LAKE TIDES

A newsletter for people interested in Wisconsin lakes

Volume 15 No. 3 Autumn 1990

Community Focus: A Closer Look

by Sterling Strathe

What do you find when you look at the surface of your lake? *You may find the tranquility of a golden sunset, or the turbulence of a storm. If you could look even closer and peer inside your lake, you would find it consists of water molecules. Some molecules may be moved toward the surface by the molecules below them in the depths of the lake. At the surface, they must survive the sometimes harsh interface of air and water. There they define the character of the lake. Just as your lake is made up of individual water molecules, so a lake organization is made up of individuals. The good things that come about from lake organizations are often the result of the efforts of those pushed to the surface. This community focus is dedicated to those who have emerged and given their time to the betterment of their lake. The following represents a sample of such leaders.*

Jack Weil, a native Chicagoan who resides on the Spider Chain of Lakes near Hayward, is such an individual. As seasonal residents for the last 13 years, Jack and his wife have received great satisfaction and enjoyment from their life on the lake. Jack has been blessed with good health and feels that "as you reach the senior age, you need to pay something back to the kitty." During the last three years, Jack has paid back by helping to get others excited and involved with their lake. Instrumental in helping to resurrect an inactive lake organization, Jack has served as environmental chairman since its rebirth.

From ideas picked up at the Wisconsin Lakes Convention, Jack has gotten volunteers around the lake involved in water testing. The youth on the lake are a resource that Jack believes in tapping for help. He sees this as a way to develop an appreciation within our young that will help preserve the lake for generations to come.

Jack says: "The future of Spider Chain of Lakes is excellent if we can keep people working to maintain the quality of our lake. The lake test results have been so good that people may become apathetic. If lake quality is to survive in Wisconsin, we need greater regulations on septic systems, requiring both regular inspection and pumping. We have got to know that these systems are working."

Nancy Erickson, a third-generation resident on Big Hills Lake near Wild Rose, is also an individual who has done much for her lake. An environmentalist at heart, Nancy has a great love for her lake and believes in leaving it better than she found it. She sees this as a means of thinking globally by acting locally. As secretary of the improvement organization and commissioner of her lake district, Nancy has been valuable in helping to maintain contact among the lake district members. Working with a good group, she keeps the momentum going by writing an educational newsletter for the district. As one of the year-round resident commissioners, she gets called on for all types of jobs, from helping hire septic tank consultants to counting fish stocked by the DNR. Nancy sees education as the key to solving our lake problems. "People are simply not aware of the implications of their

(continued next page)

actions. Through education, we are seeing a consciousness that is leading to subtle changes around the lake. One such change has been the development of buffer zones around the lake. This won't change things overnight, but will do much for the aesthetics and quality of our lake."

Nancy feels that education can eventually handle the pollution and aesthetic problems, but sees involvement by the state as a necessity on another problem. "Surface water conflicts are becoming problems all over the state. We must have some legislation and funding to carry out enforcement." Nancy feels that without help the quality of life on our lakes will suffer as conflicts between recreationists increase.

Corky Meyer, a resident of Wallace Lake near West Bend, has influenced the future of that lake. As a member of the Conservation Congress, Corky has been a valuable contact for his lake. Serving as chairman of the Wallace Lake Sanitary District, he helped get the ball rolling on several environmental projects. A quantitative study was done of the lake to better understand the effects of weed control chemicals. Corky is extremely interested in the quality of his lake. "We wanted to make sure that these chemicals were not poisoning our lake. The chemical companies know how much to use to kill the weeds, but how did we know what they were doing was right for the lake?" The district has discontinued chemical treatment and has started weed harvesting.

Corky views himself as someone who can help make contacts and keep the proper channels of communication open. With his help, volunteers from around the lake have been successful in solving lake problems. "Lake quality can only improve. We have a new awareness around the lake. We now seek proper information about lake management, instead of closing our eyes and spending money. We have learned to ask questions first." Corky sees the pride showing in the lake community. People are interested in bringing the lake back to a natural quality. He views the problems of the future as coming from non-point pollution upstream. "This is a statewide problem that needs some serious help."

Each of these individuals has contributed to the lake they live on. Whether by helping motivate volunteers, lending a hand where needed, or making the correct contacts, each has surfaced for the future of Wisconsin lakes. Just as the seasons change and shift water molecules to the surface, you too can emerge by becoming involved in your lake organization. THE FUTURE OF YOUR LAKE DEPENDS ON YOU!

Sterling Strathe is a graduate student in natural resources at UW-Stevens Point.

Resources for Lake Management Education

On July 1, 1990, the Wisconsin Environmental Education Bill (AB 660) took effect. AB 660 was supported by the Wis. Assn. of Lake Districts and Wis. Federation of Lakes because of its potential to provide a variety of resources for lakes education. The bill establishes a state Environmental Education Board (WEEB), a $200,000 environmental education grants program, and a Wisconsin Center for Environmental Education (WCEE). All three components provide potential support for lake management education.

The WEEB board will advise and assist the State Department of Public Instruction and other agencies on identifying needs and priorities for environmental education in public schools. Funds from a $200,000 environmental education grants program will be available to nonprofit organizations and public agencies including public inland lake protection and rehabilitation districts, school districts, and lake associations.

The WCEE will be established at the University of Wisconsin-Stevens Point, with Dr. Randy Champeau as Director. The goals of the Center are evaluation and infusion of environmental education into Wisconsin school districts. A resource library will be developed as a part of the WCEE.

For information on the grants program, contact the Wis. Env. Education Board of Wis. DPI, PO Box 7841, Madison WI 53707-7841.

Eco-Notes

Through the Looking Glass: Common Lake Invertebrates II

by Ed Stern

Clams The United States contain the richest, most diverse freshwater clam fauna in the world. They are common residents in lakes and rivers. Clams move by using a strong muscular organ called a "foot" to burrow in mud or sand. Trench-like trails can be observed where clams have traveled along the bottom of a lake. Adult clams remain buried in the bottom with only a portion of their shell exposed. There they feed by filtering tiny water plants and animals called plankton from the water. Clams represent one of the most efficient groups of filter feeders. They remove not only food particles from the water but also various pollutants.

Lake species typically have thin, fragile shells, while river species are thicker and heavier. Clams possess a specialized tissue that produces a layer of shell known as "mother-of-pearl." In freshwater species, this layer has been used to make buttons and various curios, while cultured pearls are made by saltwater species.

Clams exhibit one of the most unusual relationships seen among freshwater animals. Female clams release young, known as "glochidia" larvae. These microscopic larvae become temporarily attached to the gills and fins of a fish, where they feed as parasites. They eventually drop off, settle to the bottom of the lake, and grow into adult clams. For this reason, the continued existence of the clam population is directly related to the success of the fishery.

Leeches The thought of some undulating creature subtly attaching itself to your body to feed on your blood would probably leave you feeling somewhere between squeamish and repulsed. The creature that plays that role in Wisconsin's lakes is the leech. The leech, also called a "bloodsucker" is a worm that has disc-like suckers on each end. It has a mouth centered in the front sucker, which in many species may be smaller than the rear sucker. Fortunately, not all leeches are blood suckers. And very few of the blood-sucking species prefer human blood. Some species feed on snails, worms, and insects, while others are scavengers. Those leeches that feed on blood secrete an anesthetic so their activity is painless and may go unnoticed. It also secretes an anticoagulant called "hirudin" that accounts for the bleeding that continues after the leech is removed. Doctors once used what they called "medicinal leeches" to remove blood from patients.

Leeches have a flattened body that is divided externally into numerous rings and ranges in length from a fraction of an inch to over a foot. Leeches are some of the most colorful freshwater invertebrates, with spots and stripes that can be yellow, orange, red, or green. Most leeches possess powerful muscles that extend and contract, enabling them to swim with strong, undulating motions, or to crawl like an inchworm using their terminal suckers. Leeches are "hermaphroditic," meaning they have both male and female reproductive organs. However, they do mate, trading packets of sperm.

Leeches are common lake inhabitants in the north-central states and the Wisconsin fauna includes about 30 species. The single most important factor in regulating the distribution of leeches is the availability of food. They are also sensitive to touch, temperature, and drying. Leeches are a part of a healthy ecosystem and a favorite food for some fishes, as many fishermen can attest.

Leeches and clams play an important role in the lake ecosystem and they are indicators of a healthy environment.

Ed Stern is Professor of Biology at UW-Stevens Point.

Zebra Mussel:

Acting Globally Causes Problems Locally

Over the years, Wisconsin lakes have come under threat on many fronts. Exotic organisms (not native to Wisconsin land or water) such as carp, rusty crayfish, and purple loosestrife have all caused problems. Exotic creatures sometimes are more successful at filling an ecological niche than are native animals, and they often have no natural predators. This can lead to the destruction of plant or animal populations we consider more valuable.

An exotic organism that has just arrived on the scene in the Great Lakes is a harmless-looking little freshwater mollusc called the Zebra mussel (Dreissena polymorphia). The exact method of introduction into the Great Lakes may never be known, but it is believed that ships from foreign ports transported the mussel in their bilge water. The first confirmed sighting was in Lake Erie in July of 1988. As of April 1990, the Zebra mussel has been found in all of the Great Lakes.

Zebra mussels are relatively small (less than 5 cm--2 inches) with alternating light and dark bands, hence the name. They possess dense elastic strands called basal fibers which allow them to attach securely to almost any surface. They are best adapted to areas with water currents and can form massive colonies in canals or in pipes. Zebra mussels can attach to rock or gravel on lake shores or river bottoms. In some European lakes, colony densities greater than 100,000 per square yard have been reported, with dead mussels piled on the lake bottom over a foot deep in just two years.

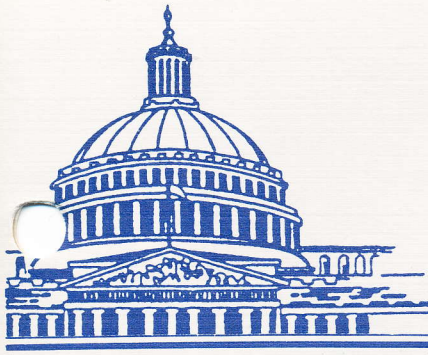
The zebra mussel colonies select appropriate light, water currents, and water temperature: water temperatures above 45°F but below 90°F, depths from six to twenty-one feet, and water currents greater than six feet per second or with rapid water level changes. Mature female mussels can produce 30,000 to 40,000 eggs per year when the water temperature is near 54°F. In two to three days the eggs become planktonic larvae called "veligers." Veligers are able to actively swim for one to two weeks, which allows them to spread over considerable distances.

A single mature zebra mussel can filter about one quart of water per day. European studies indicate that filtration of phytoplankton (algae) can dramatically improve water quality. But the loss of phytoplankton, a major food source of pelagic (open water) food chains, can disrupt fisheries. Because the mussel settles on rock cobble, there is concern about the destruction of spawning beds for species like walleye and trout.

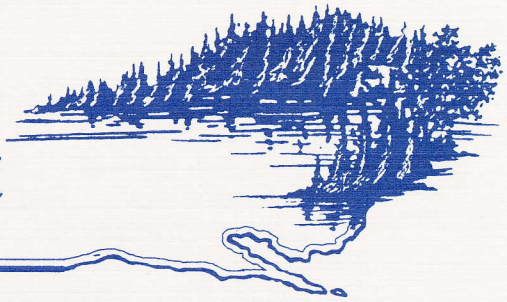
One of the most immediate impacts is the fouling of boat bottoms, boat motors, piers, rafts, and intake pipes. On infested beaches, shells wash up, cutting bathers' feet; and smells from decaying mussels may waft over the area, diminishing enjoyment.

As you read this article, there have been no reports of the Zebra mussel in Wisconsin's inland lakes. However, there are many ways for these foreigners to find their way into inland lakes, such as a bird, or a boat used in the Great Lakes and then brought onto an inland lake. If there is a lesson to be learned, it may be to realize that the technology in which we put so much faith can still be vulnerable to unintended consequences. In fact, the more faith we place in technology and economies that are global in scope, the less likely we are to exercise caution and to be concerned about maintaining the integrity of our natural systems.

We Need Your Help: The Lakes Program publishes a directory of Wisconsin's lake organizations. Please help us include your organization in the "new" directory. We need the name of your lake, county, and lake organization; and a list of the names, addresses, and phone numbers of the current directors. Please write to Jeffrey Thornton or Sterling Strathe, Lake Tides, CNR, University of Wisconsin, Stevens Point WI 54481 (715/346-2116). **Act now. Help us make your directory accurate!** We need to hear from you immediately after your annual meeting.



Capitol Report



Lake Planning Grants

Management of lakes is limited by a lack of information about the lake, the watershed, and the people who use it. Under the new Planning Grant program, the Wisconsin Department of Natural Resources will provide funding to local governments and lake management organizations for the collection and analysis of information needed to restore lakes. A major goal of the program is to develop stronger state/local partnerships, leading to more effective watershed protection and lake management. The following information will give you a general idea of how the grants will work.

WHO CAN APPLY: Any general purpose unit of government (county, town, city, or village) and all lake districts are eligible to apply. Lake associations that meet certain qualifications are also eligible.

WHAT IS A QUALIFIED LAKE ASSOCIATION: To be eligible for funding, a lake association would have to be incorporated under Chapter 181 Wisconsin Statutes and meet the following conditions:

- Specifies in its articles of incorporation or by-laws that it supports the protection or improvement of inland lakes for the benefit of the general public and demonstrates this by its past actions.
- Allows membership in the association to any individual living on or within one mile of that inland lake for at least one month each year. Also allows any individual who owns real estate on or within one mile of that lake to be a member.
- Does not limit or deny the right of any member or class of members to vote as provided under 181.16(1) Wis. Statutes.
- Has been existence for at least one year; has at least 25 members; and requires annual membership fees of not less than $10 nor more than $25.

WHAT TYPES OF PROJECTS ARE ELIGIBLE:

- Gathering and analysis of physical, chemical, and biological information on the lake.
- Describing present and potential land uses within the watershed.
- Reviewing jurisdictional boundaries and evaluating ordinances that relate to zoning, sanitation, or pollution control.
- Gathering and analyzing information from lake property owners, community residents, and lake users.
- Developing, evaluating, publishing, and distributing alternative courses of action and recommendations.

HOW MUCH MONEY IS AVAILABLE: The state may pay for 75 percent of the cost of a planning project. The remaining 25 percent must be provided by the local organization from its own revenues or cash contributions from other non-state and non-federal sources. One or more grants may be made to your lake during each two-year state budget period. The total amount of state dollars cannot exceed $10,000 during each two-year period, nor $30,000 during the life of the program. When needed, a priority system will be used to rank applications.

HOW THE PROGRAM WILL WORK: Applications are due by February 1 and August 1 of each year. The initial review is conducted by the DNR District Inland Lake Coordinator who provides ranked recommendations to the Lakes Section of the Bureau of Water Resources Management in Madison. Decisions on each application are to be made within 60 days (April 1 and October 1). Upon awarding the grant, the state provides 75 percent of its share based on estimated cost of the

planning effort (75% of its 75% share). The remaining 25 percent is sent to the district after receipt of the final report. A summary of that document must be prepared for distribution to local property owners and interested citizens. A final report is necessary at the conclusion of each grant.

WHERE TO FIND MORE INFORMATION: Application forms and more information are available from DNR District Offices or County Extension Offices. Consult your DNR Inland Lake Coordinator, County Extension Resource Agent, or County Conservationist regarding the type of information needed for your planning effort. Some information can be gathered by your own members with the guidance of agency professionals. Private consultants are available to assist you in gathering other information. A list of consultants, without endorsements, can be obtained from UW-Extension, College of Natural Resources, University of Wisconsin, Stevens Point WI 54481 (715/346-3783).

Note: Application forms will be available September 1, 1990. Deadline for applications is February 1, 1991.

Boat Shelters (NR 326)

"Boat Shelter: a structure in navigable waters designed and constructed for the purpose of providing cover for a berth place for watercraft, which may have a roof but may not have walls or sides. Such a structure may include a boat hoist." [s.30.01(1c),Stats.]

In the spring of 1988, the state legislature passed laws authorizing boat shelters in waterways and directing the DNR to adopt rules for their placement and construction. The proposal was designed to protect public interests in navigation, water quality, fish and wildlife habitat, and the natural shoreland beauty.

The DNR, with help from groups representing lake property owners, business, environmentalists, and local governments, developed the rules. It is hoped that the rules will clarify private rights in waterways with respect to boat shelter construction and eliminate the need for DNR permits where possible.

The following is a abbreviated version of the proposed guidelines:

GENERAL STANDARDS FOR BOAT SHELTERS:
- May be placed and maintained only by the riparian property owners.
- May not interfere with the rights of the public or other riparians.
- Must allow the free movement of water underneath.
- May not violate related municipal ordinances.

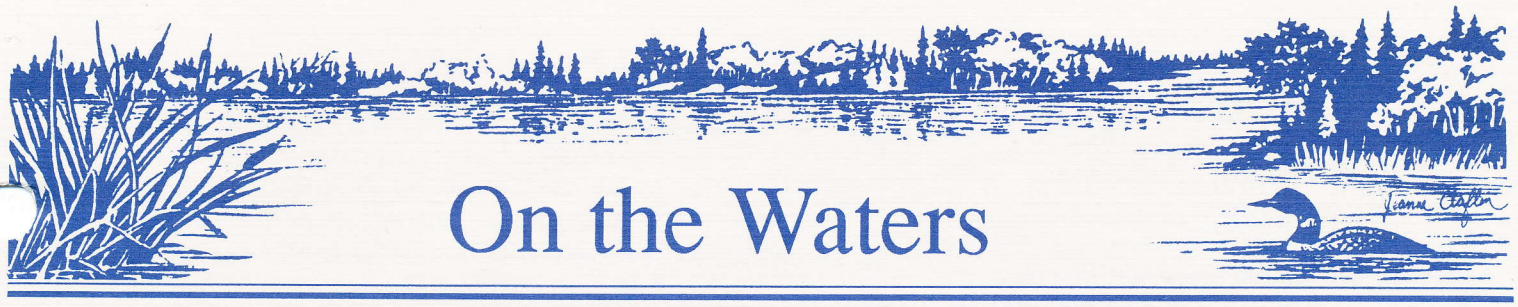
LOCATION & CONSTRUCTION STANDARDS:
- May not be placed in designated scenic waters.
- May not extend beyond the line of navigation .
- Must be connected to the uplands by a pier.
- Must be designed and used exclusively for the berthing of a single craft and may not exceed 12 feet wide by 24 feet long.
- Roof pitch may not exceed 2 feet rise to 6 feet run and there can be no sides, canvas drops or equivalent construction.
- Storage facilities only above roof line. No signs or lighting not essential to navigation.

SEASONAL BOAT SHELTERS (no permit required)
- Must be completely removed from the waterway between Nov. 1-April 1.
- Must comply with general standards and location and construction standards.
- May not be visually obtrusive when viewed against the shoreline.

PERMANENT BOAT SHELTERS: (permit required)
- Must comply with general standards and location and construction standards.
- Are not permitted on lakes, chains, or flowages of less than 1000 acres (some exceptions).
- Only permitted adjacent to developed shoreline.
- No construction after May 2, 1988 if the owners property also contains a boat house.
- Only one permitted per riparian lot. Contiguous lots in common ownership considered one lot.
- May not extend more than 30 feet from the shoreline and must be earth-tone colors and visually inconspicuous.

The above rules were presented to the Natural Resources Board in April and public hearings were held in mid-July. Rules revised as a result of public hearings and further agency review will be presented to the Natural Resources Board for final approval. Review by legislative committee is expected in early fall. If approved, the rules will be in effect in 1991.

For more information, contact Water Management personnel in local DNR offices or Mike Dresen, DNR Bureau or Water Regulation and Zoning in Madison at 608/266-8032.



On the Waters

Mercury Rising in Lakes

Sigurd Olson Env. Institute's Horizons
Summer 1990

Dr. Gary Glass, a chemist with the U.S. Environmental Protection Agency's water research laboratory in Duluth, said mercury levels are increasing at a 3% annual rate in Northeastern Minnesota lakes and streams. Studies of air and rainfall patterns over the past two years conclusively link airborne mercury to levels found in fish, he said.

Federal Help for Weed Problems

Through a proposed agreement between the U.S. Army Corp of Engineers and the Wisconsin DNR, your lake may qualify for 50% cost share money from the Federal Government. A "reconnaissance study" will be coordinated by the Corps of Engineers from information provided by the DNR on specific lakes with existing or potential plant problems. Based on recommendations of the study, individual lake project designs would be developed by the Corp of Engineers at a 50% cost-share rate to be shared by the local lake organization. Once this plan is complete, 50% cost-share money would again be available for control or eradication of plant problems. The present goal is to make implementation dollars available for the highest priority projects by the summer of 1992. Watch Lake Tides for more information as it becomes available.

Carp Can Cost

Milwaukee Sentinel July 1990

AP-Madison Two Arkansas men pleaded guilty to federal charges alleging they illegally transported and sold grass carp in Wisconsin. The fish are used to rid lakes of weeds, but they become a problem because they multiply quickly and prey on game fish. Sale and stocking of grass carp is illegal in Wisconsin.

The government alleges that William Whiting and Gary Sisk both earned $200,000 a year through the illegal sales. In July 1987, federal agents using a search warrant seized invoices from the men's homes and business that documented 32 shipments of grass carp to 20 locations in Wisconsin. The two men each face up to 10 years in prison and fines of up to $500,000. In addition, both defendants have agreed to pay restitution to the state of more than $440,000.

Whiting, who operates Sea Ranch Farms in Sheridan Arkansas along with Sisk, was charged with shipping and selling the fish to nine Wisconsin country clubs after being told by the State Department of Natural Resources that it was illegal. The clubs were Abbey Springs Golf Club in Fontana, Blue Mound Golf and Country Club in Wauwatosa, Tuckaway Country Club in Franklin, Edgewood Golf Club near Big Bend, West Bend Country Club, Westmoor Country Club in Brookfield, Maple Bluff Country Club in Madison, Monroe Country Club, and Oconomowoc Golf Club.

Officials said about 10 individuals in Waukesha, Ozaukee, Chippewa, Milwaukee, Walworth, and Vernon Counties also bought grass carp for private ponds. Those who purchased the carp paid a $98 forfeiture levied by the DNR and paid for the drainage of ponds and other eradication efforts.

Tossing Trash

Buzzworm May/June 1990

Recreational boaters dump more than one pound of garbage into the water every time they go out in a boat--beer and soda cans, plastic bottles, wrappers and bags, cigarette butts, glass bottles, dinner leftovers, foil and six-pack holders--things you would not even feed your goldfish. According to the Center for Marine Conservation, plastic in our waterways is more than just a litter problem. These seemingly harmless, if ugly, items can kill. Creatures confuse plastic for food. Ingested plastics cause fatal internal injuries to aquatic life. Some birds feed plastic debris to their young. Thousands of animals also die every year from entanglement in plastic trash. In case the threat to wildlife isn't enough to make boaters carry their trash back to shore, another consideration is the threat to personal property. Plastics can foul boat propellers and clog water intakes. In 1989, it became illegal to dump plastic trash overboard in US waters, including inland lakes. For more information, contact the Center for Marine Conservation, 1725 DeSales St. NW, Washington DC 20036 (202/429-5609).

It's here again; it comes softly, stealthily. Subtle changes in the wind, the clouds, the trees, and then it's here again. The other morning while you read the paper and gazed at the lake, you noticed the steam rising. Your thought patterns change first: the Labor Day sales on kids clothing catch your eye. Finding the storm windows and taking out the dock move up a notch on your "to-do" list.

Wait a minute--was that a tinge of red on the maples in the bay? The flags and lilies of summer at the water's edge have given way to aster and goldenrod. The vibrant shades of green are muted by the beginning of garnet and gold, soon to create a reflection that shimmers with its own jewels. Dazzling russets and oranges will contrast brilliantly with the turquoise sky. It won't be long.

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