

Volunteers Identify Lake Problems

The annual questionnaire sent to all volunteers participating in the Indiana Volunteer Lake Monitoring Program yielded some interesting results. Sixty-one volunteers returned the completed questionnaire, a 63% response rate.

When asked to identify problems that interfered with their use and enjoyment of the lake, nearly one-half of the volunteers listed “excessive weeds” as the number-one problem. Algae blooms were the second-most-mentioned problem (36% of respondents). The top eight problems identified are listed in the table below.

Thirty-nine percent of the respondents stated that their lake had been chemically treated for aquatic weeds and another 18% of the lakes had been chemically treated for algae.

Problems Affecting Use/Enjoyment of Volunteer Monitored Lakes

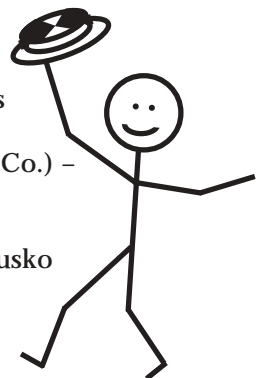
	<i>Total</i>	<i>Percentage</i>
Excessive Weeds	30	49%
Algal Blooms	22	36%
Silt	21	34%
Boat Traffic	16	26%
Jet Ski Traffic	16	26%
Large Waterfowl Population	16	26%
Low Water Level	14	23%
Rough Fish Population	12	20%

Volunteers Retire

Sadly, we say good-bye and thanks to seven volunteer lake monitors who have “hung up their Secchi disks.” These volunteers have 36 years of volunteering experience among them. We certainly appreciate all of our volunteers, but we must point out that Bill DeRyk made 82 Secchi disk measurements during his years of service while Arnie and Velda Dose made 197 Secchi disk measurements on the two lakes they monitored so faithfully for 12 years.

These efforts exemplify the interest and dedication of the volunteers in the program. Indiana’s lakes are better understood and cared for as a result of their generous efforts. Thank you from all of us in the Indiana Clean Lakes Program and the Indiana Department of Environmental Management.

- Keith and Melinda Antell (Lamb L., Johnson Co.) – 2 years
- Bill DeRyk (Big Turkey Lake, LaGrange Co.) – 10 years
- Arnie and Velda Dose (Big and Little Otter Lakes, Steuben Co.) – 12 years
- Thom Gibbons (Loomis Lake, Porter Co.) – 2 years
- Lauren Hall (Tippecanoe, Oswego, and James Lakes, Kosciusko Co.) – 1 year
- Harlan Stull (Little Turkey Lake, LaGrange Co.) – 7 years
- Corky Van (Lakes James, Steuben Co.) – 2 years



14th Indiana Lake Management Conference a Success

By Tina Hissong

The Indiana Lakes

Management Society held their 14th Annual Lake Management Conference in Merrillville this year at the Radisson Hotel on April 5 and 6. Around 100 attendees heard presentations on shoreline stabilization, the latest information on the invasive blue-green algae *Cylindrospermopsis*, new programs to combat invasive species, and lake association success stories. Despite the rash of bad luck that plagued a few of the conference speakers and kept them from attending, the program was informative and well-received. Twenty-six vendors, from nonprofit organizations to environmental engineering and consulting firms, were available to talk with attendees offering a wide range of information to further empower lake managers and lake residents with the information and tools they need to protect and restore their lakes. A goal of the Indiana Lakes Management Society with this annual conference was to provide a forum for sharing of information. To help foster the sharing of information, ILMS also provided a hospitality suite on Thursday and Friday night to bring conference attendees, speakers, and vendors together in a more casual atmosphere. A special thank-you to Commonwealth Biomonitoring and J.F. New & Associates for sponsoring the hospitality suite at this year's conference.

Despite the near-freezing temperatures and snow flurries, almost 60 hardy ILMS supporters and brat lovers attended the first annual brat fry held at noon on Friday at the Deep River Park. Let's hope for better weather next year!

At the Friday night banquet, ILMS members approved a new dues structure to ensure the

continued ability of the ILMS to provide member services, such as their quarterly newsletter and regional workshops. Two awards were presented. Jan Hosier, an Indiana University student, received top honors for her student presentation, and Holly LaSalle, former board member, was honored with a distinguished service award for her hard work and dedication for 10 years on the ILMS Board. Ron Bedwell of Lakes of the Four Seasons and Tom Johnson of Lamb Lake were voted in as new board members. Welcome, Ron and Tom! The silent auction winners were announced at the banquet also. Many thanks to those who donated items for this fun and worthwhile fundraising event.

Next year's conference will be in Indianapolis at the Garrison in Fort Harrison State Park on April 4 and 5, 2003. We look forward to seeing you there!

Bio-manipulation: A Useful Lake Management Tool

By Jan Hosier

Bio-manipulation, a lake rehabilitation technique used to improve water quality, was another popular topic at the 2001 North American Lake Management Society conference in Madison, Wisconsin. In lakes suffering from biological problems—for example, too much algae or poor game fish populations—bio-manipulation could be a treatment option.

The bio-manipulation technique uses knowledge of and manipulation of a lake's food chain to correct some water quality problems. Photosynthetic algae (phytoplankton) use sunlight and nutrients present in the water column to produce their own food. We know that excessive nutrients can cause algae blooms. The traditional approach to combat

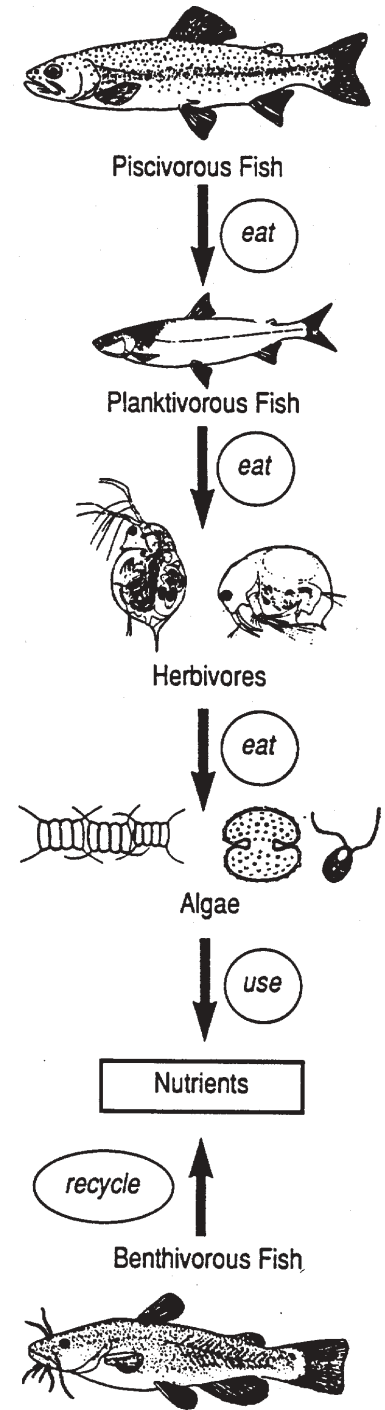


Figure 1. Lake foodchain.

excessive algae is to limit nutrient additions. This is referred to as a “bottoms-up” approach since it manipulates factors below algae on the aquatic food chain.

Algae provide the main food source for herbivorous zooplankton, tiny shrimp-like animals in the water column. *Planktivorous* (plankton-eating) fish

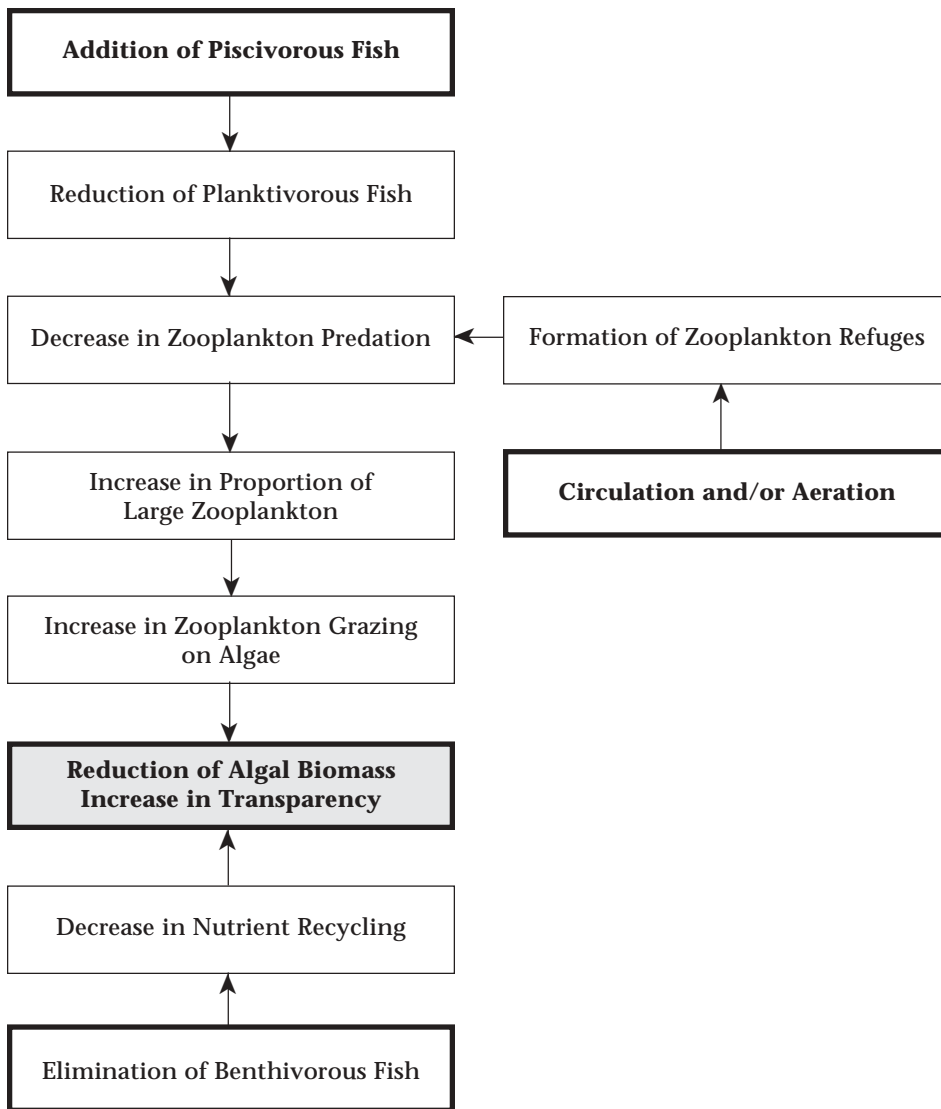


Figure 2. Biomanipulation. Adapted from Shapiro et al. 1982.

such as minnows, young bluegill and perch feed on the zooplankton and are in turn fed upon by piscivorous (fish-eating) fish such as bass, pike, and walleye. Sometimes, too many planktivorous fish can decimate zooplankton populations and result in an overabundance of algae and a decrease in water clarity. Stocking piscivores or restricting the fishing of certain size classes of piscivores can help to reduce the number of zooplankton-eating planktivores. This is called a “top-down” approach to reducing algae because it manipulates fish at higher positions in the food chain and the effects cascade down to the algae.

Zooplankton are an important part of the aquatic food chain because they are capable of completely filtering the upper layers of a lake, removing algae, bacteria, and organic matter. Maintaining zooplankton populations, either through direct addition of zooplankton or through the manipulation of fish described above, to control algae can return an altered aquatic food chain to a more balanced state. If zooplankton are being heavily preyed upon, they could benefit from circulation and/or aeration techniques that increase the amount of oxygenated refuge area available to them.

Removal of bottom-dwelling fish through harvesting is also a form of biomanipulation. Bottom-feeding fish such as carp and bullheads are responsible for the re-suspension of nutrients in the water column as a direct result of their aggressive rooting in the lake bottom sediments. Often, this increase in nutrient availability will stimulate excessive algae growth. Algae blooms, coupled with the increased turbidity caused by suspended sediments, result in decreased water clarity. An algae bloom can shade out macrophytes growing in the lake that serve as important fish habitat for developing piscivores.

Many lakes suffer from an overabundance of nutrients that find their way into lake water via runoff from agricultural fields and urban areas. These nutrients may be accompanied by pesticides, which are toxic to many species of zooplankton. Both the increase in nutrients and the mortality of zooplankton can lead to increases in algae populations. Thus, external inputs to the lake may also require control if biomanipulation techniques are to be successful.

Before biomanipulation can be used as an effective lake management tool, it is imperative that the ecological relationships in the lake be understood. The lake’s fish community should be thoroughly surveyed to identify the number of planktivorous, piscivorous, and benthivorous fish. Also, zooplankton populations must be sampled to identify the dominant species and determine whether or not fish are feeding on them (the presence of large zooplankton suggest little fish predation on the zooplankton population) and reducing their numbers. Once information has been gathered and the specific problem identified, biomanipulation can be a relatively inexpensive way to treat a water quality problem related to algae.

New Aquatic Plant Control Regulations

A new law set to go into effect on July 1 should reduce the amount of unregulated aquatic weed control conducted at Indiana natural lakes.

The new law, based on approval of SB 230 by the state legislature and signed by the governor, modifies Section 14-22-9-10 of the Indiana Code. It requires lake residents to get a permit for mechanically removing large areas of vegetation and brings regulation of various insects or other biological agents used to control weeds under Department of Natural Resources authority.

Prior to the new law, lake residents could chemically treat up to one-half of an acre of aquatic plants or up to 50% of their shoreline without a DNR permit.

Lake residents will now be limited to treating no more than 625 square feet without a permit, including 25 feet along the shore to a maximum of depth of six feet. If they wish to treat a larger area, an aquatic weed control permit will be required.

Permits can be obtained from the DNR's Division of Fish and Wildlife and require a five dollar filing fee. Permits are typically obtained by licensed commercial applicators contracted by lake associations to treat large areas, although permits can be issued to individual property owners.

Lake residents who want to mechanically or physically remove aquatic plants will also be allowed to do so in areas up to 625 square feet without a permit.

"The new law basically allows lake residents to alter the plant community in small areas along the shore for their use and convenience," says Gwen White, fisheries staff specialist. "If they want to do things on a bigger scale, we need to look at the possible biological impacts to the lake."

In the past, vegetation could be removed mechanically without a

permit, including large beds of lily pads. At some lakes, mechanical weed harvesters were hired to cut large areas of aquatic plants, prompting local complaints from anglers and some lake residents

"The new law puts mechanical harvesting under the same restrictions as herbicide treatments," says White. "It never made sense that lake residents could cut plants anywhere they wanted."

The new law also highlights growing concern over the use of biological agents, such as weevils and beetles, to control aquatic plants. Research has shown that some insects can control certain nuisance aquatic plants under specific environmental conditions. However no law currently provides state review or oversight of their release. "The new law will allow us to manage these new technologies," says White.

Lots of Aquatic Plants Expected this Summer

State biologists are telling northeast Indiana lake residents to expect certain kinds of nuisance aquatic plants to be more abundant along their lake shoreline this spring.

Biologists say the mild winter weather and lack of ice cover gave a jump-start to early-season plant growth. Various species are well ahead of their normal growth cycle.

Eurasian watermilfoil, a non-native plant from eastern Europe,

could be especially troublesome. "Milfoil can grow in cold water temperatures as long as it gets enough light," says Ed Braun, Division of Fish and Wildlife biologist.

"Without much ice and snow cover on the lakes to block out the sun, milfoil can flourish. Once water temperatures warm up in the spring, it can really take off," says Braun.

Braun says similar weather conditions in 1998 sparked severe milfoil problems in Lake Webster, Sylvan Lake, and others. Shallow lakes with rich organic bottoms are usually the lakes affected the most.

Curly-leaf pondweed, another non-native aquatic plant, is also likely to be denser this year. Like milfoil, it can grow fast in the spring and shade out beneficial native plants. The mild winter may also stimulate certain species of algae to reach nuisance levels sooner.

Despite the likelihood of experiencing more weed problems this year, Braun advises lake residents not to over-react and initiate unnecessary and expensive weed control programs.

"My advice is for lake residents to work through their local lake associations to contract with a licensed chemical

applicator to treat nuisance plants," says Braun. "These people can correctly identify the problem, apply the appropriate herbicide, and handle all the state permitting requirements. They can also use techniques that protect beneficial plants."



**Have you checked out the
Indiana Clean Lakes Program Web page lately?**

Take a look at:

<<http://www.spea.indiana.edu/clp/>>

and see what's new and happening with the Program and with Indiana lakes!

BEFORE YOU BOAT . . . KNOW WHAT YOU TOTE!

*It's up to YOU to control
aquatic nuisance species*

NOTICE TO BOATERS

Exotic plants and animals pose a significant risk to the health of Indiana's waterbodies. These aquatic nuisance species are transported via boats, trailers, fishing equipment, bait fish and bait buckets, diving gear, and other aquatic recreational equipment. It's important to prevent the spread of zebra mussels, Eurasian watermilfoil, and other aquatic nuisance species into uninfested waters. Once established, it's impossible to eradicate these organisms and management is very expensive.

HOW CAN YOU HELP?

REMOVE all materials (plant or animal) from any equipment (trailers, motors, anchors) that has been in contact with an infested waterbody. Dispose of plant or animal material away from the waterbody. **Don't throw it back into the water.**



Eurasian watermilfoil

empty buckets of all plants and organisms. **Don't let the water drain back into the lake.**

INSPECT your equipment before you launch into, fish, dive, or paddle on another waterbody.

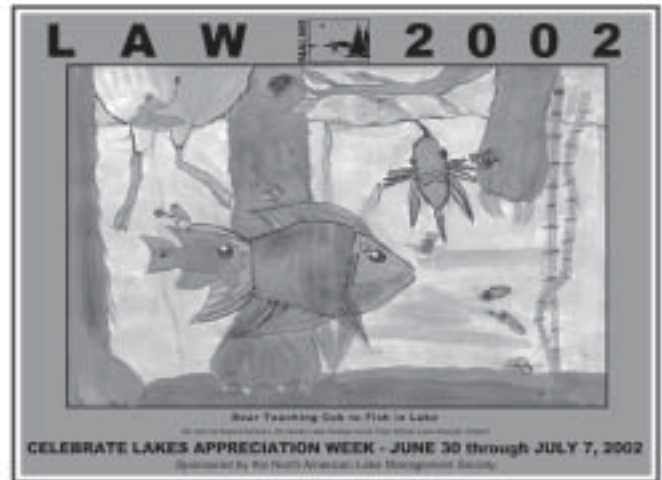


Zebra mussels

Upcoming Events

Lakes Appreciation Week 2002

Governor Frank O'Bannon has again signed a proclamation encouraging Hoosiers to celebrate Lakes Appreciation Week. This event, sponsored by the North American Lake Management Society (NALMS) seeks to raise public awareness of our Nation's lakes. The fifth annual event will be held from June 30 through July 7, 2002. For more information about what you can do, see the NALMS Web site at: <<http://www.nalms.org/>>.



The Great North American Secchi Dip-In

The 9th Annual Great American Secchi Dip-In will be held between June 29 and July 14, 2002. This event is a demonstration of the potential of volunteer monitors to gather environmentally important information on our lakes, rivers and estuaries. A goal of the Dip-In is to increase the number and interest of volunteers in environmental monitoring. The Dip-In also provides a national perspective of water quality. It gives a comprehensive glimpse at transparency at volunteer-monitored sites across. For more information, visit the Dip-In web site at: <<http://dipin.kent.edu/>>.



Do You Know?

The most useful boating and all-purpose knot available is the bowline. When properly tied, a bowline does not slip and actually gets tighter when the free end is pulled. It is a great knot for attaching an anchor, your boat's bow line, or for even tying out the family dog.

To tie: (1) make an overhand loop with the end held toward you, then pass end through loop, (2) now pass end up behind the standing part, then down through the loop again, (3) draw up tight.



Many of us learned to remember how to tie the bowline by the following mnemonic— “the rabbit comes out of its hole, runs around the tree, and goes back down its hole.”

DFW to Install More Porta-johns

State efforts to increase the number of portable restroom facilities at public boat ramps this year should provide a sigh of relief for many natural lake visitors and lake residents.

The Indiana Division of Fish and Wildlife plans to install temporary “porta-johns” at 36 lake access sites for the upcoming boating season, more than double the number provided last year.

“We see a lot of support for the program,” says Gary Hudson, DFW fisheries supervisor. “It’s one of the most popular programs we’ve had in recent years.”

Hudson says the DFW contracts with local vendors to place and maintain the restrooms from April 1 through October. Costs are lower than what it would take for the DFW to

purchase and maintain the facilities.

“We got into the program due to complaints by some lake residents that boat ramp visitors were being less than discrete,” says Hudson.

According to Hudson, the need for porta-johns is greatest in residential areas on heavily developed lakes. “That’s where we targeted the program first. Some of these ramps are right next door to lake homes,” says Hudson.

“So far we haven’t experienced any serious vandalism problems or significant complaints,” he says. “If we do, we’ll simply cut the program and take them out.”

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“When one tugs at a single thing in nature, he finds it attached to the rest of the world”

—John Muir

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