



Office of Water Management  
Indiana Department of  
Environmental Management

## Fourth Indiana Lake Management Conference Set for Monticello

The Fourth Indiana Lake Management Conference will be held in Monticello, Indiana on Friday and Saturday, April 24-25, 1992. The conference, sponsored annually by the Indiana Department of Environmental Management's Clean Lakes Program, will be hosted locally by the Greater Monticello Chamber of Commerce. Monticello lies along the Tippecanoe River between Lake Shafer and Lake Freeman in White County. Lake Shafer, which has the largest watershed of any inland lake or reservoir in Indiana, is currently under study by IDNR's Lake Enhancement Program.



Registration materials and the semi-final program will be mailed out in early February. **Mark your calendar now!**

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FALL  
1991  
Vol. 3, No. 3

## 1991 Lake Water Quality Assessment

Indiana Clean Lakes Program (CLP) staff from Indiana University had a busy summer of conducting water quality surveys at public lakes throughout Indiana. A total of 90 lakes were surveyed for: total phosphorus, soluble phosphorus, nitrate, ammonia, organic nitrogen, pH, alkalinity, dissolved oxygen, light transmission and plankton. Results will be used in the Indiana Department of Environmental Management's (IDEM) lake Trophic State Index, a measure of overall water quality, to compare conditions in lakes and to detect water quality trends.

Thanks go out to all the citizens who helped the CLP staff during the summer with directions and lake information (and on occasion, with extracting our stock trailer from difficult accesses!) . Findings from this work should be available in the spring and will be included in IDEM's 1990-1991 305(b) report to the U.S. EPA.

## IDEM Gets \$1 Million for NPS Management

On August 26, IDEM was awarded a \$1,018,509 Clean Water Act Section 319 Grant for further implementation of the state nonpoint source water pollution management program. IDEM will use a portion of the money internally for groundwater-related activities, but the majority of the money is to be used to fund projects proposed by other organizations, as follows:

—*Trail Creek*. A multidisciplinary group in La Porte County will develop and begin implementation of a watershed protection plan for Trail Creek.

(Continued on page 2)



(IDEM GRANT. . .  
Continued from page 1)

—*Urban Erosion.* IDNR's Division of Soil Conservation will (1) conduct a series of regional workshops and (2) develop regional demonstration sites to educate builders, developers, planners, regulators and the public about construction-related erosion control (see article following).

—*Constructed Wetlands.* Purdue University will evaluate the performance of three wetlands constructed as components of animal waste treatment systems.

—*Juday Creek.* The St. Joseph River Basin Commission will implement a watershed protection plan for Juday Creek, in South Bend.

—*Farmstead Assessment.* Purdue University will adapt and apply the "Farm-A-Syst" program in Indiana.

—*Indiana Dunes Drywells.* The Indiana Geological Survey will cooperate with the State Board of Health in an evaluation of the performance of drywells used for wastewater disposal in the Indiana Dunes region.

—*Fish Creek.* The Nature Conservancy will implement a protection program in the Fish Creek watershed in northeast Indiana, which is the only known habitat of an endangered species of mussel.

—*Hoosier Heartland.* The Hoosier Heartland RC&D will continue its well monitoring and protection program.

—*Mill Creek.* The Soil Conservation Service will work in the Mill Creek watershed (Lawrence Co.) to demonstrate agricultural management practices suitable for karst areas.

—*Atmospheric Deposition.* The U.S. Geological Survey will establish a three-year program in the Grand Calumet River Basin to appraise the water quality impacts of atmospheric deposition. (Jim Ray, IDEM)

## Urban Erosion Control Work Plan

The Division of Soil Conservation of the Indiana Department of Natural Resources will utilize a Section 319 grant from IDEM to conduct an educational program on improving water quality by

controlling erosion and sedimentation in urban areas undergoing development and construction.

The Division will, in cooperation with the Soil and Water Conservation Districts (SWCDs), arrange for up to 11 different erosion control demonstration areas. (The extent of interest expressed by potential local participants will be a factor in determining the final number of demonstration sites). These areas will be established in newly developing areas such as subdivisions or industrial/commercial parks that are actively engaged in construction. The areas would be designed to demonstrate best management practices (BMPs) that can be implemented to control erosion and sedimentation. This would include demonstrations of seeding and mulching methods, use of erosion control matting and filter fabric, storm sewer inlet protection techniques, construction of sedimentation basins, waterway protection, tree protection, topsoil stockpiling, and construction of drop structures—as appropriate for the conditions at each site.

After the areas are prepared, a field day will be held at each site for contractors, developers, county and local officials, and potential homeowners. The ultimate goal is to better educate the governmental officials, the builders, and the consumers on the importance of controlling erosion and sedimentation on construction sites, as well as demonstrating cost effective methods of doing so.

The locations, cooperating SWCDs, and dates proposed for the demonstrations are:

1. LaPorte, LaPorte SWCD, Spring 1992
2. Lafayette, Tippecanoe SWCD, Spring 1992
3. Angola, Steuben SWCD, Spring 1992
4. Churubusco, Whitley Swcd, Spring 1992
5. Terre Haute, Vigo SWCD, Fall 1991
6. Bloomington, Monroe SWCD, Spring 1992
7. Avon, Hendricks SWCD, Fall 1991
8. Vincennes, Knox SWCD, Spring 1992
9. Corydon, Harrison SWCD, Fall 1991
10. Columbus, Bartholomew SWCD, Spring 1992
11. Jeffersonville, Clark SWCD, Spring 1992

For more information, contact Greg Biberdorf at IDNR at (317) 494-8387.

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## CALL FOR PAPERS

### Fourth Indiana Lake Management Conference Monticello, Indiana April 24-25, 1992

The 4rd Annual Indiana Lake Management Conference, sponsored by the Indiana Department of Environmental Management's Clean Lakes Program, will bring local, state and federal officials; lake management professionals; academics; and lake citizens together to work towards the common goal of more effectively managing Indiana's lakes. This one and one-half day conference will be the only time during 1992

when all those interested in lake management in Indiana will be together in one place. This year's program includes a Friday afternoon Technical Session and an all day Saturday General Session.

If you or your organization wants to present a paper at the **Technical Session** on Friday, April 24, 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, river basin management, fishery ecology and management, wetlands, toxic substances in lakes, modeling and other suitable subjects. Contributors of abstracts accepted for oral presentation may have their paper published in the conference proceedings.

**Abstracts must be received by:  
January 17, 1992.**

## Prides Creek is First to Complete Three-Stage Lake Enhancement Project

In August, Prides Creek Lake near Petersburg in Pike County became the first T-by-2000 lake enhancement project to complete all three program stages—feasibility, design, and construction—as well as installing conservation practices to control sources of soil erosion in the watershed.

The project began in May 1988 with a feasibility study, which characterized the lake, identified its problems, and recommended solutions. The design phase, initiated a year later, developed engineering plans for a large sediment basin and a wetland to prevent the silt in runoff water from getting into the lake.

Construction of the basin and wetland got underway early this year and was finished in August. At the same time, water and sediment control basins (WASCOBs) and grassed waterways, were installed within the watershed to control sedimentation at its source.

The Prides Creek Lake project received funding assistance from various sources, including local contributions, T-by-2000 lake enhancement and cropland erosion control cost-sharing, and federal conservation program agencies. With the combination of in-lake and watershed treatment measures now in place, the lake's utility and recreational value have been extended many years. (Paul Glander, IDNR)

## New Law Will Protect Water Quality with Classified Filter Strips

Establishing a natural vegetative strip along shorelines and streambanks can provide many water quality benefits for lakes and streams. A buffer strip of grass, trees, and shrubs helps stabilize shorelines and streambanks, and control erosion. Vegetative filter strips also slow the surface flow of runoff to lakes and streams, absorb nutrients, and decrease sedimentation.

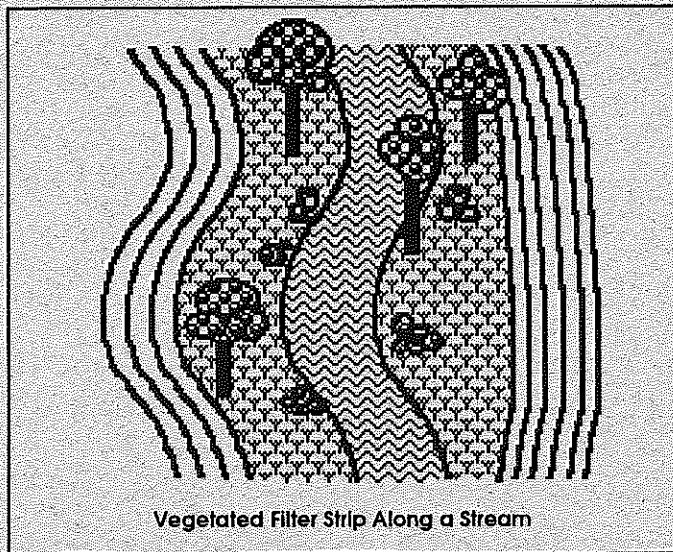
Vegetative filter strips can provide important fish and wildlife habitat too. Canopies of overhanging trees create cool water refuges for fish in hot summer weather, while stands of native grasses and shrubs provide important food and cover for wildlife.

The Classified Filter Strips Act (HEA 1604) was passed by the Indiana General Assembly in 1991 to

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(NEW LAW ...  
continued from page 3)



Vegetated Filter Strip Along a Stream

provide incentives to landowners who establish vegetative filter strips adjacent to ditches, creeks, rivers, wetlands, or lakes. The legislation, which took effect July 1, creates a tax abatement program for filter strips similar to the classified forest, wildlife habitat, and windbreak programs.

By establishing vegetated filter strips, a landowner can have those parcels assessed at only \$1.00 per acre for general taxation purposes. To qualify, the strips must be between 20 to 75 feet wide and meet certain other requirements.

A person wanting to have a parcel of land classified as a filter strip should contact their county surveyor for assistance. The county surveyor, in cooperation with the county extension service and the county Soil and Water Conservation District (SWCD) will provide advice and technical assistance to the landowner for the establishment and maintenance of filter strips. (Kelly Boatman, IDNR)

## Wetland Restoration in LaGrange County

The U.S. Fish and Wildlife Service and the LaGrange County Health Department are cooperating with an evaluation of several watersheds in the county. The Service will be identifying opportunities for wetland restorations within the watersheds and will fund restoration projects that qualify for the Service's Wetland Restoration Program. The objectives of the effort are to improve water quality inflows to lakes in the county and to improve fish and wildlife habitat.

The LaGrange County project is a continuation of Service efforts to restore drained wetlands through the national Wetland Restoration Program.

Also in LaGrange County, the Service will begin restoration of a 30-acre wetland this fall in conjunction with the Lake Shipshewanna enhancement project. The restoration site is a drained wetland that will be restored by constructing a levee and control structure. The project is being funded by the Service's Wetland Restoration Program, the IDNR, and the Shipshewanna Lake Association. Additional engineering assistance has been provided by the Soil Conservation Service. The project is designed to provide water quality improvement to the lake and will also improve fish and wildlife habitat in the area. The Service expects the project to be completed next summer.

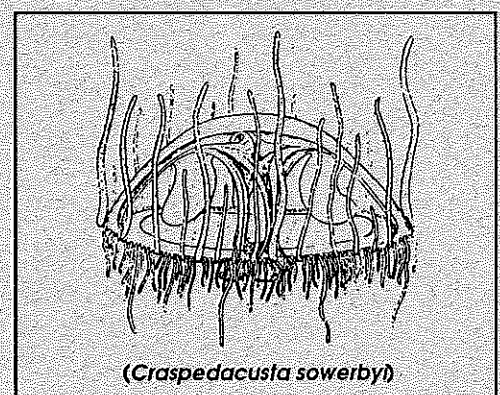
The Service has restored 375 wetlands in Indiana through this program. Landowners, lake associations, and others interested in learning more about the Wetland Restoration Program should contact the U.S. Fish and Wildlife Service, 718 North Walnut Street, Bloomington, Indiana 47404 (812)334-4261. (Jim Ruwaldt, U.S. Fish & Wildlife Service)

## CLP Volunteer Monitors Research Freshwater Jellyfish in Yellowwood Lake

Don and Elsa Schwartz, Volunteer Lake Monitoring Program volunteers on Yellowwood Lake in Brown County since 1990, became interested in freshwater jellyfish (*Craspedacusta sowerbyi*) after observing the organisms in the 120-acre reservoir. From mid-July to late-August 1990, the

jellyfish became more and more abundant in the upper end of Yellowwood. At times, there seemed to be "clouds" of jellyfish in

the water and Don easily captured some in empty milk jugs. *Craspedacusta* is the only freshwater jellyfish in North America. The medusa (or adult) stage that Don and Elsa observed (see sketch) is



(*Craspedacusta sowerbyi*)



approximately one-inch in diameter and feeds on zooplankton. Medusa emergence from the polyp (larva) is sporadic and swarms may appear suddenly where none had been observed for years.

This year, after borrowing the necessary equipment from SPEA, Don set out to conduct a population study of the jellyfish in Yellowwood Lake, during his bi-weekly Secchi disk measurements. But plankton net tows from the lake bottom to the surface during July and August 1991 failed to produce any jellyfish. Don offers the following observations to explain the lack of jellyfish in 1991:

—the hot, dry summer resulted in water temperatures that may have been too warm to favor medusa formation.

—the rooted aquatic vegetation in the lake's upper end during 1990 was dominated by emergent forms, whereas in 1991, the aquatic vegetation was dominated by submersed forms that created dense stands that may not have allowed enough open water for the jellyfish.

Despite the lack of jellyfish during 1991, Don and Elsa found both their study and their participation in the Volunteer Lake Monitoring Program most rewarding. "We really got a feeling for the 'rhythms' at Yellowwood, and had many pleasurable hours canoeing there," they said. In November, Don and Elsa will move to Pennsylvania. We wish them well.

### **Public Meeting Scheduled for Clean Lakes Program and Lake Enhancement Program Grants for 1992**

A public meeting has been scheduled for all those interested in learning more about funding opportunities available for 1992 through the U.S. EPA Clean Lakes Program and IDNR's Lake Enhancement Program.

The meeting will be held on Monday, November 25, 1991 from 10:00 a.m. to 3:00 p.m. in the First Floor Conference Room at the IDEM Building at 105 S. Meridian in downtown Indianapolis. Representatives from IDNR, IDEM, and the U.S. EPA will be present to explain their 1992 program funding priorities and to answer questions. For more information, contact,  
John Winters (317) 243-5028 or  
Paul Glandon (317) 233-3870.

## **Revision of 327 IAC 5**

At the request of the Water Pollution Control Board in 1990, a committee was formed to consider the proposed revision to 327 IAC 5 which details how National Pollution Discharge Elimination System (NPDES) permit limits are determined based on the water quality standards. NPDES permits are issued to point source dischargers (for example, wastewater treatment facilities). They set limits on the types and amounts of pollutants that may be discharged by the permit holder. The committee consisted of members of the regulated community, the environmental community, and IDEM staff.

The committee met four times to discuss such issues as: (1) level of detection problems, (2) background concentrations, (3) how to handle bioconcentrating chemicals of concern (BCCs), (4) NPDES permit limit calculation procedures, and (5) the variance procedure. The proposed revision incorporates the lake discharge policy which establishes special wastewater treatment requirements for discharges directly to lakes or to a tributary within two miles upstream. Also, the Great Lakes Water Quality Initiative procedures were discussed as many of the same issues were involved in both discussions. The proposed revisions to 327 IAC 5 are expected to be presented to the Board in December 1991.

For further information, contact Lonnie Brumfield (317) 232-8705 or Mark Stanifer (317) 232-8431 at IDEM.

## **The Great Lakes Water Quality Initiative (GLWQI)**

The Critical Programs Act of 1990 requires EPA to develop and publish guidance to the Great Lakes States on appropriate criteria to protect human health, aquatic life, and wildlife in the Great Lakes Basin as well as guidance on how to implement these criteria and the antidegradation policy. The EPA proposed to accomplish this task through the GLWQI.

Technical staff from each of the Great Lakes States and from the affected EPA regions have been meeting and working on the development of these criteria and implementation procedures once a month for over a year. Input from environmental groups and the regulated community was obtained through a Public Participation Group which met regularly with the Technical Workgroup. A steering

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(GREAT LAKES . . .  
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committee consisting of the Water Directors from each of the Great Lakes States and the EPA regions and headquarters provided guidance and direction to the Technical Workgroup and will be asked to give their approval of the Workgroup products for publication in the Federal Register for public comment.

From the outset, one of the main objectives of the process was to develop criteria and implementation procedures which could be applied consistently by all the Great Lakes States. The Workgroup now feels that the guidance is as complete as it can be without public input and comment. The guidance contains criteria to protect aquatic life, human health and wildlife, and procedures detailing how to calculate these criteria, as well as guidance on how the criteria will be implemented into permit limits and how the antidegradation policy will be implemented. It is expected that the Steering Committee will vote to approve this guidance package for publication in the Federal Register for public comment at their November meeting. If all goes as planned, the guidance should appear in the *Federal Register* in March 1992. For further information on the GLWQI, contact Dennis Clark (317) 243-5037 or Lonnie Brumfield (317) 232-8705 at IDEM.

## Pesticide Applicator Training

Training in the proper use of aquatic herbicides and basic aquatic plant identification is offered by the Indiana State Chemist's Office and Purdue University Cooperative Extension Service. Individuals who complete the training and pass a test receive a Pesticide Applicator License. Successful completion of both the category training and core training are required. Core training includes pesticide classification, formulation, toxicity and hazards information as well as label interpretation and Indiana pesticide law. The category specific training provides information about aquatic plants and aquatic pesticides.

Core training sessions and exams are scheduled for 11 dates between November 1991 and March 1992. The training and exam for the aquatic pest control category (category 5) is offered only once on March 31, 1992. Each training session costs \$45 and they are held at Purdue University in West Lafayette. Call (317) 494-2753 for registration information.

Pesticide applicator training and licensing

provides valuable information which will help lake associations and lake shore residents evaluate and manage aquatic plant communities. However it is not currently required in Indiana for private individuals to use aquatic herbicides. A permit from the Indiana Department of Natural Resources is needed, however, by all individuals who wish to chemically treat more than one-half acre of aquatic vegetation. (Paul Glander, DNR)

## Videotape on Wetlands Available

A 23-minute videotape that shows farmers the advantages of wetlands on a farm is now available from the Soil Conservation Service (SCS). "The Wealth in Wetlands" features interviews with farmers from California, Indiana, Louisiana, Minnesota and New York. The video, narrated by actor Leslie Nielsen, shows wetland restoration techniques and provides sources of help for wetland restoration and conservation.

Videotape sponsors are the SCS, National Association of Conservation Districts (NACD), Successful Farming magazine, Ducks Unlimited Inc., U.S. Fish and Wildlife Service, and the National Fish and Wildlife Foundation. Copies are available for loan from local offices of SCS and the other sponsors. The VHS tape may also be purchased for \$10.00, or borrowed for \$5.00 from NACD, P.O. Box 855, League City, TX 77574-0855; (800) 825-5547. (*Water Impacts*)

## Considerations in Buying Shoreline Property

*[Ed. note: This begins a multi-part series on the planning, development, and management of lakeshore property. This first part is adapted from "A Guide for Buying and Managing Shoreland" (Minn DNR, 1990) and "Inland Lake Watershed Analysis—A Planning and Management Approach" (Mich DNR, 1975).]*

The desire to own lakeshore property in Indiana is stronger than ever. Lakeshore lots continue to command significantly higher prices than lots without water frontage. However, uncontrolled and unplanned lakeshore development can be detrimental to our water resources. Without controls, land with water frontage tends to be divided into smaller and smaller lots. Scattered homes merge to form a continuous band of buildings along lakeshores,



resulting in the destruction of natural vegetation and scenic beauty. As prime lots become developed, marginal properties with steep slopes, high water tables or severe flooding potential receive development pressure.

There are a number of different types of shoreline that can be defined around lakes. Several have serious limitations for development.

—*Wetlands*: Wetlands should never be developed. High water tables preclude conventional construction of homes and septic systems. Wetlands are more valuable as wildlife habitat and water purifiers than they are for building sites. In addition, the alternation of or filling in of wetlands requires state and federal permit approval.

—*Berms*: Berm areas may be too small for both buildings and adequate access roads. High water tables and nearness to surface water on both sides increases the risk of water contamination. Indiana state regulations require that the bottom of septic systems be at least two feet above the water table. Local regulations may be more restrictive.

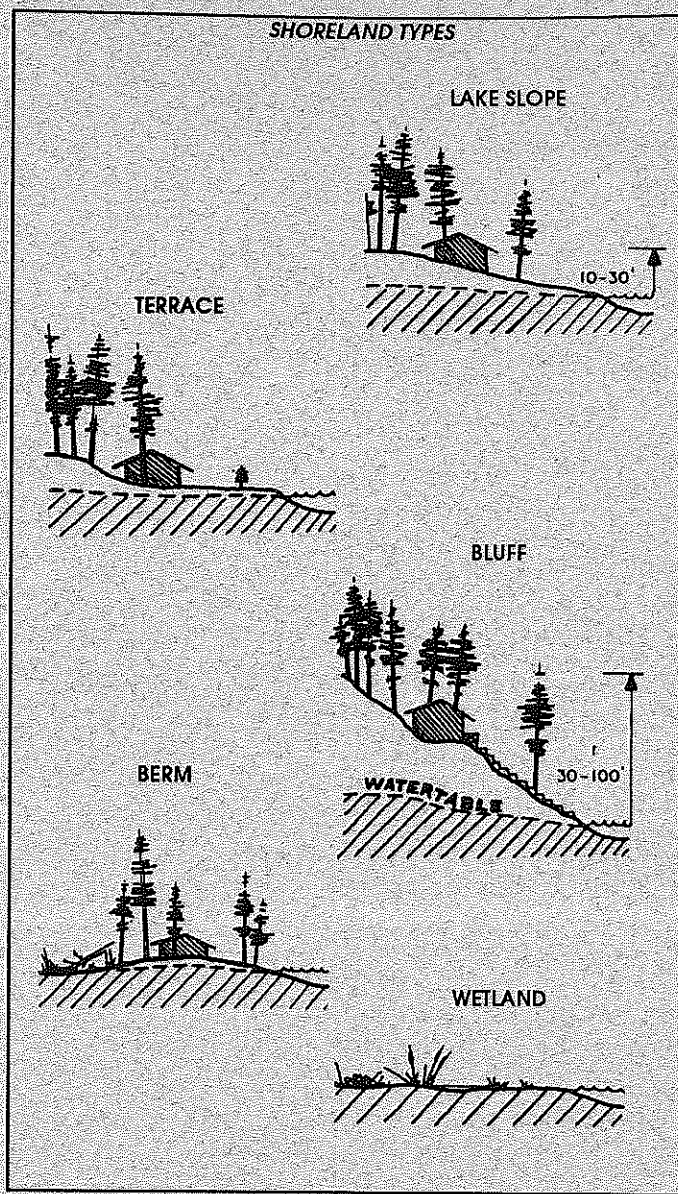
—*Bluff*: Lakeshore bluffs can be attractive building sites but they require extra engineering precautions to prevent soil erosion along the steep slopes. Often times, slopes are too severe for local or state septic system regulations. Indiana state regulations prohibit installing septic systems on slopes of 15% or greater.

—*Terrace and Lake Slope*: These two shoreline types are relatively well-suited for development.

Lakeshore lots should be large enough to accommodate your intended use, as well as comply with local zoning requirements. Although the size of the lot may meet zoning requirements, the slope can restrict the use and location of structures. Long, narrow lots or pie-shaped lots may make it difficult to meet some of the requirements for setbacks, lot widths and sewage treatment systems.

The consequences of overdevelopment along lakeshores affect all Hoosiers. Degraded property values, polluted lakes and wells, flood damage, and increased public service costs can result from poor planning, development and management of lakeshore areas.

[Next Issue: "Scenic Values and Visual Qualities"]



#### WATER COLUMN

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

Address all correspondence to:  
SPEA 347  
Indiana University  
Bloomington, IN 47405

Phone: (812) 855-4556



## Meetings

- **November 21-22, 1991—Annual Meeting of the Hoosier Chapter of the Soil and Water Conservation Society.** Brown County State Park, Nashville, Indiana. Contact: Walt Douglas, (317) 653-9785.
- **December 2-4, 1991. Annual Conference of the Indiana Association of Soil and Water Conservation Districts.** Purdue University, West Lafayette, Indiana. Contact: John Wellman, (317) 494-0243.
- **March 5-6, 1992. Indiana Chapters of the American Fisheries Society and The Wilderness Society.** Contact: Tom Lauer, (317) 232-4080.

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