the U.S. Environmental Protection Agency, received \$7 million dollars from Congress

Call for Papers

**Third Indiana Lake Management Conference
Tri-State University • Angola, Indiana
April 19-20, 1991**

If you or your organization wants to present a paper at the **Technical Session** on Friday, April 19, from 1:00-5:00 p.m., send a one-page, double-spaced abstract that states the goal, content and conclusions of the presentation to:

Bill Jones
SPEA 347
Indiana University
Bloomington, IN 47405

Topics can include: lake ecology, biology, nutrients, lake management, watershed management, fishery ecology and management, wetlands, toxic substances in lakes, modeling, and other suitable subjects. Contributors of abstracts accepted for oral presentation can have their paper published in the conference proceedings.

**Abstracts must be received by:
February 15, 1991**

for funding programs during 1991. Of this total, Region V of EPA (MN, WI, IL, MI, IN, OH) expects to receive \$1.2 million.

Region V funding priorities for this money are:

1. additional lake water quality assessment grants to the state;
2. new Phase I Diagnostic Feasibility Studies;
3. Phase II implementation projects.

In order to stretch the available money, Region V will give preference to Phase I proposals requesting only a 50% federal share and a maximum of \$50,000 of federal funds. Phase I diagnostic/feasibilities require an extensive one-year lake sampling effort. Phase II grants are awarded only for projects having a completed and approved Phase I study.

Due to the delayed federal budget approval, EPA could not notify the Indiana Department of Environmental Management of the availability of Clean Lakes Program funds until mid-November. On November 26, IDEM sponsored an informational meeting for Indiana communities interested in applying for the federal funds. Don Roberts, EPA Region V Clean Lakes Program Coordinator, attended the meeting and answered questions.

Applications for this year's program are due to EPA by January 9, 1991. Since IDEM is the desig-

nated state contact agency for the federal Clean Lakes Program, it must review the proposals and submit the formal application to the EPA. Therefore, completed proposals must be sent to IDEM by December 15, 1990.

For additional information regarding the EPA Clean Lakes Program, contact John Winters at (317) 243-5028.

Meetings

January 7-18, 1991—AQUA-SITION: Short Course on Lake Management. Treehaven Field Station, Tomahawk, WI. Sponsored by: University of Wisconsin—Stevens Point. Registration Fee: \$95. Contact: Jeff Thronton, (715) 346-2278.

January 14-16, 1991—Controlling Sediment from Construction Sites. Madison, WI. Sponsored by: University of Wisconsin—Extension. Registration Fee: \$450. Contact: Patrick Eagan, (608) 263-7429.

February 27-28, 1991—Indiana Chapter American Fisheries Society Annual Meeting. Indianapolis, IN. Contact: Anne Spacie, (317) 494-3621.

March 16, 1991—Lake Association Leaders Workshop. Holiday Inn—University Place, East Lansing, MI. Sponsored by the Midwest Aquatic Plant Management Society. Contact: Bob Johnson, (812) 497-2410.

March 17-19, 1991—The Midwest Aquatic Plant Management Society Annual Meeting. Holiday Inn- University Place, East Lansing, MI. Contact: Bob Johnson, (812) 497-2410.

April 19-20, 1991—Third Annual Indiana Lake Management Conference. Tri-State University, Angola, IN. Sponsored by: Indiana Department of Environmental Management. Contact: Bill Jones, (812) 855-4556.

June 10-12, 1991—Regional Lake Management Conference: A Lake is a Reflection of its Watershed. Airport Hilton Hotel, DeMoines, Iowa. Sponsored by: U.S. Environmental Protection Agency, Region VII. Contact: Donna Sefton, (913) 551-7500.

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