

A Long Winter's Nap

Amphibians & Reptiles Sleep It Off



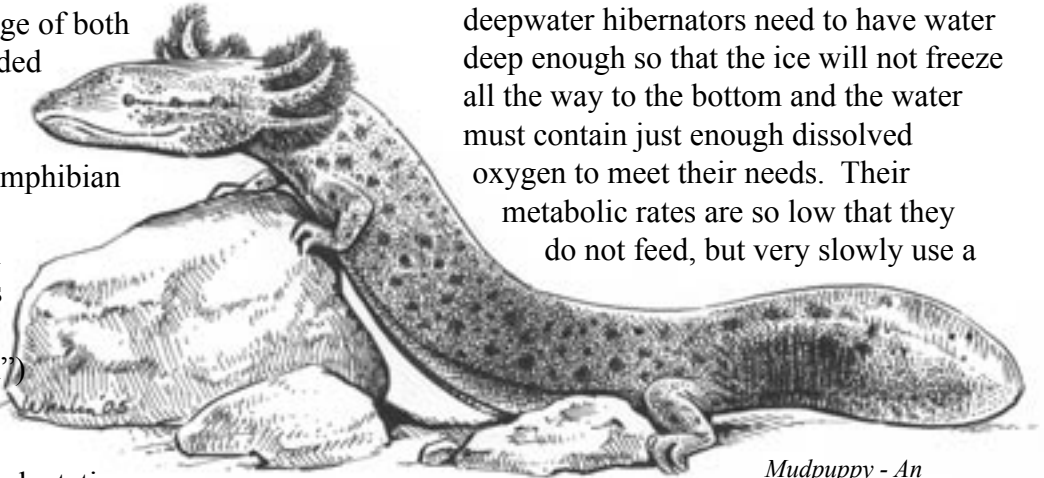
Surviving winter's chill requires special adaptations for animals whose body temperatures fluctuate with the environment. At this time of year you can walk across the surface of a lake on thick, hard ice and your feet crunch in the cold snows of deep winter. Ice and snow – these solid forms of water hide from our view the animals that lie dormant in the cold.

A Very Cool Community

Beneath the frozen surface of Wisconsin's lakes and in the snow-covered forests and swamps sleeps a very cool community of amphibians and reptiles. Their disappearance is hardly noticed for it is easy to forget about these silent "cold-blooded" critters during the winter months. But they are biding their time, quietly waiting out the months when frigid air and water temperatures slow their metabolic rate to a standstill. Hibernation (from the Latin word hiberna meaning "winter") is the word used to describe the wintertime inactive stage of both warm-blooded and cold-blooded animals. Amphibian and reptile hibernation (sometimes called "brumation") is possible because of marvelous adaptations.

Some amphibians and reptiles are even able to withstand freezing! How do they cope with these severe winter conditions? Not every Wisconsin amphibian or reptile species overwinters in the same way, but there are some general patterns.

As autumn sunlight dwindles and temperatures start to fall, frogs such as the leopard frog, green frog, and mink frog feel the urge to swim to the bottoms of ponds and lakes. They rest on the bottom or may even partially burrow into the mud. Their highly specialized skin allows them to breathe by taking in oxygen through their skin and giving off carbon dioxide in the same way. The moist film on their thin skin allows respiratory gases to dissolve and diffuse in and out of the blood capillaries. These deepwater hibernators need to have water deep enough so that the ice will not freeze all the way to the bottom and the water must contain just enough dissolved oxygen to meet their needs. Their metabolic rates are so low that they do not feed, but very slowly use a



Mudpuppy - An Aquatic Salamander

reserve of stored energy. Occasionally there are "winter kills" of frogs where the oxygen levels at the pond bottom are insufficient to sustain them.

(Continued on page 2)

(A Long Winter's Nap, cont.)

Another Wisconsin amphibian that spends winter in deep water is a large aquatic salamander called a mudpuppy. Unlike some frogs, this strange looking amphibian remains relatively active and even feeds during the winter. People ice-fishing occasionally catch them!

Reptiles such as the painted turtle, snapping turtle, and Blanding's turtle also spend their winters under deep water. They too require oxygen, but their skins are not as capable of exchanging gases as the amphibians. A turtle survives this dilemma by taking water into its mouth and cloaca (the termination of the urinary and digestive systems). Here, the skin lining the throat and cloaca is capable of exchanging enough oxygen and carbon dioxide to sustain the low metabolism.

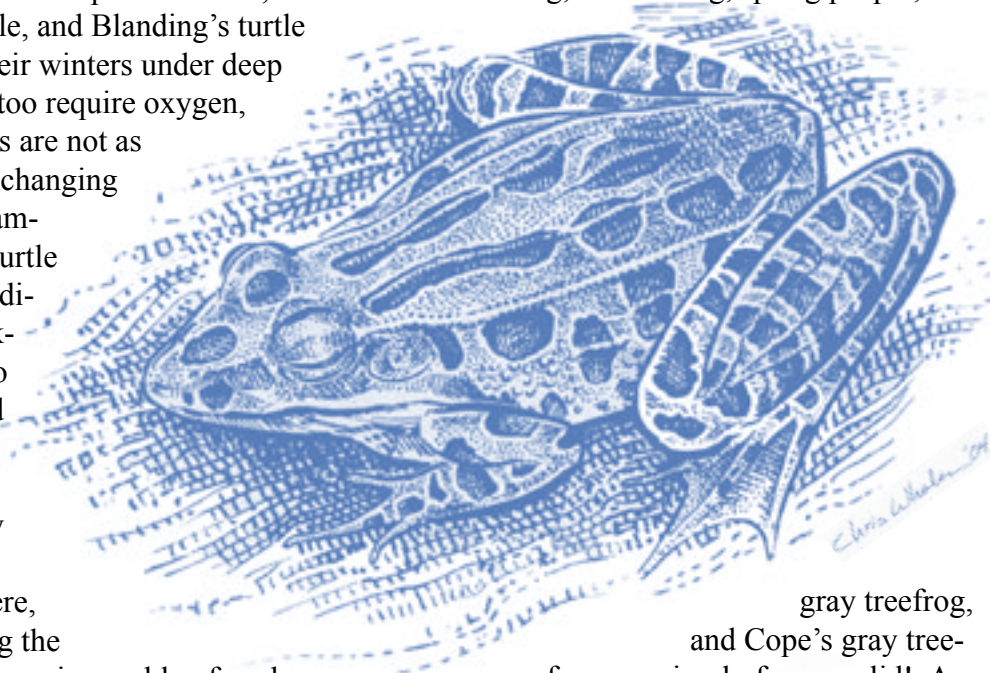
Hibernation Hiatus

Some amphibians hibernate on land by digging their way down below the frost line to avoid freezing. In autumn, the American toad burrows his way down by pushing earth with his hind feet. Down, down, down to three feet or more. The spotted, blue-spotted, and tiger salamanders go deep too, but they tend to use abandoned burrows or other natural holes. These salamanders are sometimes called "mole salamanders" because of their propensity to use burrows. Once they are deep enough, they go dormant and wait until the warming soils of spring signal the end of their rest. These deep-soil hibernators, like the deep-water hibernators share a common trait: if they freeze they

die. Changing climates with less snow to insulate the soil, and cold temperatures could impact these deep-soil hibernators.

Frozen Frogs

A few frogs native to Wisconsin have the amazing ability to withstand freezing. The wood frog, chorus frog, spring peeper,



gray treefrog, and Cope's gray treefrog can simply freeze solid! As late fall approaches, individuals of these species lay on the forest floor, under leaves and debris. When the temperatures dip for extended periods to below freezing, much of the water in their bodies (more than fifty percent) will freeze. During this time the frog does not breathe nor does its heart beat. Brain activity is immeasurable. The frog appears to be dead and rock-solid. Despite this apparently terminal condition, as temperatures warm, the frog awakens to spring. This feat is accomplished by an intricate metabolic process that results in high levels of sugars and sugar alcohols in the frog's tissues. This sugary mix acts as an antifreeze agent protecting the delicate cells in the body. Ice forms around the outsides of the frog's organs, but the thicker fluid in the individual cells does not freeze, and the fragile cellular structures remain intact.

Changing climates with less snow and cold temperatures could impact deep-soil hibernators.



As scientists have studied the freeze tolerance phenomenon, they've discovered that some reptiles also have this capability. Delicate hatchling painted turtles overwinter on land by surviving freezing. Garter snakes are freeze tolerant too, although they are not quite as hearty as their amphibian cousins when it comes to long bouts of freezing. Of course, a huge variety of invertebrate animals (such as insects, spiders, and slugs) are freeze tolerant, but that's another article.

As you sit in front of a warm fire in your den this winter, take a moment to marvel at how amphibians and reptiles pass their time during this frigid season. Before

long, the first spring peeper choruses will alert us that the season has changed. Leopard frogs will once again snag passing damselflies and painted turtles will crawl up on logs to capture the sun's warmth. Their adaptations have allowed survival through another long season of freezing temperatures. ❄️

*By Dean Premo, President and co-founder, White Water Associates, Inc.
www.white-water-associates.com*

Dean has a doctorate degree in zoology with an emphasis in herpetology (the study of amphibians and reptiles). With his wife and two children, Dean performs folk and traditional music as the family band White Water.

Hats Off to Crew V

Crew members of the fifth Wisconsin Lake Leaders Institute completed their training this fall with a memorable graduation at the Aldo Leopold Shack near Baraboo. DNR Secretary Scott Hassett, Interim Dean of UW-Stevens Point College of Natural Resources Christine Thomas, and WAL vice president Jim Abbs all attended the graduation.

This group of lake stewards spent six days together over the past year learning about lake ecology, local and state government, and leadership skills.

Since its inception, 160 participants have graduated from the Lake Leaders Institute and have made significant contributions in resolving a host of diverse water management issues.

Meet these Crew V graduates and other lake leaders at this year's Lakes Convention in Green Bay. More about the Lake Leaders Institute and those who have participated in Crews I through V can be found online at www.uwsp.edu/cnr/uwexplakes/lakeleaders/.

Join us in congratulating these special leaders of Crew V who are willing to make a commitment to Wisconsin lakes, participate in the decision-making and assist with our state's water issues...

Larry Bresina	Mary Jo Knauf	Paul Maulberg	Marlo Orth
LeAnn Colburn	Mary Knipper	Meg Marshall	Gordon Philip
Lisa Conley	Chris Krieg	Peter Murray	Scott Porter
Dennis Cullen	Terri Lyon	Cyndi Neeb (Crew IV)	Carolyn Scholl
Reesa Evans	Sam Lewis	Jim Neeb (Crew IV)	Teresa Scollon
Ann Heuschele	Emily Lund	Don O'Keene	Susan Sharkey
Derek Hoffman	Barry McLeane	Dave O'Malley	Dennis VanderWerff




DNR Secretary Scott Hassett congratulates Lake Leader Sam Lewis.



Mixing Milfoil

Eurasian & Northern Water Milfoil

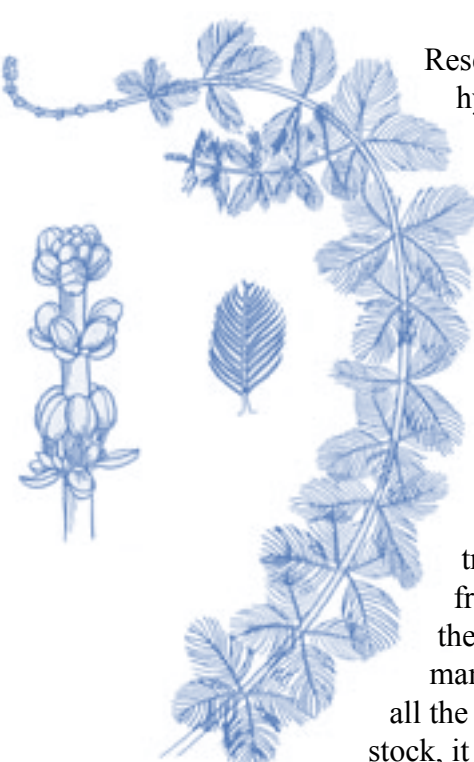
Create a Hybrid



There is an aquatic plant that most people who like lakes have heard of...a plant that can cause apprehension...Eurasian water milfoil (EWM). Now there is another wrinkle in the life of this tenacious plant. It seems to have developed a hybrid with Northern water milfoil, one of the “good plants.”

Northern water milfoil

Researchers know that water milfoils produce seeds, but they believe that most of these seeds do not germinate. It is considered even less likely that a seedling would live long enough to produce a viable plant. Somewhere, somehow, Northern water milfoil and Eurasian water milfoil cross-pollinated and viable seeds were produced. Thus a hybrid plant came into existence.



Researchers do not know where this hybridization took place or how it is spreading. DNA testing in 36 Wisconsin lakes found the hybrid living in sixteen of them. In the case of Pine Lake in Forest County, it has probably been there for years. The hybrid does not seem to be aggressive and is not forming large beds.

Since water milfoil spreads via plant fragments, we may be transporting hybrid fragments from one lake to another or maybe the hybridization is occurring in many lakes at the same time. If all the hybrids are of the same genetic stock, it would be convincing evidence that the plant is being spread via transportation as a fragment. If there is genetic variability in the hybrids, it would lead us to believe hybridization is happening on its own in different lakes.

Eurasian water milfoil

DNA testing is the only sure way to tell if you have the hybrid milfoil. The hybrid does not canopy like EWM. In fact, researchers have not found specific characteristics that fit only the hybrid – it seems to have a combination of characteristics of both parent plants. Because of factors that can be unique to an individual lake such as nutrient levels, water clarity, and water depth, even the same species of water milfoil often look different from lake to lake. To make it even more confusing, water milfoils, like many plants, display variances even on the same plant. Looking at a single water milfoil plant you will find that the leaves often have different counts of leaflets depending upon where you pull the leaf from the stem. It is quite common for the lower leaves to have fewer leaflets per leaf. That is why there are ranges on leaflets in the plant taxonomy keys. EWM has leaves with “more than” 12 leaflets on each side of the leaf. Northern water milfoil has “11 or fewer” leaflets on each side of the leaf. These are general guidelines, however, and you can certainly find Eurasian water milfoil plants with less than 12 leaflet pairs and Northern water milfoil plants with more than 11 leaflet pairs per leaf.

We will need more studies to better understand the hybrid. Researchers will look at the effect of chemicals on the hybrid, how easily EWM plants cross-breed with Northern water milfoil, and if the water milfoil weevil will control the hybrid. We do not know if the hybrid is more or less aggressive than the native Northern water milfoil. History has shown that human impacts on aquatic systems (such as the introduction of EWM) can have major consequences...with luck this milfoil hybrid will prove harmless.💧

AIS Workshop Opportunity

With the growing concern over the spread of aquatic invasive species to Wisconsin's inland lakes, many lake association members and other concerned citizens are looking for ways to get involved.

To address this need, the Wisconsin Lakes Partnership is offering workshops through their Clean Boats, Clean Waters Volunteer Watercraft Inspection Program. In 2004, over 350 volunteers were trained to perform watercraft inspections to educate boaters on how and where invasive species are most likely to hitch a ride into waterbodies.



How can you get involved?

For more information about the Clean Boats, Clean Waters Watercraft Inspection Program visit www.uwsp.edu/cnr/uwexlakes/CBCW. For more information on the following workshops contact Laura Felda-Marquardt at Laura.Felda@dnr.state.wi.us or 715-365-2659.

Workshop Dates and Locations

- April 9** - Spooner, 8:30am-noon, Agriculture Research Station, Washburn County
- April 13** - Crandon, 6-9pm, Crandon Library, Forest County
- April 16** - Barnes, 8:30am-noon, Barnes Town Hall, Bayfield County
- April 23** - Mercer, 8:30am-noon, Mercer Community Center, Iron County
- April 28** - Green Bay, 6-9pm, KI Convention Center, Brown County (see page 14)
- April 30** - Green Bay, 8-11am, KI Convention Center, Brown County (see page 14)
- May 4** - Manitowish Waters, 6-9pm, North Lakeland Elementary School, Vilas County
- May 10** - Rhinelander, 6-9pm, Nicolet College, Oneida County
- May 14** - Ashland, time TBA, Great Lakes Visitor Center, Ashland County
- May 17** - Amherst Junction, 5-8:30pm, Lake Emily County Park, Portage County
- May 19** - Elkhorn, 4-7:30pm, Government Center, Walworth County
- May 21** - Waukesha, 8:30am-noon, DNR Service Center, Waukesha County
- May 26** - Eagle River, 6-9pm, Northland Pines Middle School, Vilas County
- June 2** - Minocqua, 6-9pm, Nicolet College-Lakeland Campus, Oneida County
- June 11** - Florence, 8:30am-noon, Resource Center, Florence County
- June 16** - Madison, 2-5pm, location TBA-Big Splash Angler Ed. Program, Dane County
- June 18** - Barron, 8:30am-noon, location TBA, Barron County
- June 21** - Eagle River, 1-4pm, Trees For Tomorrow-Big Splash Angler Ed. Program, Vilas County
- June 23** - Cable, 1:30-5pm, Telemark Lodge-Northwest WI Lakes Conference, Bayfield County
- July 9** - Ladysmith, 8:30am-noon, location TBA, Rusk County

Additional workshops may be added, please check the website for the latest details:
www.uwsp.edu/cnr/uwexlakes/CBCW. 📌



Grant Rules

Guidelines for Aquatic Invasive Species Control Grants

There is a growing realization of the potential effects of aquatic invasive species (AIS) on Wisconsin's waters and therefore, on our economy. This concern has helped to generate state financial support in the struggle to control AIS and limit their spread in our waters.

To assist in guiding the work that will be done with these grant dollars, rules are now in place which will help people interested in managing invasive species in their lakes or rivers. The Wisconsin legislature directed the Department of Natural Resources (DNR) to write rules (NR 198) that establish procedures to award cost-sharing for Aquatic Invasive Species Control Grants. These grants are available to public and private entities for up to 50% of the costs of projects to control invasive species. These monies are available to conduct projects on all waters of the state, including lakes, rivers, streams, wetlands and the Great Lakes. The grant projects are broken down into three major groupings:

- ***Education, prevention and planning***
- ***Early detection and rapid response***
- ***Controlling established infestations***

Eligible Sponsors

Any entity that is eligible for a Wisconsin Lake or River Planning or Protection Grant is also eligible for an AIS Control Grant. This includes units of local government, tribes, lake protection and rehabilitation districts, qualified lake associations, qualified river management organizations, nonprofit conservation organizations and qualified school districts. However, first priority will go to units of local government.

The state will pay up to 50% of the cost of a project, with caps of:

- ***\$75,000 for education, prevention and planning***
- ***\$10,000 for early detection and rapid response***
- ***\$75,000 for controlling established infestations***

The remaining 50% must be provided by the local organization in the form of cash, time, services, or "in-kind" items. These grants operate on a reimbursement basis.

Applications

Applications for education, prevention and planning projects and established infestation control projects are due by the first of February and August of each year. Early detection and rapid response grants are offered continuously on a first-come, first-served basis, funded in order of approval.

More detailed information on lake grants can be found at <http://dnr.wi.gov/org/caer/cfa/grants/Forms/LakesGuidelines2004.pdf>. The DNR can provide help with applications and technical guidance. Private consultants can also assist you. A list of consultants, without endorsements, can be obtained from UW-Extension, College of Natural Resources, University of Wisconsin, Stevens Point, WI 54481 www.uwsp.edu/cnr/uwexlakes/lakelist/ (715/346-2116 or uwexlakes@uwsp.edu) or your DNR Regional Lakes Coordinator. 🌊

*Curly-leaf
Pondweed*

AIS Control Grants - Qualifying Projects

There are many types of projects that qualify for the Aquatic Invasive Species (AIS) Control Grants. The following list gives you a flavor of what they might be. Details and the actual rule (NR 198) can be found at the UWEX Lakes website at www.uwsp.edu/cnr/uwexlakes/law

1. Education, Prevention and Planning

- Educational programs and distribution of information about AIS. (Note: Projects will be reviewed for consistency with the DNR statewide education strategy and the use of existing publications and outreach materials).
- Monitoring, mapping and reporting of data about the presence or absence of AIS to provide baseline information and monitor trends in a water body or water bodies.
- Development of plans for the prevention and control of AIS.
- Studies or assessments that will aid in the prevention and control of AIS.
- Watercraft inspection and education projects.

2. Early Detection and Rapid Response

- Identification and removal, by approved methods, of small pioneer populations of AIS in the early stages of colonization or re-colonization.
- Control of a re-colonization following the completion of an established infestation control project.

3. Controlling Established Infestations

DNR-approved control activities recommended in a management plan adopted by the sponsor for the control of AIS. Experimental or demonstration projects following a DNR approved plan. Purple Loosestrife bio-control projects (no plan approval required).



*Flower Smellers - Donna Bennett
2003 WI Lakes Convention Photo Contest*

Help With Your Newsletter

Are you always looking for good articles and pictures for your lake newsletter?

Check out the UWEX Lakes website at www.uwsp.edu/cnr/uwexlakes and click on *Editor's Corner*. You will find dozens of articles from past issues of *Lake Tides*, photos and website resources for your use. Also feel free to call our staff if you have questions about newsletters.

Grants



Water In Our Veins

Celebrating Lake Volunteers

2005 Wisconsin Lakes Convention
April 28-30, 2005

KI Convention Center/Regency Suites, Green Bay

Hooray for volunteers! This is the message of the 2005 Wisconsin Lakes Convention, to be held April 28-30 in Green Bay. Wisconsin lake enthusiasts spread an amazing amount of tender loving care over the waters of our state. They are busy monitoring water quality, designing conservation and restoration efforts, engaging in public education and more.

What makes a great volunteer? How are we motivated to action? These issues and others will be some of the topics addressed at the 27th annual Wisconsin Lakes Convention. This conference represents an exceptional opportunity to listen, learn and discuss with others your experiences and questions on lake and water resource management, law, land use and watershed planning, shoreland restoration, economics, youth and adult education and other important topics.



*Hoarfrost, by Marge Kazmierczak
2004 WI Lakes Convention Photo Contest*

Thursday

The convention will start on Thursday, April 28 at 9:30 a.m. in the Exhibitors Hall with refreshments and information about the products and services of our business partners. Get a peek at some of the cutting-edge technologies being used in the business of lake management. At 10:30 a.m., the convention will officially kick off as attendees gather for addresses from Wisconsin's Attorney General Peg Lautenschlager, Buddy Huffaker from the Aldo Leopold Foundation speaking on leadership, and Howard Aprill, one of our state's many volunteer Army Reservists, speaking about his experience as "An American Naturalist in Iraq." The remainder of the day will be spent in concurrent sessions allowing time to network with old and new friends, with lunch and dinner included in the price of the convention. After-dinner events will include sessions on current lake issues along with a feature play, "On Golden Pond," presented by students of New Auburn High School.



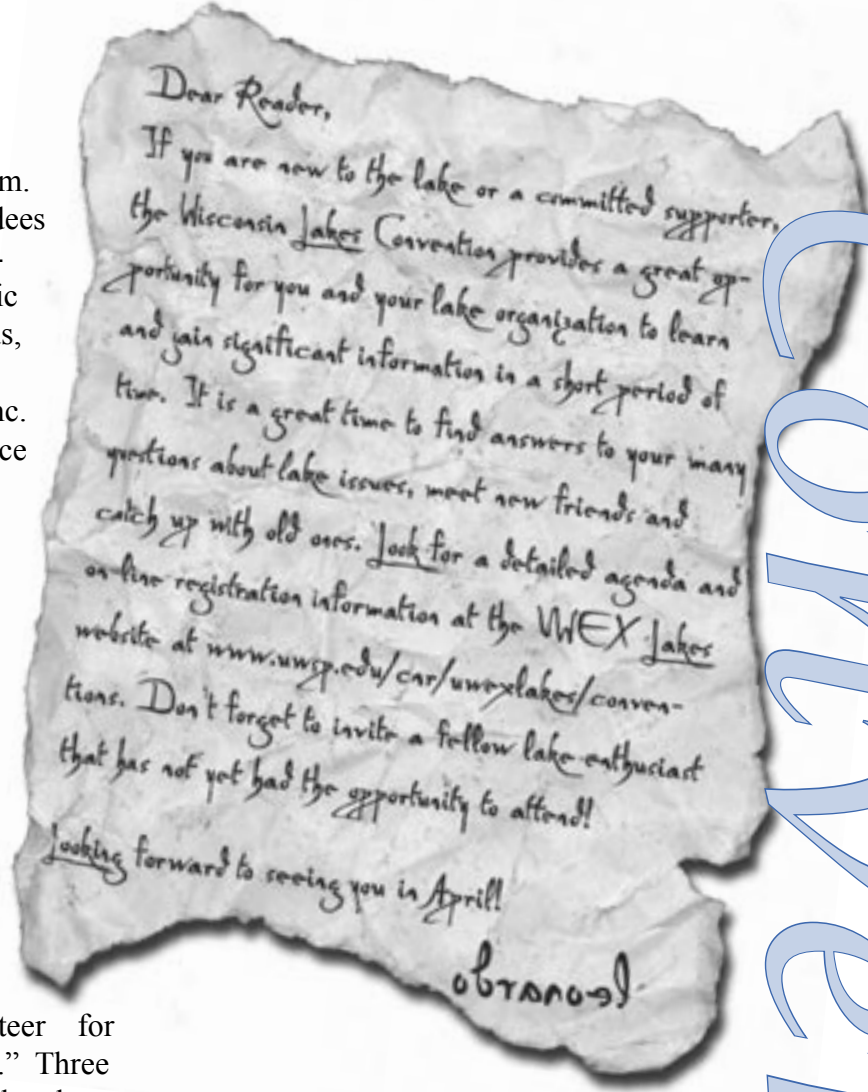
Friday

Friday, April 29 will begin at 9 a.m. with a plenary session. All attendees will gather to hear about an exciting new way for the general public to tune into their home watersheds, brought to us by Dave Jones of StormCenter Communications, Inc. Dave combines years of experience in meteorology, broadcasting and remote sensing with a vision for the future in leading the way to transform the television weather-cast into an "Envirocast."

Advocates for clean lakes, such as Governor Jim Doyle (invited), Representative Scott Gundersen and DNR Secretary Scott Hassett, will also be on hand to talk with us and address our concerns about lake issues. We will end the plenary with a multi-media reminder of why we volunteer for lakes called, "Water in Our Veins." Three sets of concurrent sessions will take place on Friday, along with the Wisconsin Lake Stewardship Awards ceremony. These awards, while always special, take on new meaning this year as we celebrate all who volunteer their time and expertise to keep our lakes part of Wisconsin's legacy. Friday evening will feature sessions on current lake issues and a late-evening reception at the Neville Public Museum, just over the Fox River from the convention hall.

Saturday

More exciting learning and networking opportunities will take place on the final day of the convention, Saturday, April 30. Concurrent sessions and the WAL annual meeting will highlight the morning. The hottest ticket at the convention has always been the aquatic plant identification workshop, from 8-11am, which requires pre-registration. The convention closes with a lunch and special farewell ceremonies.



Concurrent Sessions

Concurrent sessions are always a major part of the Wisconsin Lakes Convention. We've gathered together a premier collection of experts on lake management, water policy, and education. Just a few short years ago, the convention offered four sets of concurrent sessions. In 2005, we are up to seven sets of concurrent sessions over the three days of the convention. The sessions are offered in topic "streams," and we will be featuring eight streams this year for a total of 56 different concurrent sessions that attendees can choose from. While this enormous amount of information can seem overwhelming, it allows attendees to learn about issues and topics that most interest them and gives them opportunities to talk with experts on these subjects. Attendees can follow a stream throughout the convention or portage around to different ones to suit their interests. 🌊

Convention



Stream Topics

2005 WI Lakes Convention

Stream A: *Exploring the Wild Life of Lakes* – Discover the habits of some curious critters that you might find in or near your lake, from fur bearers to fish and many places in between.

Stream B: *The Inside Story on Invasives* – What are the best ways to control Eurasian water milfoil? Should we aggressively manage invasive plants or leave them alone? Are toxic blue-green algae a threat to our health? These are just a few of the questions to be addressed by experts in the field of invasive species.

Stream C: *Land Matters: Riparians and Watersheds* – The health of a lake is a reflection of how the land that drains into it is used. Look at various case studies and ways that you can take action to protect your lake by protecting your watershed.

Stream D: *The Nuts and Bolts of Lake Organizations* – Running a lake organization takes the time and effort of many concerned citizens. How can you start to organize and how do you keep the momentum moving forward? First-timers and those involved in lake organizations for many years annually welcome the information contained in this stream.

Stream E: *Topics in Limnology and Lake Management* – From habitat to water quality, knowing what makes a lake ecosystem tick is vital for anyone who lives on or cares about Wisconsin's lakes. Here you will find both basic and in-depth sessions to increase your personal limnological knowledge.

Stream F: *Voices for Volunteerism: Stories of Success!* – Wisconsin's many varied ecosystems continue to benefit from the vigilance and caring of its citizens. As we celebrate volunteerism, discover some successful projects along with ways to work with volunteers or become one yourself!

Stream G: *The Economics of Lake Living* – Lakeshore property owners face many issues when it comes to taxes and the local economy. Explore the current reality and future strategies to address not only the economic health of inland lake communities, but also the state's issues tackled by Annex 2001. (If you want to find out what Annex 2001 is...you'll have to go!)

Stream H: *Public Policy and Water Law* – Planning for shoreline and pier rules are ongoing. What are the latest updates and how do they affect you? Get your questions answered during this exploration of recent legal and legislative affairs by those forming the policy. 🌊



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Thursday

9:30am-7pm Exhibit Hall Open
 9:30-10:30am Refreshments in Exhibit Hall
 10:30am-noon Convention Opening/Plenary Session
 - Attorney General Peg Lautenschlager
 - Howard Aprill - "An American Naturalist in Iraq"
 noon-1:30pm Lunch
 -Talk tables
 -Speaker (TBA)
 1:30-2:20pm Concurrent Sessions I
 2:20-3:00pm Refreshment break in Exhibit Hall
 3:00-3:50pm Concurrent Sessions II
 3:50-5:00pm Networking time
 5:00-6:00pm Dinner
 6:00-9:00pm Clean Boats Clean Waters: Volunteer Watercraft Inspection
 (pre-registration and fee required for this workshop)
 7:00-9:00pm Evening Sessions
 7:00-10:00pm "On Golden Pond" - theatrical performance by
 New Auburn High School students

Online registration now available!
www.dsmn.edu/conferences/lakes/conventions

Auburn

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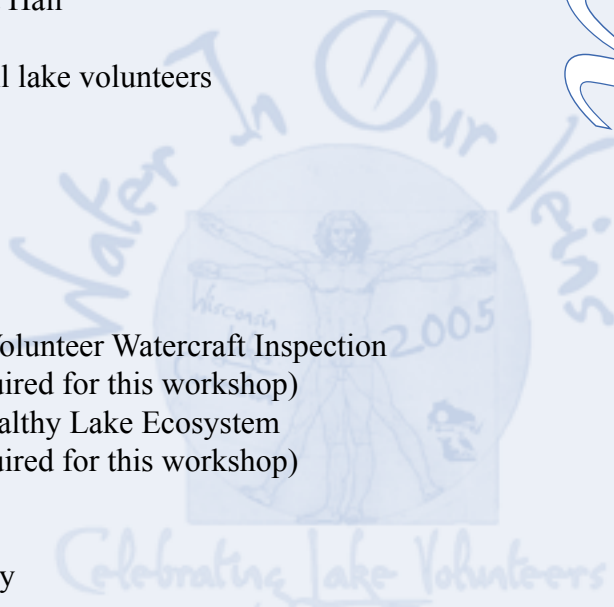
Friday

7:30am-7pm Exhibit Hall Open
 9:00-10:45am Plenary Session
 -Christine Thomas - UWSP College of Natural Resources
 -Dave Jones - StormCenter Communications Inc.
 -Representative Scott Gunderson
 -DNR Secretary Scott Hassett
 -Multi-media presentation "Water in Our Veins" by Robert Korth
 10:45-11:15am Refreshment break in Exhibit Hall
 11:15am-noon Concurrent Sessions III
 12:15-2:00pm Lunch
 -Wisconsin Lake Stewardship Awards
 -Governor Jim Doyle (invited)
 2:00-2:50pm Concurrent Sessions IV
 2:50-3:20pm Refreshment break in Exhibit Hall
 3:20-4:10pm Concurrent Sessions V
 4:30-6:00pm Reception in celebration of all lake volunteers
 7:00-9:00pm Evening Sessions

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Saturday

7:30am-1pm Exhibit Hall Open
 7:45-8:45am Morning sessions
 8:00-9:00am WAL Annual Meeting
 8:00-11:00am Clean Boats Clean Waters: Volunteer Watercraft Inspection
 (pre-registration and fee required for this workshop)
 8:00-11:00am Aquatic Plants: Root of a Healthy Lake Ecosystem
 (pre-registration and fee required for this workshop)
 9:10-10:00am Concurrent Sessions VI
 10:10-11:00am Concurrent Sessions VII
 11:15am-1pm Lunch and Closing Ceremony



Logo Facts



The theme of this year's lakes convention is "Water in Our Veins." We are celebrating the hard working volunteers of Wisconsin's lakes. Those who volunteer often blend art and science, show creative

and forward thinking, and march to a different beat. Who better represents these attributes than Leonardo da Vinci and what better than his amazing illustration The Vitruvian Man.

Leonardo da Vinci 1452-1519

As inventor, painter, sculptor, artist, engineer and scholar, Leonardo da Vinci was one of the great minds of the Renaissance. Throughout his life, Leonardo had brilliant and far-out ideas, ranging from the practical to the prophetic...ideas like the parachute, helicopters, tanks, and SCUBA equipment. When it came to water, he had all sorts of ideas. He dreamed up plans for a device to measure humidity, a steam-powered cannon, many different waterwheels, and industrial machines powered by flowing water. He saw science as the measure of beauty...he combined fact with poetry and made use of both to carry on wide investigations in nature.

Leonardo wrote in Italian using a shorthand he invented. People who study his notebooks have long been puzzled over his use of what is called "mirror writing." He would start at the right side of the page and move to the left, making the text read-

able only when held up to a mirror. Only when he was writing something intended for other people did he write in the normal direction.

While Leonardo is perhaps best known for his *Mona Lisa* and *The Last Supper*, he also studied and painted nature and anatomy. His dissections of the human body paved the way for remarkably accurate figures. He was the first artist to study the physical proportions of men, women and children and to use these studies to determine the "ideal" human figure.

Leonardo's pen and ink drawing, *Vitruvian Man*, depicts the human form fit to a circle and a square. While the drawing is used frequently in our culture, few people know its name or the secrets that it contains. Vitruvius was an early Roman architect who believed that buildings should be based on the proportions of man, because the human body is the model of perfection. He justified this by stating that the human body with arms and legs extended fits into the

Leonardo da Vinci was like a man who awoke too early in the darkness, while the others were all still asleep.

- Sigmund Freud



perfect geometric forms, the circle and the square. The original design explained by Vitruvius contains many layers of geometry and symbolism. This idea of “reason” governing “form” was the fundamental theme of the Renaissance and is traceable in the architecture and art of the time.

Our 2005 Lakes Convention logo uses *Vitruvian Man*, mirror writing, and a font based on Leonardo’s own handwriting. To all of you who, like da Vinci, share a love for the beauty of art and science we say thank you for all you have done and the vision you see. 🌊

www.uwsp.edu/cnr/uwexlakes/conventions
Online registration now available!

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.

There are five categories in which to acknowledge Wisconsin Lake Stewards:

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

The nomination deadline is April 1, 2005, and all nominees will be recognized at the Wisconsin Lakes Convention, April 28-30. For more information call Wisconsin Association of Lakes at 608-662-0923 or go to www.uwsp.edu/cnr/uwexlakes/conventions.

Photo Contest

To celebrate the 27th Wisconsin Lakes Convention, UWEX, WDNR and WAL are once again sponsoring a photo contest. It is an opportunity to show the state why you love your lakes as well as display your skill with a camera.

Entry Categories:

www.uwsp.edu/cnr/uwexlakes/conventions

1. People enjoying lakes.
2. Natural features around and in lakes and under water.

Basic Rules: See our website for detailed rules before entering!

1. The contest is open to anyone. An entry form is required.
2. Prints must be at least 8 x 10 inches and mounted (not framed or matted)
3. UW-Extension reserves the right to obtain an electronic or film copy of any image entered in the contest, for non-commercial educational or promotional use.

Judging:

Photos will be judged by a three-member panel. Criteria for judging include visual impact, technical merit and composition. Cash prizes are awarded!

The prints will be displayed and judged at the Wisconsin Lakes Convention, April 28-30, 2005.

Good luck!



REGISTRATION FORM

27th Annual Wisconsin Lakes Convention - Water In Our Veins: Celebrating Lake Volunteers
April 28-30, 2005
KI Convention Center and Regency Suites, Green Bay

Name: _____
 Address: _____
 City: _____
 Daytime Phone: (____) _____ Email: _____
 Affiliation (Lake Org., etc.) _____ County _____

CONVENTION	Cost includes major meals, breaks and materials.		
		Regular	Early Bird (before March 10)
	Thursday, April 28	<input type="checkbox"/> \$60	<input type="checkbox"/> \$55
	Friday, April 29	<input type="checkbox"/> \$75	<input type="checkbox"/> \$65 Check for
	Saturday, April 30	<input type="checkbox"/> \$60	<input type="checkbox"/> \$55 vegetarian
	Full convention, Thurs-Sat, April 28-30	<input type="checkbox"/> \$175	<input type="checkbox"/> \$155 meals <input type="checkbox"/>
	Late Registration Fee (after April 15, 2005)	<input type="checkbox"/> \$15	

OPTIONAL WORKSHOPS	<p>Registration for these workshops closes April 18! See www.uwsp.edu/cnr/uwexplakes/conventions for more detailed descriptions.</p> <p>Clean Boats, Clean Waters: Volunteer Watercraft Inspection (Limit: 25) This three hour workshop will provide the materials and training to help volunteers set up a monitoring and watercraft inspection program. <input type="checkbox"/> Thursday, April 28, 6-9pm <input type="checkbox"/> Saturday, April 30, 8-11am \$25 (includes complete boat landing toolkit)</p> <p>Aquatic Plants: Root of a Healthy Lake Ecosystem (Limit: 25) A hands-on, three hour approach to aquatic plant identification, this is a unique opportunity to learn and identify Wisconsin's common aquatic plants. <input type="checkbox"/> Saturday, April 30, 8-11am \$30 (includes aquatic plant collection kit and book)</p>	<h2 style="margin: 0;">PAYMENT</h2> <p>Conference Fees: \$ _____</p> <p>Workshop Fees: \$ _____</p> <p>Total Enclosed: \$ _____</p> <p>Payment method: <input type="checkbox"/> Check <input type="checkbox"/> Credit</p> <p>Check one: <input type="checkbox"/> Visa <input type="checkbox"/> Master Card</p> <p>Cardholder's Name _____</p> <p>Card No. _____</p> <p>Expires _____</p> <p style="text-align: center;">You will receive confirmation and additional information upon registering.</p> <p style="text-align: center;">No refunds issued after April 23, 2005.</p> <hr style="border: 1px wavy blue;"/> <p style="text-align: center;">I am a WAL member <input type="checkbox"/></p> <p style="text-align: center;">(Contact WAL - \$20 rebate info. 1-800-542-5253)</p>
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Lodging information: KI Convention Center/Regency Suites, 333 Main St., 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 in the evening. **Please refer to the Wisconsin Lakes Convention when reserving your room.** Nearby Holiday Inn: (920) 437-5900 (\$62/night).

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

Save a Stamp, Register Online!

Online Convention Registration Now Available

Save yourself some time and 37 cents this year by taking advantage of our new 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. ☎

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February 23, 2005 - Watershed Planning Conference - Milwaukee. A day focusing on the health of local watersheds and Lake Michigan. For more information: 414-272-5100 or www.mmsd.com/wqi/.

March 10, 2005 - Early bird deadline for the 2005 Wisconsin Lakes Convention. See pages 8-14 for details and registration information.

March 11-12, 2005 - Wisconsin Aquaculture Annual Conference - A registration packet can be found online at www.cals.wisc.edu/ccs (click on *Register Online* and scroll down to *Wisconsin Aquaculture Conference*).

For registration questions, please contact CALS Conference Services at 608-263-1672.

March 30-31, 2005 - Shallow Lakes Forum - Arrowood Resort, Alexandria, MN. The event will focus on the impacts of shoreland development on shallow lakes, subsequent surface water and land use changes, and the policy that goes along with these issues. For more information: www.shallowlakes.info or contact Shannon Fisher at 507-359-6073.

April 1, 2005 - Deadline for 2005 Wisconsin Lakes Stewardship Award nominations. See www.uwsp.edu/cnr/uwexlakes/conventions for details.

April 22-24, 2005 - Lake Home & Cabin Show - for details call 888-471-1192 or go to www.lakehomeandcabinshow.com

April 28-30, 2005 - 27th Annual Wisconsin Lakes Convention - Water in Our Veins: Celebrating Lake Volunteers - KI Convention Center, Green Bay.

May 1, 2005 - Grants Deadlines

Lake Protection and Lake Classification Grants

www.dnr.state.wi.us/org/water/fhp/lakes/lakeprot.htm

River Planning Grants

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

River Management Grants

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



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Reflections

The Wood Frog *(excerpt)*

I am a frozen frogsicle.
I froze beneath a logsicle.
My mind is in a fogsicle
Inside this icy bogsicle.
My temperature is ten degrees.
I froze my nose, my toes, my knees.
But I don't care, I feel at ease,
For I am full of antifreeze.

- Douglas Florian
lizards, frogs and polliwogs (2001)

Douglas Florian is a nationally known children's author and illustrator. His latest book is *zoo's who*.

