Lake Tides
The newsletter for people interested in Wisconsin lakes

Celebrating Great Work

Leading by Example to Care for the Public Trust

Wisconsin is known for its amazing lakes, rivers, streams and wetlands. As the numbers of residents and tourists increase over time, it becomes more and more challenging to protect these water resources from overuse and abuse. Thankfully, we have many professional organizations and volunteer citizen groups that are doing some great work in resource management to help us keep a balance by protecting and preserving these watery gems.

We have been focusing on several of these volunteers and specialists in this year's editions of Lake Tides*, from Wisconsin Lake Stewardship Award winners to Invader Crusaders, Citizen Lake Monitoring Network Superstars and other amazing water lovers. We would like to continue to feature these outstanding efforts by sharing a few more notable awards that have been presented recently.*

Cumulative efforts of individuals can make an enormous impact, especially over time.

In addition to the award recipients, there are thousands of professionals and citizens doing great work to keep our state's water resources healthy. You are probably one of them! So, "Thank you!" and we hope you continue your great work!

Green Lake Conservancy Awarded 2015 Land Trust of the Year Award

Gathering Waters, Wisconsin's umbrella resource for the state's 50 land trusts, honored Green Lake Conservancy (GLC) with their prestigious Land Trust of the Year Award. Green Lake Conservancy has provided lake and watershed protection for the past 20 years, working with landowners to preserve their lakefront properties. To date, 17 properties and over 700 acres of watershed lands have been protected. These properties offer trails, boardwalks and even a water trail to the public. Additionally, GLC has forged a partnership with other organizations to create the Green Team—offering up monthly outings to community members, including field trips, canoe/kayak floats, maple sugar making, winter moonlight walks, bicycle tours and other family-oriented activities.

(Continued on page 2)

Photo by Althea Dozour Photography

Green Lake Conservancy Board Members L to R: Tom Schultz, Bob Burke, Jane Pearsall, Melissa Curran-Secretary, Peter Vandervelde-VP Organization & Treasurer, Bur Zeratsky-President, Thomas Eddy-VP Conservation & founding board member, Debbie Zeratsky & Lindsie Wallenfang

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Wisconsin Lakes Partnership

Wisconsin DNR Secretary's Director Awards

Each year the Wisconsin Department of Natural Resources (WDNR) acknowledges individuals or groups who have displayed outstanding innovation and teamwork. Typically, there is one person within the WDNR and a person or group external to the Department who receive these awards. We would like to congratulate Buzz Sorge, Tim Day and Ray Zuelke for their exceptional work!

Photo provided by UWEX Lakes

Lake Biologist Buzz Sorge

This year, Buzz Sorge of the WDNR Water Division was selected as an employee who demonstrates excellence in leadership, and there is no one more deserving. As a lake biologist in the Western District, Buzz works tirelessly to understand current science, build relationships with stakeholders, and gather resources in order to protect and improve the lakes of Wisconsin. Buzz's technical knowledge on watershed conditions, in-lake management and agricultural practices helps guide his lake management recommendations to address the complex factors affecting lake health. Not only does Buzz understand good science, but he recognizes that building trusting relationships is vital to help improve water quality and habitat.

Over his career, Buzz has spent countless nights and weekends hosting meetings to organize civic governance. These gatherings bring together local partners to improve the management of local water resources. Buzz has also coached members of lake associations and districts on leadership skills. As a result, Wisconsin's ability to enhance lakes has multiplied many times over due to local leaders advocating and working for their lakes.

Buzz Sorge accepts this wonderful framed picture at an awards ceremony

Buzz has played an important role in eight Total Maximum Daily Loads (TMDLs) developed in Western Wisconsin including Lake St. Croix, Lake Menomin and Tainter Lake. Buzz is currently the Chairman of the St. Croix Basin Water Resources Planning-Implementation Team which is completing what will be the first TMDL implementation plan in Wisconsin. Through all of his work, Buzz has built trusting relationships with scientists, educators, local government officials, lake residents and farmers that are critical to solving the environmental issues in our state. Congrats Buzz on a job well done!

Volunteers Ray Zuelke and Tim Day

Volunteers Ray Zuelke and Tim Day of Shawano Area Waterway Management (SAWM) have been honored by the Wisconsin Department of Natural Resources for tackling invasive plants in 6,215-acre Shawano Lake.

Jean Romback-Bartels, WDNR Secretary's Director for northeast Wisconsin, presented the 2015 Secretary's Director award to Zuelke and Day on Sept. 22, shortly after the SAWM volunteers delivered a report on their efforts to the Wisconsin Natural Resources Board. The Board was touring several ecologically important sites in the area.

Eurasian watermilfoil (EWM), an invasive plant, out-competes native plants and affects fish habitat, food sources and navigation. SAWM has successfully applied for grants that funded the treatment of about 1,300 acres of EWM clusters in Shawano Lake. Shawano Lake is a popular fishing and boating destination, and it is a powerful economic driver for the surrounding communities.

In addition to conducting the detailed investigations, community outreach and

funding drives behind the grant applications and treatment plans, Zuelke and Day worked with local schools to educate young students. The students then implemented boat launch campaigns to have conversations with lake users about invasive species and their transport.

"We can't do all that needs to be done in maintaining and enhancing the natural resources of the state," said WDNR Secretary's Director Jean Romback-Bartels. "We rely heavily on citizen partnerships to fill niches in resource management. Working with partners like Ray Zuelke and Tim Day is critical to protecting priceless resources such as Shawano Lake."

Shawano Area Waterways Management (SAWM) is a non-profit organization dedicated to protecting and preserving the waters of Shawano Lake, the Wolf River and the channel connecting them on behalf of 1,200 waterfront property owners. With the support of over 400 active members, SAWM is the leading advocate for the waterways and is actively engaged with the local communities as well as various state agencies.

Jim Krietlow Awarded Wisconsin DNR Water Quality Bureau's Employee of the Year

The Wisconsin DNR's Bureau of Water Quality provides science-based monitoring, analysis and regulation of discharges to surface waters to protect and maintain the water quality in Wisconsin through management actions. These actions include aquatic plant management, aquatic invasive species initiatives and lakes, rivers and wetland grants and program implementation. The Bureau's leadership recently selected Jim Krietlow from among the dozens of field and central office staff as their 2015 Employee of the Year.

Jim has worked for the DNR for thirty years and is presently a Water Resource Management Specialist in a northern region that includes Florence, Forest, Lincoln, Langlade, Price and Taylor Counties. He has brought his professional knowledge of algae to scores of lake stakeholders seeking help with their water quality concerns. He has also taken on some of the more contentious water resource issues

Photo provided by Wisconsin DNR

Pictured here (L to R): Tim Day, Ray Zuelke, Jean Romback-Bartels (WDNR Secretary's Director in the northeast and Brenda Nordin (WDNR Water Resources Management Specialist, Marinette, Menominee, Oconto and Shawano Counties)

in northern Wisconsin, always maintaining his professional and dedicated demeanor. In summarizing his accomplishments, his colleagues noted: "Jim has worked his entire adult life to protect the public trust. He believes with all his heart that it is his responsibility to protect and defend the resource. He works every day with people in the grant program to provide a vehicle to lake groups to protect their lake and satisfy the public interest. Jim has a full plate which includes contentious issues, but he keeps moving forward – if you asked Jim he would say, 'That is all you can do.'"

Photo provided by WDNR

Nominate a Lake Steward

Deadline: February 5, 2016

Do you know folks like these who dedicate time and talent to our state's water resources? Please nominate them for the prestigious Wisconsin Lakes Partnership Stewardship Award. The categories are:

- Citizen
- Organized group
- Youth (individual or group)
- Public service
- Business

Recipients and all nominees will be recognized at the Wisconsin Lakes Partnership Stewardship Award Banquet, March 31, 2016. Find a nomination form at www.uwsp.edu/cnr/uwexlakes/. Click on *2016 Convention* under **Events** in the left navigation bar.
For more information call the Wisconsin Association of Lakes at 608-661-4313 or 800-542-5253.

AIS Snapshot Day

Volunteers Make a Splash Searching for Invasive Species Statewide

By Jeremy Jones, Aquatic Invasive Species Program Director, River Alliance of Wisconsin

On August 29, 2015, over 100 volunteers splashed into streams all across Wisconsin to search for invasive species that threaten recreation and the health of our waters. This second annual statewide monitoring event was coordinated by River Alliance of Wisconsin, Wisconsin Department of Natural Resources and over 20 local partners. Braving the rain, volunteers dipped rakes, nets and hands into rivers to collect samples and bring them back for verification with experts at their host sites. These citizen scientists covered 54 different rivers including portions of the Chippewa, Mississippi, Manitowoc, Plover, Fox, Bois Brule and Wisconsin, with a focus on high-use bridge crossings and landings.

Photo by Kaci Baillies

Volunteers in Fond du Lac County monitor their neighborhood river for invasive species.

The goal of the day was to detect new infestations of aquatic invasive species (AIS), including pioneer populations from recent aquarium releases or water gardens. These types of releases occasionally occur at the end of summer as people clean out their water ponds and may dump their plants and animals into easily accessible waterbodies. The day also focused on emerging threats such as the New Zealand mudsnail, faucet snail and Asian clam. These species are difficult to control once established, so early detection is key.

On the morning of the event, volunteers met at one of 17 rendezvous sites around the state and received training on simple monitoring protocols for 22 different species, including wetland plants, aquatic plants and invertebrates. Volunteers monitored 131 sites and found invasive species at 71 of the sites. The four most common target species found were zebra mussels (31), Eurasian watermilfoil

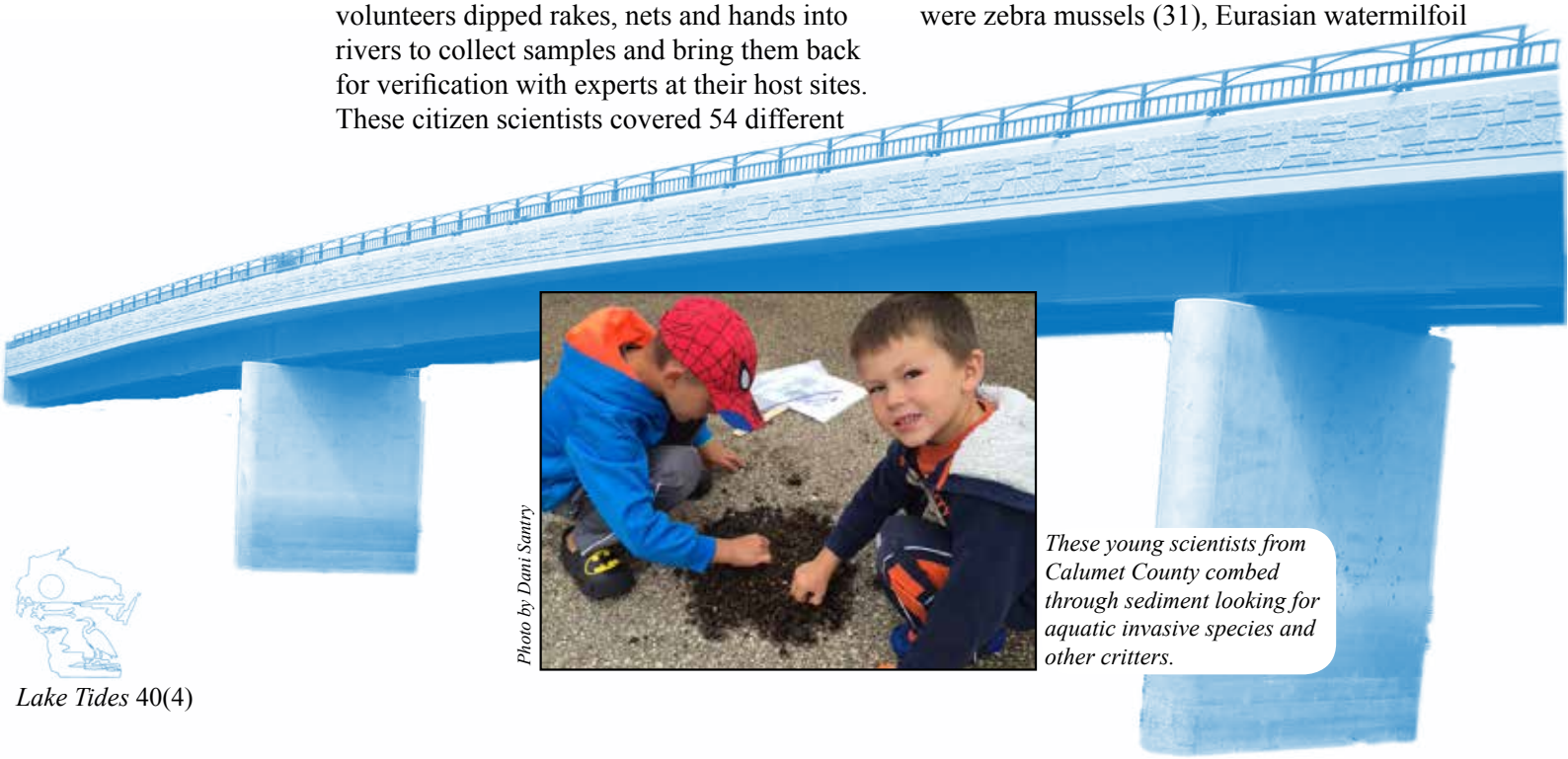


Photo by Dani Santry

These young scientists from Calumet County combed through sediment looking for aquatic invasive species and other critters.

(22), purple loosestrife (17) and faucet snails (10). There was a collective sigh of relief at the good news that no new infestations of prohibited water garden plants were found. However, some sites reported invasive species such as faucet snails and zebra mussels in previously undocumented locations. These results help refine our understanding of the distribution of these species and where to target outreach efforts such as signage and training events. For a map of the monitoring sites and results visit: http://www.wisconsinrivers.org/events/display/item/snapshot-day.

This event was a great success because of all the eyes on the water. But beyond the data, volunteers shared stories of romping in their rivers, hearing their kids shift from 'yuck' to 'cool' while exploring river life, and learning hands-on in their local waters. Many families came out to monitor along with employees from Time Warner Cable and other dedicated stream enthusiasts. Local AIS coordinators, who are the backbone of this effort, made the day fit their local needs with hosts leading paddles, jumping into the stream with their volunteers or lighting up the BBQ to celebrate the day. This event connects citizens and their water, building more than a database of species but also an informed public who are not afraid to hitch up their mud boots and hit the stream to protect their resources.

photo by Kaci Baillies

Surface Water Grant Deadlines Just Around the Corner

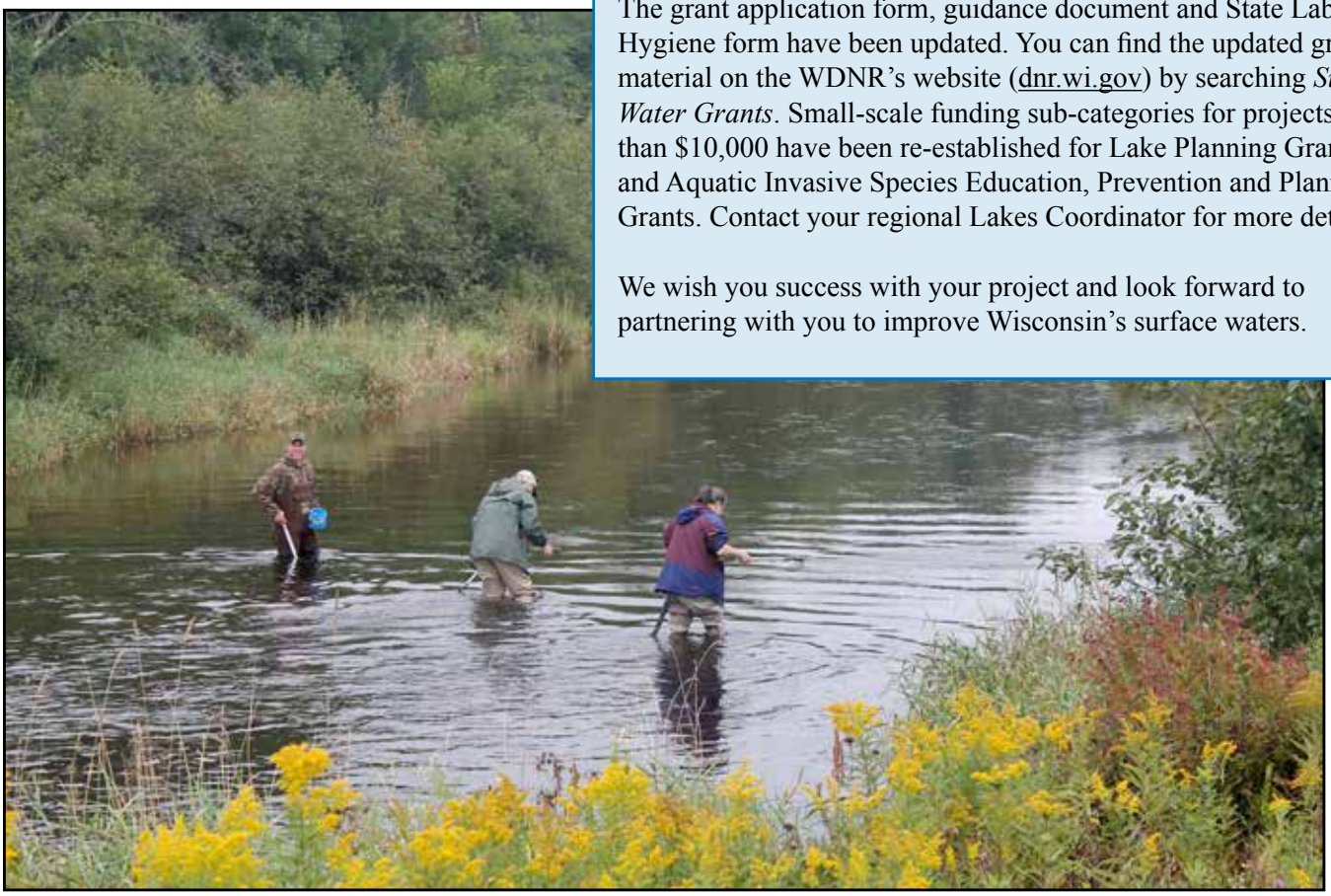
Lake, River and Aquatic Invasive Species Planning Grants are due December 10, 2015; Management Grants are due February 1, 2016. If you plan to apply, be sure to work with your regional AIS/Lakes/Rivers Coordinator to develop a successful project (search for *AIS coordinator* on the dnr.wi.gov website).

The grant application form, guidance document and State Lab of Hygiene form have been updated. You can find the updated grant material on the WDNR's website (dnr.wi.gov) by searching *Surface Water Grants*. Small-scale funding sub-categories for projects less than $10,000 have been re-established for Lake Planning Grants and Aquatic Invasive Species Education, Prevention and Planning Grants. Contact your regional Lakes Coordinator for more details.

We wish you success with your project and look forward to partnering with you to improve Wisconsin's surface waters.

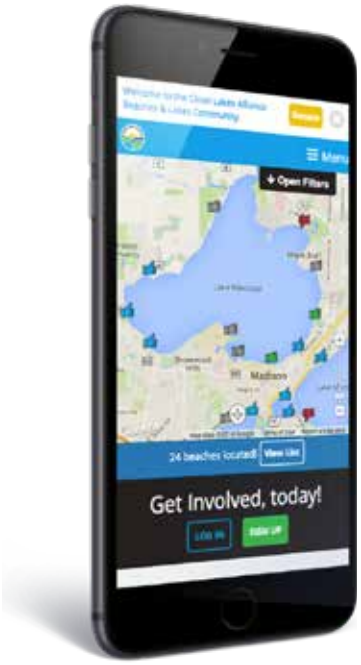
Volunteers in Marathon County join in the fun during AIS Snapshot Day.

Photo by Chris Hamerla



What's the Water Like Today?

Lakeforecast.org Brings Water Quality Data to our Fingertips



Anyone who spends time on lakes knows how quickly conditions can change. A shift in the wind and an algal bloom on Monday can give way to crystal clear waters on Tuesday. Even on the same day, near-shore conditions will often vary from one spot to another. With such variability, it would be easy (but misinformed) to take an isolated event and write off a whole lake as crowded or dirty. Our communities want and deserve information, but how and where can they get it? We've long had real-time weather and traffic reports, so why not real-time beach-condition reports?

What It Is and How It Works

These questions were the inspiration behind lakeforecast.org, a new tool that brings water quality data to the people, thanks to citizen scientists and the latest smartphone capabilities. Launched this past summer, the Greater Madison lakes community is now empowered to make the most of their day on the water by tapping into the power of a large water quality monitoring network.

Lakeforecast.org is a mobile-ready information hub conceptualized by the Clean Lakes Alliance (CLA), a Madison-area non-profit group working to reduce phosphorus loading by 50% to local lakes by the year 2025. The project was realized in partnership with MIOsoft, the City of Madison, Dane County, and University of Wisconsin-Madison's Center for Limnology and Space Science Engineering Center. The partnership seeks to increase beach use by engaging lake visitors with user-friendly water quality information. Through interactive maps and search features, anyone with Internet access can find the latest water temperature and clarity reports, and learn whether beaches are open, lifeguards are on duty or algal blooms are present before leaving home.

Founded in 1998, MIOsoft focuses on context-based data technology. MIOsoft's U.S. office and global headquarters are located in Madison, WI.

Reliability and Predictions

The mobile website aggregates water quality data from a number of sources. Beach closures come from the local public health department, while scientific instrumentation on a buoy maintained by the University of Wisconsin complements water quality data uploaded from CLA's network of over 50 citizen-monitoring stations. Aside from informing the general public of evolving lake conditions, the collaboration is aiding University researchers in developing models that attempt to predict the location and severity of algal blooms before they even materialize.

Future Capabilities

In the future, anyone will be able to report beach conditions and upload photos, making lakeforecast.org a powerful crowd-sourced social tool. "We want to get to the point where, on a daily basis during the summer, we talk about water quality just like we talk about weather or traffic," said CLA's Executive Director James Tye. Ultimately, the hope is that by providing timely and accurate information on lake conditions, more people will use the lakes and enjoy their time there, leading to more public support for clean lakes efforts.

Photo by Katie Van Gheem

Making Lakes Better

One Impaired Waters Listing at a Time

By Katie Hein, Lakes Monitoring Technical Lead, WDNR
with contributions from Aaron Larson, Water Resources Management Specialist, WDNR

Looking out over the sparkling water, it is hard to believe that Bass Lake was once on the impaired waters list. Algae scums slicked the surface, and fish often died in winter due to low oxygen levels. The problems stemmed from neighboring agricultural practices, which contributed to high phosphorus levels in the lake. Marinette County worked with landowners and a range of governmental entities to clean up the lake. Approximately $696,000 was invested in efforts to reduce phosphorus inputs to the lake and immobilize phosphorus that had already polluted the lake. The total phosphorus concentration in Bass Lake decreased from 490 ug/L to 10 ug/L and water clarity doubled. Bass Lake was delisted in 2010 after 26 years of management efforts and monitoring.

Success stories like Bass Lake are poster children for impaired waters listings. In 1972, the Clean Water Act was passed, specifying water quality standards for all waterbodies in the nation. These standards are only useful if someone actually goes out to monitor water quality and track which waters are meeting water quality criteria. If those criteria are not being met, the specific waterbody is placed on the impaired waters list. In Wisconsin, the top three pollutants for lakes are mercury, E. coli and total phosphorus. Both mercury and E. coli are human health concerns; mercury contaminates fish tissue and E. coli is a pathogen that pollutes beaches. Total phosphorus causes eutrophication and excess algae growth. It wasn't until 2010 that Wisconsin first codified total phosphorus standards. Out of 613 lakes with sufficient data to assess phosphorus-related impairment, 87 were added to the 2014 impaired waters list.

What is the fate of lakes on the impaired waters list?

First, a water quality restoration plan needs to be developed to determine the sources of pollutants and identify reduction targets. Partners and stakeholders work with the Wisconsin Department of Natural Resources (WDNR) to create and then implement this water quality improvement plan. Waters are delisted once new monitoring data prove the waterbody meets the standards. Sixty-two lakes have been delisted for mercury contamination since 2006. Although it is difficult to pinpoint causes for each lake, mercury emissions and accumulation have declined since the 1970s in the Upper Midwest, thanks in large part to air pollution control, less industrial use, shifts from coal to natural gas and less waste incineration. Practices that lead to cleaner beaches are more localized, including the reduction of stormwater runoff and combined sewer overflows, sewage treatment and the relocation of geese. Nine beaches on seven inland lakes were delisted for E. coli since 2006.

Photo provided by WDNR

In Wisconsin, the top three pollutants for lakes are mercury, E. coli, and total phosphorus.

It takes time to fix nutrient problems in lakes because phosphorus can come from a large area of land surrounding the lake. It often takes commitment from the entire community to change land management practices. Improvement can also take time because phosphorus deposited in lake sediments continues to pollute the lake even after external sources are cut off. That is why it took community involvement and an alum treatment, which locks up existing phosphorus, to improve Bass Lake. Since 2008, three lakes have been deleted from the list for total phosphorus, but it will take more management efforts and time to improve the 54 lakes that remain.

(Continued on page 13)

You Otter Read This!

By John Bates, Northwoods Naturalist and Author, manitowish@centurytel.net, 715-476-2828

Otters can outswim all other land mammals and most fish, utilizing their webbed hind feet, a slight sculling motion from the tail, and a back-to-belly flexing undulation for propulsion.

Years ago, my wife Mary and I drifted in our canoe around a bend of the Manitowish River and came upon an otter family. The otters repeatedly dove and surfaced, snorting at us whenever they popped up. Eventually, they swam back into some shrubby willows, and all was quiet for a minute. Then we heard birdsong coming from the willows. We wondered why birds would be singing from within a small shrub complex when six otters were hiding there. The birdsong wasn't familiar to either of us, and we couldn't identify the species. With our binoculars, we panned the shrubs for any sign of songbirds, but saw nothing. Several minutes passed. The songs continued, and we decided to move on, concerned that we might be stressing the otters, even though we were on the other side of the river.

Photo by hehaden, Flickr Creative Commons

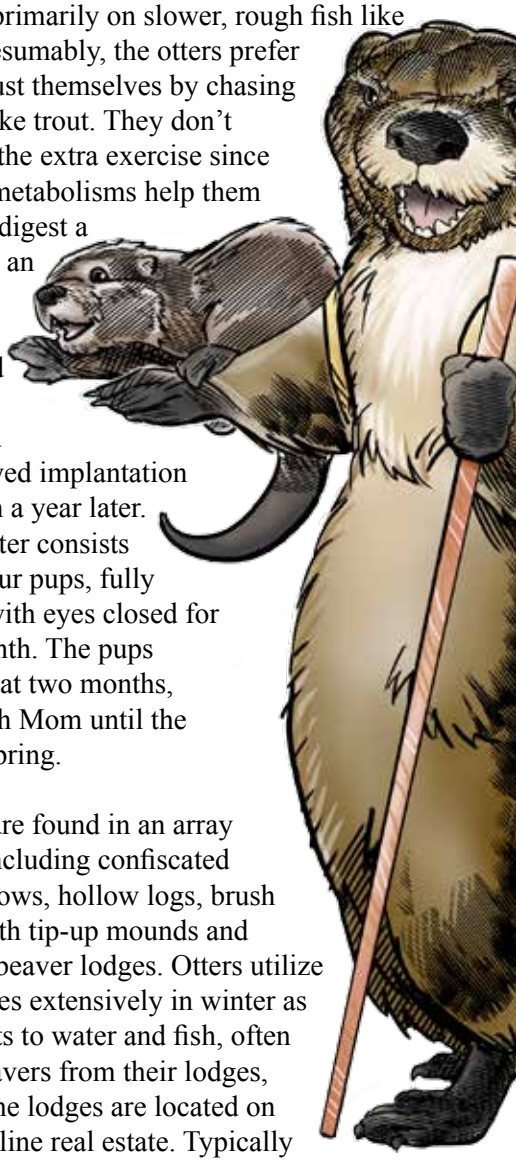
This otter definitely wants to be heard!

The next day we looked up otters in Hartley Jackson's Mammals of Wisconsin and found to our amazement that otters emit "an oft-repeated birdlike musical chirp, evidently a call note." We'd never known that was possible, but his description fit what we heard. We had yet another remarkable experience to add to our appreciation of otters.

Otters leave clear sign of their presence if you don't actually get a chance to see them. They deposit an oily black scat that usually contains orange crayfish scales. Look on the inside curves of the river where sand deposits accumulate. These sites offer warm, dry tables for otters to eat their meals in peace.

The largest member of the weasel family at three to four feet long (including the tail) and 15 to 25 pounds, the otter's long, muscular body is a swimming machine. Otters can outswim all other land mammals and most fish, utilizing their webbed hind feet, a slight sculling motion from the tail, and a back-to-belly flexing undulation for propulsion. They are able to stay under water for six minutes or more, dive to 40 feet, and outmaneuver much smaller fish. Otters can capture trout if they wish, though trout are a minor component of their diet. Their straight away speed under water is estimated at up to seven miles per hour.

Like most animals, otters feed opportunistically on whatever is available at the wetland buffet, which ranges from crayfish to frogs, muskrats to fish and even a few birds. However, research studies in Wisconsin, Michigan and Minnesota show that otters feed primarily on slower, rough fish like suckers. Presumably, the otters prefer not to exhaust themselves by chasing faster fish like trout. They don't really need the extra exercise since their rapid metabolisms help them completely digest a meal within an hour!

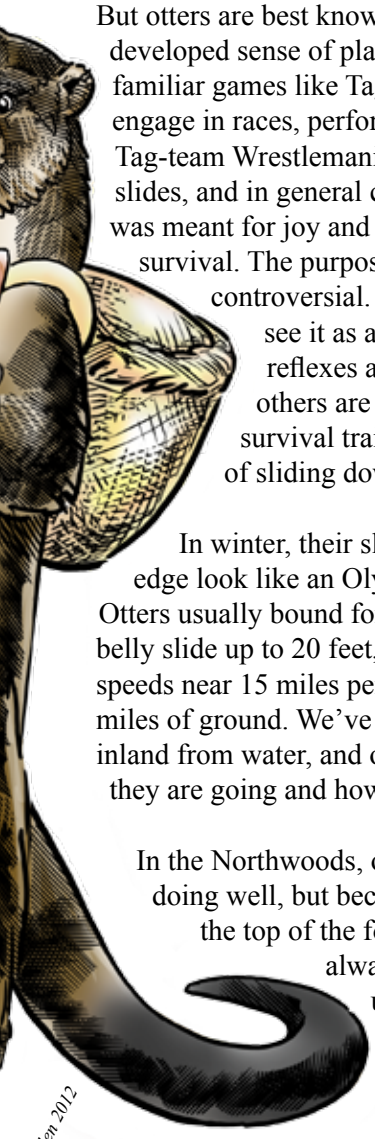


Otters breed in March or April and utilize delayed implantation to give birth a year later. A typical litter consists of two to four pups, fully furred but with eyes closed for the first month. The pups are weaned at two months, but stay with Mom until the following spring.

Otter dens are found in an array of places, including confiscated animal burrows, hollow logs, brush piles, beneath tip-up mounds and abandoned beaver lodges. Otters utilize beaver lodges extensively in winter as access points to water and fish, often evicting beavers from their lodges, given that the lodges are located on prime shoreline real estate. Typically about three square miles of lakes and streams lie within the territory of one otter pair.

Photo by William Schmoker

These otters are relaxing on a dock in Burnett County. Thank you to William Schmoker for submitting this to the Wisconsin Lakes Partnership Photography Contest (see page 13 for more information).



Whalen 2012

But otters are best known for their beautifully developed sense of play. They appear to play familiar games like Tag or Follow the Leader, engage in races, perform wild versions of Tag-team Wrestlemania, go up and down slides, and in general cavort around as if life was meant for joy and not the hardship of survival. The purpose of their play remains controversial. Animal behaviorists see it as a means of sharpening reflexes and hunting skills, while others are hard-put to assign survival training to hours on end of sliding down mud banks.

In winter, their slides can make a river edge look like an Olympic toboggan venue. Otters usually bound for a few steps and then belly slide up to 20 feet, moving along at speeds near 15 miles per hour and covering miles of ground. We've seen their slides miles inland from water, and often wonder where they are going and how they find their way.

In the Northwoods, otter populations are doing well, but because they are near the top of the food chain, they will always remain relatively uncommon. Given their uncommon approach to life, that's only fitting.

Listen Up! You May Hear Otters Before you See Them

You will typically hear an otter before you see one, but what do they sound like? Here is a quick reference:

Happy - While playing, otters might chirp, purr, squeal or make gurgling sounds. Young otters tend to be more vocal during play.

Location - A single, loud chirp sounding like a small bird or tree frog, or maybe a squeaky wheel, helps family units stay together after spreading out during the day to hunt. Mothers will let out a single chirp, while pups will chirp constantly until they find their mama.

Fear & Alarm - Otters may hiss or yelp if they are anxious, but turn to a whistle in order to beg or send an alarm. If you hear a loud, staccato "hah" sound, like a dog's bark, it's likely they are warning other otters of danger. If threatened, an otter may scream so loud it can be heard a mile away!

Threatening - While breeding, male otters will fight over territory and often grunt, hiss and snarl (like scrappy little dogs). Like many other mammals, a mother otter will growl and hiss, and even physically attack a male who is trying to take food from her young.

Keeping Lakes in the Family

Sharing the Magic Through Stories

Compiled by Lynn Markham, Center for Land Use Education, UW-Stevens Point

*This year's children's book recommendations focus on things fish need: food, shelter, maybe even another fish to love. Underwater plants are a home, safe haven, nursery and bountiful buffet for fish and many other creatures in a healthy lake. Trees in lakes provide similar benefits: spawning areas, shelter and food. Bass and bluegill, for example, build their nests among aquatic plants, which shelter the nest and provide cover for the young fish once they hatch. Yellow perch lay their eggs on submerged wood and aquatic plants. Often, the **amount** of plants that cover the lake bottom is more important to fish than any particular species of plant. Aquatic plants are also the base of the food web, providing food for insects, frogs and small fish. Caddisflies feed on aquatic plants, and are a key food source for fish and frogs. Dragonflies are voracious mosquito eaters, and in turn are eaten by fish and frogs. Everything is connected. So a healthy fishery depends on a healthy stand of aquatic plants and numerous trees in the water, plus insects, frogs and more.*

I liked learning how some plants catch insects, and how water plants grow.
~ Tessa, age 6

Pond Plants *Age 5 and up*

Written by Ernestine Giesecke (out of print; available at a few libraries)

A great introduction to plants found in lakes. Includes clear photos and valuable facts about ten types of water plants, where and how they grow, how they help the lake, and how fish, birds and other animals depend on them.

For a short summary about insect-eating plants in Wisconsin, see Meat Eaters with Roots and Leaves from the *Wisconsin Natural Resources Magazine* at http://dnr.wi.gov/wnrmag/2009/08/meat.htm

Dragonflies: Catching - Identifying - How and Where They Live

Ages 8 and up

Written by Chris Earley

In this book readers will learn how to observe dragonflies in the wild and have them hover as close as their nose! Dragonflies can be found in wetlands, forests, fields and even backyards. This illustrated guide to dragonflies and damselflies is packed with all the facts about what they are, what finding them tells us about an area, what they eat and what eats them.

Water Insects *Ages 9 and up*

Written by Sylvia A. Johnson

Photos by Modoki Masuda

Colorful, informative and interesting, this will fascinate children who want to learn about water insects. Insects who spend all or part of their lives in water are carefully examined. Johnson makes clear the difference between bugs and beetles. Habitats, reproduction and hibernation are all discussed in detail and clarified with full-color, captioned photographs.

A Place for Fish *Ages 6 and up*

Written by Melissa Stewart

Illustrated by Higgins Bond

Fish are threatened by a variety of situations created by humans. This nonfiction text has several levels of information about fish for the reader. First, the main picture book text is simple. It tells a basic fact about how fish are being harmed, and it tells what we can do about it. Then, on each spread a detailed solution is featured. Includes the northern pike and smallmouth bass. Stunning illustrations.

UWEX Lakes Bookstore

Another great place to find that perfect gift for the water lover in your family is the UWEX Lakes bookstore! Check out our popular field guides and make a quick and easy online order.

www.uwsp.edu/cnr/uwexlakes

Book reviews are drawn from Amazon and the Cooperative Children's Book Center at UW-Madison.

Bull Trout's Gift: A Salish Story about the Value of Reciprocity

Ages 8 and up, Written by Confederated Salish and Kootenai Tribes

"We were wealthy from the water," says a tribal elder. He speaks to our understanding of the natural world and the consequences of change. In this book the wisdom of the elders is passed on to the young as the story of the Jocko River, the home of the bull trout, unfolds for a group of schoolchildren on a field trip.

Beautifully illustrated and narrated in the tradition of the Salish and Kootenai Tribes, this account of conservation as the legacy of one generation to the next is about being good to the land that has been good to us. Bull Trout's Gift is steeped in the culture, history and science that our children must know if they hope to transform past wisdom into future good.

> ***I like the beautiful contrast in this book between the way the Native American and the fisheries biologist think of the river and teach. I think the Native American is very well-spoken. I like the point that if you're mean to people they might take away your water, which is needed for life.***
>
> *~ Tate, age 10*

Are you a Dragonfly? *Ages 5-8*

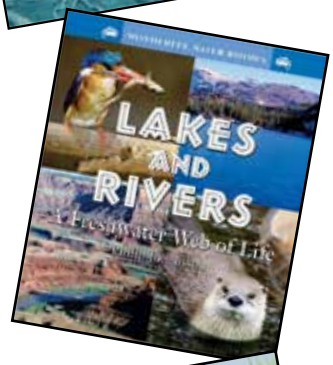
Written by Judy Allen
Illustrated by Tudor Humphries

The most colorful wings on the pond belong to the nimble dragonfly, but this delicate flying insect didn't begin life in the air. In this book, the secrets of how a dragonfly changes from a water insect to an amazing flyer unfurl.

Lakes and Rivers: A Freshwater Web of Life

Ages 9 and up
Written by Philip Johansson

Discover the diverse world of lakes and rivers and explore great facts and photos about the plants and animals in lakes and rivers. Author Philip Johansson shows how all living things are connected, from algae and coontail to bass, otters and moose.



Largemouth Bass *Ages 9 and up*

Written by Sheila Griffin Llanas

This book is filled with amazing fish photos by Eric Engbretson, a skilled underwater fish photographer who presented at the Wisconsin Lakes Convention in 2011. The text provides detailed information about largemouth bass including what they eat (worms, frogs, insects, snakes and smaller fish), how they nest and where they hang out in lakes. This author has written a similar book titled Walleyed Pike.

Adult Books

A Peek Beneath the Waves: Managing and protecting aquatic plants for the health of Wisconsin's lakes.

A great, non-technical introduction to why aquatic plants are important and how they have been managed in Wisconsin from the late 1800s until today. Available online at http://dnr.wi.gov/wnrmag/2014/08/aquatic2014.pdf

Fish Watching: An Outdoor Guide to Freshwater Fishes

By C. Lavett Smith

Smith, an ichthyologist, crafted Fish Watching as a book about fishes. Not about catching them. Not about keeping them. Not about cooking them. Just about them. The result is a most pleasant and surprising work of natural history writing devoted solely to fishes. He gives clear suggestions on how to start watching fish and provides descriptions of fish habitats and fishes classified by family with line drawings and three dozen color photos. His personal anecdotes add interest.

2016 Lakes Convention

Celebrating Volunteers!
March 30-April 1, 2016

2016 Wisconsin Lakes Partnership Convention

Fall is traditionally a time of thanksgiving, but this coming spring the Wisconsin Lakes Partnership is planning to extend the spirit of gratitude through the end of March and early April as we celebrate volunteers at the 2016 Wisconsin Lakes Partnership Convention in Stevens Point. This spring, we are teaming up with the Water Action Volunteers (WAV) and the Wisconsin Citizen-based Monitoring Network to put together a diverse program that highlights the tremendous work volunteers have been carrying out by working with state and local partners. We are also marking the occasion of the 30th anniversary of Wisconsin's Citizen Lake Monitoring Network (CLMN) and the 20th anniversary of WAV.

Early bird deadline: March 9, 2016

Researchers and the general public, alike, have shown an increasing interest in citizen science the last few decades. When CLMN started, it was one of only a handful of regular opportunities for volunteers to gather environmental and ecological data. Today, there are dozens of programs ranging from wasp monitoring to tracking water levels. Formal scientific incorporation of citizen data has also grown; the Ecological Society of America issued a comprehensive report this fall titled "Investing in Citizen Science Can Improve Natural Resource Management and Environmental Protection." The President's Office of Science and Technology Policy also recently mandated that all federal agencies develop capacity for citizen and volunteer collected data and developed a toolkit to facilitate the process. CLMN, WAV and other Wisconsin programs are poised to capitalize on this interest in citizen science to demonstrate how, over long periods of time, volunteers truly can make a difference in the environment.

Photo by Leanne Davis

Alyssum Pohl in her boat "Spirit" on the Mississippi River.

One of our keynote speakers this spring will be a woman who has personally taken citizen science to a whole new level. Alyssum Pohl set out in early summer to paddle the entire length of the Mississippi by kayak, monitoring water conditions along the way. She entered the water on July 1 and should be safely at the Gulf of Mexico right about the time you receive this newsletter. In addition to water quality data, Alyssum spent time gathering river water samples every 100 miles and sent them to *Adventurers and Scientists for Conservation* for their freshwater microplastic research project. This effort is "crowdsourcing" water samples from around the world to learn about the amount of tiny plastic particles that are increasingly showing up in the food web. Alyssum will share her results as well as interesting stories from her four months on the river.

The 2016 convention schedule will also include pre/post-convention workshops, technical and breakout sessions, poster displays and other inspirational speakers. We look forward to seeing you, and offering our thanks in person, at the Lakes Partnership Convention!

Photo by Alyssum Pohl

Alyssum is all smiles after almost two months of paddling on the Mississippi River.

(Making Lakes Better, continued)

Making Your Mark

There are many ways that you can get involved, both to delist an impaired lake and to prevent your lake from being listed in the first place. As a landowner near a lake, you can ensure that you are not contributing pollutants to the lake: restore your natural shoreline, lighten up on lawn chemicals, rake leaves in the fall and keep storm sewers clean, prevent runoff and erosion using Healthy Lakes practices (http://healthylakeswi.org), and inspect your septic tank (see http://water.epa.gov/type/lakes/lakestipsfull.cfm for more ideas). Even if you don't own lakefront property, your actions at home can still impact the lake!

Big changes happen when people organize and work together. Form a lake association and work with your county conservationist and WDNR lake specialist to develop a lake management plan. There are a lot of funding opportunities for lake organizations to implement management actions, and lakes on the impaired waters list are often prioritized for state and federal grants. Some examples of funding opportunities include: Lake Planning, Lake Protection, Healthy Lakes, Targeted Runoff Management and Urban Nonpoint Source and Stormwater grants from the WDNR, State Stewardship funds and the USDA's Environmental Quality Incentives Program.

Finally, you can get involved in the actual process of listing impaired waters. Impaired waters lists are updated in even numbered years. For each listing cycle, there are two public comment periods: one for establishing guidance to determine if a lake is impaired, and one for reviewing the proposed list of impaired lakes. You can also submit your own water quality data for each assessment cycle. The proposed impaired waters list for 2016 will be open for public comment this fall.

Sometimes the impaired waters list gets a bad reputation. Nobody wants their lake to be impaired! But the impaired waters list is not a lake's final resting place. Rather, it is a way to attract attention and resources to make the lake a healthier and even nicer place for all to enjoy.

Even if you don't own lakefront property, your actions at home can still impact the lake!

CALL for POSTERS

Deadline: February 12, 2016

Share your plans, projects and research results with convention attendees at the ever-popular poster session. This is a great way for lake stewards, researchers, educators and managers to share with, and learn from one another.

When: March 31, 2016 from 3:30 to 5:00 PM. You are required to attend your poster during this time.

Questions: please contact the UWEX Lakes office at (715) 346-2116 or uwexlakes@uwsp.edu.

For more information and to submit your abstract, go to www.uwsp.edu/cnr/uwexlakes and click on *Convention 2016* under **Events**.

The Wisconsin Lakes Convention does not endorse specific products or services. Therefore, posters presented by individuals representing corporations or projects conducted by corporations should avoid the use of trade or brand names and refer to the products or services by a generic descriptor.

Win $100 with Your Best Lake Photo!

Photo by Carolyn Betz, adjusted

Cha-ching! First prize in each of two categories in the Wisconsin Lakes Partnership Photography Contest pays out $100 ($50 for second place and $25 for third place)!

***** THIS YEAR ONLY *****
The 2016 Photo Contest will have an additional category: *Celebrating Volunteers*, in which there will be one winner ($50).

Show us the beauty and uniqueness of your favorite Wisconsin lake and how you enjoy it. It's easy. Just go to www.uwsp.edu/cnr/uwexlakes and click on *Convention 2016* under **Events**, or contact Amy Kowalski at 715-346-4744 to get the official rules and an entry form.

Aquatic Invasive Species

How do they get here? Fifth and Final

By Tim Campbell, AIS Communications Specialist, UW-Extension and Dept. of Natural Resources

Properly dispose of plants in the trash or find another home for unwanted pets.

That's it – we've reached the end of our organisms in trade (OIT) road. Over the last four issues of *Lake Tides*, we have talked about the risks that some common OIT invasion pathways pose, and we have also discussed some of the things that are being done in Wisconsin to prevent invasions through these pathways. Hopefully, you feel good about what is being done by industry, government, academia and non-profit groups to limit the availability of invasive species in the marketplace and to address the different release pathways. As always, there is still more work that needs to be done to better address OIT-related pathways.

Luckily, there are folks across the region working to address these issues. The Internet has made it easy for anyone to get whatever they want from almost anywhere in the world, including potentially regulated invasive species. The Great Lakes Commission (GLC) is working on a tool to help find places where people can buy aquatic invasive species of concern - the Great Lakes Detector for Invasive Aquatics in Trade. With the help of state management agencies around the Great Lakes basin, the GLC is hoping this tool will limit the number of invasive species available in the marketplace.

The Great Lakes Sea Grant Network (GLSGN), led by the Minnesota and Wisconsin Sea Grant programs, just completed a large Great Lakes Restoration Initiative grant that provided resources to promote the Habitattitude campaign across the Great Lakes basin. It also provided resources to host a national symposium on OIT issues that was held in Milwaukee in June of 2014. This meeting allowed educators, resource managers and business associates to discuss how to best move forward with the management of OIT issues.

With the project wrapping up, GLSGN looks to continue to stay involved with OIT issues and hopes to host another large symposium on these issues in the near future.

There is a lot going on in Wisconsin to address OIT issues, too. NR40 regulations keep invasive species out of the marketplace, while outreach done by a network of aquatic invasive species (AIS) partners across the state helps educate stakeholders about alternatives to release. Wisconsin's Department of Natural Resources and Sea Grant have both worked with retailers to help them better understand NR40 regulations and what they can be doing to prevent the spread of AIS. Future work with retailers and non-profits will hopefully build capacity for alternatives to releasing an unwanted pet.

There are always things you can do to be sure you are not introducing invasive species through an OIT pathway. Always know exactly what you are buying - using scientific names helps with this - so that you can be sure you are not purchasing an NR40 regulated species. If you have something you need to dispose of or that you can no longer care for, never release it. Properly dispose of plants in the trash or find another home for unwanted pets. These simple actions make it easy for everyone to stop invasions through OIT pathways.

The invasive species rule (Wis. Adm. Code ch. NR 40) makes it illegal to possess, transport, transfer or introduce certain invasive species in Wisconsin without a permit.

CALENDAR

November 14, 2015 – "Connections in Nature" Student Research Symposium - Newburg, WI
This day-long gathering is in its third year and going strong. Just east of West Bend at the Riveredge Nature Center, we will be celebrating and learning what Wisconsin students have been researching. For more information: http://riveredgenaturecenter.org/event/10282/

November 16-19, 2015 – AWRA Annual Conference - Denver, CO
The American Water Resources Association will hold its annual conference at the Grand Hyatt Hotel Denver this year. Hear the latest research and case studies, discuss current water resource topics and share new ideas. For more information: http://www.awra.org/meetings/Denver2015/

November 17-20, 2015 – NALMS 25th International Symposium - Saratoga Springs, NY
The theme for this year's symposium is "North American Lakes: Embracing Their History, Ensuring Their Future" is tied to the historic location of Saratoga Springs.
For more information: http://www.nalms.org/

November 21, 2015 – Grant Deadline - Urban Waters Small Grants
The U.S. Environmental Protection Agency's Urban Waters Program helps residents and local organizations (especially in underserved communities) restore water resources for the health and economic benefit of the community. Grants range from $40,000-$60,000.
For more information: http://www2.epa.gov/urbanwaters/urban-waters-small-grants

December 10, 2015 – Planning Grant Deadline
Application deadline for lake and river planning, lake classification and ordinance development, AIS education, planning, prevention and Clean Boats, Clean Water grants.
For more information: http://dnr.wi.gov/lakes/grants/

January 6-7, 201 – Wisconsin Groundwater Conference - Wisconsin Dells, WI
This year's theme is "Back to the 50s" - continuing education credits offered on January 8.
For more information: http://www.wisconsinwaterwell.com/news-and-events/

January 24-27, 2016 – Midwest Fish and Wildlife Conference - Grand Rapids, MI
Biologists and students from 13 Midwest states will learn and network. Early bird pricing through November 15, 2015. For more information: http://www.midwestfw.org/

February 1, 2016 – Management Grant Deadline
Application deadline for lake and river protection and AIS established population control grants.
For more information: http://dnr.wi.gov/lakes/grants/

February 5, 2016 – Wisconsin Lake Stewardship Nomination Deadline
Let us keep celebrating the good work of our peers! See more on page 3 of this issue.

February 23-25, 2016 – Wisconsin Wetlands Association Annual Conference - Green Bay, WI
Wetland experts and enthusiasts from the Midwest with join to discuss this year's theme, *Wetland Solutions*. Abstract deadline: November 15, 2015 Early bird deadline: January 17, 2016
For more information: http://conference.wisconsinwetlands.org/

March 9, 2016 – Early Bird Deadline, Wisconsin Lakes Partnership Convention
For more information: http://www.uwsp.edu/cnr/uwexlakes or see page 12 of this issue.

March 30-April 1, 2016 – Wisconsin Lakes Partnership Convention
Agenda details and online registration will be available in January 2016.
For more information: http://www.uwsp.edu/cnr/uwexlakes or see page 12 of this issue.

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IN THIS ISSUE

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Reflections

The movement of a canoe is like a reed in the wind. Silence is part of it, and the sounds of lapping water, bird songs, and wind in the trees. It is part of the medium through which it floats: the sky, the water, the shores.

~ Sigurd Olson