



LAKE TIDES

The newsletter for people interested in Wisconsin lakes

The Facts of Ice

Winter is finally here; our lakes are capped in their cold armor... Ice is a marvelous substance and has some properties that seem to fly in the face of physics.

Volume 25, No. 1
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For one thing, ice floats. If this were not true, life on earth as we know it would not exist. If water did not expand as it solidified, ponds, lakes, and oceans would freeze solid from the bottom up. Because ice floats, it insulates the liquid water below from the colder air, slowing the freezing process and allowing life to exist under the frozen surface.

Most substances contract and get denser as they cool until they solidify. Water expands as it freezes. Unlike most other materials, it is actually less dense as a solid than as a liquid. Water behaves like other liquids (expanding as it warms, contracting as it cools), until its temperature drops to 4° C (39.2° F), then water molecules no longer move vigorously enough to break their hydrogen bonds and they begin to freeze. As the temperature drops to 0° C (32° F), the water locks into a crystalline lattice, with each water molecule bonded to four partners. These hydrogen bonds force the molecules to keep their distance, enough to make the ice about 10 % less dense than liquid water at 4° C.

When is ice safe?

There is no sure answer. Ice is tricky, and just because a lake or stream is frozen doesn't mean the ice is safe. To understand the factors involved in the strength of ice, it's necessary to understand how ice forms on lakes and streams and a few of its physical properties. The following are points to consider, largely based on research by the U.S. Army Cold Regions Research and Engineering Laboratory in New Hampshire.

- You can't tell the strength of ice just by its appearance, the daily temperature, thickness, or whether the ice is or isn't covered with snow. Strength of ice, in fact, is based upon all four factors plus the depth of water under the ice, the size of the water body, water chemistry, distribution of the ice, and local climatic factors.
- Generally speaking, new ice is much stronger than old ice. Direct freezing of lake or stream water will be stronger than ice formed by melting snow, refrozen ice, or ice made by water bubbling up through cracks and freezing on the surface. Several inches of new ice may be strong enough to support you, while a foot or more of old, "rotten" ice may not.
- Ice seldom freezes or thaws at a uniform rate. It can be a foot thick in one spot while, 10 feet away, only an inch thick.
- A layer of snow insulates ice, slowing down the ice forming process. In addition, the weight of snow can decrease the bearing capacity of the ice.
- Ice near shore is weaker. The buckling action of the lake or stream over the winter breaks and refreezes ice continually along the shore.
- If you hear ice "booming" or cracking on cold days or still evenings, it doesn't necessarily mean the ice is dangerous, merely that it's changing shape as the temperature changes.
- Ice formed over flowing water, near shore, around inflowing or outflowing streams, in places where the lake narrows, under bridges or on lakes containing large numbers of springs can be unsafe. River ice is generally about 15 percent weaker than ice on lakes. Straight, smooth flowing stretches are safer than river bends. River mouths are dangerous because the current undermines



**Wisconsin Lakes
Partnership**

the ice and creates unsafe pockets. A potential danger spot on lakes is an open portion completely surrounded by ice. Winds will force exposed water beneath the ice and rot it from below.



- Other factors that weaken ice are water level fluctuations and the actions of birds and fish. As an example, schools of carp create thin ice spots or even open water by congregating in one location while circulating the water with their fins.

Ice Safety Tips

Once you understand the physical properties and problems with ice, you can understand why ice is so unpredictable and why the only absolute safety factor on ice is to stay off. In Wisconsin staying off the ice is hard to imagine. For those of us who venture onto the ice, whether on foot or in a

vehicle, here are some tips to lessen your chance of a breakthrough:

- Ø Ice fishing requires at least four inches of clear, solid ice; a snowmobile requires five inches. Automobiles and light trucks require at least eight inches to a foot of ice. (Remember, these are merely guidelines; the factors mentioned above must be considered!)
- Ø Before you head onto ice, check with local experts, fire departments, wardens or local police for known thin ice areas or aeration operations which have created open water.
- Ø Refrain from driving on the ice with your car or truck whenever possible. Traveling on ice in a vehicle, especially early or late in the season, is always risky.
- Ø If you must drive a vehicle, be prepared to leave it in a hurry. Unbuckle your seat belt and have a simple plan of action in case you break through. Some safety experts recommend that the doors be left open and windows down for an easy exit.
- Ø Parking a vehicle in one spot tends to weaken ice. Vehicles should be moved from time to time so the ice can resume its "normal" position and shape. A car parked on ice one foot thick will depress the ice an inch within a diameter of 200

feet. Cars parked close together may increase the load beyond the bending limit, causing the ice to break. Bending, however, gives added buoyancy since the ice becomes somewhat boat-shaped as it rests on the water underneath. But if the ice cracks, the added buoyancy is lost. A car surrounded by ice cracks has only the buoyancy of that single piece to support it. When driving across ice which has cracked and refrozen, cross the cracks at right angles and avoid parking near them.

- Ø If you drive on ice, remember that it is only a film across a water surface. Weight moving across this film causes it to bend up and down in the form of long waves that roll out and away from a vehicle as it moves across the ice. U.S. Army researchers discovered that wave action might crack the ice if the vehicle is moving at a "critical speed." Speeds above or below this critical speed substantially reduce the danger of cracking. Higher speeds are usually not recommended for other reasons, except over very shallow water. So drive slowly. Don't follow close behind other cars; you may interrupt their wave action with your own, causing a break in what would otherwise be safe ice.
- Ø Often cars will establish roads from shore to the current fishing "hotspot." After repeated use, these roads may cause the ice to weaken. Therefore, they may not be the safest routes.
- Ø If you're on a snowmobile or driving a vehicle, be especially cautious at night or when it is snowing. The falling snow or darkness obscures thin ice or open holes.
- Ø Carry a couple of large nails with caps on the sharp end and a length of light nylon rope in your pocket. The nails can help you pull yourself out of the water and onto the slippery ice. Use the line to rescue someone else. If you make your own ice picks remember to put a cap on the sharp end so they don't stab you if you fall down.

Reference: U.S. Army Cold Regions Research and Engineering Laboratory, New Hampshire.



Say "YES" to Lake Research!

When you buy your fishing license or register your boat in Wisconsin, the sales clerk may ask if you want to contribute to the Lake Research Voluntary Check-off Fund. By saying "YES" and adding \$1.00 to the cost of your license or registration, you can support important research that may affect your favorite lake. These moneys are deposited in a special fund that can only be used by scientists working for the Wisconsin Department of Natural Resources.

Historically, these funds have been used to support research projects that dealt with lake problems such as eutrophication (advanced "aging" due to pollution) and lake acidification. In recent years, the funds have been allocated to innovative restoration and protection projects at Silver Lake in Manitowoc County, Devil's Lake in Sauk County and Fox Lake in Dodge County. The research dollars have contributed to studies investigating the impacts of motorboats on the shallow zones of lakes, elevated mercury levels in loons, and impacts of developed shorelands on water quality and fish habitat. The funds have also helped make Wisconsin a leader in paleolimnology, or the reconstruction of the history of lakes through the analysis of sediment cores.

"Research is one key component to a complete lake management program. Like any successful enterprise, research keeps our organization at the cutting edge of technology and helps us solve problems and develop the tools and methods needed for dealing with the changing environment," says Carroll Schaal, Lakes Team Leader at the DNR.

Education and Publication Update!

Developing educational materials is a critical aspect of the Wisconsin Lakes Partnership mission. In this and future issues of *Lake Tides* we will review materials currently available for you to use and alert you to new educational materials in development.

New Fact Sheets: Two new fact sheets dealing with shoreland issues are available through County Extension Offices or DNR Service Centers. *A Fresh Look at Shoreland Restoration* [DNR Pub. #FH-055-99 or Ext. Pub. #GWQ027] and *What is a Shoreland Buffer* [DNR Pub. FH-056-99 or Ext. Pub. #GWQ028] are the first in the new Shoreland Stewardship Series. These fact sheets will help answer your questions regarding the what, how and why of keeping native vegetation growing on our lake shores.

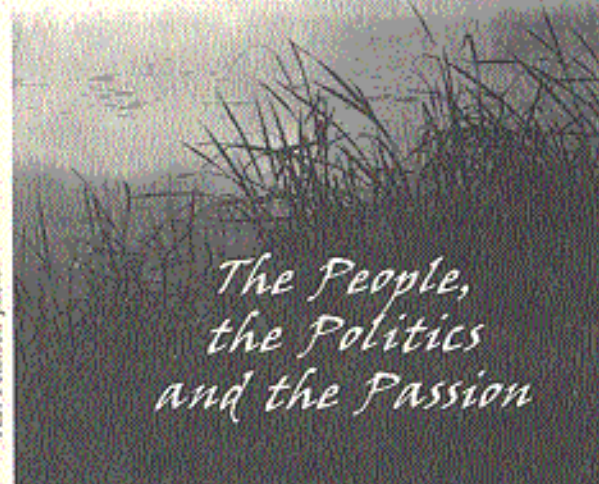
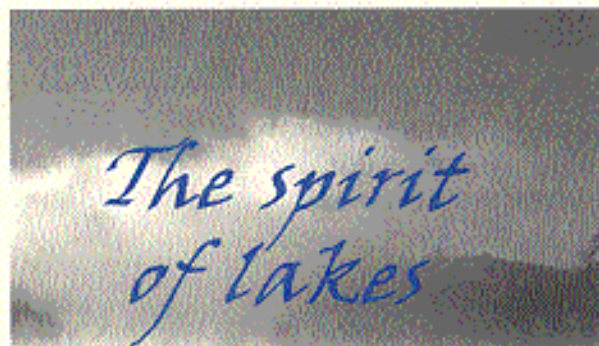
Old Favorites: Additional sources of information on shoreland issues can be found in these two standards: *Life on the Edge... Owning Waterfront Property* (now in its sixth printing) and *Through the Looking Glass... A field guide to aquatic plants*. These two publications are still available through the UWEX-Lakes Partnership Office at 715/346-2116 or the Wisconsin Association of Lakes at 1-800/542-5253. Get your copy today!

Honor Thy Neighbor—The Wisconsin Lake Stewardship Awards:

One of the most prestigious honors Wisconsin bestows on its citizen lake caretakers is the Lake Stewardship Awards. For twenty-two years women and men who have gone above and beyond the call of duty to preserve and protect our legacy of lakes have been recognized at the Lakes Convention. You don't have to look far around the Badger state to find folks who work tirelessly and selflessly for the betterment of Wisconsin lakes and waters. Some spend their entire life without ever being acknowledged for their commitment. You can change that. All you need to do is nominate a person or group that deserves recognition for their distinguished service on your lake.

The four categories of Stewardship Award are **Individual, Group, Public Service and Youth** (group or individual). **Nomination deadline is February 4, 2000.** Send your nomination with supporting materials (newspaper articles, letters, information on their accomplishments) to Becky Aarestad, UWEX-CNR, 1900 Franklin St. UW Stevens Point, Stevens Point WI 54481 or baaresta@uwsp.edu





A.J. Peterson photo

Wisconsin Lakes Convention—

March 9, 10, 11, 2000

Stevens Point Holiday Inn/Convention Center

If you travel around the nation and ask folks to identify people that really care about lake and river stewardship, sooner or later the conversation will come around to Wisconsin. The Badger state is known for its strong and cutting-edge water management programs and is recognized as a source for caring **People**, enthusiastic **Politics** and real **Passion** for lake stewardship.

The Spirit of Lakes: The People, the Politics and the Passion is the theme of this year's convention. For twenty-two years the annual Wisconsin Lakes Convention has been a place to learn, to find inspiration, and to share with other lake enthusiasts. Once again we invite you to join us as Wisconsin Lake Stewardship steps into the next Millennium.

This is your convention. It exists because of the support given by you and your neighbors. You work hard to preserve and protect our legacy of lakes. The convention is your opportunity to share your successes, discuss your disappointments and recognize the hard work of your lake neighbors. The Wisconsin Lakes Convention is the largest event of its kind in the nation. In three days you will be able to find more answers, connect with more people and develop more solutions than you could in a year working from home.

Sedges on the Edges: The Lake-Wetland Connection: Co-sponsored by the Wisconsin Wetlands Association, Thursday's pre-conference technical session will focus on the connection between wetlands and lakes within the watershed. See the agenda on page 6 for more details.

Balance and Swing: By attending the 2000 convention you will have the opportunity to witness a remarkable event. To celebrate the beginning of the next century and our support of cutting edge educational ideas, we are proud to present for your viewing pleasure, a brand new production that looks at the issue of shoreland development. It is called ... *Balance and Swing*.

Our inability to reach outside "the choir" with our educational message is a common complaint among lake folks. How do we interest folks that are not aware of our impacts on lakes, or do not seem to care? This production, which is included in your convention package, is a tool that can do just that. The development of *Balance and Swing* was sponsored with a grant from the Kellogg Foundation. Some of the best musicians and actors from around the Great Lakes states have joined together to write the original music and develop the play. Part of the plan is to make *Balance and Swing* available to your local community theatre. Be ready for some superb entertainment as you preview *Balance and Swing* by Kevin McMullin and the Theater in the Woods Production Company.

Although costs continue to creep upward, we have been able to keep the registration fee near the same low price that it has been at for the past five years. Tell your neighbors and invite your friends. If you believe in healthy lakes and harmonious lake communities, make sure your lake is represented at this major event.

Lodging Information: A block of rooms is being held at the Holiday Inn (800/922-7880 or 715/341-1340) until Feb. 8, 2000. Rates are \$54/single, \$84/double or triple or quad. Be sure to ask for the Lakes Convention block. Other nearby hotels include: Comfort Suites (715/341-6000); Country Inn & Suites (715/345-7000); Super 8 (800/800-8000); Road Star Inn (800/445-4667); or contact the Stevens Point Visitors Bureau at 800/236-4636 or 715/344-2556.

Spirit is the inner spark that powers our dreams and helps us live life to the fullest.



Wisconsin Lakes Convention, March 9, 10, 11 - 2000

Registration Form - Pre-register by February 25th to avoid \$10 late fee.

Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Daytime Telephone: _____

I am representing _____ Lake in _____ County

My lake has send a rep. to the Convention _____ times. I have personally attended _____ times.

____ I am a Self-Help Lake Monitor. _____ My lake has an Adopt-A-Lake project.

\$_____ Thursday, March 9: "Sedges on the Edges: The Lake-Wetland Connection"
\$35.00 includes materials, lunch/breaks [Pre-registration required, limited to 125]
I will attend Breakout Session **I II III** (see agenda for description/circle one)

\$_____ Friday, March 10: Lakes Convention Day 1 - \$40.00 includes materials, lunch/breaks,
Balance and Swing Performance

\$_____ Saturday, March 11: Lakes Convention Day 2 - \$25.00 includes materials, Lake
Stewardship Awards Breakfast/breaks

\$_____ Package Fee for Friday/Saturday: \$55.00 (savings of \$10.00)

\$_____ Aquatic Exotic Educational Trunk Workshop - Special fee - \$30.00/trunk
[Sat. 3/11, 9-10:00am; limited to 25; see p. 7 for details, pre-registration required]

\$_____ K-12 Student Fee: \$5.00/day (meals not included) _____ Friday _____ Saturday

\$_____ Extra Meal: Fri. Lunch (3/10) _____ @\$15.00; Sat. Award Breakfast (3/11) _____ @\$12.00
_____ Vegetarian Meals requested

\$_____ \$10.00 late registration fee (must be postmarked by February 25th)

\$_____ Total Registration Fee enclosed

Mail form and check payable to UW-Extension to: **Becky Aarestad, UWEX-Lakes, 1900
Franklin St., CNR-UWSP, Stevens Point WI 54481.** Sorry-no telephone or credit card
registrations accepted.

____ My non-profit lake organization would like a display table/poster space (must provide own
display boards; bring easel if possible) Contact person: _____
Telephone: _____

____ I would like to contribute \$_____ to the WAL Youth Scholarship Fund (make
separate check payable to WAL Youth Fund.

Final Conference Agenda will be sent with confirmation of your registration.



The Spirit of Lakes...
The People, the Politics, the Passion
2000 Lakes Convention, Stevens Point Holiday Inn
Tentative Agenda

Thurs., March 9, "Sedges on the Edges: The Lake-Wetland Connection"

Co-Sponsored by the Wisconsin Wetlands Association

- 8:00 am Registration/Check-in
9:00-12:00 **General Session: An Overview of Our Wetlands**
Opening Remarks (Charlie Luthin, WI Wetlands Assn., Jeff Bord, WI Waterfowl Assn.)
9:15 am Keynote: Extending our view of lakes—wetlands in the watershed (Wil Cwikiel, Tip of the Mitt Watershed Council, Michigan)
10:00 am A Tour of Wisconsin's Wetlands: A heritage of diversity (Eric Epstein, Community Ecologist, WDNR)
10:40 am Wisconsin's Colorful Wetland History: Wetland changes and their impact on wildlife (Mike Mossman, Community Ecologist, WDNR)
11:20 am Horicon Marsh: one wetland's story (Bill Volkert, Wildlife Educator, WDNR)
12-1:30 Lunch
1:30-4:30 **Break Out Sessions [specify which session (I, II, or III) you will attend]**

I. Wetland Wildlife

1. Wetland Invertebrates (Dr. Kurt Schmude, Lake Superior Research Institute)
2. Amphibians and Reptiles (Bob Hay, Cold-blooded Species Manager, WDNR)
3. Birds (Sumner Matteson, Avian Ecologist, WDNR)
4. Mammals (Rebecca Christoffel, UW-Extension/Wildlife Ecology)

II. Wetland Restoration and Management

1. Near Shore and Shoreland Restoration (Wild Rice Restoration-Peter David, Great Lakes Indian Fish and Wildlife Commission; Waterfront Wetland Restoration-Jenny Winkelman, Minnesota DNR)
2. Inland Wetland Restoration (The Landowner Perspective-TBA; Learning by Doing: The evolving art of wetland restoration-Jeff Nania, WI Waterfowl Assn)
3. Invasive Species Control (Kelly Kearns, Native Plant Management Biologist, WDNR)
4. Getting It Done! Funding sources for wetland restoration (Jim Ruwaldt, US Fish and Wildlife Service)

III. Wetland Protection: Regulation and Beyond

1. Wetland Rules and Regulations (Dave Siebert, Wetland Ecologist, WDNR; Faye Amerson, Walworth County Land Conservation Dept.)
2. The Friends of Pheasant Branch Story: A case study of effective citizen action (Jan Coombs, Friends of Pheasant Branch)
- 3-4. Panel Discussion: Voluntary Protection Approaches
 - Wetland Watchers Network (Charlie Luthin, WI Wetlands Assn.)
 - Acquisition Using Lake Grants (Carroll Schaal, Lake Planner, WDNR)
 - Land Trusts and Conservation Easements (Vicki Elkin, Gathering Waters)
 - The Wisconsin Woodland Owners Association Model for Citizen Participation (Nancy Bozek, WI Woodland Owners Association)



Friday, March 10, 2000—Wisconsin Lakes Convention

(Sponsored by WI Association of Lakes, UW-Extension, Dept. of Natural Resources)

- 8:30 am Exhibit Hall Opens; Registration/Check in
9:00 am Welcome and Introductions (Jeff Bode, WDNR; Jim Burgess and Donna Sefton, WAL; Secretary George Meyer, WDNR)
9:30 am Keynote—Leadership: Your Gift to Life (Professor C.Y. Allen)
10:15-10:45 Break (coffee with vendors)
10:45-11:45 Workshop stream 1 (7 concurrent workshops)
12:00-1:00 Lunch
1:15-2:15 Workshop Stream 2 (7 concurrent workshops)
Move to Sentry Theater (10-15 min. walk, shuttle bus, or limited parking)
3:00-5:00 "Balance and Swing" music and dance performance about shorelands
5:00-7:00 Vendor Social with WAL Raffle
7:00-9:30pm WAL Annual Meeting

Saturday, March 11, 2000

- 7:45-8:45 am Wisconsin Lake Stewardship Awards Breakfast
9:00-10:00 Workshop Stream 3 (7 concurrent workshops)
*Special Aquatic Exotics Trunk Workshop (\$30 fee, see below)
10:00-10:15 Break
10:15-11:15 Workshop Stream 4 (7 concurrent workshops)
11:15-12:15 Closing Ceremony and Refreshments

Workshop Streams (Tentative—Titles may change)

- 1. Water and Laws.** Tamara Dudiak, UWEX-Lake Specialist, Moderator
[Legal Update; Variance Process in Shoreland Zoning; Overview of Deer Lake Conservancy Projects; How to Obtain 501(c)(3) Tax Exempt Status]
- 2. Aquatic Ecology.** Bob Wakeman, WI-DNR SE Region, Moderator
[Aquatic Exotics; Aquatic Insects as Water Quality Indicators and Shoreline Stewardship; Aquatic Ecology with (Bounded) Vision; Aquatic Plant Ecology and Control; Aquatic Exotic Educational Trunk Workshop—\$30.00 fee (see below)]
- 3. Nuts & Bolts of Lake Management.** Susan Tesarik & Donna Sefton, WAL, Moderators
[Step 1: Choose the Right Tool; Step 2: Read the Instructions; Step 3: Assembly Required; Step 4: Joining Forces]
- 4. Fisheries.** Jana Grote, UWEX/DNR Fisheries Partnerships, Moderator
[Taking Stock: Perspectives on the future of stocking; River Restoration: Is a river by another name still a river?; What's My Line? Panel Discussion; Conservation in Action]
- 5. Helping Hands.** Scott Toshner, WDNR Self-Help Program-SER, Moderator
[Self-Help Program and LoonWatch; Loosestrife Beetle Rearing and Amphibian Watch; Lake Leaders Institute Experiences in Community Action; Shoreland Friends Initiative and Augusta High School Student Projects]
- 6. Tool Time.** Nancy Bentz, WI Association of Lakes, Moderator [To be announced]
- 7. Up in the Watershed.** Carroll Schaal, Lake Planner-DNR, Moderator
[Redesigning Wisconsin's Nonpoint Source Program; Creating Community with Local Radio; Basin Educators: What can we do for you?; Involving Youth in Your Projects]

***Aquatic Exotic Educational Trunk Workshop, Saturday March 11, 9:00-10:00 a.m.:**

Exotic species have long threatened Wisconsin lakes. As our population becomes more mobile, these invaders tag along and create havoc in our water bodies. Participate in this 1-hour workshop and create your own exotic educational trunk that you can use for Lake Fairs or Lake meetings. As you create your trunk, you will network with others across Wisconsin that have become "experts" in identifying, monitoring and controlling the exotics. Brochures, preserved specimens, identification cards and a 20 minute slide program (with narration) will feature these exotic species: Purple Loosestrife, Eurasian Water milfoil, Rusty Crayfish, Zebra Mussels and the Exotics of the Future! **Registration Fee: \$30/trunk, limited to 25 people.**

Self-Help Lake Monitoring



Lake Tides 25(1)

From Green to Blue, Volunteers Document Progress on Little Green Lake

The success of Self-Help Lake Monitoring is found in its combination of good science and strong partnerships. Nowhere is this concept better displayed than at Little Green Lake. Because the year 2000 marks the 15th year of Self-Help monitoring, it seems a good time to salute the enormous contribution made by volunteer monitors to the Wisconsin Lakes Partnership by sharing the experience at Little Green Lake.

Little Green Lake (referred to from here on as LGL) is hypereutrophic: it has dense beds of exotic weeds, filamentous and "pea soup" algae, and low dissolved oxygen. The 28 foot deep, 466-acre lake is located in a large agricultural watershed. It supports a good sport fishery despite the water quality problems. The best news of all—a dynamic and assertive partnership is committed to enhancing the lake.

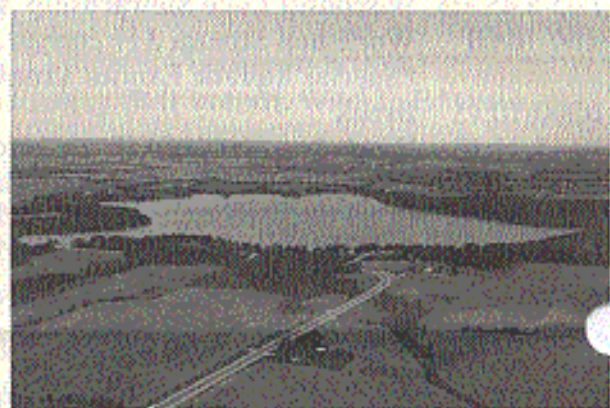
The key partners are too numerous to list individually, but include:

- Little Green Lake Protection & Rehabilitation District;
- Big Green Lake Association;
- USGS;
- Ramaker and Associates;
- DNR lakes, fisheries, and research staff;
- Green Lake County;
- the Town of Green Lake;
- Green Lake County;
- the Town of Green Lake;
- Green Lake Conservation Department;
- elected representatives;
- Wisconsin Association of Lakes;
- Lake Leaders; and last but not least
- Joyce Hartert, Wilton Wilsnack, Jill Geisthardt and many other local citizens with vision and energy.

Prior to 1990, two agricultural diversions were completed in cooperation with the owners. Residences around the lake had septic system inspections and mandated upgrades. When the immediate improvements were subtler than hoped, the partners gathered steam and just kept on working.

The partners conducted a series of studies funded by state lake grants. First a compre-

hensive lake management plan was developed. The process provided an opportunity for direct public involvement in envisioning what the lake should become, and how to get there. The partners then monitored and analyzed water quality, aquatic plants, the watershed, sediments, and phosphorus loading. Finally they conducted community surveys, stormwater and land use planning, and a diagnostic feasibility study for lake destratification. These studies led to a land use plan, an action plan for aeration feasibility, and a sensitive plant habitat protection plan for the lake.



The studies also set the stage for a variety of other spin-offs, such as a county-based land use plan, designation of lake use areas, and even the design of a large catch basin on property purchased by the District on 6 acres of land. By trying to fully understand the dynamic components of LGL, the partners are able to protect the lake's assets and enhance critical resource values.

It's no surprise that the partners of Little Green Lake have grand plans for the future. Their vision includes implementing an aeration system to reduce algae blooms (*ed. note: They just received the grant to proceed with this project*), emphasizing education around the lake and watershed, expanding USGS monitoring, developing a countywide lake association, and beginning a shoreline development program.

Hats off to these spirited lake enthusiasts, and thank you Jill Geisthardt for sharing this chronicle of inspiration!

A Time for Reflection...

1999 is dwindling to a close. As we think back to those spring winds, hot summer days and beautiful fall nights, lakes are often the subject of our thoughts and pictures. Whether you are a lucky lake dweller or someone who has "adopted" a lake, we are looking for pictures to post and admire at the Lakes Convention 2000, March 9-11.

We all Adopt-A-Lake in our own special way. Build the Spirit by sending your photo to: Laura Felda, Adopt-A-Lake Coordinator, University Wisconsin-Stevens Point, Wisconsin Lakes Partnership, College of Natural Resources, Stevens Point, WI, 54481. Don't forget to identify the county and lake of your dreams!

Education is the KEY!

Lake Stewardship begins with education. How do you reach lake residents, community members and youth? A floating classroom has become a successful method for many



Floating with education, Green Lake!

Lake Organizations. Green Lake Association in Green County has been hosting a "Pontoon Classroom" for several years. On four separate Saturdays, lake members offer their pontoon boat as a classroom for the youth in Green Lake. Topics such as watershed mapping, water quality, fish population, geologic history and culture are the focus of their studies both on the water and back at the community park.

Residents on White Lake in Langlade County use their pontoons as an invitation for the community to learn more. Only a few blocks from the school, White Lake beckons youth of White Lake School District to come explore its watery treasure. After the initial "get-to-know" pontoon ride in September and a Project WET workshop for teachers and lake association members in November, the school now has a monthly guest speaker or topic that will help them stay in touch with lake issues. A spring celebration is planned for the community and school. The association has many interactive educational sessions planned so that the learning will continue long after the boat ride!



Fall celebration on White Lake!

Are you thinking about increasing your educational efforts for the year 2000? Come join us at the Lakes Convention in Stevens Point, March 9-11th 2000. There will be many opportunities to develop educational plans for your lake. Stop by the Adopt-A-Lake display and pick up your copy of "Adopt-A-Lake—Pontoon Style." It's a great collection of ideas to get that educational project floating to success!

The Deer Lake Conservancy

A Model for Watershed and Lake Protection

Contributed by Cheryl Bursik

The residents around Deer Lake had for years enjoyed the benefits of clean, clear water. But obvious signs of trouble on the lake were disturbing. High phosphorus levels in the lake led to unsightly algae blooms. Spring runoff brought plumes of sediment and manure into their treasured waters. The most graphic impact came after a summer storm when hundreds of tires, carelessly disposed of in an intermittent stream, were carried in runoff water to the lake. Something had to be done.

The Deer Lake Association, an organization that had existed on the lake for over 50 years, was concerned. With the assistance of a planning grant from the Department of Natural Resources, the Association hired a consulting firm to complete a study of runoff into the lake. The study analyzed the sources of phosphorus from six drainage areas and provided recommendations for controlling them.

During this same time period the Department of Natural Resources and Polk County were studying area lakes and sources of pollutants as part of a Priority Watershed Project water quality appraisal and inventory. The DNR study concluded that with a concerted effort at phosphorus reduction, Deer Lake could be brought from its current eutrophic state to a more clear water or mesotrophic status!

The planning grant study recommended increasing stormwater retention, slowing stormwater flow, and stabilizing stream-banks in the watershed. Matching funds were available through the priority watershed program. But one problem remained: the lake association had no ability to raise funds to match the program.

A small group of individuals decided to take action, and in 1995 the Deer Lake Conser-

vancy, a 501(c)(3) organization, was formed. Suki Victor, one of the founders of the Conservancy, had a vision of an organization that could successfully raise funds, manage projects, and hold easements and title to property.

A 501(c)(3) tax exempt organization was critical for successful implementation of the lake management plan:

- Tax exempt status was necessary in order for donors to receive tax deductions on their donations.
- 501(c)(3) status was required for eligibility for some grant programs.

With tax exempt status and a plan of action in hand, fundraising began in 1996. The Conservancy got started with 40 founding members willing to donate \$1000 each to help improve Deer Lake.

The group chose to first construct a basin to capture agricultural runoff. This project was completed in the fall of 1997. The Conservancy worked with the landowners to construct the basin and convert 15 acres of farmland into native prairie. The DNR, Polk County, and the Deer Lake Conservancy contributed over \$25,000 to this project.

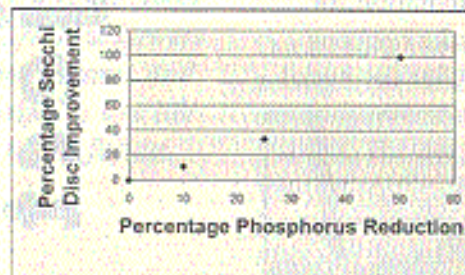
Since then the Conservancy has completed several other projects. Some of these projects include the purchase of additional critical properties, a wetland restoration effort and prairie plantings.

Completed conservation practices will likely provide a significant reduction in pollutants carried in runoff to Deer Lake. Conservation easements will permanently protect the 70 acres where the practices are installed.

Interested in taking action to help your lake?

The St. Croix Basin Team and Deer Lake Conservancy are sponsoring a **Lakes Conservancy Symposium**, April 28, 2000 in Dresser, WI. The Symposium will provide additional information about starting a tax exempt 501(c)(3) organization, the tools for land protection, and the work of the Deer Lake Conservancy. Call Linda at 715/468-4694 for more information.

The work of the Deer Lake Conservancy will be featured at the 2000 Wisconsin Lakes Convention.



Projected changes in secchi depth readings.



Personal Watercraft are Getting Cleaner and Quieter

One of the loudest complaints about personal watercraft (or PWCs) relates to the noise they make. The pollution from two-stroke engines has also been a source of some concern. The Personal Watercraft industry is working hard at making their machines quieter and cleaner running. A number of the major PWC manufacturers are proactively introducing sound suppression measures in their 1999-2000 models. Some models claim to be as much as 70% quieter than their older counterparts. In August 1996 the EPA established emission standards for marine engines. These standards were to be implemented over a 10-year period and in place by 2006. The PWC industry has introduced new technologies that should reduce emissions on some models by as much as 76% and meet 2006 emission standards by 2000.



MN Gov. Jesse Ventura test drives a new cleaner running PWC.

Susan Tesarik began working for the Wisconsin Association of Lakes (WAL) in September as a Water Classification Outreach Coordinator, made possible through a DNR Lake Classification Technical Assistance Grant Contract. Susan will provide outreach assistance to citizen groups, Lake Organizations, and local governments regarding Lake Classification and other water resource management strategies.

Prior to joining WAL, Susan was a Watershed Manager for the Fond du Lac County Land Conservation Dept. on the Fond du Lac River/Winnebago West Priority Watershed Project. For the past year, she had been working with the Green Lake Sanitary District and the Green Lake Association

through a Lake Protection Grant Project for Big Green Lake. This work included: updating the watershed inventory, organizing information for their Lake Management Plan, and providing outreach for their detailed educational initiative with local schools and the community around Big Green Lake.

Susan grew up on a century-owned dairy farm in Manitowoc County. She obtained a Bachelors Degree in 1995 from UW-Stevens Point in Water Resources-Watershed Management with Minors in Soil Science & Geology. Susan looks forward to working with folks throughout the State on water resource protection issues. **Welcome to the Lakes Partnership, Susan!**



Welcome Susan Tesarik!

C A L E N D A R

- Jan. 22:** Toward Harmony with Nature IV-A natural landscaping conference, Oshkosh WI (Contact the Wild Ones at 920/233-4853 or niendorf@northnet.net for more information)
- Feb. 4:** Get Your Feet WET this Winter! Project WET at the WAEE Winter Workshop, Treehaven Field Station, Tomahawk WI (Contact WAEE at 715/346-2796)
- Feb. 5-6:** WAEE Winter Workshop: Time to Fly—Reaching New Horizons with Environmental Education. Treehaven Field Station, Tomahawk WI (Contact WAEE at 715/346-2796)
- Feb. 7-10:** Tools for Urban Water Resource Management and Protection, Chicago IL (Contact Chicago Botanic Garden at 847/835-8365 or Bob Kirschner at 847/835-6837)
- Feb. 19:** Project WET Workshop, University of Wisconsin-LaCrosse (Call 608/785-8148)
- March 14&15:** Get WILD with Angler Education! Project WILD, Water Action Volunteers and Angler Education, Spooner WI (Contact John Haack at 715/635-7406)
- April 12:** Get WILD with Angler Education, Eau Claire (Contact Holly Eaton at 715/839-1634)
- April 28:** Lakes Conservancy Symposium, Dresser WI (Call Linda at 715/468-4694)



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No Time For Silence

And now the lakes lay silent.

The loons are far away.

*For deer and mouse, otter and grouse,
Winter's on its way.*

The aurora borealis

Streaks above the night.

*Rainbows shimmer, glow and glimmer,
Painting the lake with light.*

Like the northern lights,

Our lakes are changing fast.

*And wilderness, more or less,
Just a word from times gone past.*

Though our lakes lay silent,

This is no time to pause.

*Maintain your stand for lake and land,
For right and knowledge and laws.*

Like ripples in calm water,

A difference you can make.

*And much like the northern lights,
You will enhance your lake.*

James A. Brakken