



Long-Term Ecological Research

Learning from Our Lakes

By Carol Warden, Researcher, Trout Lake Station, Center for Limnology, UW-Madison

The Long-Term Ecological Research (LTER) Program has been collecting consistent, long-term data from all sorts of different ecosystems across the United States for over 40 years! In 1981, Trout Lake Station became one of 28 LTER sites worldwide and, appropriately, focuses on lakes. The North Temperate Lakes (NTL) LTER collects data on 11 different lakes – seven in Vilas County and four down near Madison in Dane county – to identify and explain long-term changes and trends. The lakes vary in size, bathymetry, and habitat diversity as well as biological diversity and productivity. NTL-LTER is integral to understanding the long-term dynamics of our lakes, and I am fortunate enough to be part of it.

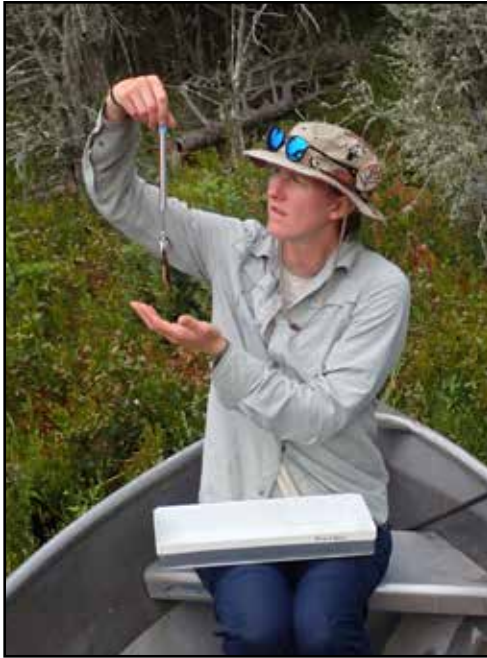
We collect long-term data to capture phenomena that occur over a period of three or more years and to provide a context for short-term work. This long-term data set provides the foundation for detailed observations and experiments in lakes. NTL-LTER focuses on using these data to see how water chemistry, changing land use, and climate play a role in the changing health of our lakes. The data collected by NTL-LTER are used by researchers all over the world to compare and evaluate lake dynamics at the global scale. From these observations, over 1,400 research papers have come out in those 40-some years! The data collected are also critical for many of the other research projects taking place on station. Most research projects are conducted over the course of three to five years, so it's important to have these long-term data giving context to our shorter-term research projects.

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All photos for this article provided by Carol Warden, UW-Trout Lake Station

Paul Schramm poses with sampling gear on a bog lake.



Carol Warden weighs a mud minnow during fish sampling season.

Students are vital to keeping LTER data collection strong. Researchers have trained and employed huge numbers of graduate and undergraduate researchers in the process. During the busy summer season, the NTL-LTER students work to ensure the long-term data sets are maintained. As one of my predecessors said to me upon my accepting this research position, “Carol, your job in the summer is to teach people how to be scientists.” And that we do.

Here in Wisconsin, our winters come with an abundance of road salt. Wisconsin covers almost 35,000 lane miles of our highways with salt every season. We use 470,000 tons of road salt every year. For freshwater, chloride levels should be between 0-10 milligrams per liter. One teaspoon of road salt in a five-gallon bucket equals 230 milligrams per liter! In Wisconsin we allow 395 milligrams per liter at a chronic level before we consider it toxic. Canada, on the other hand, sets its threshold at 120 milligrams per liter.

Thanks to our LTER data, we clearly see how road salt is accumulating in our freshwater lakes. The unfortunate truth is that nothing in our temperate, lake-rich environment uses salt. And that means our freshwater is at risk of becoming saline. Along Highway 51 in Vilas County sits Sparkling Lake. From 1981-2020 we’ve documented the chloride rising from 3 milligrams per liter to almost 14 milligrams per liter in Sparkling Lake. We see this same trend in other lakes that flank highways. This level of chloride goes beyond the 10 milligrams (or less) per liter that we expect of freshwater and causes a toxic environment for zooplankton and other bugs. Because of the extensive, long-term data collection, we can petition highway departments to use only the amount of salt necessary and use alternatives such as sand mixtures when near lakes.

The data collected by NTL-LTER are used by researchers all over the world to compare and evaluate lake dynamics at the global scale.

At Trout Lake Station, sample collection occurs every other week throughout the entire year. Measurements are taken for water temperature, dissolved oxygen, water clarity, water chemistry, zooplankton abundance, and chlorophyll concentrations. The longevity and frequency of sampling reveal trends in our lakes that short-term research projects don’t have the ability to observe. The four-season sampling schedule has also made Trout Lake Station a global leader in winter limnology. Our winter sampling has revealed some alarming trends.



Long-Term Ecological Research crew during routine winter sampling on Trout Bog.





Schramm collecting a light profile reading with specialized instrumentation.

For freshwater, chloride levels should be between 0-10 milligrams per liter of chloride. When levels exceed this amount, it becomes a toxic environment for zooplankton and other bugs.

One teaspoon of road salt in a five-gallon bucket equals 230 milligrams per liter!

Another factor of winter that we track is ice duration on lakes. We've detected changes in both duration of ice cover on our lakes as well as massive variability in when the ice thaws every spring. On Lake Mendota, we have a 130-year ice record. When we look at the last fifteen years of ice duration on Lake Mendota, you don't see much of a change at all. But when you look at the entire 130-year record, we learn that we've lost a month of ice cover in the winter. In 2012, Trout Lake thawed on March 12. One year later, it thawed on May 10. This is more than 50 days difference from year to year. When we study this huge variability in how long the ice is on the lake, we see the residents of the lake respond. We see that walleye struggle in these extreme years. When the lake thaws farther away from the average, age-0 walleye are less abundant. We also see a deeper warm surface layer on lakes, meaning there is less cold-water habitat for the fish that require cold water.

NTL-LTER data analysis isn't all doom and gloom though. We've also seen that in the northern lakes, our water clarity is staying fairly steady. With our northern lakes being surrounded by forest, we have insight into

how land use affects water clarity. We have evidence showing that natural landscapes are essential for healthy lakes.

The upside to knowing the outcomes of shifts in water chemistry, land use, and climate and how those relate to changes in our lakes is that we can do something about it. Without North Temperate Lakes Long Term Ecological Research, we may not have detected these significant changes in our lakes. Long live Long-Term Ecological Research! 💧

Check out wisaltwise.com to see how we can work together to keep our freshwater fresh!



Schramm deploys a winter buoy to collect data under the ice.



Lake Tides 48(4)

Lake Districts in WI

Fifty Years of Working Together to Keep Our Lakes Healthy

By Eric Olson, Director and Lakes Specialist, Extension Lakes

[Chapter 33] essentially gave rise to the Wisconsin Lakes Partnership as we know it today, and its 50th anniversary is certainly an occasion worth celebrating.

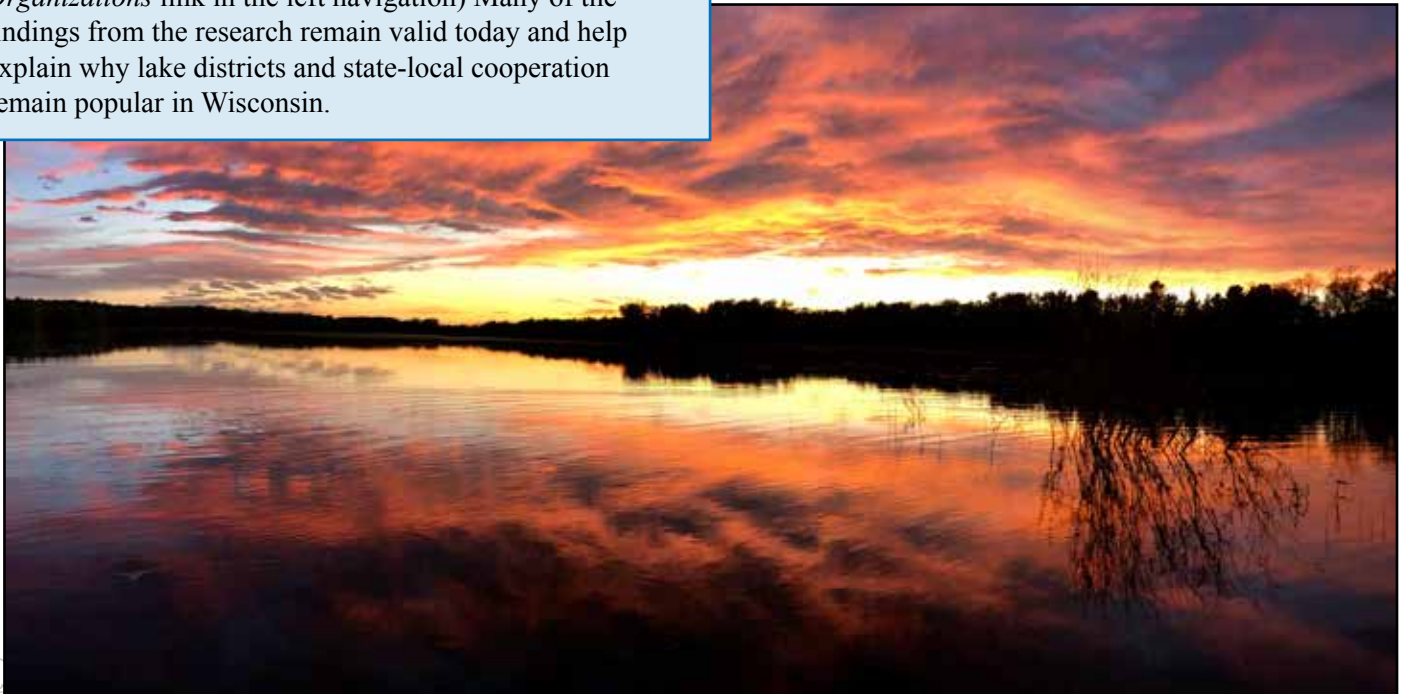
Wisconsin recently passed a significant milestone in the history of lake organizations in the state through the creation of the 250th inland lake protection and rehabilitation district. In 1974, the Wisconsin legislature created and passed the state's unique inland lake law, Chapter 33 "Public Inland Waters". This was a major step forward in caring for the state's lakes, as it formalized a co-management relationship

between local stakeholders and the Wisconsin DNR. It also included a key role for the University of Wisconsin to educate local advocates and communities working to tackle lake issues. The law essentially gave rise to the Wisconsin Lakes Partnership as we know it today, and its 50th anniversary is certainly an occasion worth celebrating.

A major section of the law outlines a process for forming lake districts (special purpose units of local government that focus on lakes) as well as rules for their operation and management. A typical lake district originates from a citizen-driven petition process to show that the majority of people within a new district support its formation. The primary power of a lake district is the ability to levy taxes and special charges to property owners in the district. The annual budget and tax levy are decided each year by the residents and owners in the district at an annual meeting.

Lake Districts in Wisconsin - A History

The proposed inland lake law was written as part of an applied research project funded by the federal government. One of the reports from the research, "A State/Local Lake Rehabilitation Program: A Proposed Bill and Commentary," was published in June of 1973. You can read the report online on our Extension Lakes website at uwsp.edu/uwexlakes (find "lake districts" under the *Lake Organizations* link in the left navigation) Many of the findings from the research remain valid today and help explain why lake districts and state-local cooperation remain popular in Wisconsin.



Ben Mori

Looking West at sunset on beautiful Pine (Hancock) Lake in Waushara County, managed by Hancock Pine Lake Management District.



While the initial rate of new district formation was high in the 1970s, things slowed through the 1990s and early 2000s. More recently, lake stakeholders have recognized that organizing as a lake district would provide important financial tools to tackle large and long-running projects. Some examples from across the state highlight the diverse challenges that communities are tackling through new lake districts.

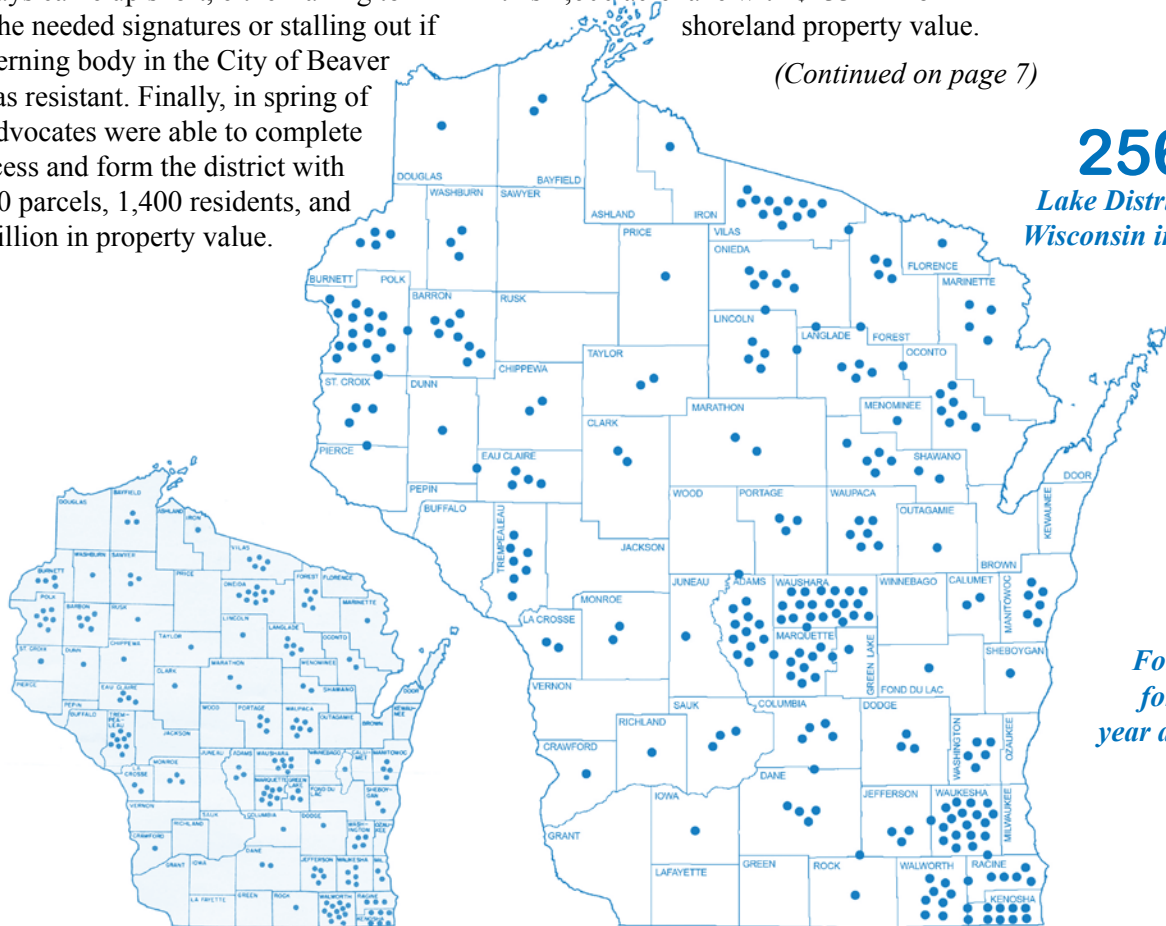
Two large flowages, one in eastern Wisconsin and another in the west, have formed districts to tackle nutrient pollution that is causing excessive algae growth and blue green algae blooms. Beaver Dam Lake is one of several dammed lakes in Dodge County that are in the headwaters of the Rock River. While nearby Fox and Sinissippi lakes have long benefitted from having a lake district, Beaver Dam was relying on donations and fundraisers to care for a large (6,700 acre) lake. Groups had made several attempts in the past to form a district but always came up short, either failing to gather the needed signatures or stalling out if the governing body in the City of Beaver Dam was resistant. Finally, in spring of 2020, advocates were able to complete the process and form the district with over 800 parcels, 1,400 residents, and \$280 million in property value.

To the west in Dunn County, homeowners on Lakes Tainter and Menomin have been working to understand and manage phosphorus pollution for decades. The Red Cedar River flows through the connected lakes and carries with it a high concentration of this algae-feeding nutrient. Different small-scale initiatives had been attempted to limit the impacts of phosphorus, but many stakeholders argued that a lake district could provide the stable long-term funding needed to employ larger-scale solutions. This past spring and summer, the new Tainter Lake Rehabilitation District was officially formed to help manage this 1,600 acre lake with \$233 million in shoreland property value.

Find a Lake District Near You!

Find a lake district near you on the Lake List, Extension Lake's directory of lake organizations. The directory includes self-reported links to websites, Facebook pages, and other information about each organization and the waterbody it supports. Beaver Dam Lake, Tainter Lake, and Silver Lake all have websites where you can learn more about their budget, priorities, and challenges. Don't see your lake organization listed, but would like to be included? Contact us at uwexplakes@uwsp.edu and we will add you to the directory and make sure you have access to additional helpful resources.

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256
Lake Districts in Wisconsin in 2023

Forty lake districts formed in the first year after the passing of Chapter 33.

In the very first Lake Tides newsletter in 1975, we shared this map on the left showing 162 lake communities interested in Wisconsin's new Lake Management Program (brought about by Chapter 33). Forty communities had already formed lake districts within a year of the law passing, as they were eager to receive assistance from the DNR to study and manage their lakes. Nearly 50 years later, we can see where the now 256 lake districts have formed across the state.





WISCONSIN LAKES

According to Merriam-Webster, an association is “an organization of persons having a common interest,” while a federation is “an encompassing political or societal entity formed by uniting smaller or more localized entities: such as...a union of organizations.”

What Really IS in a Name?

By Mike Engleson, Executive Director, Wisconsin Lakes

A little over thirty years ago, the Wisconsin Federation of Lakes (lake associations) and the Wisconsin Association of Lake Districts decided it would be best for the community of lakefront property owners (and for lakes) if they merged and formed one entity. Thus, the Wisconsin Association of Lakes, now known simply as Wisconsin Lakes, was formed.

For many years the organization received a majority of its funding from a state contract that paid staff to work with Wisconsin Department of Natural Resources (DNR), Extension Lakes, and our other partners on lake and lake organization issues. Then, a few years ago, Governor Walker terminated that funding.

Even as we’ve tried to keep up the work with fewer staff and resources, we’ve spent a good deal of time reflecting on what “Wisconsin Lakes” really is.

So what really is Wisconsin Lakes?

We are an “association” in that our organizational and individual members have

“a common interest” in lake protection and management.

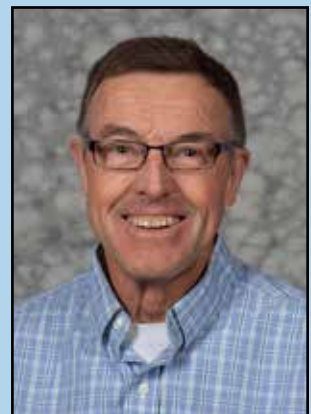
But, we are also an organization striving to unite other entities towards shared goals. We’re helping to organize lake districts around statutory updates to Chapter 33. We’re helping groups that include individual lake organizations, countywide lake and river organizations, hunting and fishing organizations, and statewide groups focused just on the impact of wakesports to organize around the wakesports issue. We’re planning to do something similar in the future around shoreland zoning and development. And we’re working together to make sure the DNR both does its job and is provided the resources and staffing to do so.

The important thing is to remember that we are your organization, and we invite you to come along with us as we continue to grow and change with the times and issues as they come. We can’t succeed in our mission without you.

To learn more about Wisconsin Lakes, or to join or donate, check out our website at wisconsinlakes.org.

State and International Recognition for Floyd Schmidt, Chute Pond, Oconto County

In addition to being recognized at the annual Convention here in Wisconsin, we nominate two of Wisconsin’s Lake Stewardship award winners to the North American Lake Management Society’s (NALMS) awards program. In fact, last spring’s winner of the *Programmatic Excellence for Lake Health* award, Floyd Schmidt, also received the *Appreciation Award – Lake Management Success Stories* at the NALMS International Symposium this past October. Congratulations Floyd!



Doug Moore



In northern Wisconsin, property owners on Vilas County's Upper and Lower Buckatambon lakes have been working to manage Eurasian watermilfoil since its discovery in the lake in 2015. A recently completed integrated management plan for the nuisance aquatic plant calls for long-term strategies across the over 800 acres of water that make up the two lakes. In 2022, two-thirds of the owners on the lake signed on to the petition to form the Upper and Lower Buckatambon Lakes Protection and Rehabilitation District. Each year going forward, the residents and owners will update their AIS management approach and the budget to fund it through the lake district's annual meeting.

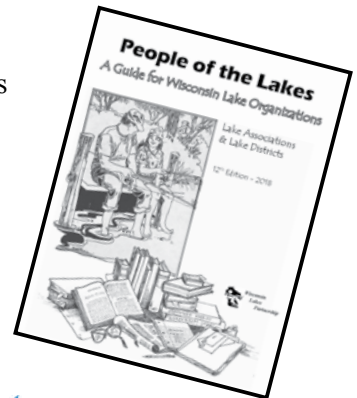
Similar concerns about AIS and long-term management motivated people around Silver Lake in western Kenosha County to form a new lake district in 2021. Over 80% of the owners on the 500-plus acre lake signed the petition in favor of forming the district. It is now governed by three elected and two appointed commissioners, one from the Village of Salem Lakes and another from Kenosha

County. Their recent annual meeting approved a \$52,000 tax levy on the nearly \$100 million of value in the district, resulting in a mill rate of about 50-cents per thousand dollars of value, far below the statutory limit of \$2.50.

Lake districts in Wisconsin are unique in maintaining the role for direct democracy in setting budgets and levels of taxation. They are the only local government in Wisconsin that formally allows for non-resident property owners to vote alongside residents. With fifty years of hindsight, it seems safe to say that lake districts will endure well into the future. Eventually the number of new districts formed annually will taper off, but in all likelihood there will be steady growth for the next several decades. If you are interested in learning more about lake districts, refer to our guide *People of the Lakes*; it is available for download on our website, or you can order a copy through the Extension Lakes bookstore. 💧

Lakes and Rivers Convention

Join us in celebrating Chapter 33's Golden Anniversary at the 2024 Wisconsin Lakes and Rivers Convention in Stevens Point, April 10-12. Find more information about the convention on page 13 or at wisconsinwaterweek.org.



Snapshot Day Volunteers Aid in New Discoveries of AIS Across the State

On August 19, 2023, water lovers of all ages gathered for a one-day statewide aquatic invasive species (AIS) scavenger hunt as a part of the 10th annual AIS Snapshot Day. This event is coordinated by the Division of Extension at UW-Madison in partnership with River Alliance, the Wisconsin Department of Natural Resources (WDNR), and Extension Lakes. Volunteers met across the state to learn how to identify AIS such as purple loosestrife and New Zealand mudsnails, and then searched for

Snapshot Day's community-based science approach maximizes the number of sites checked across the state, and the free event allows volunteers to learn how to keep local waters healthy.

We would like to extend a HUGE thank you to all the volunteers, partner organizations, and site leaders who made this event possible.

Don't forget to follow Snapshot Day on Facebook for future updates! <https://www.facebook.com/aissnapshotday>

Monitors of all ages joined the fun in Oconto County.

1 Day **145 Monitors**
102 waterbodies



Paul Skawinski

Thanksgiving at the Lodge

Celebrating with Neighbors Near the Water

By Diane Daulton, independent author, naturalist/educator, and lake and stream advocate
Reprinted with permission from The Water Column (November-December 2022)

In my Northwoods experience, Thanksgiving is a busy time. Hunting season is in full swing and it's time to invite family, friends, and neighbors to celebrate the changing seasons. Meanwhile, some of our wetland neighbors would like to invite readers to consider Thanksgiving from a new perspective. This story revolves around another being who shares strong family values, is hard working, a brilliant engineer and team player, and provides many benefits to others in their community and ours. I hope you'll enjoy this fanciful look at a few water loving neighbors in the lake or pond nearest you. While the natural history facts are true, some liberties have been taken in crafting the story. The names of animal beings in this story are given in Ojibwemowin (the Ojibwe language) as found in the Ojibwe People's Dictionary, found at <https://ojibwe.lib.umn.edu/>.

Beaver ponds create wetland habitat, improve water quality, and slow the flow during storm runoff events.

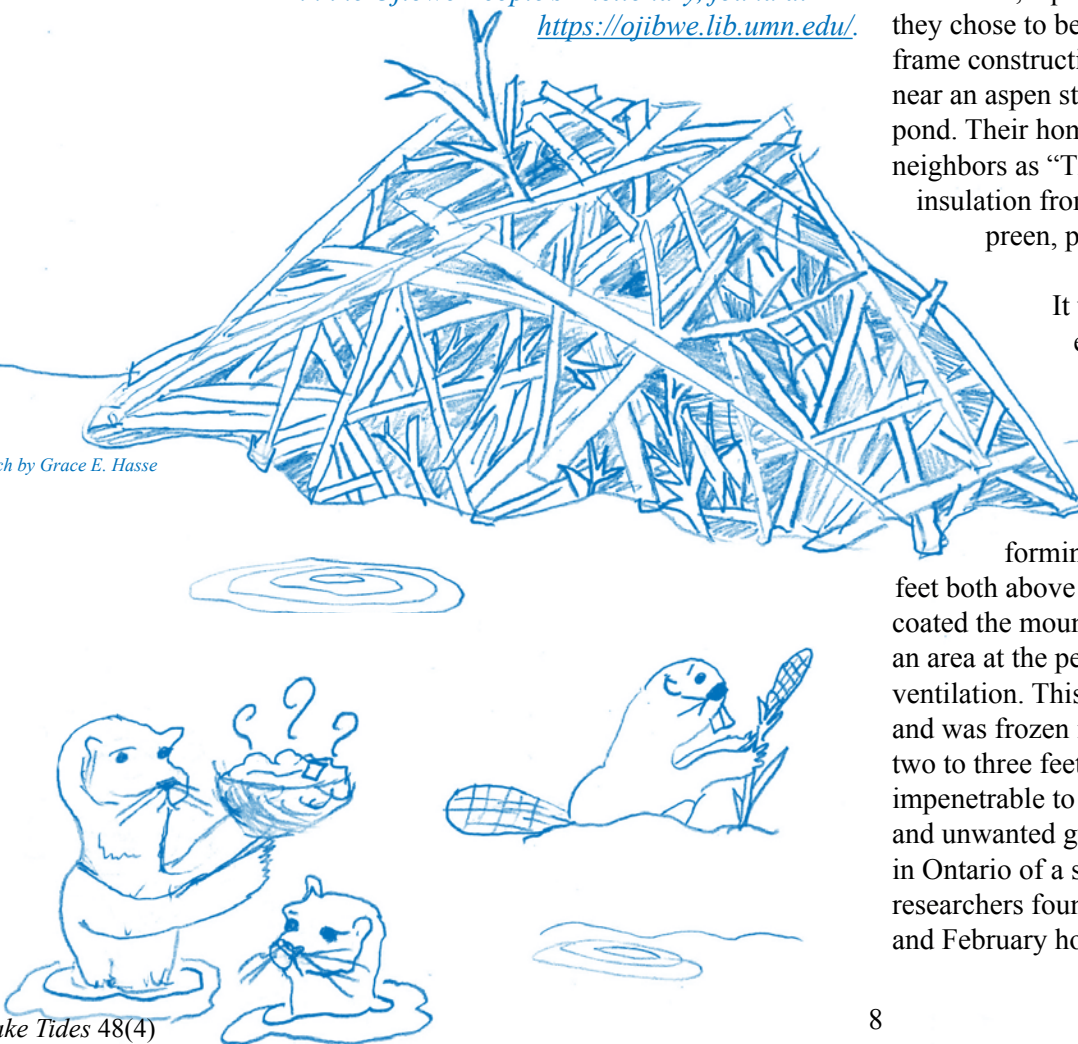
For Thanksgiving, the first question to be addressed was who would host the celebration in the neighborhood. My friend Amik and his family were the obvious choice simply because they have the biggest home - by far. As Amik contemplated who could, should, or should not be invited to partake, he reminisced about how far his beaver family had come...

First there was construction of the dam that created their pond. The family had learned much of their building craft while constructing the dam. It had been a massive job, but perhaps that's a story for another day. Recollecting, he could still see the open pond created by the dam, serene and welcoming to a myriad of wildlife, aquatic and otherwise. The site they chose to begin their new home's timber frame construction rested along a deeper pool near an aspen stand with a lovely view of the pond. Their home, now referred to by all the neighbors as "The Lodge" provided safety, insulation from winter, and a place to rest, preen, play, and feast.

It was quite spacious and strong enough to keep everyone safe and sound. During construction, his family of six had worked together to pile up branches, debris, and aquatic vegetation

forming a giant mound that rose five feet both above and below the water line. They coated the mound with tons of mud, leaving an area at the peak uncoated for chimney-like ventilation. This amalgamation had now dried and was frozen into cement-like walls some two to three feet thick at the base, virtually impenetrable to winter's cold temperatures and unwanted guests. In one study conducted in Ontario of a similar sized beaver lodge, researchers found that temperatures in January and February hovered around 32 degrees

Sketch by Grace E. Hasse



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Fahrenheit inside, while outside temperatures averaged between minus 6 to 19 degrees above zero. Thirty-two degrees may sound cold to us, but not to Amik, whose lodge and double fur coat provided protection. Thinking back, Amik also remembered what a lot of work went into the excavation that perfected the interior design of the structure.

They had planned for a large loft along with a downstairs that included a generous mudroom along the water line to welcome family and friends. The mud room was a necessity for dripping and drying off, but also doubled as a lovely dining area. The loft was carefully lined with cushy wood fibers and grasses for sleeping. The home was extra secure, having aquatic front and rear doors. This feature insured that only semi-aquatic visitors could enter. The refrigerator and root cellar were in a submerged larder, handy – just a quick dash away from the dining room. Fortunately, their rest room facilities were established away from the home, alongside the dam, to keep things fresh, neat, and tidy.

Amik was thankful that his family got along so well. As with most families of his kind, he and his mate ruled the roost with love, caring for their yearling youngsters and smaller kits – two of each to complete the current family of six. In their family hierarchy, the adults oversaw the yearlings and the yearlings, in turn, looked after the kits, keeping them in line. Usually everyone got along wonderfully. Smithsonian’s National Zoo and Conservation Biology Institute noted that among their kind, “Physical aggression is rare and vocalizations, gestures and postures are used within the lodge to communicate issues of dominance status within the group.” Imagining the family Thanksgiving table, some readers may be able to relate to using “gestures and postures” to keep the peace.

So now the next question, who to invite? Wazhashk, the short and stout little next door neighbor, and his large family were definitely on the guest list, especially because they were good friends and got along. His family name translates directly to “muskrat” in English. To keep things simple the decision was made to have official invites

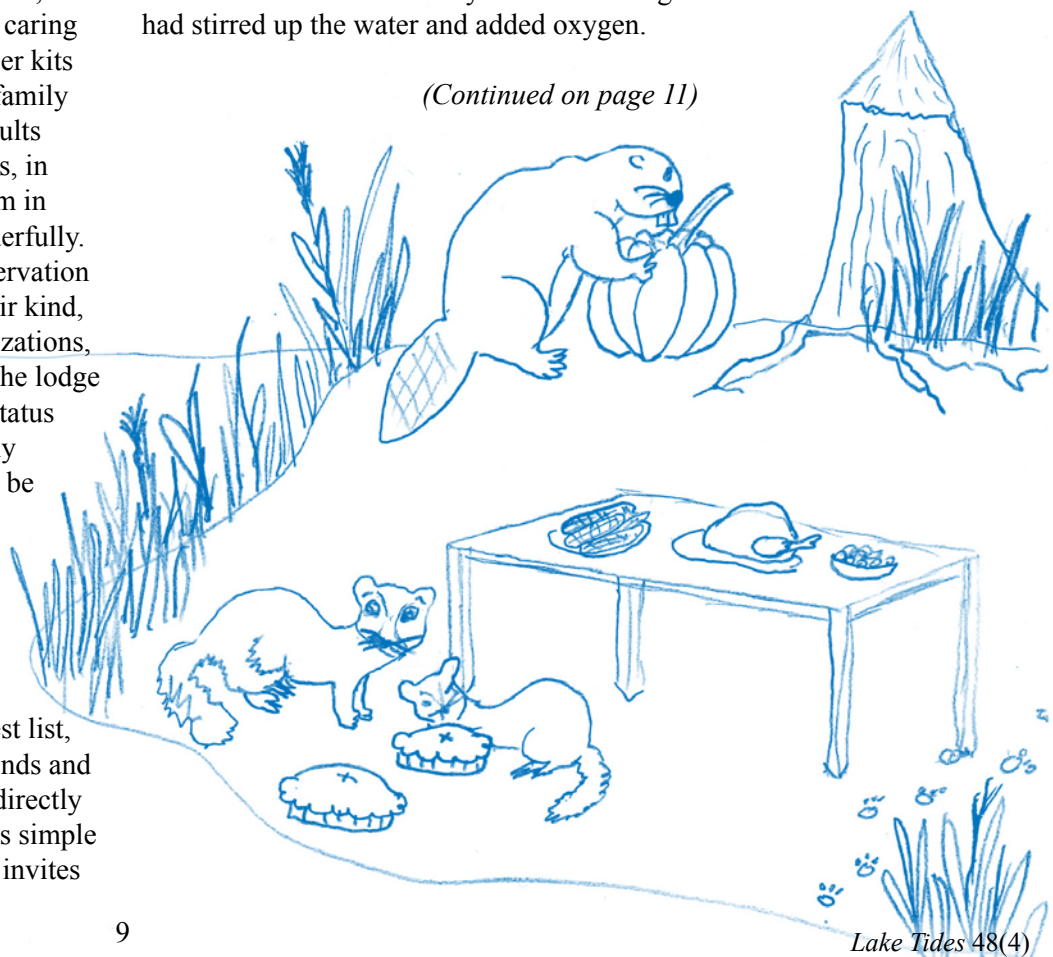
to the table for vegetarians only. Everyone would bring their favorite foods to share. Amik’s family had been stocking the larder for many months now and a large cache of aspen, willow, alder, and red-osier dogwood sticks were anchored nearby in the mud on the bottom of the pond. The Wazhashk family would likely contribute underwater roots and tubers. Amik hoped they would bring enough food, as they were known to be very big eaters, on a normal day eating around a third of their own weight - not that he minded sharing. He also wondered if they would know when to go home. One year they had stuck around and just never left. On the other hand, to help out, they had brought little gifts like fresh reeds to compensate that provided fresh bedding for the lodge. Amik decided that arrangement might actually be mutually beneficial, in the spirit of the season of course, as the Wazhashks could also provide extra watchful eyes to look out for predators.

He didn’t want any of the other wetland neighbors to feel left out, especially the neighborhood carnivores, so the family planned to have a little outdoor party to mix with them. All of the activity around the lodge had stirred up the water and added oxygen.

“Physical aggression [in beavers] is rare and vocalizations, gestures and postures are used within the lodge to communicate issues of dominance status within the group.”

~ Smithsonian’s National Zoo and Conservation Biology Institute

(Continued on page 11)



A Deep Dive into Lake Data



Kathy King

By Katie Hein, Lake Monitoring Lead, Wisconsin DNR

Do you ever wonder if water clarity has changed on the lake near you, or what types of land surround the lake? Maybe you just want a report summarizing the data you collected for your lake. The Wisconsin Department of Natural Resources (WDNR) is pleased to share a number of online tools that make viewing lake data easier.

to other lakes and how they are changing over time. You may also see how the temperature and dissolved oxygen change from the lake surface to the lake bottom over time. If you just want to view tables of chemistry results for a single year, download a report with the click of a button!

The Wisconsin Water Explorer (WEx) allows you to select a lake or stream that you are interested in (<https://dnr.wisconsin.gov/topic/SurfaceWater/WEx.html>). You can then view the watershed, which is the entire land area that drains into that lake. Explore the geology and types of land present in the watershed and on the land immediately around the lake. View how the water clarity, phosphorus, and algae (chlorophyll a) compare

[Lake Levels, Shoreland Habitat, and AIS, Oh My!](#)

Perhaps you noticed that lake levels seemed lower this year than they were a few years ago. Go to WDNR's **Lake Level Dashboard** and search on the map to see where volunteers are monitoring lake levels in Wisconsin. Once you click on a lake, you can view how lake levels have changed over time. You can also review individual lake level readings.

Scroll down the Lakes page on the DNR website to find these three resources and more!

<https://dnr.wisconsin.gov/topic/Lakes>

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

HUNTING FISHING PARKS CLIMATE ENVIRONMENT FOREST

- LAKE SHORELAND HABITAT**
View lake shoreland habitat disturbance and read habitat protection and restoration suggestions
- LAKE LEVELS**
View and graph lake level data across Wisconsin
- SURFACE WATER GRANTS**
Learn about grants available for lake planning and protection and invasive species projects
- CLEAN BOATS, CLEAN WATERS**
Clean Boats, Clean Waters inspectors are a front line defense against the spread of aquatic invasive species
- CITIZEN LAKE MONITORING NETWORK**
The Citizen Lake Monitoring Network (CLMN) creates a bond between over 1,000 citizen volunteers statewide and the DNR
- BLUE-GREEN ALGAE**
The DNR is working hard to protect humans, domestic animals and wildlife from harmful algal blooms
- WATERWAYS AND WETLANDS CONTACTS**
Staff to contact with questions about rip rap and erosion control, installation of piers/docks/ramps, dredging, etc.
- LAKES & AQUATIC INVASIVE SPECIES MAPPING TOOL**
View the geographical distribution of invasive plants, fish and invertebrates, map monitoring locations and more

Another exciting resource is the **Lake Shoreland Habitat Disturbance Viewer**. This tool maps all of the lakes where habitat along the lake shoreline has been surveyed. You can see the overall habitat condition on the lake and a list of recommendations for protecting and restoring habitat. You can also zoom in to see site-specific habitat elements and recommendations. After you get the overview of shoreland habitat, go to the **Lakes and AIS Viewer** and select the Shoreland Habitat Monitoring layer. This will allow you to map the coverage of shrubs and plants along the lake shoreline, where floating and emergent plants occur, where big logs that are great for fish are located, and other features. Good shoreline habitat leads to good water quality, fisheries, and healthy lakes.

We encourage you to dive into the lake data with the help of these new tools! Have fun exploring and feel free to reach out to us at WDNR if you have questions. 💧



Let's Make Healthy Lakes & Rivers Together!



The Healthy Lakes & Rivers initiative is a statewide effort providing outreach, technical assistance, and funding for five simple and inexpensive best practices that are appropriate for most lakeshore properties. Pitch your Healthy Lakes & Rivers feature story to Pamela Toshner (pamela.toshner@wi.gov) or Amy Kowalski (amy.kowalski@uwsp.edu).

Helpful Native Plant Resources

Do you ever see plants you would like to have in your yard, but then find out they're not native to Wisconsin? Well, we want you to know about a couple of new resources that help you find a native alternative to some popular plants that aren't so great for water-friendly landscaping and habitat.

Landscaping Alternatives for Common Invasive Wetland and Aquatic Plants (pub# WY-110)

Includes great examples of native plants you can use in your water gardens, ponds, and rain gardens to oxygenate the water, shelter and feed wildlife, provide beauty, and support pollinators.

Landscaping Alternatives for Terrestrial Invasive Flowers and Grasses (pub# NH-402)

Flowers, grasses, and sedges are great additions to your gardens and home landscape to intercept and control dirty water, store and cycle carbon, promote healthy soil, shelter and feed wildlife, and provide pollinator support.

Available in Print and Online

These brochures (up to 50 each) can be ordered for free to hand out to your lake group, neighbors, and friends! Just email DNRAISinfo@wisconsin.gov and reference the titles and publication number listed above. You can also view this information on the Wisconsin Horticulture website at <https://hort.extension.wisc.edu/articles/>. 💧



(Thanksgiving at the Lodge, continued from page 9)

This drew a little crowd of minnows and attracted larger fish. Fish added protein to the banquet fare Amik could offer to neighbors like Zhongwyzk (mink) and Nigig (river otter). He hoped their carnivorous friends would stop by to enjoy the celebration.

No doubt the Amik neighborhood gathering went off swimmingly! As author of this somewhat fanciful article, I should note that beaver do indeed share their lodge space with other critters occasionally including muskrat, otter, and even mergansers! In fact, the gifts that beaver provide to other beings including people are impressive. Their ponds create wetland habitat, improve water quality, and

slow the flow during storm runoff events to name a few. For these gifts we can all be grateful to Amik! Miigwech.

In this season of Thanksgiving, let's remember how lucky we are to have ample provisions, sharing spirits, and a beautiful landscape that offers rejuvenation, contemplation, and bright sunshine. Should readers find themselves paddling near a beaver lodge this fall, look for their larder, submerged near one of the underwater entrances. Near dusk, you may be lucky enough to spot the family. Later, as snow softens the landscape, steam rising from the vents of their lodge betrays their presence. 💧



Get 'er Done

“Ready-to-go” Programs Help Lake Orgs

By Eric Olson, Director and Lake Specialist, Extension Lakes

Capacity
or Nov.
2023
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Every fall we share ideas and resources for building organizational capacity with an emphasis on getting things done, also known as programmatic capacity.

Most lake organizations are small, volunteer-driven efforts.

The Wisconsin Lakes Partnership approach recognizes that not every group is going to have the time and wherewithal to develop sophisticated plans and programs. The Wisconsin Department of Natural Resources (WDNR), in cooperation with Extension Lakes, provides several “ready-to-go” programs that almost any lake group can participate in.

guidance for those do-it-yourselfers, WDNR also provides competitive Healthy Lakes & Rivers grants for eligible applicants like local units of government, qualified lake or river organizations, and others who can apply for funding on behalf of shoreland property owners.

The newest tool in this “action kit” is the Score My Shore shoreland evaluation tool. This online, interactive survey allows landowners to explore their own property and learn about specific steps that they can take to better protect their lake, including Healthy Lakes & Rivers practices eligible for state cost-share. The web tool is based on a similar site developed in Michigan. Your organization can now come on board as a partner in Score My Shore to efficiently get the word out to landowners about this helpful resource. Participating lake organizations can also access summaries of shoreland practices on their lake. This can help tailor future education and outreach efforts. For example, if many respondents to the Score My Shore tool indicate that they often fertilize their yard, the lake group can emphasize that too much fertilizer can harm the lake and promote using soil tests before fertilizing to get more specific nutrient recommendations. Find the Score My Shore resource on the Healthy Lakes & Rivers site, and look for the Partner Organizations information at the bottom of the page (healthylakeswi.com).



Citizen Lake Monitoring Network

The Citizen Lake Monitoring Network allows lake groups to scientifically collect information about the health of their lake and detect trends over time. Equipment and training is provided to volunteers to gather this high-quality lake monitoring data, which helps inform lake management.



Clean Boats, Clean Waters

The Clean Boats, Clean Waters watercraft inspection program engages volunteers and local staff to communicate important aquatic invasive species (AIS) prevention messages to boaters coming and going from lakes. Inspectors also perform boat and trailer checks, as well as collect and report any new species.



Healthy Lakes & Rivers

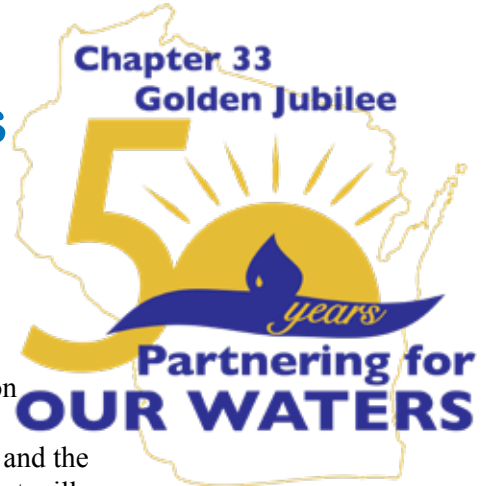
Healthy Lakes & Rivers provides five simple and inexpensive best practices that improve habitat and water quality on your shoreland property. In addition to technical



Illustrated by Karen Engelbretson

Lakes and Rivers Convention

Chapter 33 Golden Jubilee: 50 Years Partnering for Our Waters



Whether you are part of a lake organization, river group, a water-related business owner, water professional, or dedicated volunteer, we welcome you to join us at the 2024 Wisconsin Lakes and Rivers Convention. We may be celebrating the last 50 years of partnering for our waters, but we are also looking forward to celebrating new partnerships that protect our waters for the next 50 years and beyond. We need people from all areas of Wisconsin with different skills and perspectives to join us.

New to the Convention?

The Lakes and Rivers Convention isn't your ordinary trade show or research symposium; it is a unique educational event that brings together professionals, students, community members, and businesses who care about our shared water resources. If you're considering attending for the first time, we are happy to connect you with a seasoned Convention-goer who can help you decide which sessions to attend and how to get the most from the event. They can introduce you to new people and new opportunities.

Convention Veteran?

News for you seasoned Convention-goers: all the stuff you love and more! The Flow Project Art Exhibit will be back with a twist, the closing luncheon on Friday will include guided table discussions and reflection, and the Thursday evening awards banquet will become the Golden Gala Awards Ceremony to celebrate 50 years of partnerships.

Looking forward to the rich content of the concurrent sessions? The sessions will fall into several topical areas including:

- 50 Years of Water Science Translated to Action
- Lake and River Flora and Fauna
- Legislative & Policy Updates
- Human and Critter Health
- Managing Recreational Impacts
- Capacity Building Strategies for Lake and River Groups
- Watershed Approach to Water Protection
- Aquatic Invasive Species
- County Successes Over the Last 50 Years: How local government has played a role in protecting water resources

Hope to see you there! 💧

SAVE THE DATE
April 10-12, 2024
 Wisconsin
 Lakes & Rivers Convention



Upcoming Deadlines

February 28: Early-bird registration

March 1: Lightning Talk Proposals

March 24: Photo Contest Entries

April 1: Poster Proposals

Reserve Your Room Now

Rooms have sold out quickly in the past, so we encourage you to book your room early at the Holiday Inn and Convention Center in Stevens Point. Just go to wisconsinwaterweek.org, and click on "Lakes and Rivers Convention," then click on "Lodging" for instructions.

wisconsinwaterweek.org



Keeping Lakes in the Family

Sharing the Magic Through Stories

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

Fall is a time for reflection and witnessing the changes in nature. As we sit back and prepare for the holidays, here are some lake-related books to share with that special child in your life. Curl up to read some of these wonderful stories together and reveal your own lake experiences. While these books may have been designed for children, they're a great fit for anyone who enjoys wonderful illustrations and fun stories. These fun, educational options also make great gifts for your local library or school, where many people can enjoy the magic of lakes.



A Day at the Lake

Written by Stephanie Wallingford and Dawn Rynders

Illustrated by Erica Pelton Villnave
Ages 2-6

This joyful book follows three children as they enjoy the simple pleasures and rare glimpses that nature offers us around the lake. Brightly colored illustrations bring this story to life.



Me and You and the Red Canoe

Written by Jean E. Pendziwol

Illustrated by Phil

Ages 5-8

In the stillness of a summer dawn, two siblings leave their campsite with fishing rods, tackle and bait, and push a red canoe into the lake. A perfect morning on the water unfolds, with thrilling glimpses of wildlife along the way. The poetic text is accompanied by stunningly beautiful paintings rendered on wood panels that give a nostalgic feeling to the story.



The Lake I Love

Written by Edward M. Shankman

Illustrated by Dave O'Neill

Ages 5-10

This book follows a young family spending joyful summers at the lake surrounded by nature. The rhyming text describes the joy of watching fish, frogs, fireflies and other critters in the day and nighttime.

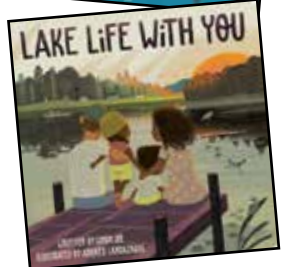
Lake Life with You

Written by Cindy Jin

Illustrated by Andrés Landazábal

Ages 1-5

With sweet, rhyming text and beautiful art that will transport you to the lake, this board book celebrates the best things about enjoying lake life with the ones you love. Whether it's feeding ducks, looking for fish, or enjoying a peaceful nature walk, this cozy story proves that the best thing about lake life is making precious memories with the ones you love that last long after you leave the shore. 💧



Gifts Ideas from our Bookstore

Looking for water-related gifts or stocking stuffers for your loved ones or your local library this holiday season? Check out these ideas from the Extension Lakes bookstore!

Gifts under \$5

Freshwater Fish Series:
Bluegills and Iowa Darter (paperbacks);
Shoreline Living Magazine; My Lakeshore Field Journal; informational pamphlets

Gifts under \$20

Wisconsin Lakes Trivia Game; Magic Goggles (hardcover); For Love of Lakes

Gifts under \$50

Aquatic plant field guides



Become a Lake Leader!

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

Call for Nominations for Lake Leaders - Crew 15

Are you interested in gaining skills and increasing your network related to lake management and protection? Want to tackle lake-related issues, but need some extra help? Consider nominating yourself, or someone else, for the Wisconsin Lake Leaders Institute. The next group, Crew 15, will meet in May, September, and October of 2024. The deadline for nominations is February 1, 2024.

What is the Lake Leaders Institute?

This leadership program consists of three separate two-day seminars engaging approximately 30 individuals from different backgrounds who are committed to protecting and preserving Wisconsin's lakes. The first seminar focuses on our society and our individual communication styles. The second seminar focuses on aquatic ecology and watershed management. The third seminar introduces us to a multitude of other organizations who work to protect or manage our water resources and provides a foundation for understanding water law in Wisconsin.

Individuals who successfully complete the program leave with new skills and resources to help them tackle lake-related issues. These graduates also have the opportunity to attend future training for Advanced Lake Leaders focused on topics of their choosing. For more information, visit uwsp.edu/uwexplakes and click on "Lake Leaders."

Advanced Lake Leaders Recap

Approximately 40 Lake Leaders, representing nine crews, met at the Kemp Natural Resources Station on Lake Tomahawk in September to participate in the Advanced Lake Leaders session. These individuals sharpened their skills and increased their knowledge thanks to professionals who shared information and strategies regarding shoreland protection and zoning, endowments, and succession planning. 💧



Advanced Lake Leaders discussion with Lake Tomahawk in the background.

Sara Windjue



Nominate yourself or someone else by February 1, 2024!

CALENDAR

December 5, 2023 – Wisconsin Lakes Annual Meeting, Online

For more information: <https://wisconsinlakes.org>

December 7-8, 2023 – Wisconsin Water and Soil Healthy Conference, Wisconsin Dells

For more information: <https://cropsandsoils.extension.wisc.edu/wwash/>

January 20-21, 2024 – Free Fishing Weekend, Wisconsin

For more information: <https://dnr.wisconsin.gov/topic/Fishing/anglereducation/freeFishingWeekend>

February 1, 2024 – Wisconsin Lake Leaders Institute Nomination Deadline

For more information: <https://www3.uwsp.edu/cnr-ap/UWEXLakes/Pages/programs/lakeleaders/default.aspx>

February 20-22, 2024 – Wisconsin Wetland Science Conference - Green Bay

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

February 26-28, 2024 – 44th Annual MAPMS Conference, Columbus, OH

Join the Midwest Aquatic Plant Management Society in Columbus.

For more information: <https://www.mapms.org/conferences/2024-conference/>

To stay up-to-date on lake, river, and watershed events, go to uwsp.edu/uwexplakes and find the calendar!



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Reflections

“What we contemplate here is more than ecological restoration; it is the restoration of relationship between plants and people. Scientists have made a dent in understanding how to put ecosystems back together, but our experiments focus on soil pH and hydrology—matter, to the exclusion of spirit. We might look to the Thanksgiving Address for guidance on weaving the two. We are dreaming of a time when the land might give thanks for the people.”

— Robin Wall Kimmerer
Braiding Sweetgrass

