

Office of Water Management
 Indiana Department of
 Environmental Management

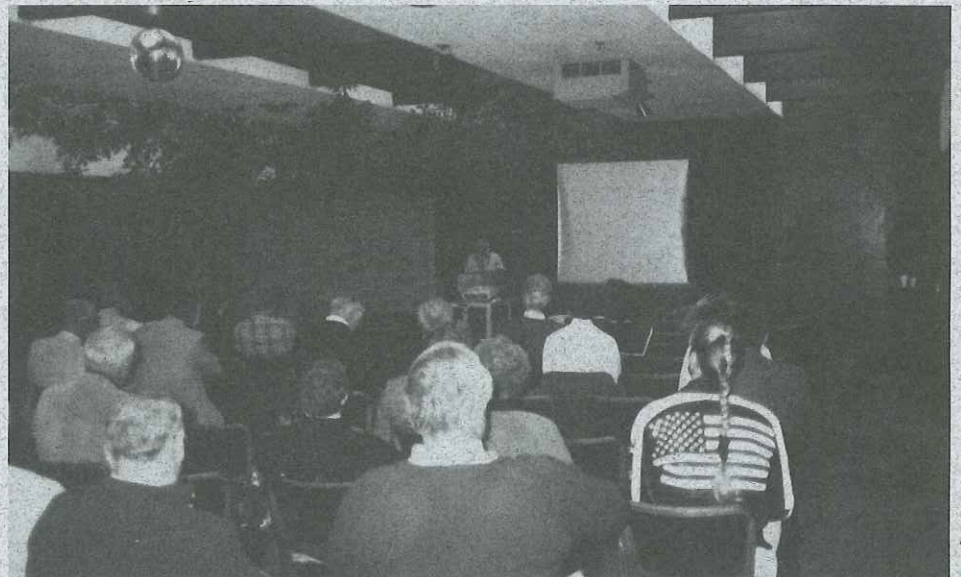
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SUMMER
 1992
 Vol. 4, No. 2

Fourth Indiana Lake Management Conference

More than 150 property owners, lake managers, public officials, agency personnel, students, and other interested citizens attended the Fourth Indiana Lake Management Conference held April 24-25 along the shores of Lake Shafer in Monticello. The conference, sponsored by IDEM and hosted locally by the Greater Monticello Area Chamber of Commerce, featured technical reports, a lake ecology session, a workshop on increasing the effectiveness of lake associations (see following article), lake management program updates, tours of local hydroelectric dams, the annual meeting of the Indiana Lakes Management Society, and 19 exhibits from commercial firms, organizations, and agencies.



Karen Dehne, Executive Director of the Lake Maxinkuckee Environmental Fund, Inc., addresses the audience.



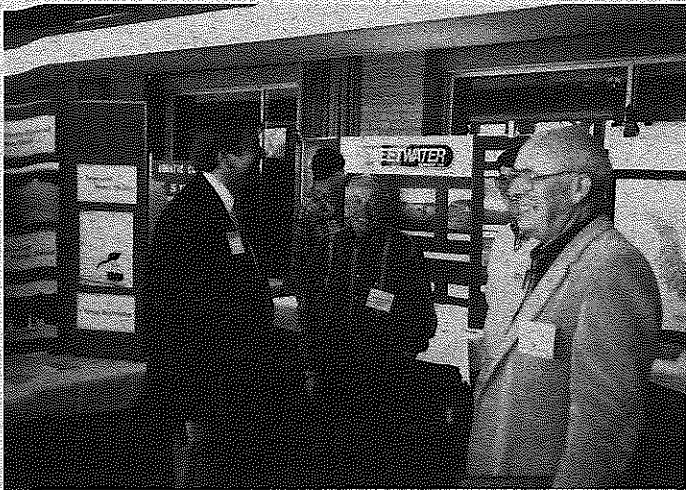
Nineteen commercial, agency, and association exhibitors displayed their products and education materials in the exhibit hall.

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(CONFERENCE . . .
Continued from page 1)

The Friday afternoon Technical Session included papers on management efforts at Skinner Lake (Noble County), West Boggs Lake (Daviss County), and four ponds in Hoosier National Forest; an analysis of data collected during the IDNR's Lake Enhancement Program feasibility studies; an analysis of the Indiana Trophic State Index; and a discussion of the Oakdale and Norway run-of-the-river hydroelectric dams on Lake Shafer.

On Saturday's General Session, the audience heard Monticello Mayor Richard Cronch, State Senator Katie Wolf, and U.S. Congressman Jim Jontz voice their support for state lake management efforts, including the annual Indiana Lake Management Conference. Congressman Jontz stated his support for full funding for the U.S. EPA Clean Lakes Program. Congress authorized \$30 million per year for the program in 1980 but these funds have never been included in the President's budget. Each budget period, Congress must insert funding (usually only \$7-8 million per year) back into the budget. Congressman Jontz would also like a more generous cost-share for lakes where there is no municipality to serve as the local fundraiser. The current cost-share for federal and non-federal funding used in Region V is 50-50.



Chris Holdren, Robert Fuess, and John Weyler have a discussion in the exhibit hall during a break.

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WATER COLUMN
SPEA 347
Indiana University

Twelve Things You Can Do To Be a More Effective Lake Association

During the workshop on "Increasing the Effectiveness of Lake Associations" held at the Fourth Indiana Lake Management Conference, the speakers—Karen Dehne (Lake Maxinkuckee Environmental Fund, Inc.), Ed Dubois (Beech Villa Property Owners Association, Saugany Lake), Roy Mann (retired lake manager of Apple Canyon Lake, IL), and Robert Hampton (Indiana Lakes Management Society) offered the following tips for lake associations:

- Be active year-round, not just in the summer.
- Include the entire watershed in the association's membership and activities.
- Elect a representative Board of Directors, including people with different talents and include watershed residents.
- Talk with local schools and civic groups about lake management.
- Educate lakeshore and watershed residents about "Best Management Practices" to prevent non-point source pollution.
- Raise lake management funds through capital fundraising campaigns; auctions; sales of baked goods, beach towels or other goods.
- Be creative.
- Communicate, communicate, communicate!
- Work with local and state legislators.
- Hire a professional lake manager.
- Use consultants when necessary to identify lake problems and recommend appropriate management techniques.
- Implement a volunteer lake monitoring program on your lake.

Expanded Volunteer Lake Monitoring Program Begins

In May, 29 volunteers on 30 Indiana lakes began collecting monthly water samples for total phosphorus and chlorophyll *a* analysis. The new program, funded by a U.S. EPA grant to IDEM, is an expansion of the three-year old Volunteer Lake Monitoring Program in which volunteers measure water transparency and color with a Secchi disk.

Phosphorus is the primary plant nutrient which controls algae growth in most lakes and chlorophyll *a* is the pigment which green plants use to convert sunlight to energy through the process of photosynthesis. Their measurement will help CLP staff understand lake dynamics and will provide



Are these people battling lake snakes?? No, they are being trained to use an integrated sampling device to collect water samples. Training took place at the Fourth Indiana Lake Management Conference. L to R: Jeff Jontz (CLP staff) and Volunteers Gordon Guenther, and Tom Parsons.

additional data needed to more completely monitor changes in lake water quality.

Volunteers in the expanded program received additional training and equipment from CLP staff. Integrated water samples are being collected from the water surface to the six-foot depth to be representative of the lakes' surface waters. Water samples for phosphorus are poured into acid-rinsed 125 ml bottles but the chlorophyll test requires filtering the water sample and collecting chlorophyll on the filter. Collected samples are frozen until sent to SPEA's laboratories for analysis.

The expanded program will be evaluated after the first year and if additional funds are available, more lakes could be included in 1993.

Questions From Readers

Q. Why do we see a lot of dead fish on the lake in the early summer?

A. Seasonal fish kills are a common, natural occurrence in productive warm-water lakes. A number of stresses combine in the spring to make the fish weaker and more susceptible to disease and bacterial infection at this time.

Other causes of fish kills during the summer include lightning from thunder storms and oxygen depletion in the lake's bottom waters from decaying organic matter (for example, algae and other plants).

- Q.** Sometimes along the shoreline in mid-summer, there is a dark cloud in the water accompanied by an oily sheen. What causes this?
- A.** The cloud is probably insect cases left behind from a hatch of aquatic insects, and concentrated along the shore by wind. Insects hatch any time from ice-out to September. As the cases decompose, sometimes an oily film is given off. Microscopic examination of oily films show a micro-habitat of bacteria, protozoans, zooplankton, algae, and organic debris.

Minnesota DNR Fish & Wildlife Nets Division Lake Enhancement AD Glander

Paul A. Glander resigned as the Division of Soil Conservation's assistant director for lake enhancement, effective April 3, to join the Minnesota DNR Fish & Wildlife as area fisheries supervisor. He will be stationed at Detroit Lakes, 40 miles east of the Fargo/Moorhead twin cities.

Paul was with IDNR nearly ten years. He worked as fisheries technician, then biologist with Fish & Wildlife from 1983 until joining Soil Conservation as T-by-2000 lake enhancement biologist in October 1989. A year later, he became AD. He also served as president of the Indiana Chapter, American Fisheries Society, and was involved in establishment of the Indiana Lakes Management Society.

In assuming his new job, Paul returns to his "roots"—fisheries management. As supervisor, he will oversee a team of six biologists and technicians working to "make fishing better" in five lake-rich northwest MN counties.

Mr. Harry S. Nikdes, former executive director of the Indiana Wildlife Federation, was named as the new AD for lake enhancement. (*Top Soil*).

WATER COLUMN

Published quarterly by the Indiana Clean Lakes Program as a medium for open exchange of information regarding lake and watershed management in Indiana

William W. Jones, Editor
Cynthia Mahlgan Moorhead, Production Manager

Address all correspondence to:
SPEA 347

Indiana University
Bloomington, IN 47405

Phone: (812) 855-4556

Telephone Locator for Lake Assistance

Below is an update of lake assistance contacts in Indiana which last appeared in the Summer 1990 issue of *Water Column*. 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: Surveillance and Standards Branch, Marty Maupin, (317) 243-5035
- Clean Lakes Program: Office of Water Management, 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: Surveillance and Standards Branch, Sharen Jarzen, (317) 243-5145

Indiana Department of Natural Resources

- Fisheries Surveys: Division of Fish and Wildlife, Bill James, (317) 232-4094
- Dam Inspections: Division of Water (Water Office), George Crosby, (317) 233-4576
- Lake Enhancement Program: Division of Soil Conservation, (317) 233-3870
- Lake Shoreline Modifications: Division of Water, Brian Balsley, (317) 232-5661
- Streambank Modifications: Division of Water, George Bowman, (317) 232-5660
- Aquatic Chemical Application: Division of Fish and Wildlife, (317) 232-4080

U.S. EPA Clean Lakes Program Update

The federal Clean Water Act (CWA), under which the EPA Clean Lakes Program (section 314) and Non-Point Source Program (section 319) are contained, is currently up for reauthorization in Congress. Past authorizations for the Clean Water Act have expired, therefore Congress must reauthorize the Act before funds can be spent for these programs. The new draft of the CWA contains provisions that could affect federal efforts with lakes and watersheds. These include: a 5% reduction in the formula for funding Clean Lakes and a deprioritizing of lake watersheds in the competition for nonpoint source funds under agricultural programs.

"Appropriations" is the process that Congress uses each year to establish actual funding levels for specific programs. Decisions are generally made by appropriations committees between May and

August for funding of programs the following October 1 (the beginning of the new federal fiscal year).

Even under the existing legislation, the U.S. Environmental Protection Agency has not requested a single dollar of funding for the Clean Lakes Program for several years, despite the program's well-documented success and its well-managed handling within the Agency. Congress usually makes up for this by adding \$7-8 million dollars to the budget for the Clean Lakes Program every year. This is well below the \$30 million annually that was authorized for the Program in the CWA.

Despite these ominous signs, we should expect some level of funding for the federal Clean Lakes Program in Region V but the guidance won't be announced until November as in past years. This does not leave much time for communities to prepare proposals for Phase I diagnostic/feasibility studies before the early January deadline. Therefore, **communities or lake associations**

Interested in pursuing a federal Phase I grant for their lake in 1993 should contact IDEM's Office of Water Management for application assistance as soon as possible.

A Phase I grant involves significantly more study than the IDNR's Lake Enhancement feasibility study and is recommended for those lakes with severe or difficult problems that can't be adequately diagnosed under IDNR's program. It requires a one-year intensive sampling effort of the lake and its watershed (diagnostic study) including: water quality, sediment quality, watershed land use, point and nonpoint sources of pollution, and economic and population impacts; and a feasibility study of all technically feasible in-lake and watershed treatment options to correct the problems diagnosed. EPA Region 5 will provide 50% of the cost (up to \$50,000). The remaining 50% must be from non-federal funds and may include local funds, state appropriations, and Lake Enhancement funds. A lake with a completed and approved Phase I Study is eligible for a federal Phase II implementation grant to implement the management plan.

Let's Be Careful Out There!

After 15 years of study, the state of Michigan has determined the single most dangerous activity for boaters. According to Eric Olsen, who examines every boating accident in the state, 70% of the boating fatalities involve falls overboard. "Of the 39 deaths [caused by falling overboard]," Olsen says, "14 of the victims had their flies unzipped." The study does not reveal how the falls occurred, or whether any of the victims were intoxicated at the time of their accident. It only indicates that relieving oneself over the side is the most dangerous single act on water (*Canoe*, May 1992).

Fishing Etiquette

There are some things good anglers do, and some things good anglers don't do.

Good anglers always:

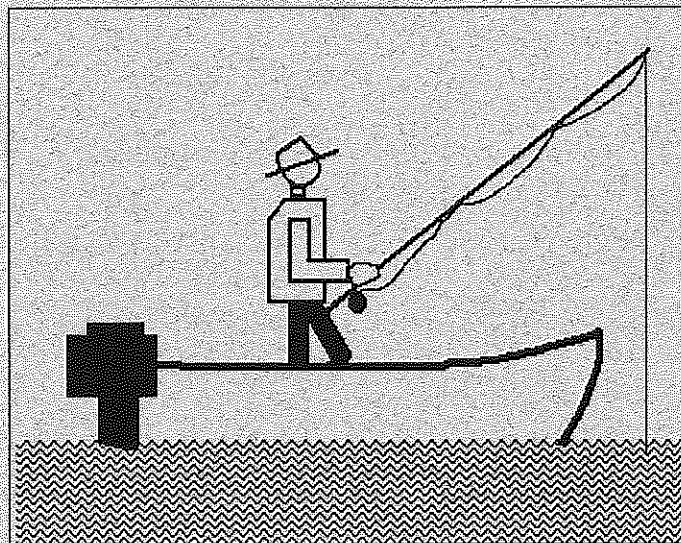
1. Obtain permission to fish on private land.
2. Pick up and pack out pop cans, empty hook packages, bait containers, used line, sandwich wrappers, and other trash.
3. Carry a current license and follow current regulations.

4. Maintain motorboats so oil and gas will not drip into lakes or streams.
5. Wear life jackets in boats.
6. Offer assistance to others in outdoor emergencies.
7. Respect wildlife and refrain from disturbing nests, lodges, and dens.
8. Keep noise down to a minimum, since sound carries far on the water and also scares away fish.
9. Give other anglers room on the water.

Good anglers never:

1. Dump unused bait into the water.
2. Speed with a motorboat past canoes, other boats, swimmers, and shore anglers.
3. "Hog" a good fishing spot.
4. Cast too close to another angler.
5. Disturb other anglers with loud music and yelling.
6. Leave fish guts and entrails on shore or on picnic tables.

(Wis. DNR, 1990)



Iowa Corn Producers Cut Nitrogen Use in a Big Way

In 1989 and 1990, Iowa farmers reduced their nitrogen applications by 200 million pounds per year, according to Jerry DeWitt, Iowa State University (ISU) Extension Director for Agriculture. Elsewhere in the Corn Belt, nitrogen fertilizer rates have remained steady at about 140 pounds per

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acre or have increased, according to the National Agricultural Statistics Service. Average nitrogen per acre in Iowa fell from 145 pounds in 1985 to less than 130 pounds in 1990.

In a December 1991 press conference, the ISU Extension Service and cooperative agencies reported that a decade of focused water quality education programs are making a difference. Water quality educational programs emphasized showing farmers effective ways to use nitrogen fertilizers, other crop nutrients, pesticides and animal manure. They established demonstrations on farmers' fields, provided them with individual help in refining their practices, and linked farmers to each other so they could exchange information. Agricultural programs in farm management, many created by the 1987 Iowa Groundwater Protection Act, have touched nearly every Iowa county. The programs also spurred university-level research on sustainable agriculture topics and conveyed the results to farmers. One development was the calibration of a soil nitrate test that pinpoints the amount of nitrogen fertilizer actually needed by corn plants.

"With these programs, Iowa farmers have begun looking at nitrogen in a new light," said DeWitt.

The decade of agricultural water quality programs brought big dividends, according to the state officials. The state spent about \$11 million from 1980 to 1990 to educate Iowa farmers on how to use fertilizer more efficiently while maintaining yields and profits. Every dollar spent for education saved farmers eight dollars in fertilizer costs. The nitrogen reductions of 1989 and 1990 saved farmers \$80 million (*News-Notes*, U.S. EPA, March, 1992).

Publications Available

A report documenting the results of the Volunteer Lake Monitoring Program for 1990-91 is now available free to those who request it. The report contains results for 75 Indiana lakes. Also included in the report is a summary of the first three years of the program. Twenty-seven lakes have been monitored for all three years of the program and some long-term trends water transparency trends in these lakes are evident. To get your own copy of this report, send your request to the *Water Column*.

EPA's Office of Water Releases Final Report to Congress On Nonpoint Sources of Water Pollution

Wildlife and recreation are the state-designated uses most affected by nonpoint source pollution in both lakes and streams. Fishing and shellfishing in the Great Lakes and other coastal waters are also impaired, as is groundwater as a drinking water source in at least nine states. This data, gleaned from state nonpoint source assessments, is reported in EPA's *Managing Nonpoint Source Pollution*, the final report to Congress on section 319 of the Clean Water Act, released April 6, 1992.

The report said, "This information indicates very clearly that nonpoint source pollution has caused severe damage to aquatic communities nationwide and has destroyed the aesthetic values of many of our treasured recreational waters."

The report, required by CWA §319(m), describes the status of the national effort to control nonpoint source pollution as of October 1, 1989. Where possible, more current information concerning the final approval of state NPS assessments and management programs and the issuance of grants in 1990 is also provided.

Nutrients and Siltation Impact Streams and Lakes

In the 40 states that reported data on rivers and streams, 16% (206,179 miles) of the rivers were impacted by nonpoint source pollution. State data indicated that 20%, or 5.4 million surface acres (excluding the Great Lakes, the Great Salt Lake, and Alaska's lakes) of lakes were affected. In both rivers and lakes, nutrients and siltation had the greatest impacts. Not surprisingly, agriculture was the biggest source of pollutants.

Watershed Approaches Yield Water Quality Improvement

On the plus side, while the report acknowledges that 1989 was too early to look for significant water quality improvements from 319 programs, it notes that the Rural Clean Water Program (RCWP), begun in 1982, has had a number of successes. Florida, Idaho, Oregon, and Utah all documented water quality improvement in demonstration projects. The report points out that the RCWP projects were implemented effectively on local levels. "Knowing this," the report to Congress continues, "the states and EPA are working together to establish and implement targeted

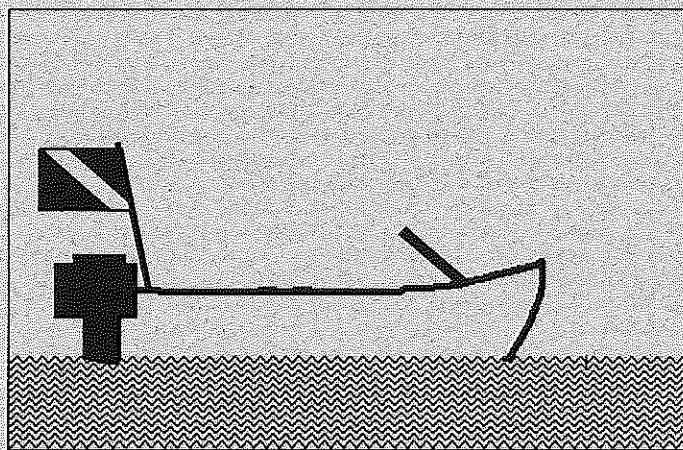
pollution control measures in high priority watersheds."

Managing Nonpoint Source Pollution includes chapters on:

- Methodology and results of the state NPS assessments (nationally and by waterbody type)
- National and state statistics
- Regional activities and state programs
- Related programs implemented by EPA, other federal agencies, and nongovernmental organizations
- Selected NPS problems and solutions (animal waste and grazing impacts, sustainable agriculture, composting, irrigated agriculture, using market incentives to prevent and control NPS).

[The 197-page document is available from Ann Beler, OW (WH-553), U.S. EPA, 401 M St., SW, Washington, DC 20460. Or FAX your request (clearly written) to (202) 260-7024] (*News-Notes*, U.S. EPA, May, 1992).

Divers Below!



Do you know what this red flag with a white diagonal stripe means? It is the recreational diver's flag. It says, "There are divers below; keep clear and travel at slow speed." It is flown only when divers are actually in the water. If you see this flag on a boat or float, keep at least **100 feet** away in order to protect the divers should they surface. Do not go closer to investigate. The divers will thank you and possible tragedy will be averted.

Damage Prevention— Ecological Restoration

A recent report from the National Research Council urges the prompt implementation of a large-scale program to restore damaged and polluted wetlands, rivers, streams, and lakes in order to prevent permanent ecological damage. Noting that the nation's aquatic ecosystems provide habitat for wildlife, recreation for people, minimization of flood damage, and filtering of agricultural and urban runoff, the report urges establishment of a long-term, comprehensive strategy for restoring these ecosystems. Funding should come from all levels of government; and all levels of government, as well as non-government agencies and grass-roots volunteers, should be involved in the planning and implementation of restoration projects.

Wetlands—The committee recommended that damaged or destroyed wetlands be "restored at a rate that offsets any further loss and contributes to an overall gain of 10 million acres by the year 2010." The committee further recommended that until wetland restoration moves from "... a trial and error process to a predictive science," wetland restoration should not be used as a way to offset or justify the destruction of other wetlands.

Rivers and Streams—According to the report, a national effort should be mounted in order to restore about 400,000 miles of rivers and riparian systems. The effort is needed because the rivers and their associated land systems have been severely degraded by diversion, damming, channelization, and pollution.

Lakes—Two million acres of lakes damaged from urban and industrial dischargers, agricultural runoff, and acid precipitation could be restored in the next 20 years. The committee recommended at least one million acres be restored by the year 2000. More knowledge of the severity of lake pollution is necessary in order to determine the extent of damage and the progress of clean-up.

Restoration is "returning an ecosystem to a close approximation of its condition prior to disturbance," so that it functions as it did before damage, and so that its natural dynamic processes are operating effectively again. While there are many damaged wetlands in urban and rural areas, the committee doesn't recommend taking prime agricultural land and urban areas out of present service and rebuilding them. If the committee's restoration plan were implemented, it could involve large tracts of land. However, according to the committee, if 50% of the lost wetlands were

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restored, less than 3% of the land used for agriculture, forestry, and urban settlement would be affected (National Research Council News Release).

Nitrates Down in Wetlands

A study of wetland dynamics in Iowa has indicated that marshes and shallow farm ponds can effectively convert nitrates in runoff into nitrogen gas. Apparently resulting from the activity of bacteria in the wetland soils, the finding suggests that if drainage tiles are adjusted to fill low spots with water, a significant portion of nitrates in the runoff can be removed. Tests conducted in experimental field study areas showed that nitrates concentration of 10 mg/l could be reduced by half in two days, and to barely detectable levels in five days (*Hydata*, March, 1992).



EPA Accepts Voluntary Label Changes for Atrazine To Reduce Water Contamination

[Ed. Note: In the last issue of *Water Column*, we reported on IDEM studies which found atrazine present at 92 of 100 water sampling sites in Indiana.]

Atrazine, used primarily in corn and sorghum, is one of the most widely used pesticides in the United States. It is also the most widely detected pesticide in water monitoring studies in the Midwest corn belt.

On April 10, EPA announced its acceptance of a voluntary proposal by Ciba-Geigy Corporation

aimed at reducing surface water contamination by atrazine, particularly in drinking water. The company will make label changes on atrazine products and carry out additional water monitoring and educational initiatives on the pesticide.

Label Changes Include Deletions of Some Uses

Some of the more pertinent label restrictions include:

- Deletion of non-crop uses, including rights-of-ways, highways, and railroads.
- Reduction in the application rates of corn and sorghum from three pounds per acre to a range of 1.6 to 2.5.
- No ground or aerial application within 200 feet around all natural or impounded waters (reservoirs and lakes) and within 66 feet of points where field surface runoff water enters perennial or intermittent streams and rivers (on highly erodible land, the 66-foot setback must be vegetated).
- All mixing and loading operations must have 50-foot setbacks from intermittent streams, rivers, reservoirs, impounded and natural lakes, and all wells, including drainage wells, abandoned wells, and sink holes.

The restrictions will go into effect for the 1993 crop season.

1991 Studies Show High Atrazine Levels in Midwestern Rivers

Atrazine has been registered and used in the U.S. since 1959 to control both broadleaf and grassy weeds, primarily in corn and sorghum. Approximately 80 to 90 million pounds of atrazine active ingredient are applied annually.

Not surprisingly, corn-growing regions often have high levels of the herbicide in water. The Maximum Contaminant Level (MCL) for atrazine in drinking water is an annual average value of 3 parts per billion (PPB), based on a minimum of four quarterly samples.

In November 1991, USGS released monitoring data from the Mississippi River and some of its tributaries for the period of April, May, and June 1991. The data showed that concentrations of dissolved atrazine above 3 ppb were sustained for four to six weeks from about mid-May to mid- or late June in the lower Platte River in Nebraska, the lower White River in Indiana, the lower Illinois River in Illinois, and the lower Missouri River in

Missouri. Atrazine exceeded the MCL of 3 ppb in 27% of the individual samples collected during these months (*News-Notes*, U.S. EPA, May, 1992).

International Lake Management Conference to be in Cincinnati

From November 2-7, 1992, lake managers, researchers, interested citizens, and government employees will gather in Cincinnati for the North American Lake Management Society's (NALMS) 12th International Symposium. This year's theme is, "The Year of Clean Water—Past Lessons and Future Challenges." Events include numerous paper sessions, poster sessions, video sessions, and exhibits. Of special interest to *Water Column* readers are the **citizen workshops and sessions** and the **newsletter production workshop**. Special registration rates are available for these sessions. This symposium will also mark the formal approval of the *Indiana Lakes Management Society* as a NALMS chapter. Let's have great representation from the Hoosier state at this important meeting. For registration materials, write or call: Bob Mason, Hamilton County Park District, 10245 Winton Road, Cincinnati, OH 45231, (513) 521-7275.

Meetings

September 13-17, 1992—INTECOL's IV International Wetlands Conference.

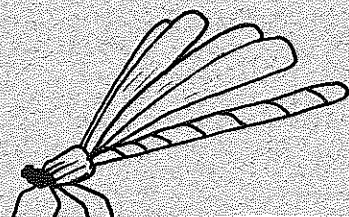
Columbus, Ohio. Contact: William J. Mitsch, (614) 292-9773.

October 12-14, 1992—The Conservation and Management of Freshwater Mussels. St Louis, Missouri. Contact: Kevin Cummings, (217) 333-1623.

October 14-15, 1992—5th Ecological Quality Assurance Workshop. Queens Park, Toronto, Ontario. Contact: George Crawford, (416) 235-5757.

November 2-7, 1992—12th Annual Symposium on Lake and Reservoir Management. Cincinnati, Ohio. Sponsored by the North American Lake Management Society and U.S. EPA. Contact Bob Mason, (513) 521-7275.

PERSPECTIVES



*At sunset on this flat terrace,
Inking my pen on the slanting stone balustrade,
I sit down to write a poem on the wu-tung leaf,
Here is a kingfisher singing on a bamboo clothes rack,
There is a dragonfly clinging to a fishing line,
Now that I know what quiet enjoyment is,
I shall come here again and again.*

—Tu Fu (eighth century A.D.)

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