



When Ice Shoves

It got cold early that year. I remember hearing eerily warping, moaning sounds traveling down the lake during a still and subzero night. The sound fit into the same category with the extraordinary sounds of loons and sandhill cranes. The lake was making ice.

Formation of an extraordinary substance

Ice on our Wisconsin lakes provides us with many things: beauty, recreation and a chance to “walk on water.” The trouble comes when the ice leaves the lake and comes on land. The formation and movement of the ice cover is complicated and many variables affect the quality, thickness and actions of ice.

With the coming of cold air temperatures, water at the top of the lake cools and becomes denser. Warmer water will normally rise and colder, denser water will sink. Here is the amazing thing about water...as it becomes colder from the point of 39.2 degrees Fahrenheit (°F), it becomes less dense and expands. Ice forms when water molecules reach 32 °F. Because it's now less dense than surrounding liquid water, ice rises. You can see this happen in a pitcher of water as the ice cubes float at the surface. Imagine if ice was less dense and did not float -- lakes would freeze from the bottom up and fish or animals would be unable to live.

By the time water reaches the freezing point, its volume has increased by about 1/8. That's why pipes burst when they freeze. Water also expands slightly again as it warms, but contracts when it gets very cold. The power of freezing and thawing water is great enough to split granite and is a force that brings down mountains and changes the earth over the eons.

(Continued on page 2)



(When Ice Shoves, continued)

On cold nights when a lake surface is not disturbed, needle-like crystals start to form. The crystals unite and continue to grow. If all goes well, a clear sheet of ice will form. Once the surface is covered by ice, direct heat lost from the water is limited and the ice sheet will gradually thicken.

Ice shoving

While ice eventually contracts with an appreciable drop in temperature, a warming temperature causes ice to expand slightly. For example, if the temperature increases from 14 to 32 °F, a lake one mile across can expand laterally about 32 inches, with forces exerted outward as much as 30,000 pounds per square inch. The ice cover on a lake is a floating mass, except at the points where it freezes tightly to anything it touches such as the shore, a bridge abutment or a pier. When ice warms it pushes outward against the

The ice can act like a giant bulldozer that nothing can stop, pushing lawns, soil, docks and whatever else is in front of it into piles.



things to which it is attached. An ice sheet, however, expands and contracts at differing rates at the top and the bottom of the ice. This internal stress causes cracks. The cracks fill with water which freezes and expands the ice a bit further. The ice sheet will expand again during the next warming spell. So what happens? The ice tends to “ratchet out” during freezing and warming cycles. This process is sometimes called “ice jacking.” Under certain conditions, the ice can act like a giant bulldozer that nothing can stop, pushing lawns, soil, docks and whatever else is in front of it into piles (some over 15 feet tall!) right up against a lake home. Under

particular shore and bottom conditions the ice may buckle and pile up in huge ridges in the shallow waters just off shore. Winnebago and Shawano Lakes are well-known for their huge ice shoves.

The level of ice shoving can vary greatly from year to year. Certain conditions, such as ice at least five inches thick, little or no snow cover and temperature fluctuations, may increase the likelihood of more aggressive ice shoves.

Can I live with an ice ridge?

If you are considering the purchase of waterfront property, check to see if there are signs of ice shoves (scarred trees, mounds of soil, boulders shoved up, the front of the house is missing, etc.). Just because a property is prone to ice shoves should not stop you from purchasing it. Over years, the earth ridges can strengthen and actually resist further ice shoves. Ice ridges are natural berms that can slow nutrient loading to the lakes and provide habitat. You have a number of options in dealing with ice shoves. You could let nature take its course, or you may decide to enjoy a game of “tug of war” with your lake -- you push the soil back to the lake edge in the spring and the lake returns it to your house in the winter.

In some cases, shoreland property owners may try engineering a solution. Fixes can be very expensive and may or may not have the desired results. In the past, some owners placed sloping concrete walls on their shore or ribs or runners to break up ice. If you do have damage from ice shoving, take pictures of the damage and contact the Wisconsin Department of Natural Resources (WDNR) to provide technical assistance. Depending on what needs to be done to restore the damage, a WDNR permit may be needed. You may also need a permit from your county zoning office.

Ice can be fragile, forming magical shapes that will glisten in the winter sunlight; or ice can be formidable, moving everything in its path. How should we deal with ice? ❄️

Some information excerpted from Minnesota DNR Ecological services: http://www.dnr.state.mn.us/waters/watermgmt_section/pwpermits/ice_ridges.html



Volunteers Reach 26,000 Boaters

As of 2006, over 640 participants from 44 counties were trained at *Clean Boats, Clean Waters* workshops. This certainly reflects the tremendous effort volunteers are making to help stop the spread of aquatic invasive species. Lake residents, county board members, tribal community members, representatives from county park and forest programs, boat marina operators and realtors have all attended workshops to learn how aquatic invasive species threaten Wisconsin waters. After three years of watercraft inspection and boater education, volunteers spoke to 26,000 boaters while inspecting over 12,000 boats for hitchhiking aquatic plants and animals.

The *Clean Boats, Clean Waters* program, sponsored by the Department of Natural Resources, UW-Extension and Wisconsin Association of Lakes, is again offering a series of training workshops across the state. These workshops provide an opportunity to learn how and why educational awareness is so important in preventing the spread of aquatic invasive species. Attendance is free, but participants are encouraged to purchase a volunteer handbook and resource tool kit for \$25.

We will be collaborating this year with the Citizen Lake Monitoring Network to offer training for watercraft inspections at the boat landing as well as whole lake monitoring for invasive species. Only four selected workshops will offer Citizen Lake Monitoring Network training to focus on monitoring for specific aquatic invasive species such as zebra mussels, rusty crayfish, and Eurasian watermilfoil. Participants in these workshops will review monitoring protocols for each species and interested participants will receive monitoring equipment. Additionally, whole lake monitoring methods will be discussed to assist participants in developing a proactive approach in early detection and rapid response efforts. Attendance is free, but participants can receive *Through the Looking Glass*, an excellent plant identification book, and color laminated plant scans to aid in identifying underwater plants for \$25.

To register for a workshop or learn more about the program, contact Laura Felda-Marquardt at Laura.Felda@dnr.state.wi.us or (715) 365-2659. Visit our website at <http://www.uwsp.edu/cnr/uwexlakes/CBCW>.

Aquatic Invasive Species: A Handbook for Education Efforts

This new education handbook was developed jointly by UW-Extension, Wisconsin Sea Grant, and the Department of Natural Resources. It includes a compilation of information on statewide programs, resources, contacts, case studies, and action strategies, along with a resource CD filled with articles, fact sheets, presentations, etc.

The handbook is available online at www.uwex.edu/erc/invasives.html. For further information, contact Mandy Beall (mandy.beall@dnr.state.wi.us, 608/267-3531) or Kristi Minahan (kristi.minahan@dnr.state.wi.us, 608/266-7055).

2006 Clean Boats, Clean Waters Schedule

**** Indicates both workshops: Clean Boats, Clean Waters and Citizen Lake Monitoring Network.**

April 8, New Auburn, 8:30 am-Noon, Ice Age Center
 April 20, Green Bay, 1-5:30 pm, KI Convention Center-WI Lakes Convention**
 April 29, Lac du Flambeau, 8:30 am-Noon, Lac du Flambeau Town Hall
 May 3, Rhinelander, 5:30-9 pm, Crescent Lake Town Hall
 May 13, Lake Mills, 8:30 am-Noon, Rock Lake
 May 25, Rhinelander, 1-7 pm, Oneida County Extension Office**
 June 6, Eagle River, 9 am-Noon, Trees for Tomorrow-Big Splash Angler Ed. Program
 June 17, Door County, 8:30 am-Noon, Whitefish Dunes State Park
 June 22, Hiles, 9am-12:30 pm, Town of Hiles' Fire Department
 June 29, Cable, Time TBA, Telemark Lodge-Northwest WI Lakes Conference**
 July 8, Iron River, 8:30 am-Noon, Iron River Town Hall
 July 20, Minocqua, 8:30 am-Noon, Minocqua Municipal Building
 August 11, Rice Lake, Time TBA, Rice Lake Technical College**



Hold the Salt?

The Impact of De-Icing and Other Chloride-Containing Compounds on Lakes

Current lake chloride concentrations may be less than half of likely future concentrations.

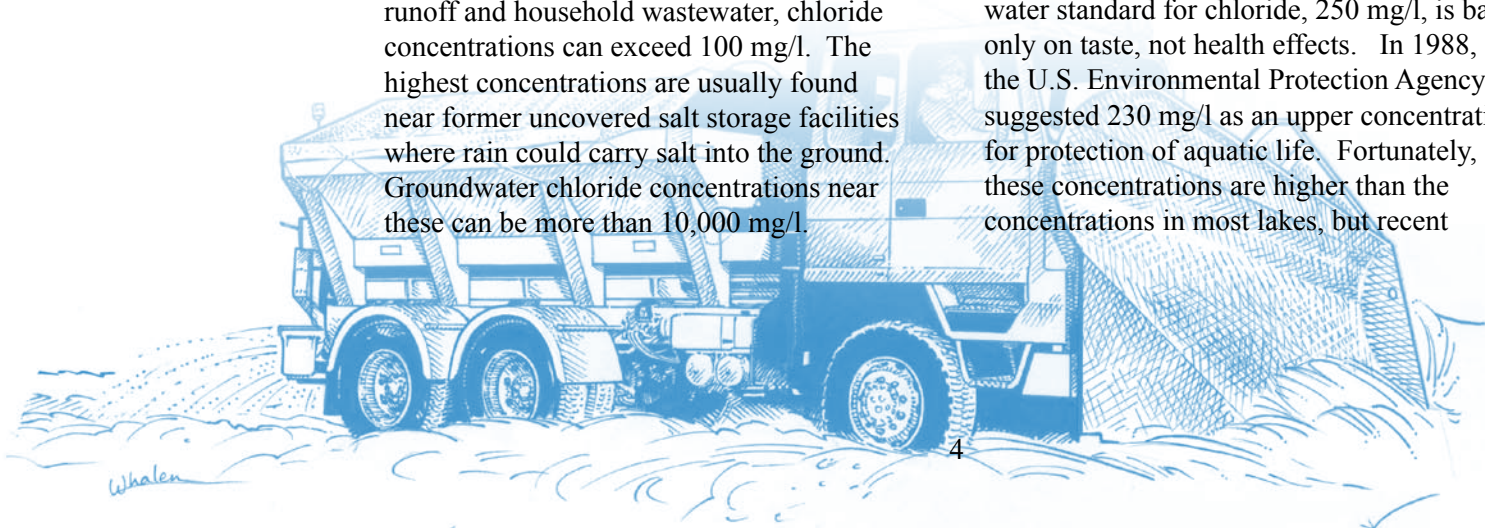
The relationship between a lake and its watershed is clearly demonstrated by the rising chloride concentrations in many lakes. Chloride is a major component of highway deicing salts. Interest in the potential impacts of chloride on lakes was heightened when the Canadian Environmental Agency proposed designating road salts as “toxic” owing to their potential for serious environmental damage. That proposal was challenged by a variety of organizations and ultimately Environment Canada published a code of practice to help better manage the use of road salt.

Chloride is a very water-soluble form of the element chlorine. While it is found in road salt, it is also found in softening salts and some agricultural fertilizers. When chloride-containing salts are applied to land or discharged to septic systems, they eventually move into storm drainage ways or percolate into the groundwater. Because chloride does not react strongly with natural solids, it moves with the water, traveling as a dissolved ion surrounded by water molecules.

In Wisconsin, chloride concentrations are good indicators of where the water in lakes and streams originated from because natural levels of chloride tend to be quite low. For example, in northern Wisconsin, natural chloride concentrations can be less than 5 milligrams per liter (mg/l). In highway runoff and household wastewater, chloride concentrations can exceed 100 mg/l. The highest concentrations are usually found near former uncovered salt storage facilities where rain could carry salt into the ground. Groundwater chloride concentrations near these can be more than 10,000 mg/l.

How these chloride sources alter lake concentrations depends on the application rate of chloride in the watershed, the quantity of water entering the lake, the size of the lake, and the time it takes for water to travel to the lake from different parts of the watershed. Lakes in urban areas quickly receive chloride from road deicing and that has been linked to an increase in chloride concentrations in Lake Mendota from 3 mg/l in the early 1900s to 23 mg/l by 1987. Chloride use in road deicing and agricultural fertilizers increased dramatically between 1960 and 1980, and many lakes experienced chloride increases during that time. The ultimate chloride concentration in these lakes can be difficult to estimate because it may take decades for groundwater from some portions of a watershed to reach a lake, and chloride use varies throughout the watershed. Research in several groundwater-dominated lakes in Portage County shows that current lake chloride concentrations may be less than half of likely future concentrations.

High concentrations of chloride may have detrimental effects on plants and animals. It has long been known that some plants are susceptible to roadway salt applications. Research has also shown that fish and invertebrates can be harmed by short-term exposure to very high chloride concentrations. It is more difficult to characterize the impacts of long-term exposure to lower concentrations of chloride. The drinking water standard for chloride, 250 mg/l, is based only on taste, not health effects. In 1988, the U.S. Environmental Protection Agency suggested 230 mg/l as an upper concentration for protection of aquatic life. Fortunately, these concentrations are higher than the concentrations in most lakes, but recent



research also suggests there may be subtle impacts on plants and animals from lower concentrations of chloride. The changing concentration may allow other species to be successful in a particular environment. For example, sphagnum moss and tamarack exhibit sensitivity to chloride concentrations, while more salt-tolerant plants such as cattails are less impacted. Researchers have found some invertebrates and algae have preferred chloride concentrations, and increases in chloride concentration could influence the mixture of species that occurs.

Another impact of increasing chloride concentrations is the influence it can have on water density. Water with a higher chloride concentration will be “heavier” than water with lower concentrations. The introduction of cooler, saltier water into lakes can change the way the water mixes. The spring overturn that characterizes most of our lakes can be reduced if deeper, cooler waters have a higher salt content. If the lake is less likely to mix, it may lead to oxygen depletion problems in deeper water.

So what can we do to help control chloride concentrations in our lakes and streams? First, remember that road salt is not the only source of chloride. Those of us who soften water can consider efforts to reduce the amount of salt we use in our water softeners. One water softener with a septic system can add hundreds of pounds of chloride to the groundwater every year. If you regenerate your water softener more frequently than necessary, you will add more chloride to the groundwater – and spend more money on salt. And if there are opportunities to safely lower chloride roadway deicing, our lakes may benefit. Remember that chloride applied to roads anywhere in the watershed will ultimately enter the lake—not just the chloride applied to roads near the lake.

As we learn more about the effects of chloride concentrations on our environment, it seems increasingly sensible to consider “holding the salt.”💧

*By Paul McGinley
UW-Extension Water Quality Specialist
UW-Stevens Point
paul.mcginley@uwsp.edu*

Research has shown that fish and invertebrates can be harmed by short-term exposure to very high chloride concentrations.

New WDNR Lake Coordinator in Spooner

Pamela Toshner is the new Lake Coordinator at Spooner. This position covers nine counties in the west half of the northern region (Ashland, Barron, Bayfield, Burnett, Douglas, Polk, Rusk, Sawyer and Washburn). Pamela will be working with lake and river groups on protection efforts, including volunteer monitoring and lake and river grant projects.

Pamela has worked on many projects with the WDNR in Water Resources, as well as with UW-Extension as a Volunteer Monitoring Coordinator. Before working for the WDNR, she held positions at the UW Center for Limnology, Marine Biochemists, and Milwaukee Metropolitan Sewerage District. She brings excellent technical skills and experience to her new job, and we welcome her to the lakes partnership.



You can reach Pamela at 715/635-4073 or pamela.toshner@dnr.state.wi.us.



Hands Across the Waters

2006 Wisconsin Lakes Convention

April 20-22, 2006

KI Convention Center/Regency Suites, Green Bay



"The ultimate test of man's conscience may be his willingness to sacrifice something today for future generations whose words of thanks will not be heard."
-Gaylord Nelson

The idea of "civic engagement" is based on the fact that all citizens can contribute ideas, energy and action for improving community. Effective civic engagement capitalizes on citizens' energy and gathers together representatives of various segments of the community. It creates genuine public forums and generates solutions that are fair, efficient, and informed. Your personal ethic to cultivate service, foster engagement in community, and leave a legacy of positive change is the focus of the 2006 Wisconsin Lakes Convention.

Thursday Convention Highlights

- Exhibitors Hall featuring cutting-edge lake products and services
- Lake organization and non-profit displays about successful projects and services
- Two optional field trips: Door County shallow lakes and Kewaunee agriculture
- Plenary session featuring keynote Stan Gruszynski
- Luncheon with Paul Johnson
- Your choice of afternoon workshops
- Dinner with Mike Staggs

Keynote Speakers



Stan Gruszynski

"Shaping Public Policy"

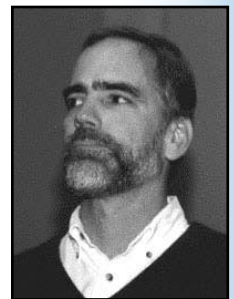
A former 71st Assembly District Representative and current director of the Rural Leadership and Community Development Program within the Global Environmental Management Education Center at UWSP, Stan will speak about civic engagement and how ordinary

people can communicate their concerns with decision-makers to help shape public policy.

Mike Staggs

"Wisconsin's Fisheries"

Mike is the WDNR's Bureau Director for Fisheries Management and Habitat. Whether you're an avid angler or a fan of Friday Night Fish Frys, Mike will hook you with stories of Wisconsin's fishing opportunities past and present. What does the future hold for our fisheries? He'll have some tips on how you can get involved in keeping angling (and eating) opportunities alive and well for future generations.



Paul Johnson

"The Role of the Citizen/Landowner in Natural Resources Conservation"

Paul Johnson has served as chief of the U.S. Department of Agriculture Natural Resources Conservation Service, a representative in the Iowa Legislature, and director of the Iowa DNR. He helped to author Iowa's landmark Groundwater Protection Act of 1987. As operator of Oneota Slopes Farm near Decorah since 1974, he recently received the 2006 Sustainable Agriculture Achievement Award. Paul will focus on the important role of private property stewardship in the overall effort to achieve sustainability.

Friday

- Exhibitors Hall featuring cutting-edge lake products and services
- Lake organization and non-profit displays about successful projects and services
- Plenary session featuring keynotes Dr. Richard Heinzl and David Zach
- “People of the Lakes” multimedia presentation
- Your choice of concurrent sessions in the morning and afternoon
- Wisconsin Lake Stewardship Awards Luncheon with Governor Doyle (invited)
- Afternoon reception in honor of civic engagement
- Late evening celebration with refreshments and music by LeJazz Hot

Keynote Speakers



Dr. Richard Heinzl

“Lessons from Abroad: the Opportunities of a Borderless World”

Fresh out of medical school, Dr. Richard Heinzl founded Doctors Without Borders - Canada, and in 1990 became the organization’s first field volunteer. Since that time hundreds of other Canadian volunteers have followed in his footsteps, bringing their healing skills to the world’s most vulnerable people. Along the way, Richard has received numerous awards and citations, including being named to *Report on Business* magazine’s prestigious “Top 40 Under 40 List.”

With a story of how he and his colleagues at Doctors Without Borders faced an overwhelming humanitarian crisis during the Iraq War, Richard will share insights into a range of topics such as the importance of a non-conventional approach to problem solving, embracing change and transformation, and the exponential change in technology and its impact worldwide. He offers a how-to guide for individuals and organizations that want to inject more energy and commitment into their culture, and to become more global in their outlook. Filled with inspiring anecdotes of ordinary people doing extraordinary things, Richard’s eloquent presentation about the resilience and adaptability of the human spirit will move us to a renewed optimism in the human capacity to create positive change in the midst of daunting challenges.



David Zach

“An Owner’s Guide to the Future”

The power of the future is in its ability to inspire the present. From the age of knowledge and a wireless economy, to the importance of grandparents in the future, David Zach weaves our heritage, tools and commitments into a very promising tomorrow. Blending humor, a friendly style and a deep belief in the importance of the personal, he draws people in, helping them to see the professional and personal implications of the trends.

David Zach is one of the few professionally trained futurists in the United States, with a masters degree in Studies of the Future from the University of Houston-Clear Lake. As a futurist, Dave has worked with many associations, and has shared the stage with people such as Mike Ditka, Newt Gingrich, and Senator Hillary Rodham Clinton. He guides his audience on an entertaining, futuristic tour of technology, economics, business, education, and society.

www.uwsp.edu/cnr/uwexlakes/conventions

Saturday

- Exhibitors Hall featuring cutting-edge lake products and services
- Your choice of concurrent sessions
- WAL annual meeting
- Luncheon and closing ceremony



Lake Tides 31(1)

Photo Contest

*Show the state why
you love your lakes as
well as display your
skill with a camera.
Enter the 4th Annual
Photography Contest at
the 2006 Wisconsin Lakes
Convention. For details
visit [www.uwsp.edu/cnr/
uwexlakes/conventions](http://www.uwsp.edu/cnr/uwexlakes/conventions)*

Le Jazz Hot

A Benny Goodman Revival

Le Jazz Hot is a quintet of exceptional jazz musicians. Besides regularly appearing on the Sunset Concert Cruises in Door County, they also entertain folks in many other venues across the state. The versatile and crowd-pleasing Le Jazz Hot will quite often do polkas, waltzes and show tunes in addition to their traditional jazz repertoire in the Benny Goodman style. Join us Friday night to dance, chat, eat, or just enjoy good music!



Agenda

Thursday

| | |
|-------------|---|
| 9:00-6:30 | Exhibit Hall Open |
| 10:00-11:30 | Convention Opening/Plenary Session |
| | • Stan Gruszynski |
| 11:30-1:00 | Lunch |
| | • Topic Tables |
| | • Paul Johnson |
| 1:00-3:00 | Workshops Block 1 |
| 3:00-3:30 | Refreshment Break in Exhibit Hall |
| 3:30-5:30 | Workshops Block 2 |
| 5:30-6:30 | Networking time |
| 6:30 | Dinner |
| | • Mike Staggs |
| Evening | Lake Leaders Reception/Hospitality |

Friday

| | |
|-------------|---|
| 7:30-6:00 | Exhibit Hall Open |
| 9:00-10:45 | Plenary Session |
| | • Richard Heinzl |
| | • David Zach |
| 10:45-11:15 | Refreshment Break in Exhibit Hall |
| 11:15-12:05 | Concurrent Sessions I |
| 12:15-2:00 | Lunch |
| | • Wisconsin Lake Stewardship Awards |
| | • Governor Jim Doyle (invited) |
| 2:00-2:50 | Concurrent Sessions II |
| 2:50-3:20 | Refreshment Break in Exhibit Hall |
| 3:20-4:10 | Concurrent Sessions III |
| 4:30-6:00 | Reception in honor of civic engagement |
| 8:00-? | Celebration (entertainment by Le Jazz Hot) |

Saturday

| | |
|-------------|-------------------------------|
| 7:30-1:00 | Exhibit Hall Open |
| 8:00-9:00 | WAL Annual Meeting |
| 9:10-10:00 | Concurrent Sessions IV |
| 10:00-10:15 | Break |
| 10:15-11:05 | Concurrent Sessions V |
| 11:15-12:05 | Concurrent Sessions VI |
| 12:05 | Lunch and Closing Ceremony |



Thursday Field Trips

2006 Wisconsin Lakes Convention

Shallow Lakes in Door County – Challenges and Opportunities

10:00 am - 5:30 pm

Experience the beauty of Door County in the springtime while learning about shallow lake ecology and associated management challenges and opportunities. Two lakes, Kangaroo and Clark, will be the focus of the visit. Both are relatively shallow lakes undergoing development pressure, have recreational boating issues, and are dealing with aquatic invasives. Clark is a fairly turbid system, while Kangaroo has had a diverse plant community and relatively clear water. On this trip hosted by local agencies and lake association members, you will discover the unique natural features of these lakes, gain an understanding of the science of shallow lakes, discuss recreational boating and aquatic invasive issues, find out from local lake leaders about the issues facing their lakes and how they have tried to solve them, and of course, experience unique Door County! Lunch and snacks will be provided, along with a packet of materials and the comfort of a motor coach! We'll also make stops in Bailey's Harbor and Whitefish Dunes State Park. (Full agenda can be found on the convention website.)

Space is limited (36 people max), so sign up early to reserve your spot.

Fee: \$25

(Note: Participants in this field trip will miss the plenary session and afternoon workshops being held at the KI Convention Center. Convention registration fee still applies, and covers food for the day, including dinner at the KI Center. The field trip fee covers the transportation.)

A Day on the Farm - With 1,400 Cows

1:00 pm – 5:30 pm

Visit Pagel's Ponderosa Dairy, a large operation that participates in the University of Wisconsin–Discovery Farms Program. The program conducts on-farm research to measure the real impact of agriculture upon water quality. It looks at ways to implement necessary environmental stewardship practices and to find the most economical and effective farm management practices to protect water quality. Pagel's Ponderosa Dairy is located within miles of Lake Michigan in rural Kewaunee. This family farm began in 1946 and has systematically grown in cow numbers and acreage. Currently the farm has 1,400 cows and raises corn and alfalfa on 4,000 acres. The farm's surface water runoff and tile line water is continuously sampled and analyzed for nutrients and sediment. On this trip, you will: 1) tour a modern dairy farm, learning about animal care, housing and milking facilities, feed and manure management; and 2) learn about on-farm research conducted by the UW-Discovery Farms Program for water quality stewardship, aiming to better understand and minimize environmental impacts of agriculture. Snacks will be provided, along with a packet of materials and the comfort of a motor coach! (Full agenda can be found on the convention website.)

Space is limited (36 people max), so sign up early to reserve your spot.

Fee: \$20

(Note: Participants in this field trip will miss the afternoon workshops being held at the KI Convention Center, but will be able to attend the morning plenary session and lunch on-site. Convention registration fee still applies and includes lunch and dinner at the KI Center. The field trip fee covers the transportation.)

Thursday Workshops

2006 Wisconsin Lakes Convention

If you are not participating in one of the Thursday off-site field trips, you will be asked on the registration form to choose one of these workshops for each of two timeblocks. (Longer descriptions, including presenters, can be found on the convention website.)

Workshop Block 1 (1:00-3:00 pm)

1A. Clean Boats, Clean Waters and Monitoring for Invasive Species Beyond the Boat Landing

(this workshop runs the entire afternoon, from 1:00-5:30 pm)

Part I. The *Clean Boats, Clean Waters* volunteer watercraft inspection program provides an overview of aquatic invasive species, instructions on how to organize an effective volunteer watercraft inspection program, and hands-on training for watercraft inspections. Volunteers are strongly encouraged to purchase a handbook and resource tool kit (available on-site) for \$25.

Part II. Learn about monitoring protocols for specific aquatic invasive species like zebra mussels, rusty crayfish, and Eurasian watermilfoil, along with monitoring equipment. Whole lake monitoring methods will be explained to assist in developing a proactive approach in early detection and rapid response efforts. A set of helpful materials, including *Through the Looking Glass* and color laminated plant scans will be available for purchase on-site for \$25.

Attendance limit: 25

1B. Restoring Your Lake Lot for Lake Protection – Shoreland Buffers

Intended for the lake-side property owner who wants to reduce the impact of their property on the lake environment, this workshop will provide a primer on “naturalizing” your shoreland lawn to improve water quality, wildlife habitat and natural beauty. You will gain a solid understanding of the impacts of shoreland development on lake ecosystems and the basic elements of planning, designing and constructing a natural shoreland buffer for reducing those impacts, whether you work with a consultant or do it yourself. You will sketch plan a project, so bring site-specific information.

Attendance limit: 30

1C. Grant Writing: How to Apply for DNR Lakes and Rivers Matching Grant Programs

Need funding for a lake or river project? An overview of current lakes and rivers grant programs available through the WDNR, including grant categories, available funding, grant requirements and important grant dates will be discussed. The grant overview will serve as background for an interactive grant writing tutorial covering goal and objective writing, and how to determine project scope, budget and timeline. Be prepared to get a good start on your grant application!

1D. Recreational Use Carrying Capacity and Your Lake

Many lakes are experiencing increased boating pressures. Excessive crowding can lead to recreational conflicts, safety concerns, and environmental impacts. Discuss methods used to try to estimate a lake’s recreational carrying capacity. Using the Lake Ripley model and Cloverleaf Lakes study, you will learn how to: 1) perform a summer watercraft census; 2) track lake-use patterns; 3) calculate “useable” lake-surface areas; 4) identify activity- and watercraft-based space requirements; 5) determine the “social carrying capacity;” and 6) evaluate whether observed lake uses exceed estimated carrying capacity thresholds.

1E. Aquatic Plant Management (APM) Planning

A well-crafted APM plan is an essential first step in managing aquatic plants. A good plan guides grant writing and permit applications to conduct responsible APM activities in the best interest of your lake’s ecology. This workshop will help you: 1) decide if you really need to “do something” about the aquatic plants in your lake; 2) create an APM plan with the best mix of strategies appropriate for your lake’s ecology; 3) understand when state rules and permits for APM activities apply to you and your lake; and 4) work effectively with your consultant.

1F. Aquatic Plants: Root of a Healthy Lake Ecosystem (repeated in Workshop Block 2)

Learning the aquatic plants of your lake can help with a myriad of undertakings: APM plans, grants, or just the satisfaction of a positive identification. Samples of Wisconsin’s common aquatic plants will give you a hands-on, up-close view of their intricacies and differences to aid you in identification. Learn how the various plants and plant families contribute to the health of a lake’s ecosystem.

Attendance limit: 25

Fee: \$30 (includes materials such as *Through the Looking Glass*)

(Workshop Block 1 continued)

Thursday Workshops

2006 Wisconsin Lakes Convention

Workshop Block 1 (1:00-3:00 pm), *continued*

1G. Enrich Your Life at the Lake by Identifying and Attracting Birds

Lakeshores and adjacent habitats are among the richest areas for birdwatching, featuring nearly every major group of Wisconsin birds. This workshop will: 1) introduce some shoreline birds; 2) help you learn to identify them; 3) provide tools for keeping records and sharing information with others; and 4) discuss ways to attract and conserve desirable species. Special emphasis will be placed on bird songs, which reveal the presence of species that are otherwise easily overlooked. Part of the workshop also will be devoted to habitat enhancement and effective bird feeding.

Workshop Block 2 (3:30-5:30 pm)

2A. Restoring Your Lake Lot for Lake Protection – Rain Gardens

Intended for the lake-side property owner who wants to reduce the impact of their property on the lake environment, this workshop will provide a primer on how to construct a rain garden to reduce stormwater runoff and protect lake water quality. You will gain a solid understanding of the impacts of shoreland development on lake ecosystems and the basic elements of planning, designing and constructing a rain garden for reducing those impacts, whether you work with a consultant or do it yourself. You will sketch plan a project, so bring site-specific information.

Attendance limit: 30

2B. Lake District Commissioner's Training

Managing a lake district can be a complicated undertaking. Whether you are new to your lake district or a seasoned lake district commissioner, this workshop will help you sort through the requirements of being a commissioner and provide helpful information on operating a lake district. We will cover changes to Chapter 33 (the state law which governs lake districts), preparing budgets, running an annual meeting, and how to comply with open meeting law and other requirements.

2C. No Fret, No Frustration, No Problem: Limiting Conflict Around Your Lake

When most of us think of time at the lake we conjure up the best of memories...summer days, laughter and relaxation. As more of us move to the lakes and spend more time there, we bring different ideas on what is fun and relaxing. This is a formula that can lead to disputes between neighbors. So how do we limit fretfulness, frustration and disappointment? This interactive workshop will explore conflicts, help us understand what makes us react the way we do when clashes occur, and discover ways to manage the outcomes.

2D. Aquatic Plants: Root of a Healthy Lake Ecosystem (see description in Workshop Block 1)

2E. Photography: Tips and Tricks for Taking Better Photos

Photographs are powerful. Learn about special techniques and approaches that professional photographers use to create stronger images that move and motivate their audience. Discover ways to create, handle and optimize digital images. Covering digital and film, topics explored in this workshop include lighting, composition, camera basics, people pictures, nature photos, close-up techniques, digital basics, PowerPoint and photo software. You are encouraged to bring questions and 2 or 3 examples of your work to share with the group. Digital images should be on a flash drive device or CD.

2F. Navigating Wisconsin Water Law: How Recent Changes in Chapter 30 Permitting Affect Lakefront Property Owners

2003 Act 118, signed into law in 2004, made sweeping changes to Chapter 30 of WI Statutes, which regulates activities undertaken and structures placed by private individuals and others along and in public waterways. Structures such as piers, rafts, riprap and seawalls, in-water boathouses and boat shelters, bridges, and culverts, as well as activities including dredging, filling, grading, and pond construction have been and continue to be regulated by Chapter 30. How does the permitting process work for lakefront property owners?

2G. Ecology and Identification of Dragonflies and Damselflies of Wisconsin

Wisconsin has over 110 documented species of dragonflies. Many are strikingly beautiful and colorful, and catch our eye as they fly by, darting, twisting, and hovering. Learn to identify some of these fascinating creatures as adults, larvae, and by their exuviae. (What's exuviae? We won't tell you here!) Find out how you can take part in the Wisconsin Odonata Survey by learning sampling strategies and techniques for citizen monitoring of dragonflies and damselflies. Attendance limit: 25

Friday/Saturday Stream Topics

2006 Wisconsin Lakes Convention

*A total of 39
concurrent
sessions will
be offered in
these Streams.*

Stream A: *Hands Across the Waters - Public Involvement*

Do you want to help shape the future of your lake, your community, and beyond? Get involved! Sample sessions in this stream: Partnerships in community planning; reaching consent for projects; citizen group actions; communicating with legislators; networking with decision-makers; running for local office.

Stream B: *The Inside Story on Invasives*

Invasive species can cause havoc to a lake's ecosystem, and learning what to watch for and how to manage them is important to many lake organizations. Sample sessions in this stream: Dealing with resistant Eurasian water-milfoil; toxic algae; purple loosestrife eradication; rusty crayfish; invasives to watch for in the future.

Stream C: *The Nuts and Bolts of Lake Organizations*

Running a lake organization takes time and effort from many concerned citizens, not to mention good, basic information. Sample sessions in this stream: Lake district annual meetings; starting a lake association; measuring the effectiveness of lake associations; private septic systems; lake grants; where to turn for assistance.

Stream D: *Topics in Limnology and Lake Management*

Limnology is the study of lakes, and there are a variety of management issues that lake organizations have to learn about and tackle. Sample sessions in this stream: Water quality and agriculture; effects of groundwater pumping on lakes; Secchi disk protocol; shallow lakes management; lakeshore aesthetics; latest internet tools for lake management.

Stream E: *Exploring the Wild Life of Lakes*

Interacting with fish, birds and other wildlife can make living on the lake a restful and exciting experience. Sample sessions in this stream: Ecology and management of bald eagles; dragonflies and damselflies; herp habitat on your shore; fish stocking; coarse woody habitat; aquatic invertebrate ecology.

Stream F: *Land Use and Water Law*

Explore recent legal and legislative affairs that relate to our lakes, as well as successful partnerships protecting our waters. Sample sessions in this stream: Update on latest court decisions; property tax credit for watershed management; acquisitions of conservancy land; NR 326 pier rules; NR115 shoreland development standards.

Stream G: *Local Government Involvement (Friday sessions only)*

Are you involved in local government, or interested in getting your local government interested and engaged in lake issues of all kinds? Sample sessions in this stream: Roles of town and county government; support systems for local governments; successful local project examples.



REGISTRATION FORM

 Please fill out both sides of this registration form. 

28th Annual Wisconsin Lakes Convention - Hands Across the Waters

April 20-22, 2006

KI Convention Center and Regency Suites, Green Bay

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: () _____ Email: _____

Affiliation (Lake Org., etc.) _____ County: _____

REGISTRATION

Registration fee includes major meals, breaks and materials.

Thursday, April 20 (see back of this form)

Friday, April 21

Saturday, April 22

Full convention, Thursday-Saturday, April 20-22

(save \$20 with the 3-day package!)

Late Registration Fee (after April 10, 2006)

Regular

☐ \$60

☐ \$75

☐ \$60

☐ \$175

Early Bird (by March 20)

☐ \$55

☐ \$65

☐ \$55

☐ \$155

Check for
vegetarian
meals ☐

☐ \$15

LODGING

Lodging Information:

KI Convention Center/Regency Suites

333 Main Street

Green Bay, WI 54301

(800) 236-3330 or (920) 432-4555

Rates:

\$95 single or double occupancy

\$105 king single or double occupancy

\$20 for each additional person up to a maximum of 6

Price includes full breakfast and 2 hours of complimentary beverages each evening. **Please refer to the Wisconsin Lakes Convention when reserving your room.**

Nearby Holiday Inn: (920) 437-5900 (\$89 single).

Nearby Days Inn: (920) 435-4484 (\$55 single
\$65 double).

PAYMENT

Registration Fee:

\$ _____

Thursday Field Trip or Workshop Fee:

\$ _____

(See other side of form)

Late Fee (if applicable):

\$ _____

Total Enclosed:

\$ _____

Payment method: ☐ Check ☐ Credit Card

Check one: ☐ Visa ☐ Master Card

Cardholder's Name _____

Card No. _____

Expires _____

Or register and pay online at

www.uwsp.edu/cnr/uwexlakes/conventions

You will receive confirmation and additional information upon registering.

No refunds issued after April 17, 2006.

 Please fill out both sides of this registration form. 

Mail this form with your check (payable to UW-Extension Lakes) or credit card information to:

UWEX Lakes, UWSP/CNR, 800 Reserve St., Stevens Point, WI 54481 (715) 346-2116 uwexlakes@uwsp.edu

Or register and pay online with a credit card at www.uwsp.edu/cnr/uwexlakes/conventions.

THURSDAY FIELD TRIPS or WORKSHOPS

Register early to save your spot!

See www.uwsp.edu/cnr/uwexplakes/conventions
for detailed descriptions.

Choose one:

- ☐ I would like to participate in a field trip rather than the workshops.
- ☐ I would like to participate in the workshops.

THURSDAY FIELD TRIPS - OR - WORKSHOPS

THURSDAY FIELD TRIPS

*Choose **ONE** of these field trips or move to the workshops section below.*

☐ Shallow Lakes in Door County:
Challenges and Opportunities
10:00 am - 5:30 pm
Fee: \$25

☐ A Day on the Farm
(With 1,400 Cows)
1:00 pm – 5:30 pm
Fee: \$20

- OR -

THURSDAY WORKSHOPS

*Please indicate a **first** and **second** choice for each workshop block. We will try to accommodate your first choice.*

Workshop Block 1 (1:00-3:00 pm):

- ___ 1A. Clean Boats, Clean Waters and Monitoring for Invasive Species Beyond the Boat Landing
(this workshop runs the entire afternoon, do not choose a workshop for Block 2) *Limit: 25*
- ___ 1B. Restoring Your Lake Lot for Lake Protection – Shoreland Buffers *Limit: 30*
- ___ 1C. Grant Writing: How to Apply for DNR Lakes and Rivers Matching Grant Programs
- ___ 1D. Recreational Use Carrying Capacity and Your Lake
- ___ 1E. Aquatic Plant Management (APM) Planning
- ___ 1F. Aquatic Plants: Root of a Healthy Lake Ecosystem (\$30 fee) *Limit: 25*
- ___ 1G. Enrich Your Life at the Lake by Identifying and Attracting Birds

Workshop Block 1 fee (if you chose 1F) \$ _____

Workshop Block 2 (3:30-5:30 pm):

- ___ 2A. Restoring Your Lake Lot for Lake Protection – Rain Gardens *Limit: 30*
- ___ 2B. Lake District Commissioner's Training
- ___ 2C. No Fret, No Frustration, No Problem: Limiting Conflict Around Your Lake
- ___ 2D. Aquatic Plants: Root of a Healthy Lake Ecosystem (\$30 fee) *Limit: 25*
- ___ 2E. Photography: Tips and Tricks for Taking Better Photos
- ___ 2F. Navigating Wisconsin Water Law: How Recent Changes in
Chapter 30 Permitting Affect Lakefront Property Owners
- ___ 2G. Ecology and Identification of Dragonflies and Damselflies of Wisconsin *Limit: 25*

Workshop Block 2 fee (if you chose 2D) \$ _____

Stewardship Awards

The Wisconsin Lake Stewardship Award recognizes the outstanding efforts of individuals and groups toward the well-being of Wisconsin's lakes. We encourage you to nominate those you feel deserve this prestigious award.

Wisconsin Lake Steward categories:

- 1) Individual citizen
- 2) Organized group
- 3) Youth group
- 4) Public official or employee
- 5) Business

The nomination deadline is March 24, 2006, and all nominees will be recognized at the Wisconsin Lakes Convention, April 20-22. For more information call Wisconsin Association of Lakes at 608-662-0923 or go to www.uwsp.edu/uwexlakes/conventions.

Save a Stamp, Register Online!

Save yourself some time and 39 cents by taking advantage of our online convention registration. Conveniently pay with a credit card over our secure site. Just log on to our website www.uwsp.edu/cnr/uwexlakes/conventions. If you have any questions, call us at 715-346-2116.



R

February 18 - Southeast Regional Lakes Workshop - Wisconsin Association of Lakes Southeast Region Lakes workshop will be held at the Richard T. Anderson Education Center - Waukesha County Technical College (Pewaukee campus). For more info: <http://wisconsinlakes.org/events/Southern06.htm>

A

March 2-3, 2006 - American Water Resources Association (AWRA) 2006 Meeting - "Wisconsin Water Resources: Conflicts & Collaborations" in Elkhart Lake. For more info: <http://www.awra.org/state/wisconsin/index.html>

D

March 20, 2006 - Early bird deadline for the 2006 Wisconsin Lakes Convention. See pages 6-14 for details and registration information.

N

April 25-28, 2006 - Planning A Survey of the Nation's Lakes - 19th Annual Conference on Enhancing the States' Lake Management Programs - Chicago, IL. For more information contact Bob Kirschner bkirschner@chicagobotanic.org

E

April 20-22 - 28th Annual Wisconsin Lakes Convention - Hands Across the Waters - KI Convention Center, Green Bay.

L

April 28-30, 2006 - Lake Home & Cabin Show - for details call 888-471-1192 or go to <http://www.lakehomeandcabinshow.com>

A

May 1, 2006 - Grants Deadlines

Lake Protection and Lake Classification Grants

<http://www.dnr.state.wi.us/org/water/fhp/lakes/lakeprot.htm>

River Protection Planning Grants

<http://dnr.wi.gov/org/caer/cfa/Grants/Rivers/riverplanning.html>

River Protection Management Grants

<http://dnr.wi.gov/org/caer/cfa/Grants/Rivers/riverprotection.html>

C



Lake Tides -- 905032
College of Natural Resources
University of Wisconsin
800 Reserve St.
Stevens Point, WI 54481

Non-Profit Organization
U.S. Postage
PAID
Permit No. 19
Stevens Point, WI

Volume 31, No. 1
Winter 2006



IN THIS ISSUE

| | |
|------------------------------------|-------|
| When Ice Shoves..... | 1-2 |
| Clean Boats, Clean Waters..... | 3 |
| Hold the Salt?..... | 4-5 |
| Welcome Pamela Toshner..... | 5 |
| 2006 WI Lakes Convention..... | 6-7 |
| Agenda at a glance..... | 8 |
| Field Trips..... | 9 |
| Workshops..... | 10-11 |
| Stream Topics..... | 12 |
| Registration Form..... | 13-14 |
| Save A Stamp, Register Online..... | 15 |
| Calendar..... | 15 |

Wisconsin Lakes Partnership



Published Quarterly

Internet: www.uwsp.edu/cnr/uwexplakes
E-mail: uwexplakes@uwsp.edu
Phone: 715-346-2116
Editors: Mary Pardee, Robert Korth,
 Tiffany Lyden
Design Editor: Amy Kowalski
Contributing Editor: Carroll Schaal, DNR
Photos by: Robert Korth (unless otherwise noted)
Illustrations by: Carol Watkins, Chris Whalen

The contents of *Lake Tides* do not necessarily reflect the views and policies of UW-Extension, UWSP-CNR, the Wisconsin DNR or the Wisconsin Association of Lakes. Mention of trade names, commercial products, private businesses or publicly financed programs does not constitute endorsement. *Lake Tides* welcomes articles, letters or other news items for publication. Articles in *Lake Tides* may be reprinted or reproduced for further distribution with acknowledgment to the Wisconsin Lakes Partnership. If you need this material in an alternative format, please contact our office.

Printed on recycled paper with vegetable-based ink.

Reflections

Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.

-Margaret Mead

