



# Summer Camp

## A Wisconsin Tradition Continues

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

Summer is a time of exploration and discovery - a time to be outside getting fresh air and exercise. Summer camps have historically been an important part of summer traditions for many families, and during these times of virtual communications and electronic existence, summer camps may be more important now than ever. Whether at a day camp or a residential camp, thousands of students across Wisconsin experienced camp this summer. We want to share with you just a few stories of how camps introduced students to water experiences and began to facilitate the next generation of water stewards.

Camp Nan A Bo Sho

### YMCA of the Fox Cities - Camp Nan A Bo Sho

The YMCA of the Fox Cities' Camp Nan A Bo Sho (meaning "Land of the Great Spirit") served a total of 579 campers this summer. This camp is located on the shores of 116-acre Waubee Lake in Oconto County, in which all campers have swim time each day. Camp groups are required to participate in at least two boating activities throughout the week, and most campers also choose to go fishing or catch frogs.

Danielle Pickering-Polzin, Director at Camp Nan A Bo Sho said, "Lake activities are definitely a highlight of the camp experience at Camp Nan A Bo Sho. It's a great place for campers to cool down on hot days and really get their hands dirty exploring the world around them."

(Continued on page 2)



## Nan A Bo Sho

*Land of the Great Spirit*



Amy Kowalski



“The CORCL boat was designed specifically for 7-15 year olds to enjoy flat water: spinning, racing, and messin’ around.”

### Stevens Point Area YMCA - Camp Glacier Hollow

The Stevens Point Area YMCA’s Camp Glacier Hollow served 65 campers in Day Camp for eleven weeks and 120 Resident campers over the course of ten weeks. The lake upon which Camp Glacier Hollow sits is Lake Elaine, a small glacial lake which is primarily used by campers for swimming, fishing, and boating (using canoes, kayaks, paddleboards, and CORCLS). Campers also have the opportunity to learn about the lake and the creatures living in it through an activity known as mucking.

During this activity, campers collect macroinvertebrates (dragonfly nymphs, caddisfly nymphs, crayfish, etc.) from the lake to see them up close and learn more about them before releasing them back into their natural lake environment.

### Girl Scouts of the Northwestern Great Lakes

Over 300 Girl Scouts of the Northwestern Great Lakes experienced camp this past summer and had a great time using the My Lakeshore Field

These Girl Scouts are checking water clarity using a Secchi disc.



Lake Tides 46(4)

Journal when doing squish hikes (wading into the water to see what they can catch or find).

Lisa Freeman, Camp Manager, told us, “They really liked learning about the Secchi disc and noticing how far down in our lake they could see, as well as using the nets to catch some of the fish in the lake. We’ve never had much interest in catching fish until this summer. They could use the books and look at the fish to determine which fish we had in the lake and learn more about Wisconsin lakes and ecosystems.

Many of the girls were excited to get into the water to learn about our lake’s ecosystem and how we might be able to make that better to have more diversity in our lake. Several girls used the postcards that were in the books to send letters home over the summer.”

### Friends of the Hunt Hill Audubon Sanctuary, Inc.

Hunt Hill Audubon Sanctuary offers a variety of programming for children and youth including school field trips, summer day camps, youth outings, and family programs. A total of 567 students from 15 classes attended school field trips during the month of May 2021, and each camper received a free My Lakeshore Field Journal to take home.



Friends of the Hunt Hill Audubon Sanctuary, Inc.

Sage Dunham, Program Director, explained, “During the field trips, students participated in many activities near, on, and in the lakes. Students used nets to catch and identify macroinvertebrates, paddled canoes around the lakes and channels, did water chemistry and water quality testing, floated above the lake on the bog, and investigated beaver lodges and dams.”

With seven full weeks of day camps offered in the summer of 2021, Hunt Hill totaled 700

camper days! In addition to all of the wonderful activities that students experienced during the school field trips, day campers also had many opportunities to enjoy the lake.

Director Dunham said, “Campers swam in the lake on a daily basis and enjoyed investigating all of the animals that call the lake home. One of their favorite activities was fishing, and nearly all of the campers caught a fish on fishing day!

The children that come to Hunt Hill develop a love of the lake. At first, when campers hear that there is a swim time, they ask, ‘But where is the pool?’. Some of the children are wary of the fish, frogs, insects, and aquatic plants with which they have to share the water, but as time goes on they become more comfortable. By the end of the week, most campers are excitedly scooping up critters in pond nets, wondering about dragonfly exoskeletons and caddisfly cases. Even the children who don’t swim enjoy sitting with their feet in the water and letting the fish nibble at their toes or listening to the loons call on the other side of the lake.”



Girl Scouts work together using a seine net to catch small fish and critters.

### Wisconsin Lions Camp

The Wisconsin Lions Camp had a total of 639 campers (both children and adults) who benefited from camp this summer, including campers who are blind or visually impaired, those who are deaf or hard of hearing, children with diabetes, intellectual disabilities, autism, and epilepsy. This special camp is situated on Lions Lake, which is home to many activities throughout the summer including boating and swimming.

The Camp’s boating programs include kayaks, canoes, stand up paddle boards, row boats, paddle boats, CORCLS, and pontoon boats. Fishing is a very popular activity for some campers throughout the summer.

Phillip Potter, Assistant Camp Director said, “We also have a rope swing going into the lake that is an activity traditionally paired with our mud pit. Campers will hike on a trail out to our mud pit to jump in and get covered in mud and then hike to the rope swing area and swing into the lake and clean off the mud. The lake is a huge part of our programming at camp and we are very fortunate to have a beautiful 45-acre lake on our property.”

*We’ve never had much interest in catching fish until this summer; they could use the [My Lakeshore Field Journal] books and look at the fish to determine which fish we had in the lake and learn more about Wisconsin lakes and ecosystems.”*

- Lisa Freeman, Camp Manager, Girl Scouts of the Northwestern Great Lakes



# Capacity Corner - Nov. 2021

## Carrying Out Programs to Protect Lake Health

By Eric Olson, Director and Lake Specialist, Extension Lakes



*We close out each year of the Capacity Corner by looking at programmatic capacity. This represents the ability of a lake organization to get things done. Programmatic capacity often depends on how well a group performs in the other three dimensions of capacity (membership, organizational, relational). Since we started our regular focus on capacity, we've heard*

*from lake stakeholders across the state who are hoping to share their own programmatic successes and challenges. We'd like to use this edition of Capacity Corner to discuss what protection efforts look like across Wisconsin and share one such story to help inspire you in your capacity building efforts.*

**The recipe to protect a lake from invasive species is simple: keep them out of the lake!**

It's helpful to think of a lake group's programs focusing on two realms of activity: protection and restoration. Protection encompasses proactive steps that fend off future harm. Restoration focuses on fixing problems, often after

they have become obvious. As with human health, it is often true that preventing poor lake conditions is less costly and complicated than bringing a lake back from an impaired state. Unfortunately, lakes and humans both can be subject to benign neglect, especially if the consequences of letting our guard down take years or decades to manifest.

Protecting lake health from external threats represents a long-term, continuous programmatic need for lake groups and their partners. While protecting human health is fairly well understood (eat a nutritious diet, exercise, don't overindulge), protecting lake health can be harder to conceptualize. If a lake is healthy today, it likely has been so for thousands of years, so why worry?

### Threats

For starters, science has helped us better understand the causes of poor lake health, and it turns out that no lake is immune from the harmful forces that can degrade a lake's water quality and ecology. Major threats to lakes include: nutrient and sediment loading from the watershed, loss of habitat in and around the lake, and harmful invasive species. Climate change is a fourth threat, impacting lakes directly by modifying their temperature regimes and indirectly by amplifying the potential harm of the other three threats.

The recipe to protect a lake from invasive species is simple: keep them out of the lake! Anyone who has been involved in the decades-long battle against aquatic invasive species (AIS) knows that it's not that easy in practice. Boat landings are understood as the primary gateway for AIS, but bait buckets and anything else being moved from lake to lake can also transport AIS. Participating in the Clean Boats, Clean Waters (CBCW) education campaign is one major programmatic approach to preventing AIS. So too is monitoring the lake

Emily Heald



Clean Boats, Clean Waters volunteers and staff from the Turtle Lake Chain Association in Winchester, Vilas County.



to find plants and critters that don't belong before they become firmly established. Does your lake group participate in CBCW? Are there volunteers doing AIS detection work through the Citizen Lake Monitoring Network (CLMN) or the annual AIS Snapshot Day?

***Hundreds of lakes and thousands of volunteers and staff collaborate in the CBCW program. Nearly 1000 lakes carry out volunteer citizen monitoring. Learn how your lake can participate on the Extension Lakes website: [www.uwsp.edu/uwexplakes](http://www.uwsp.edu/uwexplakes)***

Habitat loss near the lake is another threat to lake health. We have learned that the ecology within a lake is tied to the ecology around the lake; a healthy shoreland area fosters insects and wildlife that support a diverse and robust fishery. The gradual addition of dead trees into the lake plays a key role in supporting aquatic insects, young fish, and slowing shoreline erosion. Buffers of native plants along the shore slow runoff and protect the lake from excess nutrients. Lake organizations can foster norms that keep native plants on the landscape and in the lake. Does your lake group participate in the Healthy Lakes and Rivers program? Are there opportunities to install demonstration projects showcasing native plants at boat landings, parks, and other public spaces? Does your group recognize and reward shoreland owners who actively protect and restore native shores?

***The Healthy Lakes and Rivers website provides easy to use resources to help landowners and lake groups do the right thing for our Wisconsin lakes and rivers. <https://healthylakeswi.com/>***

## **Watersheds**

Watershed threats are often much more vexing for a lake group to tackle. The water coming into your lake comes from either direct precipitation, groundwater, or streams and surface water runoff. In less than 200 years, humans have radically altered the Wisconsin landscape in ways that feed more runoff to waterbodies, and the speed it arrives allows



*This native planting was part of a Healthy Lakes & Rivers grant in Montello, Marquette County.*

runoff to carry soil particles and other materials that degrade water quality. In forested regions of Wisconsin, the changes are relatively small and subtle, but the potential for future forest loss looms. Changes in climate and irrigation technologies are making agriculture economically viable in places where immigrant farmers abandoned their efforts in the 1930s and '40s. Securing forested land and limiting future land use change seems daunting.

## **Programmatic Capacity At Work**

An example from Sawyer County sheds light on how a lake association can draw on its capacity to protect a healthy watershed. Grindstone Lake, at over 3,000 acres, is just outside of Hayward and fortunate to have a heavily forested watershed and great water quality: summertime Secchi readings indicate about 20 feet of clarity! An opportunity to proactively protect the lake arose when the owner of a 57-acre cranberry bog near the lake

*(Continued on page 15)*

# The State of Salt

By Allison Madison, Sustainability and Development Coordinator, Wisconsin Salt Wise

Wisconsin's fresh water is becoming increasingly salty. According to the Wisconsin Department of Natural Resources, 47 rivers and lakes in our state are impaired due to high chloride concentrations. Elevated salt levels in lakes, streams, and wetlands threaten our fisheries, tourism, economy, quality of life, and the health of our aquatic ecosystems. Road salt is the primary culprit, followed by salt from conventional water softening systems.

**Over 525,000 tons of salt (sodium chloride) are applied to Wisconsin roadways annually.**

Over 525,000 tons of salt (sodium chloride) are applied to Wisconsin roadways annually. Deicing salt does its job by dissolving into snow and ice; once it's dissolved it goes where the snowmelt goes – often into storm sewers and directly into our lakes and streams.

***All the salt that we bring into Wisconsin ends up in our fresh water.***

The 40-lb bags of salt that we pour into our water softener's brine also ends up in our fresh water either through infiltration from private septic systems or direct discharge from the

sewage treatment plants that are unable to desalinate wastewater. Whether these salts are shuttled straight to surface waters or slowly infiltrate into groundwater, all the salt that we bring into Wisconsin ends up in our fresh water.

## We're salting our surface water

Salt is a permanent pollutant in lakes, streams, and wetlands. Elevated salt levels stress plants and animals that have adapted to freshwater environments. Before reaching lethal levels, chloride (Cl<sup>-</sup>, the negative ion in sodium chloride, NaCl), has a variety of direct and indirect impacts on the health of organisms in aquatic ecosystems. Fish experience decreased rates of growth, frogs are more susceptible

to parasites, and the embryonic survival of salamanders declines as salt concentrations increase. Researchers hypothesize that the young of many species are impacted

before the adults because the organs (kidneys, gills, etc.) that help with osmoregulation, the regulation of salts in the body, are not yet fully formed. As salt levels go up, the one winner is algae. Expect greener, murkier waters as water

gets saltier because the zooplankton that eat algae are highly sensitive to salt. (*A review of the species, community, and ecosystem impacts of road salt salinisation in fresh waters, 2019.*)

The Southeastern Wisconsin Regional Planning Commission (SEWRPC) is investigating the inputs and impacts of chloride in regional watersheds. Initial SEWRPC study results include chloride concentrations above 3,000 mg/L in freshwater streams in southeastern Wisconsin. This is 10 times greater than the EPA limit for chronic exposure (230 mg/L) and over three

Provided by Allison Madison



times the EPA limit for acute exposure (860 mg/L).

## We're salting our groundwater

Surface water is not the only victim of unchecked salting. In Wisconsin's capitol, salt pollution of both upper and lower aquifers is forcing the Madison Water Utility to prepare for the closure of one drinking water well in the next 10-15 years and another 10-15 years after that. Elevated concentrations of sodium (Na<sup>+</sup>, the positive ion in NaCl) in drinking water are a concern for individuals on low-sodium diets. According to private well water data from the University of Wisconsin-Stevens Point, drinking water across the state has elevated levels of chloride; it's likely that sodium levels are elevated as well, but it is not often tested. We do know, throughout most of the state, that our water now comes to our taps pre-salted. Additionally, now that our groundwater is salted, our lakes and streams are recharged with salty water. In the SEWRPC study referenced earlier, monthly chloride grab samples indicate that some stream chloride concentrations are elevated above the chronic toxicity limit year-round!

## The cost of salt keeps rising

Beyond the very clear impacts to our freshwater resources, oversalting is a costly endeavor. By weakening metal, concrete, brick, and stone, one ton of road salt causes between \$800 and \$3,300 in damages as it prematurely ages our roads, bridges, and vehicles. Nationwide, we spend \$5 billion annually to repair salt damage to roads and bridges and we're not keeping up. (*Impacts of Chemical Deicers on Roadway Infrastructure, 2018.*)

## There is a better way

Forward-thinking municipalities across the state are rethinking winter maintenance. They are ditching the outdated mindset around salt that "more is better" and embracing precision applications of salt combined with a renewed focus on mechanical removal.

*Provided by Allison Madison*



Educating operators, calibrating equipment, and incorporating salt brine are several of the methods that are enabling communities to reduce salt use by 30-70%. Read about improvements by Salt Wise Champion Municipalities on our website at <https://wisaltwise.com> under *Successes*.

As individuals, we can support our municipal public works staff by staying off roads during winter storms as pressure from constituents often drives the over-use of salt. We can also improve personal practices around our homes and places of work by using winter salt wisely and making sure our water softener is not a salt hog. Get tips on how you can be Salt Wise at <https://wisaltwise.com/TakeAction>. A quality ice scraper could preempt your need for deicing salt. A salt-free water treatment device may solve hardwater scale issues equally as well as a salt-based softener. Whatever steps you take, your local freshwater lake or stream, and the freshwater species that call it home, will appreciate it! 💧

*Educating operators, calibrating equipment, and incorporating salt brine are several of the methods that are enabling communities to reduce salt use by 30-70%.*



# Cute Crawdads

## Crayfishes in Wisconsin

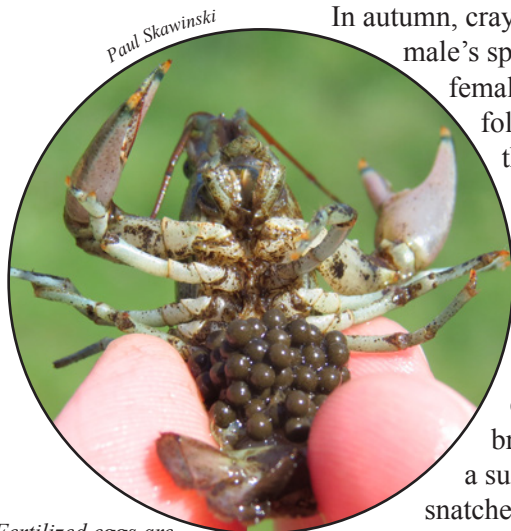
By Paul Skawinski, Statewide Citizen Lake Monitoring Network Educator, Extension Lakes

*One of our less common native species is the calico crayfish. It is only 2-3 inches long and often lives near aquatic plants in high-quality lakes, streams, and wetlands.*

*Crayfishes, or “crawdads,” are common bottom-dwelling creatures in lakes and streams. You’ve probably seen one if you’ve ever moved a large rock or log from the lake bottom. They will scurry away in reverse, keeping their eyes locked on you while they rapidly scoop their tail to make a quick retreat. Although they can defend themselves with a strong pinch, they are generally quite shy and will prefer to swim away rather than engage against a threat.*

Crayfishes are known as decapods, from the Greek word meaning ten legs. Each of these legs has a pair of tiny “fingers” at the end, which are used to feel and taste things along the lake or river bottom. About a third of a crayfish’s length is devoted to the tail and abdomen, which contain powerful muscles and “swimmerets” underneath. These help with the rapid backward swimming that is characteristic of a crayfish.

In autumn, crayfishes seek out a mate. The male’s sperm are transferred to the female but are stored until the following spring. The female can then fertilize her eggs as they are released, and the fertilized eggs are attached under the female crayfish’s abdomen/tail. This keeps fresh water and oxygen flowing past the eggs as she moves around. Newly hatched crayfish will stay with Mom briefly and then drop off to find a suitable shelter, if they don’t get snatched up by a hungry predator first!



*Fertilized eggs are held under the female crayfish’s abdomen for protection.*

be particularly shy, often living within dense aquatic plants, under rocks and logs, or even in muddy burrows. The burrowing species are sometimes called “chimney crayfish” because of the chimney-like entrances to their burrows. The chimneys are built from balls of mud that the crayfish excavates out of the burrow and carries to the entrance.

One of our less common native species is the calico crayfish. It is only 2-3 inches long and often lives near aquatic plants in high-quality lakes, streams, and wetlands. The calico crayfish occurs throughout the Midwest but is probably under-reported in Wisconsin.



*The shy calico crayfish is one of our native Wisconsin crayfishes.*

### Invasive Crayfishes

We also have two non-native crayfish species that are considered invasive – the red swamp crayfish and the rusty crayfish. Red swamp crayfish have been found in pet stores and were likely released intentionally (and illegally) into several southern Wisconsin locations. “Rusties” are native to the Ohio River Basin and were brought here decades ago by fishermen using them as bait. Some escaped from hooks, and extras were likely dumped into lakes and rivers at the end of a fishing trip; rusties are now known to occur in more than 800 lakes and rivers in Wisconsin. The rusty crayfish is large with impressive claws and an attitude. While native species tend to be skittish, rusties will





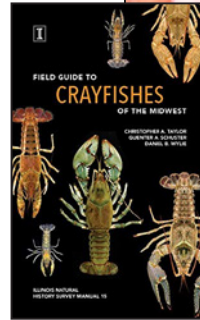
often stand their ground when faced with a predator, locking their gaze on the predator and showing off their large claws. As they invade a new lake or stream, they tend to kill native crayfishes and eat a variety of invertebrates, eggs, and aquatic plants.

## Harvesting and Fishing

Crayfishes are commonly consumed as food throughout the world. Possession of crayfishes in Wisconsin is only allowed for disposal or consumption. Harvesting of crayfishes is legal, but an angler cannot possess fishing gear and a live crayfish on a Wisconsin waterbody at the same time. This is to reduce

the risk of crayfishes being used as bait and possible spread of the rusty crayfish to new waterbodies.

To learn more about crayfishes, check out the Field Guide to Crayfishes of the Midwest published by the Illinois Natural History Survey! 💧



Paul Skawinski

*A rusty crayfish showing its characteristic rusty spot and black/orange claw tips.*

## Did you know Wisconsin DOT is beginning to implement dual language signs along Wisconsin roadways?

# DYK

The Wisconsin Department of Transportation (WisDOT) now offers dual language road signs on tribal lands. These signs welcome travelers to tribal communities in English and native languages. Dual language signs join a long tradition of Native American language shaping our state. The names of many Wisconsin cities, lakes, and landmarks are derived from tribal languages. The first installation of dual language signs happened this November in Red Cliff, which is Gaa-Miskwaabikaang (pronounced ga-misk-wah-be-kong) in Ojibwe. Gaa-Miskwaabikaang means the place where there are red rock cliffs.



There is a process for tribes to request new signage on state highways on or within the boundary of tribal lands. Specific sign types include: Reservation boundary signs, city population signs, county line boundary signs, and bodies of water (lakes, rivers, and streams) when the waterbody is crossed by a state highway bridge or the water is visible to motorists. These new signs will accomplish several objectives:

- 💧 Assist tribes with the revitalization of their languages.
- 💧 Inform people of the historic pre-settlement names of geographic features.
- 💧 Create a sense of place that reflects the unique tie each Wisconsin tribe has to the land that embodies them as a people.
- 💧 Connect the public to Native American history, culture, and environment.
- 💧 Support the sovereignty of Wisconsin tribes.

Learn more on Wisconsin DOT's Tribal Affairs webpage: <https://wisconsindot.gov/Pages/doing-bus/civil-rights/tribalaffairs/default.aspx>



# Keeping Lakes in the Family

## Sharing the Magic Through Stories

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

Often it takes a disaster to remind us of the worth of water. Here are some stories that remind us how precious water is to all living beings and encourage us to choose behaviors that help keep our waters healthy.



### We Are Water Protectors

Written by Carole Lindstrom  
Illustrated by Michaela Goade  
Ages 3-6

We Are Water Protectors received the 2021 Randolph Caldecott Medal, which the American Library Association awards to the most distinguished American picture book for children. The book stresses the urgent need to take care of Earth's water.

“Goade’s watercolor illustrations fill the spreads with streaming ribbons of water, cosmic backdrops, and lush natural landscapes.... Lindstrom’s spare, poetic text flows with the ‘river’s rhythm.’ Written in response to the construction of the Dakota Access Pipeline, famously protested by the Standing Rock Sioux Tribe (and others) these pages carry grief, but it is overshadowed by hope in what is an unapologetic call to action.”

- Booklist

### Young Water Protectors: A story about Standing Rock

By Aslan Tudor, Kelly Tudor and Jason Eaglespeaker  
Ages 9-12

“At the not-so-tender age of 8, Aslan arrived in North Dakota to help stop a pipeline. A few months later he returned - and saw the whole world watching. Read about his inspiring experiences in the Oceti Sakowin Camp at Standing Rock. Learn about what exactly happened there, and why. Be inspired by Aslan’s story of the daily life of Standing Rock’s young water protectors. Mni Wiconi ... Water is Life.”

- Amazon

### Oil

Written by Jonah Winter  
Illustrated by Jeanette Winter  
Ages 4-8

“Mother-son team Jeanette and Jonah Winter tell the story of the Exxon Valdez oil spill and its devastating and lingering effects in this poetic and timely picture book. Oil is drawn up from deep in the earth by machines, transported through pipelines, and pumped onto a ship that sails out to sea. When the ship crashes into a reef, the oil spills out over miles of ocean, covering rocks and animals alike. What will the consequences be?”

- Simon & Schuster

### Oil Spill

Written by Melvin Berger  
Illustrated by Paul Mirocha  
Ages 4-8

“Did you know that an oil spill occurs somewhere in the world almost every day of the year? Oil spills can have many different causes, but the result is the same. Oil harms plants and wildlife that make the oceans and coastlines their home. Scientists are learning the best ways to combat oil spills. Learn how you can help, too!”

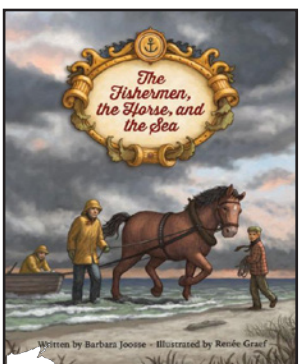
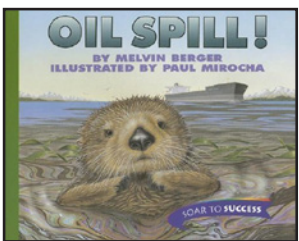
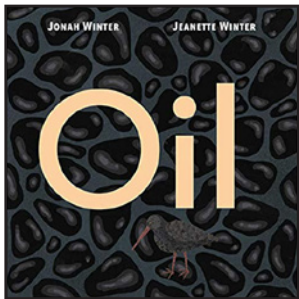
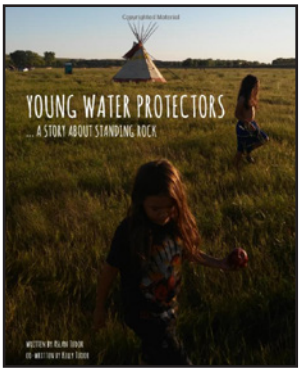
- Amazon

### The Fishermen, the Horse, and the Sea

Written by Barbara Joose  
Illustrated by Renée Graef  
Ages 7-10

“Based on a true story of the dramatic rescue of young Lester Smith and his family after a violent storm hits their town of Port Washington on the shores of Lake Michigan. Beautifully illustrated and wonderfully written.”

- Wisconsin Historical Society Press



## Our Wisconsin: The Climate Change Effect

55-minute video. 2017.

Wisconsin scientists describe the effects of climate change on lakes, fish, wildlife, and people.

<https://www.youtube.com/watch?v=e3NWBhYpQZU>

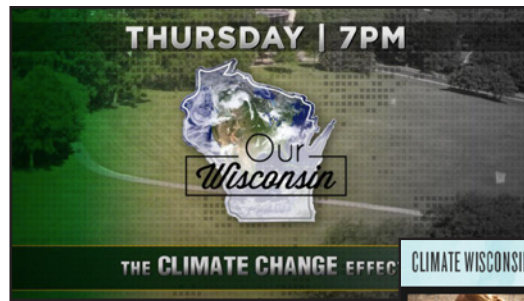
## Climate Wisconsin: Stories from a State of Change

11 short videos. Grades 6-12

“From warming trout streams to decreasing ice cover, lower lake levels to extreme heat, Climate Wisconsin tells stories of our rapidly changing climate. This online educational multimedia project features ten videos along with background essays and teaching tips. Climate Wisconsin connects stories of personal observation and experience to current climate change research.”

- PBS Wisconsin

<https://wisconsin.pbslearningmedia.org/collection/climate-wisconsin/>



# Q & A Lake Districts

We often get phone calls and emails from Lake Tides readers with a variety of questions about lake districts. Do you have a question about lake districts that you would like to see answered in Lake Tides? Send it to [uwexlakes@uwsp.edu](mailto:uwexlakes@uwsp.edu) so we can include it in a future issue.

### **Q: Can a lake district have committees for special topics like dam management or fish stocking?**

**A. Yes!** Both lake associations and lake districts can - and arguably should - establish committees in order to carry out their work. In addition to holding meetings that focus on specific topics or challenges, committees can be a way to engage citizens who are interested in the lake district but not prepared (or perhaps not qualified) to serve on the lake district board. For example, a district may have a very active community of anglers who wish to help shape the lake's future fishery. Though they may not be property owners or district residents (key qualifications to serve on district boards), they can provide energy and ideas to the lake district through roles on a fishery committee. Committees also provide an opportunity to recruit people who might be interested in serving on the board in the future; they allow citizens to become more acquainted with the district's operations before taking on formal elected or appointed positions. The lake district law (Chapter 33 of Wisconsin Statutes) does not provide details for setting up and operating committees; this provides each district with latitude in determining their own process. Unlike lake associations, lake district committees are part of local government, so they must adhere to the same open meetings and open record laws as other local government committees (school board committees, county board committees, etc.). You can find a video recording of Extension Lake's Advanced Lake District Commissioner Training workshop, that was held online in Spring 2020 at <https://youtu.be/otbSz5QoywE> - the second half of the workshop discusses public meetings requirements. We will also be holding an advanced commissioner training at the 2022 Lakes and Rivers Convention in Stevens Point on Wednesday, April 6; You'll find more details in the next edition of *Lake Tides*.

For more information on lake districts, see *People of the Lakes: A Guide for Wisconsin Lake Organizations*, at <https://www.uwsp.edu/cnr-ap/UWEXLakes/Pages/organizations/guide.aspx>.



# Coming Together to Protect and Celebrate What We Love Wisconsin Lakes and Rivers Convention 2022

Planning for the 44th annual Lakes and Rivers Convention is well underway. We are anticipating a fairly normal gathering in Stevens Point April 6-8 at the Holiday Inn Convention Center, a change from the last two years when we've had little choice but to hold the meeting virtually. We are excited at the prospect of seeing everyone face-to-face, engaging in spontaneous conversations, hearing about successes and challenges, and celebrating your excellent accomplishments!

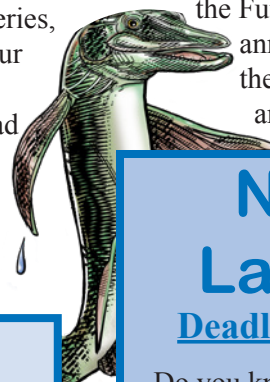
To help ensure that our April gathering recharges your batteries, we are bringing back one of our most invigorating keynote speakers, Chad Pregracke. Chad single-handedly initiated an award-winning effort to clean debris and trash from the Mississippi River. In 25 years, Living Lands & Waters has engaged

108,000 volunteers to remove 10 million pounds of garbage from American rivers. They have since broadened their programs to encompass watershed restoration, environmental education, and citizen activism.



Chad Pregracke won the 2013 CNN Hero of the Year award!

We have also invited some VIPs from the state and federal government to join us and share the many resources available to help us achieve this year's theme: Protecting What We Love for the Future. We will be posting announcements on Facebook and on the Convention website as details are finalized.



## 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](http://wisconsinwaterweek.org), and click on "Lakes and Rivers Convention," then click on "Lodging" for instructions.

## Agenda At-a-glance

Your full convention agenda will be online in early 2022! [wisconsinwaterweek.org](http://wisconsinwaterweek.org)

## Nominate a Lake Steward

Deadline: December 15, 2021

Do you know an outstanding person or group who dedicates time and talent to our state's water resources? We encourage you to nominate them for the prestigious Wisconsin Lake Stewardship Award.

Recipients and all nominees will be recognized during a special awards ceremony on April 7, 2021, at the Wisconsin Lakes and Rivers Convention.

For more information go to [wisconsinwaterweek.org](http://wisconsinwaterweek.org), click on "Lakes and Rivers Convention," then click on "Nominate a Lake Steward."



[wisconsinwaterweek.org](http://wisconsinwaterweek.org)

# Congrats to Graduates of WI Lake Leaders Crew 13

Every two years, the Wisconsin Lakes Partnership adds a group of special lake stewards as graduates of the Wisconsin Lake Leaders Institute. The 2020 Lake Leaders Institute was disrupted by the pandemic; however, after shifting the Institute to 2021, we are excited to announce the graduates of Crew 13! This crew participated in three in-person trainings as well as virtual meetings which focused on technical and people skills that can benefit Wisconsin's lakes. With new tools and knowledge in hand, Crew 13 members will be able to enrich their communities and the waters within them. These lake stewards graduated from the Wisconsin Lake Leaders Institute on October 8 at Aldo Leopold's shack near Baraboo.



*Pictured from left to right (back row): Sara Windjue and Eric Olson (Extension Lakes), Susan Trier, Ted Anchor, Katrina Shankland, Bill Monfre, Ken Keegstra, Kari Kirschbaum, Jim Zach, Ron Gerrits, Mike Lea  
Front row: Bob Schell, Debbie Krumpack, Lori Bechtel, Colette Camerano, Larry Keller, Emily Henrigillis, Molly McKay, Kirsten James, Sarah Hull, Tracy Arnold, Jane Getting, Donna Carlson, Karen Knotek*

## Your Opportunity to Speak for Lakes: Call for Crew 14 Lake Leaders

**Nomination Deadline:**  
**February 1, 2022**

The Wisconsin Lake Leaders Institute is now seeking nominations for Crew 14! This intensive leadership and learning experience features three focused, two-day retreats in May, September, and October. We are seeking nominations for people who can help the Wisconsin Lakes Partnership carry out our statewide effort to “protect in partnership our legacy of lakes.” You may nominate yourself or someone you know.

**Nominations are due by February 1**, and we will ask nominees to complete a full application by March 1. Participants will be selected in time for the Lakes and Rivers Convention (page 12), which is another great venue for collaborating with folks who care about Wisconsin waters. The nomination form is on the Extension Lakes webpage at [www.uwsp.edu/uwexplakes](http://www.uwsp.edu/uwexplakes) under *Lake Leaders*.





## WISCONSIN LAKES

# Carrying Capacity

## How much can a lake take?

By Mike Engleson, Executive Director, Wisconsin Lakes

*Carrying capacity assessments in Wisconsin are rather rare. Lake Ripley did one in 2003, and Wisconsin Lakes is working to develop materials and a protocol to help lakes in the state do something similar.*

If you've spent any amount of time on a lake in Wisconsin the last few years, you've probably noticed an increase in traffic. Some days your lake might remind you of an L.A. freeway at rush hour.

So, what happens when the number of watercraft on a single lake gets too big? Just like an overcrowded highway, an overcrowded lake starts to cause problems - environmental degradation to the lake, property damage, safety concerns, and even a diminishment of aesthetic quality. After all, it's not always fun being in a crowd.

The threshold where the number of watercraft on a lake starts causing a problem is called its recreational carrying capacity. Wisconsin Lakes became interested in the concept as we've developed our Recreational Impacts Initiative (see page six of *Lake Tides Vol. 46, No. 3*). If we could determine a lake's carrying capacity and how close to (or how far over) capacity it currently is, that could help inform steps to take to mitigate the impacts.

Carrying capacity assessments in Wisconsin are rather rare. Lake Ripley did one in 2003 (you can read about it at <https://bit.ly/3nQsw8n>), and Wisconsin Lakes is working to develop materials and a protocol to help lakes in the state do something similar.

Fortunately, you can determine a sort of back-of-the-envelope calculation with this two-step process. First, figure out how much acreage your lake has for full-speed boating by subtracting all the areas that are designated slow-no-wake. Then, apply this rule of thumb: boats that generally don't move around all that much, like fishing boats, get 10 acres each. Boats that travel big distances fast, like waterski boats, get 30 acres each. That means a lake with 300 acres of full speed water could handle 30 fishing boats or 10 waterski boats at a time, giving the lake a capacity of 10-30 boats depending on what they are doing.

Studies like the one Lake Ripley did get a little more complicated in that they look at the types of activities happening on the lake being assessed and narrow down that range for boat numbers based on those activities (the Ripley study estimated a carrying capacity for the lake of 14-17 boats for 260-300 acres of usable water).

Those rules of thumb also don't account for newer watercraft or the enhanced wakes created these days, so our back-of-the-envelope calculation is pretty imprecise. Still, it might give you a sense for whether your lake is at or near a capacity crisis, and in a future column, we'll look at some management options when your lake is looking a bit too much like an L.A. freeway.

Robert Korth



Wisconsin Lakes gave a webinar on carrying capacity as part of our *Thursdays @ 4:00* series with Extension Lakes (find links to this and other recordings on [www.uwsp.edu/uwexlakes](http://www.uwsp.edu/uwexlakes) under *Events*). And remember, if you appreciate Wisconsin Lakes' work on recreational impacts, it's exclusively funded by generous donations from folks like you. Check out [wisconsinlakes.org](http://wisconsinlakes.org) for more information and to donate online. 💧



(Capacity Corner, continued)

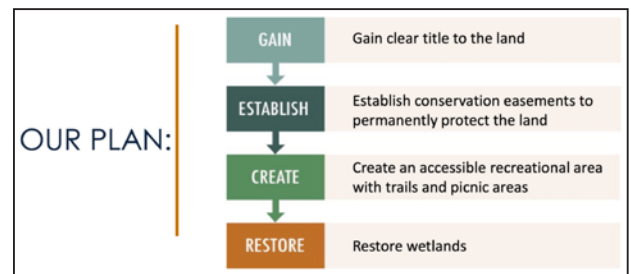
elected to discontinue growing crops and sell the land. What would the future of the bog be: development and roads feeding more runoff to the lake, or restored wetlands and recreational trails?

The Grindstone Lake Association set out to raise the money needed to ensure an outcome that would help protect the lake. Drawing on all of their membership, organizational, and relational capacity, they supported the creation of an independent foundation in 2018 to focus solely on the cranberry bog project. The foundation set a goal of raising over \$750,000 in just a few short years to secure the site. They have already raised almost half a million dollars, providing the momentum needed to accomplish this lofty project. They also connected with UW Madison to engage a graduate student to help envision the ecological and recreational potential of the land, helping supporters understand how a proactive strategy would benefit the community.

Protecting lake and watershed health is a major challenge. The Wisconsin Department of Natural Resources has been working with partners over the last year to begin a major initiative to align their own programmatic capacity towards stronger protection. The Healthy Watersheds and High Quality Waters initiative will be sharing their action plan this spring at the Wisconsin Lakes and Rivers Convention in Stevens Point (see page 12 for more information). Come to learn about the effort and share your own experiences keeping our waters healthy! 💧

*The Grindstone Lake community is still seeking support for their effort to ensure protection of the cranberry bog. You can see details of their vision and make a contribution by visiting their website: <https://savethebog.org/>*

<https://savethebog.org>



*Grindstone Lake Association's plan to save the bog.*

C A L E N D A R

**December 2 – Harmful Cyanobacteria Bloom Free Online Training**

For more information and to register: <https://bit.ly/3F3S4Wl>

**December 7 – Wisconsin Lakes Annual Membership Meeting - Online**

For more information and to register: <https://bit.ly/3F5uJUo>

**December 14 – Midwest Glacial Lakes Partnership Lake Conservation Webinar - Online**

This month's topic is "Managing Tribal Fisheries and Employees on the Reservation." For more information and to register: <https://bit.ly/3HaHRJv>

**December 15 – Deadline to Nominate a Lake Steward**

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

**February 15-17, 2022 – Wetland Science Conference - Stevens Point**

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

**April 6-8 – Wisconsin Lakes and Rivers Convention - Stevens Point**

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

*Stay up-to-date with lake events across the state with our online calendar. Don't see your event listed? Let us know by clicking "Add an Event" at the top of the page and fill out the short form! <https://www.uwsp.edu/cnr-ap/UWEXLakes/Pages/calendar.aspx>*



# Lake Tides -- AAJ6721

College of Natural Resources  
University of Wisconsin-Stevens Point  
800 Reserve Street  
Stevens Point, WI 54481

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MILWAUKEE, WI  
PERMIT NO. 530

Volume 46, No. 4  
Fall/Winter 2021



Extension  
UNIVERSITY OF WISCONSIN-MADISON



Extension Lakes  
College of Natural Resources  
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<b>IN THIS ISSUE</b>	Summer Camp.....	1
	Capacity Corner, Nov. 2021.....	4
	The State of Salt.....	6
	Cute Crawdads.....	8
	DYK about dual language signs?.....	9
	Keeping Lakes in the Family.....	10
	Lake District Q&A.....	11
	Lakes and Rivers Convention.....	12
	WI Lake Leaders Institute.....	13
	Carrying Capacity.....	14
	Calendar.....	15

## A quarterly publication of the Wisconsin Lakes Partnership

Editor/Designer: Amy Kowalski  
Regular Contributors: Patrick Goggin and Eric Olson, Extension Lakes  
Contributing Editors: Erin McFarlane, Paul Skawinski, and Sara Windjue, Extension Lakes  
Illustrations: Carol Watkins and Chris Whalen

The contents of *Lake Tides* do not necessarily reflect the views and policies of UW-Madison Division of Extension, UW-Stevens Point College of Natural Resources, the Wisconsin DNR or Wisconsin Lakes. Mention of trade names, commercial products, private businesses or publicly financed programs does not constitute endorsement. *Lake Tides* welcomes articles, letters or other news items for publication. Articles in *Lake Tides* may be reprinted or reproduced for further distribution with acknowledgment to the author, *Lake Tides* (including volume and number of edition) and the Wisconsin Lakes Partnership. If you need this material in an alternate format, please contact our office.

[www.uwsp.edu/uwexplakes](http://www.uwsp.edu/uwexplakes)  
[uwexplakes@uwsp.edu](mailto:uwexplakes@uwsp.edu)  
715-346-2116



Printed on recycled paper with vegetable-based ink.

## Reflections

*“Water effects and connects us all. We must fight to protect it. I have hope that the next generation, YOU, will continue to see the importance of preserving our precious planet by pledging to be a Water Protector with me!  
Aapiji go miigwech.*

*Your niiji,  
Carol”*

— Carol Lindstrom, Author  
*We Are Water Protectors*  
2021 Randolph Caldecott Medal winner

