

Coming Together for Water, Unconventionally

By Eric Olson, Director and Lake Specialist, Extension Lakes



Every spring since 1979, the Wisconsin Lakes Partnership has assembled experts from state and local governments, higher education, and lake service firms to engage with a wide range of water stakeholders at our statewide Convention. We pride ourselves on having a relatively large and well-organized event; the total number of participants often rivals some of the nationwide lake and river management conferences. A good year would see about 350 citizen lake and river volunteers, and about 100 natural resource professionals, joining us to learn, teach, network and be celebrated.

This is good, but not good enough. We estimate that there are roughly 1,000 lake districts, lake associations, river organizations, and watershed groups in Wisconsin. Each group has at least five board members, so there are a minimum of 5,000 people who have a direct leadership role in caring for Wisconsin's waters. There are thousands more people serving on committees, volunteering to monitor water quality, engaging as Loon Rangers, and potentially seeking future roles on boards governing the related groups. So, our great big annual education and networking event reaches maybe 3-5% of this true audience of water stakeholders. If our objective is to educate stakeholders and facilitate networking, we need to do more.

Increasing Our Reach

2021 presents an opportunity for us to dramatically expand our reach, and we've been working since summer to create a program and delivery method that will be accessible to thousands of people rather than a few hundred. We've recast this year's Lakes and Rivers Convention as Wisconsin Water Week, taking place March 8-12. The planning team has built an agenda that

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Wisconsin Lakes Partnership

LakeTides

The newsletter for people interested in Wisconsin lakes

(Coming Together for Water, continued)

features over 200 knowledgeable presenters joining us live from their workplaces and homes to share their work and address your questions. We've also lined up notable figures from the state and nation to provide keynotes, share updates, and inspire. Additionally, we've worked with partners across the state to facilitate a set of simultaneous regional conferences on Thursday to build on and complement three days of statewide programming. Lastly, we are still adding local events and activities to close out the week on Friday.

[Connecting Virtually](#)

Working closely with Wisconsin Lakes, we've secured an online conference platform that is both user friendly and interactive. Rather than traveling to Stevens Point, you are invited to join us from your living room, your office, or your southern winter home. The Wisconsin Water Week platform works on a personal computer, laptop, tablet, even a smartphone. In addition to the live presentations, the platform supports audience Q&A with upvoting, meaning that you can simply give a "thumbs up" to questions raised by other attendees to move them higher in the queue. This is such a cool and useful feature that we plan to keep using it in 2022 and beyond when we meet again in person! There are numerous other bells and whistles that you can read about throughout this copy of *Lake Tides*.

[Technology needed to participate](#)

To participate in this virtual learning and networking event, you'll need the following:

- An Internet connection using a computer, laptop, tablet, or smartphone. Most of the content will be streaming live, so a faster Internet connection will ensure that you'll get the most out of the experience. A slow Internet connection may cause content to buffer or freeze. If needed/available, consider spending the days you'll be participating at a venue with faster Internet.
- A microphone and camera are highly recommended if you'll be joining a session that includes break-out rooms. These types of sessions are meant to encourage and facilitate conversation, which is more beneficial when you can see and hear the entire group.

[Expanding Accessibility](#)

With no food, facility, or hotel costs, we've made this event more accessible than ever! The cost is only \$20 per day (Monday-Thursday), with mostly free local events on Friday. We are raising money for scholarships that will support participation by anyone for whom the cost is an issue.

[Want to help?](#)

Although \$20/day is pretty affordable, it still could be a barrier for some. Consider donating to the scholarship account, available as an option when you register.

[Need a scholarship?](#)

If you would like to attend Wisconsin Water Week, but are struggling to find the funds to do so, please submit an application for a scholarship on our website at uwsp.edu/uwexlakes.

[Join the Experiment](#)

Last year the Lakes and Rivers Convention focused on resiliency. Buzz Holling, one of our inspiring figures in resilient ecosystem management, left us this admonition:

The only way to approach such a period, in which uncertainty is very large and one cannot predict what the future holds, is not to predict, but to experiment and act inventively and exuberantly via diverse adventures in living.

Wisconsin Water Week is an experiment in Holling's spirit, and we are inviting you to join us. Even if you've never considered coming to the Lakes and Rivers Convention. *Especially* if you've never considered coming to the Lakes and Rivers Convention. Check out our little exuberant experiment, even if for only a day! We'll see you at Water Week. 💧



Share the gift of water!

Water is a gift to all of us! In gratitude, we are gathering for Wisconsin Water Week, March 8-12, 2021. Do you have a friend, neighbor, or family member who would appreciate a week of inspiring content and connections among water enthusiasts? We have the perfect solution - shower them with a \$20 gift certificate to attend one of these days free of charge.



Just go to uwsp.edu/uwexplakes and click on the logo for Wisconsin Water Week, then click the button that says, "Give the Gift of WI Water Week."

Educator Spotlight

Attention K-12 and nonformal educators! We would love for you and your students to engage in Wisconsin Water Week events, so we're working with educational organizations who have thought of unique ways to increase awareness of water issues and opportunities for students during Wisconsin Water Week. Click the *Educator Spotlight* button on our Wisconsin Water Week page for more details and start planning now!



Register Now!

uwsp.edu/uwexplakes

Capturing the Magnificence of Lakes and Rivers in Turbulent Times

Some of you may be wondering when you can submit the amazing photos you captured this past year to our annual Lakes and Rivers Photography Contest. Well, fear not, we are accepting digital photos again this year! As in year's past, there are two categories, and you can submit one entry per category:

People enjoying lakes/rivers: Images with people fishing, canoeing, skiing, swimming, etc.

Natural features in and around lakes/rivers and underwater: Examples include wildlife, vegetation, geology, insects, close-ups of aquatic life, etc.

You can find all of the rules, judging criteria, and prize information on our website at uwsp.edu/uwexplakes (just click on the *Wisconsin Water Week* logo on our main page). There's even a link to winners from previous contests.



Brice Palla

Low Altitude Flight, taken on Upper Eau Claire Lake in Bayfield Wisconsin, took third place in the Natural Features category of the 2020 Wisconsin Lakes and Rivers Photography Contest.



Wisconsin Lakes

Building Connections Virtually at Wisconsin Water Week

by Mike Engleson, Executive Director, Wisconsin Lakes

WISCONSIN LAKES

A big shout out to the 2021 sponsors who have already committed their support!

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Water Resources Program

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Lake Tides 46(1)

I attended my first Wisconsin Lakes Partnership Convention in April of 2010, mere months after being hired by Wisconsin Lakes.

Held in Green Bay at the time, I was blown away. Blown away by the sheer volume of information presented. Blown away by the mix of participants. And especially blown away by the camaraderie felt between all of those who were there.

Over the years, the connections I made at my first convention and the many more forged in subsequent events, grew stronger and deeper. I looked forward to beginning each spring with a deep dive into water issues with so many friends.

In that time, Wisconsin Lakes remained committed to a deep involvement in the Convention, even after budget cuts ended our state funding. The Convention allowed the board and staff time to spend with our members and there was so much important information to share with all of you.

Now, twelve years later, everything is different. This year the pandemic again forces us to meet online. But Wisconsin Water Week promises to be a very special event, with more information than ever, and our virtual event platform retains at least some semblance of those connections that blew me away back in 2010. It might not be the same as when we'll be back in person in the future (2022!!), but we've built an event space that will provide you with the means to connect: with presenters, with exhibiting businesses and organizations, and with each other, all while absorbing more information about more water topics than ever before.

It is those connections that keep Wisconsin Lakes so committed to this great event. We want to be together - no doubt - but, I'm excited by the opportunities this year! All of us at Wisconsin Lakes are proud to be a part of Wisconsin Water Week. Whether you are a grizzled Convention veteran or dipping your toes in for the first time, I'm confident you're going to be blown away. 💧

Sponsoring/Exhibiting Comes With Benefits

One of the hallmarks of in-person Lakes and Rivers Conventions is the many contacts that sponsors and exhibitors receive with participants.

While it's nearly as difficult to recreate that experience online as it is to recreate the convention experience in general, Wisconsin Water Week is offering its sponsors numerous opportunities on the event platform to engage virtually with attendees, much the same as they would in person. And being virtual, we anticipate attendance numbers as much as twice what we normally would see at the in-person event.

Each sponsor receives a customizable "virtual exhibit booth" and much more. Higher sponsorship levels provide additional benefits and exposure as well (For more information: <https://wisconsinlakes.org/wisconsin-water-week/wi-water-week-sponsorship-opportunities/>).

We believe the sponsorship packages bring great value on a professional platform. We hope to connect with you and that you'll join us as part of Wisconsin Water Week!

Water Cycles

Monday, March 8, 2021

Wisconsin Water Week kicks off by looking at the two biggest freshwater systems in the state: groundwater and the atmosphere. The atmosphere is an invisible storehouse and conveyor of water, delivering almost three feet of precipitation (rainfall and melted snow) across the state every year. Groundwater is largely, “out-of-sight, out-of-mind,” but it represents a massive piece of our total water wealth. Climate, the atmosphere, and groundwater are all closely connected to the lakes, rivers, and wetlands we know and love.

Monday’s agenda will feature presentations that highlight impacts of climate change and local weather and water systems, illustrating both what can be done to manage and mitigate local water issues and revealing the limitations we collectively face when dealing with problems like groundwater flooding. We’ll also look at groundwater quality and pollutants like excess nitrogen and PFAS that are threatening this priceless resource.

Morning presentations will feature speakers from government agencies, the University of Wisconsin, and advocacy groups working to understand and protect water resources. These concurrent live presentations will cover:

- Groundwater
- Climate, Flooding, and High Water
- Great Lakes and River Basins
- Climate Change and Fisheries
- Water and Climate Justice
- Climate Impacts on Water Birds

In the afternoon, participants will be able to choose from several interactive sessions:

- Understanding Climate Through Phenology
- Climate Adaptation Workshop
- NR 151 and Groundwater Protections: A Moderated Discussion
- Racial Equity and Environmentalism: Understanding the Connections
- Climate Conversations: How to Begin
- Web Tools for Planning Resilient Lakes

Monday Keynote Speaker Profile

At 11:00 a.m., all participants will be brought together for the Monday Keynote featuring Dr. Katharine Hayhoe, presenting:

Talking Climate: Why Facts are Not Enough

When we hear people objecting to climate change, they often use science-y or even religious-y sounding arguments. “It’s just a natural cycle,” some say, or “God is in control, so humans can’t affect something as big as our planet.” Yet, if the conversation continues a few minutes longer, it rapidly becomes apparent that the real objections have nothing to do with lack of information or knowledge or belief. Our attitudes towards climate change are primarily the result of where we fall on the political spectrum, and our corresponding aversion to what we perceive to be the only solutions: allowing the government to destroy the economy, impose unfair regulations, and rob us of our personal liberties. This gets us nowhere. Are there solutions that are economically viable and appealing across the political spectrum? And why would any of us even care? Katharine Hayhoe untangles the complex science behind global warming and highlights the key role our values can play in shaping our conversations on this crucial topic.



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Dr. Katharine Hayhoe is an atmospheric scientist whose research focuses on understanding what climate change means for people and the places where we live. She is an endowed professor of public policy and law in the Dept. of Political Science at Texas Tech University, she hosts the PBS digital series *Global Weirding*, and she has been named one of TIME’s 100 Most Influential People, the United Nations Champion of the Environment, and the World Evangelical Alliance’s Climate Ambassador.

Water Trivia Contest

Think you know about Wisconsin’s lakes, rivers, wetlands, and streams? Monday afternoon will feature an engaging and competitive Water Trivia Contest. Using the Kahoot! online contest platform, we’ll take participants through a series of challenging and fun trivia questions. Bring your A-game and compete with fellow attendees for some great prizes!



Water Bodies

Tuesday, March 9, 2021

On Tuesday, we will learn all about the water bodies of Wisconsin and the plants and animals that live in and around them. Scientists, researchers, and citizens will share management stories, provide cutting-edge research results, and offer resources for further learning. Check out the over 30 concurrent sessions that will vie for your morning attention, covering topics about fisheries, aquatic invasive species, current research, finding wetland gems, hidden lake creatures, wild lakes, and more (along with an encore showing of *Brave Blue World*!)

At noon, participants will gather together to hear powerful and motivational remarks from prestigious leaders in our Wisconsin Department of Natural Resources and University of Wisconsin System.

The afternoon will bring lively panel discussions where you can learn about the state of our loons, get an underwater guided tour, take a virtual fish hatchery tour, walk through the web-based *Wisconsin Fish ID Tool*, and more! At 3:30 p.m., participants can opt for a fast-paced succession of 5-minute *Lightning Talks* or choose to visit the *Authors' Corner*, where folks can meet and chat with a wide variety of authors who have written books about water and water life. 💧

Tuesday Highlights

- 30+ Morning Lineups
- Afternoon Tours and Panel Discussions
- Lightning Talks
- Authors' Corner
- Keynote Speakers

Tuesday Keynote Speaker Profiles



WDNR

Preston Cole (*invited*) is the Secretary of the Wisconsin Department of Natural Resources. He served on the Wisconsin Natural

Resources Board for many years, and also held roles including City Parks Superintendent, Public Works Operations Chief, and City Forester.



University of Wisconsin System

Tommy Thompson

is President of the University of Wisconsin System. He was previously the U.S. Secretary of Health and Human Services, and a former Governor of Wisconsin. He is also the Chair of the UW System Business Council.



UW-Milwaukee School of Freshwater Sciences

Marissa Jablonski

is the Executive Director of the Freshwater Collaborative of Wisconsin. She is an accomplished water engineer,

environmental advisor, and plastics-reduction expert who has worked in more than 45 countries. Marissa has a PhD in Environmental Engineering and is a strong advocate for minorities and women in STEM fields.



Water Actions

Wednesday, March 10, 2021

Wisconsin's understanding of its waters and the numerous advances in water protection that have occurred around the state have only been possible because of the tremendous commitment and passion of our state's citizens. From collecting and reporting valuable lake and river data, to educating and engaging others in water stewardship within their local communities, the people of Wisconsin continually show their eagerness to always learn and accomplish more for our waters. Our water partnership thrives because of them and their determination to make a difference.

On Wednesday of Wisconsin Water Week, we're highlighting projects, programs, and partnerships that enable individuals and communities to take action to improve their local waters, even during turbulent times.

Wednesday Highlights

- **Shoreland-themed Talks and Panel Discussions**
- **Indigenous Stewardship of Water Stream** - Engage with our indigenous partners as they share some of the water partnerships, projects, lifeways and pathways, and conservation professionals working on water actions from an indigenous point of view.
- **Pre-recorded Field Trip, Tour, and Activity**
- **Keynote Speakers**

These sessions offer stories of successful partnerships and how to better engage with stakeholders, innovative ways to educate, and discussions on plans and projects that benefit an entire watershed. A Wednesday morning keynote speaker will set our tone for the day, followed by concurrent sessions, virtual field trips, and a pre-lunch keynote. In the afternoon, longer, more in-depth concurrent sessions provide opportunities for discussion and interaction, including an opportunity to engage with our indigenous partners. 💧

Wednesday Keynote Speaker Profiles

UW-Madison
College of Agricultural & Life Sciences



Dr. Patty Loew is a respected writer, journalist, and educator. She will be joining us Wednesday morning from Northwestern University, where she is a professor at the Medill School of Journalism and Director of the Center for Native American and Indigenous Research. To set the stage for our action-focused day, Dr. Loew will invite us to incorporate Seventh Generation thinking, which has obligated Ojibwe people to make decisions in the best interests of those seven generations into the future. She will share examples from Wisconsin that highlight this approach.

Dr. Bryan Maitland and **Dr. Jennifer Hauxwell** will wrap up our morning sessions by sharing research from the UW Water Science-Policy Fellowship program, where postdoctoral or post-Master's fellows are placed at state or federal agencies to tackle some of Wisconsin's most difficult water challenges. They will feature short stories by several fellows that describe how they are tackling these water resource challenges from contaminants to coastal erosion management, groundwater, public health, and fisheries.

Dr. Bryan Maitland is an aquatic conservation ecologist working for the University of Wisconsin Aquatic Science Center and the WDNR Bureau of Fisheries as the Wisconsin Water Resources



<https://bryannaitland.weebly.com/photos.html>

Science-Policy Fellow. He works to leverage the best tools and science available to understand animal communities and help managers conserve species and their habitats.



Water@UW-Madison

Dr. Jennifer Hauxwell is the Assistant Director for Research and Student Engagement at the University of Wisconsin Aquatic Sciences Center. She identifies critical research needs related to their mission, issues calls for proposals, leads the review and selection process to identify the highest quality science to tackle the state's highest priority needs, and works with researchers and students to increase the impact of their work in serving the people of Wisconsin and beyond.



Regional Gatherings

Thursday, March 11, 2021

**Participants can choose to attend one or more regions; each regional sub-event is \$20, and will be occurring simultaneously.*

Thursday of Wisconsin Water Week will feature ten regional sub-events that will bring individuals and organizations together in these regions to explore issues and solutions specific to their area, while collaborating as partners. Participants will be able to choose to attend sessions from these regions*:

northern Wisconsin to protect valuable private shorelands and other areas, and a case study of the Grindstone Lake experience in Sawyer County to purchase and restore a cranberry bog near the lake. The afternoon session will feature Melissa Kampmann, an attorney, who will share issues and strategies for lake home and cabin owners concerned about estate planning and passing down their real estate to future generations. Staff from the Northwoods Land Trust and Landmark Conservancy collaborated to make this content possible.

Thursday Evening Celebration UWSP College of Natural Resources



Celebrate the 50th anniversary of the College of Natural Resources at UW-Stevens Point by joining this networking event/reunion.

4:00-5:00 p.m. via Zoom

Registration for this free event will be required (linked from the agenda).

Central Wisconsin

Staff from the Wisconsin Wetlands Association will share the work they've been involved in to restore watershed functions at the Little Plover

River during the morning. The lunch keynote will feature a presentation by the Wisconsin DNR on the recently approved TMDL for the Wisconsin River basin and examples of actions being planned and implemented to restore water quality. Afternoon concurrent topics focus on collaborations between water groups and producer-led watershed groups in the central part of the state's largest

river basin. This content is organized by a collaboration of Golden Sands RC&D and the Petenwell and Castle Rock Stewards (PACRS).

Driftless

This track will highlight the unique aspects of Wisconsin's southwest corner. Ken Bradbury, the Wisconsin State Geologist and Director of the Geological and Natural History Survey, will present on the geology and groundwater of the driftless region during the morning period. Curt Meine will share the perspectives of people and community represented in the recently published *Driftless Reader*. These presentations were made possible by organizers from the Upper Sugar Watershed Association.

Lake Superior

Concurrent session topics include tourism in a changing climate, citizen-led water groups in the Lake Superior Basin, sustainable agriculture, ecological and cultural importance of wolves around Lake Superior, green infrastructure, and celebrating art and water collaborations. Lake Superior's noon keynote is Dr. Nancy Langston from Michigan Tech University, exploring how past ecological recoveries can guide communities navigating climate change. Staff from Superior Rivers Watershed Association and UW Madison Division of Extension organized this content.

Lake Michigan Shore

Staff from Lakeshore Natural Resource Partnership and Sweetwater are collaborating to develop morning and afternoon sessions highlighting projects underway in the Lake Michigan coastal region of east and southeast



Headwaters

Morning talks will share the work of land trusts across



Wisconsin. Talks will highlight the newly developed Coastal Resource Hub, a new tool to help local groups message around stormwater management and other topics. Another session will summarize the importance of tree cover for protecting streams and lakes, and progress addressing forest loss to emerald ash borer.

[Fox River and Green Bay](#)

This conference will feature unique content from the Fox and Wolf River watersheds and Green Bay. The morning keynote will bring major updates from Congressman Mike Gallagher, UW Green Bay's Dean of Science and Technology, John Katers, and UW Green Bay's Director of Freshwater Strategy, Emily Tyner. The morning concurrent period will include three different options looking at fisheries, wetlands, and soil health. The lunchtime keynote includes Brown County Executive Troy Streckenbach, the Fox-Wolf River Watershed Association, and more. In the afternoon, participants will participate in an exciting trivia challenge to find out who knows the most about the region's water issues. This event is a collaboration of UW Green Bay, NEW Water, and others.

[Red Cedar](#)

The Red Cedar Watershed Conference is the lead organizer for today's keynotes (see pop-out). Between these speakers, Red Cedar will feature topics that include the basics of river ecology, successful conservation agriculture stories, methods for connecting consumers with farmers who are protecting clean water, classroom science for water protection, progress updates in the basin, and ways that landowners can implement permaculture practices. This is the 10th annual Red Cedar Watershed Conference, organized by a broad community collaboration led by the Tainter Menomine Lake Improvement Association.

[Rock River](#)

This conference will feature a luncheon keynote from the Wisconsin DNR, sharing updates to the Rock River Basin TMDL. There will also be sessions covering shoreland surveys on lakes, water quality monitoring and projects in the Yahara River watershed, best management practices for agriculture to protect water quality, and examples of adaptive

management for nutrients in Madison and Oconomowoc. This content is made possible by staff and volunteers from the Rock River Basin Coalition.

[St. Croix](#)

Topics of concurrent sessions in this region include public-private partnerships to protect the St. Croix, understanding and managing the impacts of CAFOs on watersheds, planning for and slowing emerald ash borer impacts, and engaging with the Natural Resource Conservation Service to carry out land stewardship. The lead organizer for this event is the St. Croix River Association.

[Southeast Fox River](#)

Resource agencies in Wisconsin and Illinois have collaborated since 2013 to organize an annual Fox River Summit to bring together both sides of this interstate watershed. John Rogner, Assistant Director at the Illinois DNR, will present a state-level perspective on waterway management during the morning concurrent period. The following two time slots will feature multiple concurrent sessions covering vegetation management, citizen science through Snapshot Wisconsin, TMDL updates, adaptive management efforts, soil health, salt impacts on the waterway, changes over 100 years captured through river photography, and *It's Our Fox River Day*. The Summit ends with interactive sessions, allowing participants to connect and discuss issues that are important to them. 💧

[Thursday Keynote Speakers](#)

Judith Schwartz is an author who tells stories to explore and illuminate scientific concepts and cultural nuance. She takes a clear-eyed look at global environmental, economic, and social challenges, and finds insights and solutions in natural systems. Schwartz's presentation will highlight ways that communities around the world have innovated - sometimes over centuries - to advance agriculture while healing our planet.



Judith Schwartz Facebook

<https://adamreimer.weebly.com/>



Adam Reimer is a Conservation Outreach Specialist with the National Wildlife Federation. Adam has a PhD in Natural Resource Social Sciences

from Linda Prokopy's lab at Purdue. Reimer's research and practice explores new ways that conservation agriculture can be promoted beyond the "leading edge" of early adopters and into the larger farming community.

Tia Nelson, Managing Director of Climate at the Outrider Foundation, is the daughter of Senator Gaylord Nelson. Tia will share an inspirational story of hope, sharing the ways that conservation and addressing climate change can bridge the divides in our communities, our country, and the world.



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Capacity Corner Feb. 2021

Engaging Members in Virtual Opportunities

By Sara Windjue, Leadership and Capacity Development Specialist, Extension Lakes



efforts. These members need to be informed of lake issues and opportunities to engage. How does a collective membership become an engaged body of stakeholders?

Wisconsin Water Week is accessible this year for people who may not have been able to participate before.

Your lake group can use this virtual learning event as a rallying effort to bring people together.

Due to the public health challenges we're all facing, meeting one-on-one with shoreland property owners and holding in-person workshops hasn't been a reality. But it's as important as ever to elevate a community understanding of lake issues in order to build a broad base of support for tackling lake issues.

Collective Virtual Learning

In this time of virtual learning and networking, you may have found countless opportunities to attend webinars, conferences, and virtual coffee breaks to help you learn new skills or introduce you to the latest research focused on lake management. Has your membership been invited to participate and benefit from these opportunities? If so, have they participated?

In "normal" years, we would be preparing for our annual in-person Lakes and Rivers Convention, which perhaps one or two

individuals from your lake organization would be able to attend. For many people, the time, travel, and cost of going to a statewide lakes education event is daunting, and we know that our efforts only reach a fraction of the people who could benefit from this gathering. In 2021, things are dramatically different! The Convention has become a virtual Wisconsin Water Week event, and we are actively encouraging you to reach out to your membership and invite them ALL to participate as a collective. It's always fun to share experiences with people you know, whether in-person or virtually, especially if it's for a cause that's important to you.

Wisconsin Water Week

Wisconsin Water Week is accessible this year for people who may not have been able to participate before. No travel is necessary, and you don't have to spend money on lodging or food. In addition, we're hoping the \$20/day registration cost is doable for most people. Participation in this virtual event enables your lake organization to increase community understanding of lake issues. The agenda will feature multiple "streams" of content on each day, so no two people will have the exact same experience.

Your lake group can use this virtual learning event as a rallying effort to bring people together. Send out an invitation now to your whole membership encouraging them to participate. You might even want to meet with those interested in attending before the event and strategically plan who attends which sessions so your organization can get the most out of Wisconsin Water Week.

Provide Focus/Celebrate Success

We're all busy with work, virtual schooling, parenting, staying healthy, etc., so, how can you incentivize members to attend? If you have



it in your budget, consider supporting a group to attend. Ask each of them to agree to write a newsletter article or social media post after the event about what they learned and how it benefits the lake/river/watershed/community. Getting different perspectives is a great way to expand our knowledge and learn from each other.

Consider listing the name of members who attend Wisconsin Water Week in your next newsletter to recognize them for the time they spent learning to benefit the lake. Providing recognition to some people might give them the extra lift they need to take their

commitment and involvement to the next level. It may even inspire others to increase their involvement.

After the event, possibly the Friday of Wisconsin Water Week when we're encouraging local groups to meet, plan to bring everyone together and share what they learned. Giving people the opportunity to attend a virtual event as a collective can help build a community who wants to continue to learn together and give back. 💧

You can find all the Capacity Corner articles in the Lake Tides online archive. Just go to uwsp.edu/uwexlakes and click on "Newsletter" in the left navigation.

Giving people the opportunity to attend a virtual event as a collective can help build a community who wants to continue to learn together and give back.

Help Support Aquatic Invasive Species Research in Wisconsin

Aquatic invasive species (AIS) can have negative impacts on Wisconsin's environment, communities, and economy, but often there is a lack of scientific information about the ecology and impacts of these non-native species or how to best manage them. The Wisconsin Department of Natural Resources (DNR) and many partners are working to prevent and control AIS across the state, and research helps us to learn how to do so more effectively, efficiently, and safely. The DNR conducts and supports a wide variety of projects that improve our understanding of AIS and ways to prevent and manage them. These research projects help inform our statewide AIS prevention and management strategies and provide valuable information for the DNR and stakeholders. One way you can easily support AIS research is by saying "yes" to lakes and donating \$2 or more when registering your boat. Don't own a boat? You can still donate. Just visit dnr.wi.gov, and type "say yes to lakes" into the search bar. Contributions from donations supports staff, supplies, and other costs of coordinating and carrying out invasive species research and outreach. These funds can also be used to help provide grants to scientists outside DNR who are working to better understand AIS and the tools used to prevent and manage them.

As with any science-based endeavor, it is important to communicate the goals and findings of these research projects. Communicating research findings promotes understanding and support from the general public. It also encourages informed decision making from the DNR, its partners, and stakeholders.

To better communicate department-supported research projects, the DNR has begun generating factsheets covering various AIS research topics. Some of the research is supported by these donations. These factsheets may cover multiple research projects relating to one topic or provide a more in-depth summary of a single research project. Topics include chemical management, non-chemical management, AIS prevention, and species-specific management. These and other documents can be found at dnr.wi.gov/topic/Lakes/SayYesToLakes under *Recent Research Accomplishments*. The DNR will continue to develop and post factsheets on new and ongoing AIS research projects as they are conducted.

To support AIS research and the generation of these factsheets, the public can donate \$2 or more to the department's AIS research fund through boater registration checkoffs or by visiting our website. To donate or learn more, visit dnr.wi.gov/topic/Lakes/SayYesToLakes.



Lake Bottom Mysteries

Ten Great Things to Know About Your Lake in Winter

By Ted J. Rulseh, Writer and Lake Advocate

Your lake is a very different place when encased in ice for the winter, but it's still very much a living system with many mysteries to explore. Look closely and you can appreciate the processes by which the ice forms and ultimately disappears with spring. Meanwhile, aquatic creatures change their habits to make it through until the water warms again. Here are ten things you may not know about the life of a frozen lake.

1. It all starts with steam.

If you look out on your lake on a very cold October morning, you may see tendrils of steam rising from the water. The steam forms as warmer, moist air, just above the water, rises to meet the cold, drier air above. The moisture condenses into tiny droplets to form what's known as steam fog or water smoke. It's a sure sign that the water is cooling as time for ice formation approaches.

2. Ice requires cold stillness.

Have you wondered why your lake won't freeze when the days and nights are windy? It's because wave action constantly fractures tiny ice crystals as they form, keeping solid ice from taking hold. In these conditions, the water can actually supercool, remaining as liquid below the freezing point of 32 degrees F. Then, along comes a very cold, windless night, and presto! A thin sheet of ice covers your lake.

3. Your winter lake has layers.

Underneath the ice, lake water has an interesting temperature profile. The warmest, densest water, at about 40 degrees F, lies at the bottom. The coldest, least dense water, at 32 degrees F, lies right under the ice. The ice itself is the least dense of all, which is why it floats. Ice expands by about 10 percent from the liquid state of water.

4. The lake starts winter rich in oxygen.

Fish and other water creatures need a supply of oxygen to make it through the winter. Fortunately, beneath the new ice, the lake holds more oxygen than at any other time of year. That's because water can hold much more oxygen when it's cold than when it's warm. At 32 degrees F, water holds almost twice as much oxygen as it would at 80 degrees F.

5. Water creatures need less oxygen in winter.

Fish, frogs, mollusks, crayfish, and other critters are cold-blooded. In cold water, their metabolism slows down, and they move about slowly, if at all. As a result, they use less energy, and so, less oxygen. They go into winter with the most abundant oxygen they will experience all year, at a time when they need that oxygen the least. It's a good scenario for survival.

6. There's no need to fear ice "booming."

Lake ice makes wondrous, almost musical, sometimes eerie sounds as it expands and contracts with changes in temperature. If you're on the lake when the ice is booming, or even if you hear a crack sizzle right past you and off into the distance, there's no need to fear. Booming and cracking do not mean the ice is weakening.

Beneath the new ice, the lake holds more oxygen than at any other time of year. That's because water can hold much more oxygen when it's cold than when it's warm.



Ted J. Rulseh writes the newspaper column, "The Lake Where You Live." An advocate for lake improvement and protection, he lives in the lake-rich region of northern Wisconsin. This article is adapted and excerpted from his book, A Lakeside Companion. It is printed by permission of the University of Wisconsin Press. © 2018 by the Board of Regents of the University of Wisconsin System. All rights reserved.

7. Ice is really a collection of crystals.

We think of ice as a monolithic, solid substance, akin to a block of glass. In reality, it consists of vertically oriented crystals in the shape of hexagons, tightly packed together. These crystals grow from the surface down as the lake is continuously exposed to cold air. This structure reveals itself as the ice deteriorates toward spring: The bonds between the crystals break down, and the crystals become individual “candles” very loosely held together. At this point, the ice is extremely weak and is hazardous to walk upon.

8. No one is certain why ice is slippery.

Most of us learned in grade school that we can skate on ice because the pressure of the steel blades lowers the melting temperature at the surface and creates a film of water on which we glide. Science has now rejected that explanation in favor of two theories. One is that friction, not pressure, melts the ice. The other is that ice is inherently slippery – that a tiny liquid film remains on the ice surface even at temperatures far below freezing. Scientists disagree on which theory is correct.

9. Ice is tough – and fragile.

There are various ways to assess the strength of ice. One is fracture toughness – how easily a crack spreads through a material. On this measure, ice is about one-tenth as tough as window glass. Then there’s tensile strength – how much force a substance can take when stretched from both ends. The tensile strength of ice is about half that of bricks. Its flexural strength, which measures resistance to bending under a load, is roughly the same strength as a pine board across the grain. That’s pretty tough! How much ice is safe for travel? The Wisconsin DNR’s guidelines for new clear ice are as follows:

- Ice fishing (person on foot) = 4 inches
- Snowmobile = 5 inches
- Car or small pick-up = 8-12 inches
- Medium sized truck = 12-15 inches
- Godzilla = 100+ inches

Always, the watchword is caution. One saying has it: Thick and blue, tried and true. Soft or crispy, much too risky. If in doubt, don’t go out.

10. Ice melts from the bottom up.

As the weather warms, the snow melts off the ice surface. Then the sun’s rays penetrate the ice and warm the water below, while also warming areas of open water near shore. Warm air above the ice contributes to the thaw, but it’s the warming water below that really does the trick. 💧

*Thick and blue,
tried and true.
Soft or crispy,
much too risky.
If in doubt,
don’t go out.*

*Winter is a great time
to enjoy your lake.
Whether you fish,
skate, ski, hike, or
just observe, lake ice
is a resource worth
treasuring.*

Carol Warden



Wisconsin Water Week

Top Ten Reasons to Register Now!



This year offers some new ways to connect with other water lovers across the state, and beyond. We are confident each of you will find something useful, interesting, and even exciting during Wisconsin Water Week! Join us as we launch this virtual adventure together.

#10 Be part of something big.

This is the first year that there is no cap on the number of water enthusiasts who can join this statewide gathering. Our keynote speakers will bring new perspectives and inspiration for the great work you are already doing.

#9 Meet someone new.

Take this opportunity to connect with folks you would not normally get a chance to meet. Or, find some familiar faces in the attendance list, and set up a time to catch-up.

#8 Embrace new technology.

Don't let this intimidate you - it's very intuitive! You will be able to personalize your agenda, ask or upvote questions to speakers, and join ongoing discussions.

#7 Interact with exhibitors.

There are dozens of businesses and non-profit organizations attending Wisconsin Water Week, and they are excited to meet you! Check out their online exhibits anytime throughout the week.

#6 Enjoy a little competition.

Climb the leaderboard by completing challenges like registering early, signing up for partner newsletters, finding hidden codes throughout the agenda, joining a statewide non-profit organization, and more! Top prize is free registration and two nights hotel stay for 2022! In addition, there's a Water Trivia Contest on Monday afternoon (see page 5).

#5 Invest in your water's future.

For the price of a boat cushion, you can get the latest research about lakes and rivers (and so much more)!

#4 Take action.

You will discover plans, activities, and best practices to move toward creating cleaner water and better wildlife habitat...find out ways to take action, action, action!

#3 Get inspired by citizens.

In order to accomplish the amazing water projects that are happening around the state, we need passionate and committed citizens. Join us Wednesday to get a glimpse of some of their successes that are at the core of our statewide Lakes and Rivers Partnership.

#2 Join the conversation.

Monday, Tuesday, and Wednesday all include mornings filled with an impressive offering of presentations about all things water. Although there are opportunities to type questions, it might feel a bit impersonal. That is why we designed many of the afternoon sessions to allow you to interact with the presenters and other attendees to enhance your learning experience and create a welcoming space for conversation.

#1 Bring it home.

After over 100 fact-packed concurrent sessions, panel discussions, virtual tours, field trips, and activities in the first three days, Wisconsin Water Week narrows the focus to a day of regional gatherings (more on pages 8-9). Friday is your opportunity to connect with your local lake, river, or watershed organization (or maybe just a small group of neighbors) to take what you've learned and turn that enthusiasm, knowledge, and shared experience into local action (more on page 15). 💧

uwsp.edu/uwexlakes



Water Week Local Events

Friday, March 12, 2021

If you're joining us for Wisconsin Water Week, we hope you'll end the week at a local event near you. Or better yet, plan one for your area! We want you to take the knowledge and motivation you have built from this week of learning and sharing and turn it into local action. Get involved, and be part of the solution!

Interested in organizing an event? Fill out this short form and we'll follow up: <https://forms.gle/VGipyrVWLjZd4NCB9>

If you're interested in just attending an event, browse the list of options on our website: uwsp.edu/uwexlakes.

Get Assistance

If you would like to plan a local event, we will help! Specifically, we can help local groups organize meetings and events on Friday that develop and share action plans for the 2021 field season. We have community-building exercises and strategic thinking activities for local groups to use in preparing for a season of actions that protect healthy waters, restore waters needing help, and prevent the spread of invasive species.

Your Friday, March 12 meetings might be virtual/online, or in-person, depending on the size of the gathering and the evolving public health situation.

Lake Leaders Networking Event

This Friday event is open for anyone to attend. Learn about the Wisconsin Lake Leaders Institute and how you can get involved. If you're a past crew member, reconnect with other crew members and find out where instructors are now. It will be a fun way to end the week. You must register for this virtual event in advance (link available on Wisconsin Water Week's Local Events page).



CALENDAR

February 16-19 – Wisconsin Wetlands Association Wetland Science Conference, online

For more information: <https://conference.wisconsinwetlands.org/>

February 21-24 – Upper Midwest Stream Restoration Symposium, online

For more information: <http://prsum.umn.edu/symposium/2021-upper-midwest-stream-restoration-symposium>

February 24, March 31 – Citizen Lake Monitoring Network Webinars, online

Go to our Lake/River Events Calendar at uwsp.edu/uwexlakes for details on this and other local, regional, and statewide happenings!

February 25 – Fish Passage, Flood Resiliency, and Road Stream Crossings, online

Register by February 23 using this link: <https://conta.cc/2LI7XeR>. For more information, please contact Chris Collier at chris.collier@tu.org or (419) 296-4390

March 1-3 – St. Louis River Summit, online

For more information: <https://lakesuperiorreserve.org/event/11th-annual-st-louis-river-summit/all>

March 8-12 – Wisconsin Water Week, online

Check out this edition of *Lake Tides* for more information, or go to www.uwsp.edu/uwexlakes.



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Reflections

“When day comes, we step out of the shade aflame and unafraid. The new dawn blooms as we free it. For there is always light. If only we’re brave enough to see it. If only we’re brave enough to be it.”

~ Amanda Gorman
(from *The Hill We Climb*)

