



Office of Water Management
Indiana Department of
Environmental Management

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7th Indiana Lake Management Conference

One hundred and twenty participants attended the 7th Indiana Lake Management Conference held April 7 and 8 in Warsaw. The conference, sponsored annually by the Indiana Department of Environmental Management, featured workshops, watershed tours, exhibits, and talks about many facets of lakes in Indiana.

The conference began with a Friday morning interactive "Know Your Watershed Workshop", presented by the Conservation Technology Information Center (CTIC). After "breaking the ice," participants broke into small groups in an exercise demonstrating consensus building techniques. The information presented is part of a new series of publications produced by CTIC.

Following lunch, we boarded buses for a tour of the Upper Tippecanoe River Watershed Project area. The tour, organized by Kosciusko County District Conservationist Sam St. Clair, included examples of: no-till cropland, conservation reserve program land, water and sediment control basins (WASCOBS), grassed waterways, filter strips, wetlands restoration, upland habitat development, and cow and duck manure management. All of these practices help reduce nonpoint source pollution loading to lakes in the Upper Tippecanoe River basin. The last stop on the tour was the Tippecanoe Country Club where the Kosciusko County Lakes Preservation and Development Council and the Lake Tippecanoe Property Owners, Inc. sponsored a buffet dinner followed by entertainment. A fun time was had by all!

Saturday morning's sessions included talks on the abundance and size of large-mouth bass in Indiana, the ecology of zebra mussels, the affects of acid mine drainage on stream invertebrates, the Starve Hollow Lake restoration project, and results from the 1994 Great American Secchi Dip-In. Following a luncheon was a session targeted toward the needs of lake associations. Talks covered a variety of interesting topics including: lake association liability issues, Lake Maxinkuckee macrophyte plantings for improving aquatic habitat, land acquisition for water quality protection at Lake Wawasee, and septic system dye testing at Clear Lake.

A limited number of conference programs with abstracts of the talks presented are available free by contacting us at the *Water Column*.

Bright Future for Indiana's Nonpoint Source Program

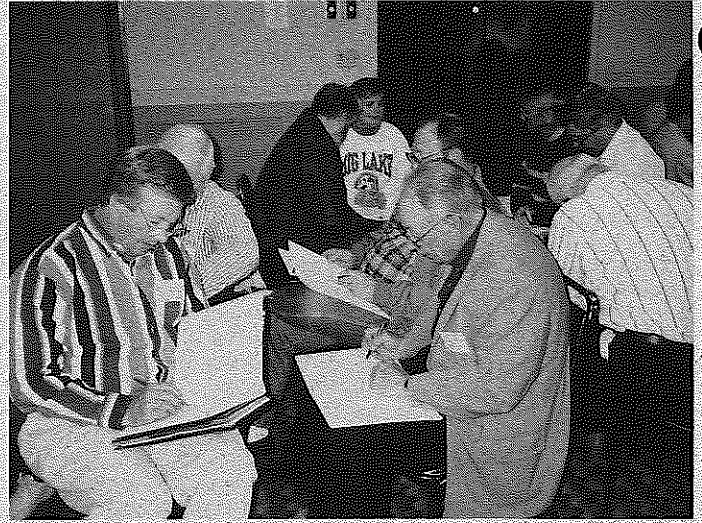
Indiana's Nonpoint Source (NPS) Program, administered by the Indiana Department of Environmental Management, is only five years old. In those five years, over 70 local and statewide projects have been initiated. Over \$4.5 million has been awarded to various groups, organizations, universities and agencies across the state to carry out NPS implementation projects. All of this was accomplished with only two IDEM staff to administer the program. Two additional staff were added to the program last year to handle contracts, accounting, project oversight and other program issues. For 1995, seven to ten additional NPS staff have been approved for this program. By expanding the NPS staff, there will be more opportunity for staff members to get out and work in the field to provide technical and administrative support to local projects.

The 1994 year of the Section 319 program in Indiana was funded with \$2,904,019 of federal/state funds, \$1,742,411 being provided by federal funds. Section 319 of the federal Clean Water Act provides support for local and statewide NPS projects. Besides providing staffing and equipment for the IDEM's Office of Water Management, it funded the following projects, with the amounts shown representing the federal funding for the projects:

Indian/Pine Watershed—Purdue University will be utilizing \$100,000 to study the watershed of Indian Creek and Pine Creek watersheds. This project will determine the

(Continued on page 3)

Scenes From the 7th Indiana Lake Management Conference



Participants worked in small groups in the "Know Your Watershed Workshop."



The Exhibit Hall was the source of much lake information.



Sam St. Clair (l.), Kosciusko County District Conservationist, leads the watershed management tour.



Scott Fetters, U.S. Fish & Wildlife Service, describes a wetland restoration project during the watershed tour.



Tour participants tour a livestock waste management facility. This best management practice also included a wetland treatment system for the effluent.

NONPOINT SOURCE PROGRAM. . .
continued from page 1)

Quality of the water system and the impacts made on it by the historic and continuing changes in land use. **Informational and educational** materials will be published and distributed, as well as a presentation developed for the state workshop.

Lake Monroe Watershed—Indiana University will be utilizing \$91,077 to study the watershed of Lake Monroe. This project study will be conducted using the same parameters as the Indian/Pine Watershed project. The results of the two projects will be compared to determine the differences in **watershed characteristics** and how they are affected by NPS pollution. This information will help to illustrate the potential need for specific land treatments for the various characteristics found throughout Indiana.

Forestry Best Management Practices—Utilizing \$57,400 to develop best management practices for **forestry application**, the IDNR Division of Forestry will conduct training sessions and field days using demonstration projects. A manual, informational/educational materials, and video, plus various news publications, will be produced and published. Once the BMPs are determined, the project will shift to an implementation and monitoring mode.

Wabash Watershed Management—The Friends of the Lumberlost will be utilizing \$51,650 for the reduction of sediment and nutrient loading in the Wabash River by applying **best management practices**. A 70 percent/30 percent cost-share program will be established for landowners interested in installing vegetative filter strips, riparian forest buffers along open streams, and fencing to exclude livestock from critical areas.

Upper Wabash River Restoration—The USFWS will be utilizing \$75,000 for work to determine how restoration of native habitats can be used to enhance water quality. Through a cooperative effort with other agencies and private landowners, up to 500 acres of **wetlands, bottomland hardwood forest, and native prairie** will be restored within the upper Wabash River watershed.

1995 Farm Progress Show/State Fair—Purdue University will be utilizing \$35,000 for the building of a mini-watershed at the 1995 Farm Progress Show and the enhancement of an already existing mini-watershed at the 1995 **Farm Progress Show** and the enhancement of an already existing mini-watershed located at the **Indiana State Fairgrounds**. The project will educate landusers on what a watershed is and how residents and landusers within a watershed affect the quality of water. Assistance and resource information will also be provided about the control of NPS pollution.

Crop Nutrient Training—Utilizing \$71,897, the Purdue University Cooperative Extension Service (CES) will be educating producers, fertilizer dealers, consultants and agency

personnel on **crop nutrient and manure management**. The CES will also be demonstrating various best management practices and providing information that can be used by the participants that will enhance the utilization of crop nutrients, manure, and yard waste in cropping systems.

Quality of Precipitation—The USGS will be using \$209,695 to **monitor the quality of precipitation** at a monitoring site located at the Gary Regional Airport. This is a continuation of a previous project. The data collected is needed to evaluate possible sources of atmospheric NPS pollution in northwest Indiana.

West Boggs Lake—The Joint Daviess-Martin County Park and Recreation Board will be using \$38,900 for the **construction of two wetlands** at the site. The structures will serve as sediment and nutrient traps, preventing the majority of these contaminants from reaching the main body of the lake.

Filter Strip Project—Utilizing \$25,050, the Kosciusko County SWCD will hire a person who will promote the benefits of **vegetative filter strips**. This person will undertake the campaign of disseminating information and making numerous personal contacts in an effort to promote the use of the filter strip. Cost-share payment will be offered for grass, legume, and tree plantings that will be maintained for a minimum of five years.

Augusta Lake Remediation—The USFWS will be utilizing \$75,000 to plan, implement, and complete a plan using anoxic limestone drains and create wetlands to abate the effects of **acid mine drainage** on Augusta Lake. This is a continuation of a previous project.

Nonpoint Source Training Seminars—The NRCS is utilizing \$22,000 to conduct seminars and participate in conferences on NPS best management practice issues related to **watershed management**. The seminars will be held at different locations around the state in an effort to reach the widest range of citizens and professionals that are involved with or concerned about methods that can be used to resolve issues concerning watershed management.

Know Your Watershed—The Conservation Technology Information Center will be utilizing \$25,000 to develop a **citizen outreach** component of its current "Know Your Watershed" program.

Groundwater Monitoring Network—The Indiana Geological Survey will utilize funds in the amount of \$50,000 to provide for the design of an implementation plan for a statistically valid statewide **groundwater monitoring network**.

CROPS—The NRCS, using \$100,000, will develop software adaptable to Indiana for the Comprehensive Resource Planning System (CROPS). CROPS is a **decision support**

(Continued on next page . . .)

model to assist farmers to plan and implement economically sound, multi-year crop production systems while complying with applicable environmental criteria and standards.

Indiana's Volunteer Lake Monitoring Program is Alive and Well!

1995 marks the seventh year of the Indiana Volunteer Lake Monitoring Program. Starting with 42 lakes in 1989, the program has expanded to include 84 lakes in 1994. In 1994, volunteers made 654 Secchi disk transparency measurements on their lakes. Thus far for 1995, we have added and trained new volunteers on: Bass, Maxinkuckee, Pleasant, Shipshewanna, Upper Long, Waubee, and Webster lakes.

If you have one hour of time to donate once every two weeks, and are committed to protecting the beautiful lakes of Indiana, contact us at the *Water Column* and we can get you information on how **YOU** can join with many other dedicated Hoosiers to become a volunteer lake monitor.

The summary report of the latest volunteer lake monitoring results is now available while supplies last. Secchi disk transparency, total phosphorus, and chlorophyll results are included for monitored lakes. Long-term transparency trends are analyzed for lakes with five years of data. If you'd like a copy of this free report, send your request to the *Water Column* or to IDEM.

Indiana Volunteer Lake Monitoring Program Results for 1992-93
Indiana Department of Environmental Management
December 1994

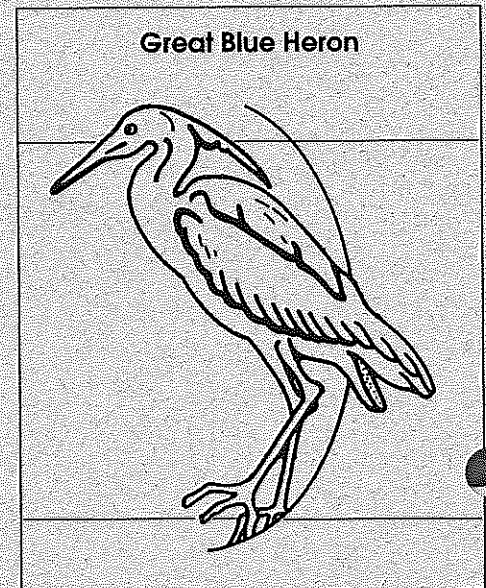


Great Blue Heron Making a Comeback in Indiana

In a recent article in Bloomington's *Herald-Times* newspaper, writer Harold Allison discussed the most magnificent of our native Indiana water birds, the Great Blue Heron. (The Great Blue Heron is featured on the Indiana Clean Lakes Program logo.) This bird is apparently making a comeback in our state. A survey conducted in 1994 found a 25% increase in Great Blue Heron nests over a 1990 survey.

Biologists found 75 active heron colonies that contained from two to 526 nests. While rookeries were found in 45 Hoosier counties, the largest were found in Martin, St. Joseph, Steuben, and Johnson counties.

Great Blue Herons prefer large trees to nest in. They usually build their nests in beech, elm, or sycamore trees. Some trees may have several nests. From three to five greenish-blue eggs are



produced by the female Great Blue Heron in the spring. While the Great Blue Heron on occasion nests by itself, it often nests in rookeries along with Great Egrets, Black-crowned Night Herons, and other species of herons.

The Great Blue Heron is blue-gray in color, and has a yellow bill. It may be up to four feet in height, with a wingspan of around 70 inches. They have a dagger-like bill, and fly with a folded neck. They are often miscalled cranes.

Great Blue Herons are listed as a bird of special concern in Indiana. Apparently the decline in their numbers is the result of a number of events. The destruction of habitat: the draining of wetlands, cutting of forests, etc., has been a major factor. In the past, many herons were shot for "sport" or food. Also, many eggs were taken from nests by collectors or were destroyed by fires or the felling of trees. In addition, it is believed a large part of the decline had been due to the large amount of pesticides in fish consumed by the birds.

While fish are the primary food of the Great Blue Heron, they also eat some land-dwelling creatures. Carp, suckers, sunfish, and catfish are among the fish most often consumed by the herons. Also, frogs and crayfish are caught by these large birds.

Great Blue Herons need wetlands to survive. They

frequent swamps, marshes, flooded fields, lakes, ponds, streams, and ditches. A shallow wetland with a profusion of emergent vegetation is ideal Great Blue Heron feeding habitat.

Some of the Great Blue Heron rookeries in Indiana have been utilized for years. One in Montgomery County has probably been utilized for more than a hundred years. One large rookery in Lake County along the Kankakee River that was known as "crane heaven" once covered up to 40 acres and contained up to a couple of thousand nests. Other large rookeries were also once found in Steuben, Starke, and Jasper counties.

Blastomycosis: How Big A Threat?

[*Editor's note:* The following article appeared in *LakeTides*, a Wisconsin lakes newsletter produced cooperatively by the Wisconsin Lake Management Program and the University of Wisconsin-Extension. *Water Column* reprints the article here to keep Indiana citizens informed. We will continue to follow this development and its potential impact in Indiana.]

The recent death of former Menominee Tribal Chair Glen Miller and two others this year from blastomycosis has caused anxiety for many waterfront property owners. Residents near Clintonville (Wis.), where two women died early this year, as well as homeowners near Ward Pond in Merrill (Wis.) have voiced concern at recent lake meetings.

The fungus that causes this disease tends to live in moist soils with a high organic material content and an acid pH; i.e., near waterways. Its spores are released by ground disturbance and can be inhaled into the lungs where they convert to a yeast that causes flu-like or pneumonia symptoms that don't go away. Another symptom is that skin lesions don't heal. The incubation period for blastomycosis varies from 15 to 90 days.

According to Kurt Reed, Director of Microbiology at Marshfield (Wis) Clinics, people should not be overly concerned. Although blastomycosis can be fatal, it is relatively uncommon among humans. Says Reed, "People with underlying health problems are more at risk, and Wisconsin physicians are very aware of the problem of blastomycosis. This leads to early diagnosis and treatment with new antibiotics that are more tolerable." He does not recommend that people avoid their usual outdoor activities, but should be aware that this problem exists and seek treatment if symptoms persist.

What's the Fuss About Personal Watercraft?

Love 'em or hate 'em, personal watercraft (aka: jet skis, wave runners) are here to stay. Nationally, sales rose to about 110,000 in 1994, with approximately 750,000 units now in operation. Indiana's share reflects a similar increase.

Personal watercraft utilize jet propulsion engines which

induce a horizontal stream of water to propel the craft. There are no propellers in the water.

Personal watercraft are the objects of a number of safety and environmental concerns. Indiana DNR conservation officer Dow Meyers stated recently that most of the watercraft accidents seen involve personal watercraft. Although there are few boat-to-boat accidents, wipe-outs with personal watercraft make up most of the accidents.

Personal watercraft can operate in much shallower waters than most other watercraft. The combination of shallow water, high speed, and noise has a greater potential to resuspend bottom sediments, increase shoreline erosion, damage water bird habitats and aquatic vegetation, or scare away birds and other wildlife which many lake users enjoy seeing. Noise from personal watercraft is often above the annoyance threshold for other people living on or recreating in the lake.

Beginning July 1, new Indiana regulations governing the operation of personal watercraft became effective. These include:

- No riding backwards.
- No towing water-skiers or aquaplanes unless the watercraft is at least 10 feet long, designed to seat at least three people, and has an observer on board in addition to the driver.
- The personal watercraft must be designed to idle down and circle its operator if the operator falls off, unless the operator is attached to a cut-off switch by a cord known as a lanyard.
- A personal watercraft cannot be used for such acts as weaving through congested water traffic, following a craft which is towing skiers, and jumping the wake of another craft in ways that endanger "human life, human physical safety, or property."

Anyone caught violating the new laws can be cited with misdemeanors or infractions which carry a fine of \$64.

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Lake Water Quality Assessment in Indiana

In its continuing program to routinely assess water quality in all Indiana public lakes, the Indiana Clean Lakes Program staff from Indiana University will begin the summer sampling lakes in Elkhart, Kosciusko and Marshall counties. From there, the sampling team will move west across the state and then south. It takes about five years to sample all of Indiana's lakes under the program. The past three years were spent assessing water quality in northeast Indiana counties, where the majority of natural lakes are located.

The data collected in this program are reported to the U.S. EPA in the bi-annual 305(b) report and are shared with other state and local agencies involved in managing Indiana's lakes.

Is Oligotrophy BAD?

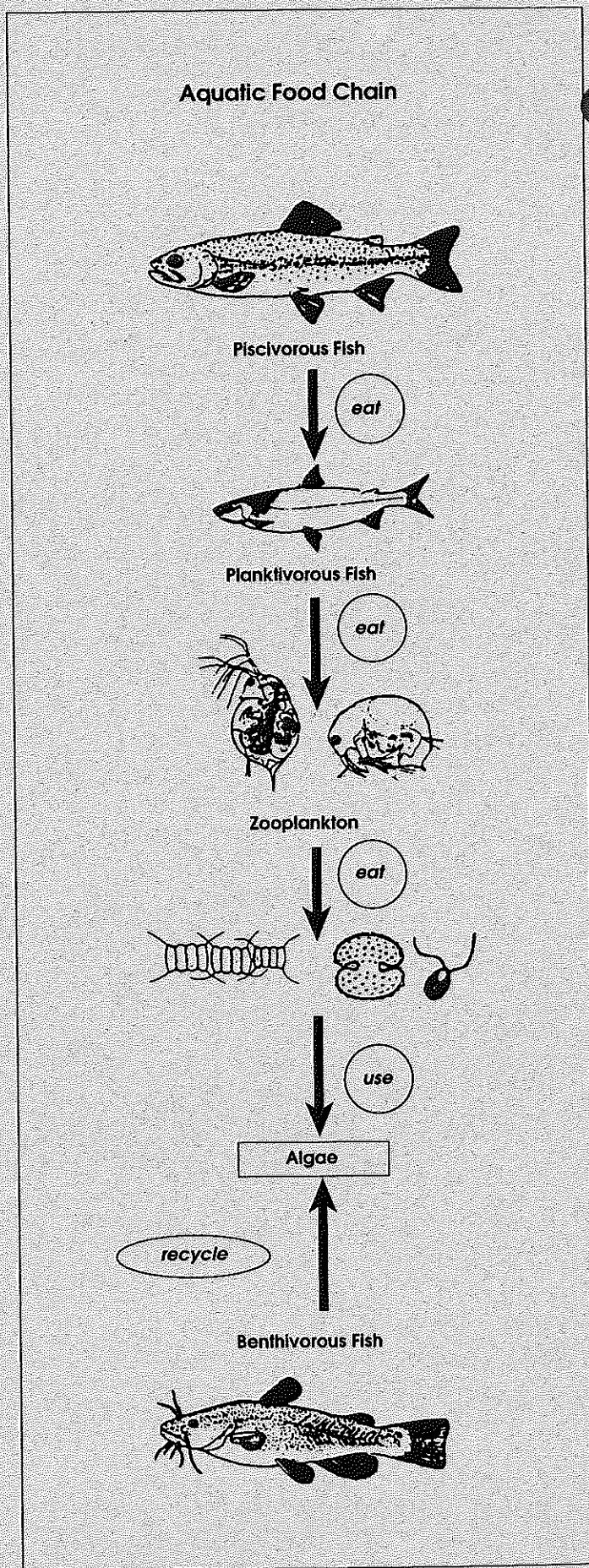
by Bill Jones

[*Editors' note: Oligotrophy is a lake condition where nutrients are few, algae production low, and the water is clear. It is the opposite of eutrophy, a condition of high nutrient concentrations, dense algae blooms and poor water transparency.*]

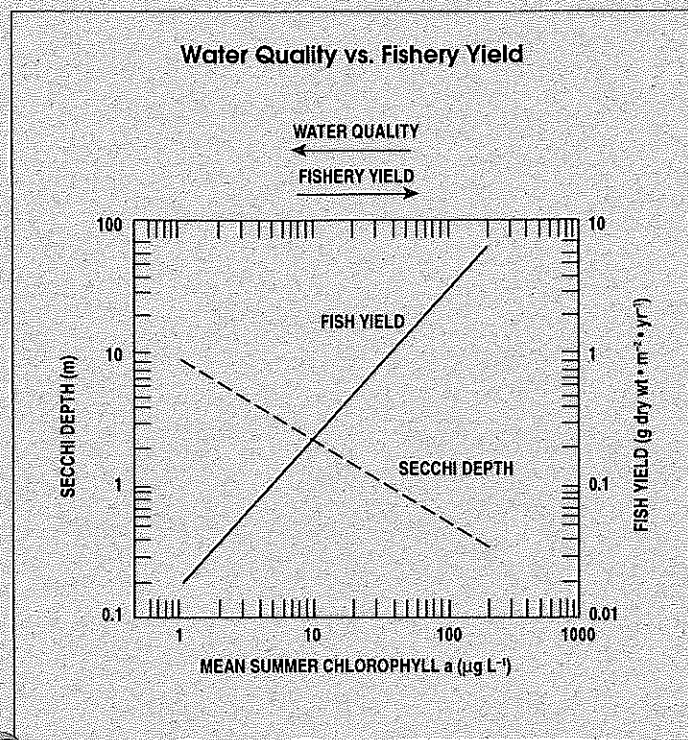
I just returned from Chattanooga where I was invited to present a paper at an American Fisheries Society meeting on, "Multidimensional Approached to Reservoirs' Fisheries Management." While I was one of the few limnologists in attendance, it was nonetheless interesting to listen to lake management from the perspective of fisheries managers.

However, I was surprised when several speakers addressed the topic of "How to avoid oligotrophy." Now, many limnologists and lake managers have worked their entire professional lives trying to reverse eutrophication and its effects from lakes and reservoirs, with oligotrophy, or something approaching it, the goal. So it was a shock to hear people advocate just the reverse. What gives? Are fisheries managers and limnologists working in opposition? Is there something good about eutrophication (or bad about oligotrophy) that we've ignored all these years?

Well, I believe that the answer lies somewhere in between. To find the answer, we must look more closely at the eutrophication/fish production relationship. Carnivorous gamefish such as bass, walleye, pike, etc., are at the top of the aquatic food chain. They eat other fish, which eat zooplankton and insects, which in turn eat algae. Algae and rooted aquatic plants are the primary producers of the system. They use nutrients and light energy from the sun to produce plant tissue, which as a form of stored chemical energy, powers the entire aquatic food chain. Without algae, freshwater aquatic food chains would collapse. No (or very few) gamefish could be supported. So, can we have crystal clear water and an abundance of



order to produce gamefish, you must have algae. But this has a cost—reduced transparency. As the figure illustrates, as algae (as measured by their chlorophyll) increase, fish production also increases but transparency worsens.



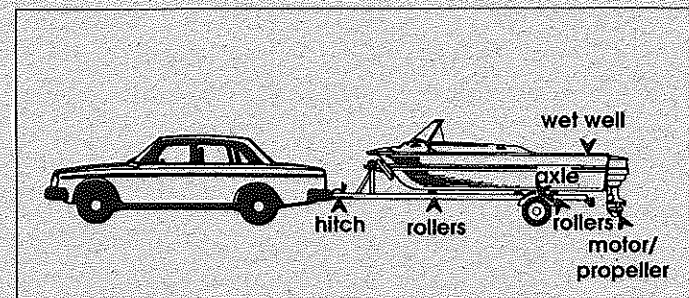
However, if nutrients become excessive, algae grow like crazy and we know what problems that causes—scums, odors, low oxygen, poor transparency, stunted fish and ultimately fish kills. Highly eutrophic conditions aren't good for fish either.

What we need in our lakes is a balance. A balance between clear water and enough algae and rooted plants to fuel the food chain. This balance is difficult to achieve and even more difficult to maintain.

The goal of limnologists and lake managers is not necessarily *oligotrophy*, nor is the goal of fisheries managers *eutrophy*. What we are all trying to achieve is a balanced, stable system which offers lake use benefits to the widest variety of people. We must better communicate these purposes to our public and to each other, or we risk losing our focus and public support.

STOP the Spread of Milfoil!

Boaters can help prevent the spread of Eurasian water milfoil and other invasive plants by removing all aquatic weeds from trailers, boats, motor/propeller, and anchors before leaving an infested lake and before launching at a noninfested lake. Special care should be taken to remove aquatic weeds from the wet wells of trailered boats and the interior of cartop boats and canoes. Small fragments of milfoil can grow into new plants even after being out of the water a week.



Meetings

August 6–9—50th Anniversary Meeting Soil and Water Conservation Society, Des Moines, IA. Contact: Tim Kautza, 1-800-843-7645.

September 18–20—Versatility of Wetlands in the Agricultural Landscape, Tampa, FL. Sponsored by the American Water Resources Association. Contact: Kerry L. Curtis (703) 904-1225.

November 6–11—15th International Symposium of the North American Lake Management Society: Aquatic Ecosystem Stewardship, Toronto, Canada. Contact: Neil Hutchinson (705) 766-2418.

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