



Lake Planning Resources Available to Boost Your Efforts

By Alison Mikulyuk, Wisconsin Department of Natural Resources

Freshwater lakes and rivers are important for our health, happiness, and livelihood. Keeping them in good condition is critical for Wisconsin and the ecosystems that support us. Freshwater is essential for life, but lakes and rivers worldwide are increasingly threatened by issues that affect water quality and quantity.

In the United States, the biggest threat to lakes comes in the form of nutrient enrichment due to excess nitrogen and phosphorus. Around one in three lakes (35%) have excess nitrogen and two out of five lakes (40%) have excess phosphorus (EPA NLA 2012). Too many nutrients can lead to excess aquatic plants, then algal blooms, poor habitat, low oxygen levels and declining overall lake health.

We can improve water quality and protect lakes from excess nutrients by implementing management practices that reduce runoff, lower the use of fertilizer, and keep nutrient-rich soil in place and out of the lake. Nutrient-rich runoff is often produced by farming, lawns and septic systems, but there are steps everyone can take to help. Best management practices like planting native plants in place of lawn, maintaining septic systems, and implementing strategies to reduce farm runoff can decrease the amount of nutrients that enter a lake or our groundwater. Because nutrients have many possible origins, it is important to gather data that will help us design restoration actions to help improve water quality.

Planning is something most of us do every day—big projects require a specific, well-thought-out plan, and lake management is no different. So, what is a lake management plan, and how do you get started making one?

What is a Lake Management Plan?

A lake management plan is a strategic document that will help a lake organization select the best activities to protect and restore their lake. Lake management plans are flexible, historical documents that will contain a record of past conditions and management actions as well as current conditions and opportunities for

(Continued on page 2)



Douglas Miskowick

(Lake Planning, continued)

Relationship building is a key component of collaborative restoration.

improvement. Management plans should clearly use monitoring data and modeling to identify source(s) of stress that are adversely affecting the waterbody. For example, plans that address nutrient enrichment will identify the major sources of nutrients nearby and in the larger watershed so that actions can be taken to reduce them.

What can you do with a Lake Management Plan?

Lake management plans will also help you plan what to do. A group that compiles a lake or river management plan carefully considers, then presents recommendations for activities to protect and restore the waterbody. Activities for protection and restoration should be tailored to the specific conditions of the waterbody and its watershed, and should be accompanied by the expected outcome or benefit they are likely to produce. When combined with a detailed implementation schedule and achievement milestones, a lake management plan becomes a recipe for success.

Lake problems are multi-scale. In-lake conditions may depend on activities happening far upstream, so good lake management plans will focus on improving conditions in the lake, around the shoreline and in the larger watershed. This is often a collaborative effort which involves people living on the lake as well as in the watershed. Relationship building is a key component of collaborative restoration. People are part of the solution to ensure good water quality and healthy ecosystems; therefore, a good lake management plan will describe the needs of stakeholders as well as what the plan is intended to maintain or restore.

Financial assistance for planning and plan implementation is available from the Department of Natural Resources' Surface Water Grants program.

Plans are made to be implemented.

Help is Available

UW-Extension has a helpful guide for writing a lake management plan called *A Citizen's Guide to Watershed Planning* (<https://fyi.uwex.edu/watershedplanning/>). Familiarizing yourself with this document is a good place to start. Financial assistance for planning and plan implementation is available from the Department of Natural Resources' Surface Water Grants program. However, you are not required to use state funds to create and implement a lake management plan (see the lake association example on page 4).

Once you have decided to start the lake management planning process, you should contact your local lake or streams biologist for assistance. Your local biologist can also help you develop an application for a planning grant, scope the project and locate professionals to provide assistance. After the plan is approved, your organization will then be eligible to compete for grants to support implementation, because plans are made to be implemented.

More information on funding and grant administration can be found on the DNR's Surface Water Grants informational website at dnr.wi.gov (search "surface water grants"). Lake management planning and plan implementation can be a big undertaking, but there are a lot of resources that can help you along the way. Many lake associations in Wisconsin have compelling success stories describing how they designed and wrote a lake management plan to protect the future of their lake for generations to come. 💧

Where are the Surface Water Grants?

Ever wonder what projects are underway to improve your favorite lakes, rivers and wetlands? The DNR's new interactive "story map" is an easy way for you to learn about projects funded by the Department of Natural Resources' Surface Water Grant program in 2018. You can learn how these 211 projects in 62 counties are using \$6.2 million to improve water quality, reduce runoff, enhance aquatic habitat and target aquatic invasive species. To explore the story map and learn more, visit <https://bit.ly/2pW3fMd>.



Beaver Dam Lake – Stormwater Plan Implementation

The City of Cumberland used two large-scale lake planning grants to collect stormwater data and develop a city stormwater plan. Their plan included the location design of a stormwater detention pond and recommendations for siting additional ponds. After the plan was created, Beaver Dam Lake Management District used implementation grants under the lake protection program to help pay for the necessary land acquisitions as well as installation. Overall, 12 lake planning and protection grants in total supported the development of their comprehensive stormwater plan and its implementation from 2010 to present.



Provided by Beaver Dam Lake Management District

Cedar Lake – Lake Management Plan and Alum Treatment



Provided by Cedar Lake Protection and Rehabilitation District

The Cedar Lake Protection and Rehabilitation District used a small-scale lake planning grant to complete a lake management plan for Cedar Lake. In the plan, an alum treatment dosage study was completed to determine how and where to apply alum in order to control internal nutrient sources. A lake protection grant was used to complete an alum treatment three years later, following the recommendation initially set out in the lake management plan.

Deer Lake – Stormwater Best Management Practices

Deer Lake Conservancy used a small-scale lake planning grant to monitor water quality and establish baseline conditions to determine if stormwater best management practices would be effective. A lake protection grant was then used to install an iron/sand filter pond to slow runoff and reduce pollutants entering the lake. The grant was also used to implement several shoreland best management practices such as rain gardens, rock infiltration pits, and native plantings on lakefront properties.



Provided by Deer Lake Conservancy

We Did it Our Way

Lake Association Uses Volunteers to Create a Lake Management Plan

By Dan Pagel, Oneida County

provided by Dan Pagel



Lake volunteers during an early morning plant survey.

I can't tell you how impressed I am with their ability and enthusiasm!

~ Sandy Wickman,
CLMN Regional
Coordinator

No government grant monies or professional consulting services were used.

A sense of involvement, ownership, and pride was felt by each volunteer no matter what level of participation.



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been conducted on the lake. The sediment comparison revealed that our lake water quality was good, but not as good as historic levels. Increased nutrients (mostly phosphorus) were the cause, so we wanted to take steps to reduce input from the watershed.

Thanks to the help of a knowledgeable lake resident, a watershed analysis was completed. Since our watershed area is basically the same size as the lake itself, lake residents have almost complete control of the amount of sediment and nutrients that enter the lake. Responsible shoreland practices and careful attention to septic systems help in maintaining that control.

The most labor intensive part in the formation of the lake management plan was an aquatic plant survey. Staff from DNR helped our volunteers learn the point intercept method of sampling and mapping aquatic plant species found in the lake. Our lake had over 900 unique sampling points because of its size. At first, this seemed like an overwhelming task, but we managed to make it fun. We divided the lake so that half the points were sampled the first summer and the rest the next year. We didn't work too many hours at a time and followed the work with some refreshments and a relaxing cruise on the lake.

From start to finish, creating our lake management plan took a bit over three years to complete. I'm sure that a consulting firm could have done it in less time, but the participation by those most interested in the preservation of the lake was invaluable. More than twenty people, at one time or another, thought the lake was important enough to deserve their valuable time and talents to create a lake management plan. Being a good lake steward is a positive attribute that will hopefully affect the attitudes of our neighbors. We want everyone taking care of lake quality to be the norm. 💧

Ten years ago, our lake association decided that a lake management plan would be beneficial to the long-range health of our lake. We weren't sure how to start this large project, so a lake management planning committee was formed. After consulting with staff from the Department of Natural Resources (DNR) and other lake groups who had already written plans, we were on our way to creating a lake management plan. Given that the plan was to be created with only volunteer involvement, we decided to limit the plan to those concerns that dealt specifically with preserving the water quality of the lake.

We are fortunate that our lake is part of the Wisconsin Citizen Lake Monitoring Network, so there is a history of the lake's water clarity and chemistry data. This effort was included as part of the lake management plan, and volunteers still collect annual samples that are compared with historical data to identify any changes that may happen over time. A paleolimnological assessment of lake sediments (core sample) had also already

Lakes 101

By Kim Becken, UWEX Lakes
 Forward by Susan Knight, UW-Center for
 Limnology, Trout Lake Station

Lakes 101 is a recurring section of Lake Tides is meant to help explain the basics of lake related topics. If you are curious about a lake issue or water related topic, let us know and we will explore it in a future issue (uwexlakes@uwsp.edu or 715-346-4744). You can also connect with us on Facebook by typing "Wisconsin Lakes Partnership" into the search box at <http://www.facebook.com>.

Topic: Lake Nutrients

Too much of a good thing almost always leads to problems. This is especially true when it comes to nutrients and lakes. Lakes need some nutrients, such as nitrogen and phosphorus, or they would be as bare as water-filled bathtubs. Nutrients are necessary for algae and plants, which in turn fuel the entire lake food web from tiny zooplankton to feisty crayfish, and from baby fish to trophy muskies. But with too many nutrients, and especially too much phosphorus, the algae multiply so fast that the lake's tiny herbivores, the zooplankton, cannot keep up and the lake turns a not-so-tempting green.

Limiting Nutrients

When a nutrient is missing or in short supply it is considered a limiting nutrient. Phosphorus and nitrogen are usually considered limiting nutrients because plants require a large amount of them to grow. With that said, phosphorus and nitrogen play a huge role in the amount of biological activity in a lake. In Wisconsin lakes, phosphorus is usually the element in shortest supply. But when increases in phosphorus concentration occur too fast, the plants can't keep up. This leads to an increase in algae. Higher levels of algae reduce water clarity and result in lower oxygen levels when this organic matter ultimately decomposes. Nitrogen is also an essential element for algae and plants, and together with phosphorus can influence the mix of algal and plant species.

Diagram created by the Water & Environmental Analysis Laboratory at the University of Wisconsin-Stevens Point.

Phosphorus

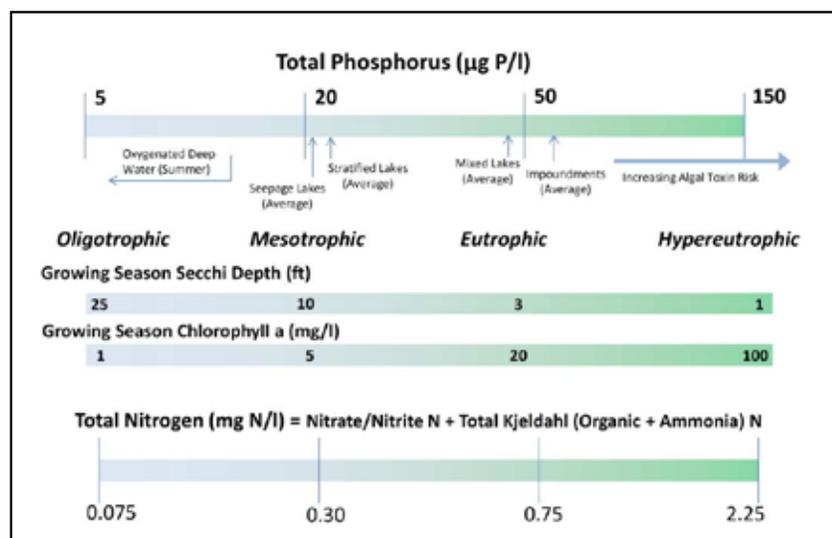
Total phosphorus is often a key driver of biological productivity in a lake. Phosphorus concentrations are shown in the diagram below with measures of algal concentrations (Secchi depth and Chlorophyll) based on research that relates all of these to a lake's trophic condition. If they are much different than expected, other factors may also be influencing lake biology. Lake total phosphorus concentrations can vary over time: from year-to-year and within years. In deep lakes, the overturn sample can often predict summer conditions. Shallow lakes that do not stratify in the spring (meaning they do not separate into distinct layers) often have higher phosphorus concentrations during the summer.

Nitrogen

Total nitrogen is composed of different forms of nitrogen including nitrate, ammonia and organic nitrogen. The normal or acceptable range is 0.30-0.60 mg/l. If the nitrogen concentrations are very low relative to the phosphorus, nitrogen may be a more important contributor to lake productivity. The concentrations of these nutrients reflect the sources of water, how long the water stays in one place and the time of year. 💧

A lake's trophic condition is a snapshot of its water quality, nutrients and clarity during its aging process. See "Lakes 101" in last winter's Lake Tides.

An overturn sample is taken during lake turnover, which is the seasonal movement of water in a lake when previously separate layers of water mix.



Capacity Corner

Focus: Programmatic Capacity

By Eric Olson, Director and Lake Specialist, UW-Extension Lakes



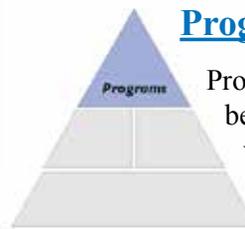
"Getting it done for lakes" with a native planting along Rock Lake.

These four dimensions of capacity serve as quarterly guideposts for our efforts to share ideas, tips and stories about capacity development in *Lake Tides*. In the three previous issues of *Lake Tides*, we explored membership, organizational and relational capacity. Now we turn our attention to *programmatic capacity*.

The Wisconsin Lakes Partnership is developing a deeper understanding of lake organization capacity as part of a renewed effort to strengthen the ability of lake associations and lake districts to reach their goals. Our conception of lake organization capacity is built around four related parts: *membership*, *organization*, *relationships*, and *programs*. *Membership* is the basis for the other three: a group needs members who provide financial and volunteer support that fuels all other efforts.

Organizational capacity is mostly about how a lake association or lake district conducts its internal affairs. Organizations develop *relational capacity* by collaborating and networking with external people and groups. Lake groups leverage these first three types of capacity to boost their ability to get things done: *programmatic capacity*.

Programmatic Capacity

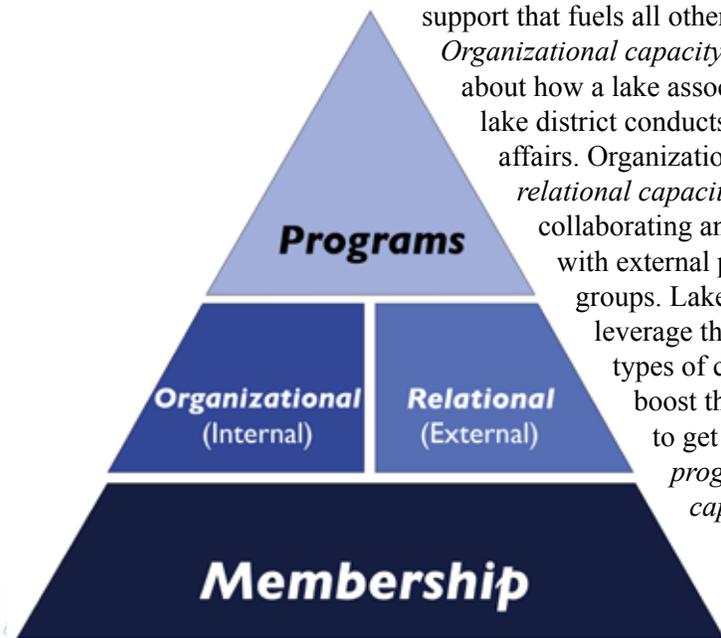


Programmatic capacity can be thought of as the point where the rubber hits the road. It leverages the other three forms of

capacity in order to get things done for a lake and its watershed. Groups will spend a lot of time and energy recruiting members, raising money, collaborating with other people and organizations, and establishing their own governance principles, not simply to do those things, but rather to do other things - the things that need to be done for the sake of the lake. Those who have been involved in carrying out the actual work of lake restoration and protection know from experience that executing a plan is not always simple and that there is variation among groups in their programmatic capacity.

“Programmatic capacity is demonstrated in implementation outcomes, or specifically the impacts of water resource management initiatives on communities and ecosystems”

~ Mae Davenport and Erin Seekamp



Drawing on the research of Mae Davenport and Erin Seekamp, Aaron Thompson (formerly at the UW-Stevens Point College of Natural Resources) identified five facets of programmatic capacity:

1. **Leadership:** The organization has invested in a process to recruit and train leaders on an ongoing basis that are decisive, honest and knowledgeable, and who are capable of listening, making decisions and solving disputes to ensure that active leadership is available for all necessary tasks.
2. **Completion of Demonstration Projects:** The organization has taken a project from an identified need to completion by recruiting necessary technical and financial resources and working together to reach a stated goal.
3. **Growing Expertise:** The organization has formally assessed and developed a plan to resolve training gaps that are limiting the organization's ability to communicate effectively about their key issues or to address other organizational deficiencies.
4. **Access to Funding:** Support for the organization is diversified and represents that other groups (foundations, agencies etc.) are supportive of the mission.
5. **Access to Community Power:** The organization is effective at coordinating action with other community groups, has the support of local officials or community leaders, and works to actively position the mission as part of broader community priorities.

While these five facets are meant to illustrate a group's ability to get things done, there are numerous ways that anyone could monitor and compare programmatic capacity across different organizations and over time. Much of what lake organizations work on has a physical effect on the

landscape: they restore shorelines, build and plant rain gardens or manage infestations of Eurasian watermilfoil. We can see their success (or lack thereof) in the environmental conditions in and around the lake. There are also "policy" achievements that a lake organization can strive for: asking the county to fund important lake-related positions, or helping the local board of adjustment make variance decisions that have a positive impact on the lake.

Examples

There are two places where you can learn more about what a lake organization with high programmatic capacity looks like in practice. One is the storymap of the Wisconsin DNR's surface water grant recipients referenced in this issue of *Lake Tides* (page 3). By successfully obtaining state funding to carry out their work, these groups self-identify as lake organizations that are capable of not only setting goals, but reaching them as well. Another is the annual list of lake organizations recognized for their accomplishments through the Wisconsin Lake Stewardship Awards. Each year, the Lakes Partnership receives numerous nominations of groups that merit statewide recognition; their stories are filled with leadership, collaboration, and most importantly, getting it done for lakes. You can review the winners from past years in the convention archives on the UWEX Lakes website. Know of an individual or group that deserves statewide recognition for their lake work? Check out page 13 for details on how to nominate them for a Wisconsin Lakes Stewardship Award. 💧

Much of what lake organizations work on has a physical effect on the landscape.

Building Capacity for the *Lake Tides* Newsletter

You can help to create permanent funding for this publication in the future. To help continue this four-decade pursuit of educating and connecting future generations of lake lovers, contact Steve Menzel at the UW-Stevens Point College of Natural Resources (Steve.Menzel@uwsp.edu or 715-346-2032), or donate online:

Step 1: Go to <https://give.uwsp.edu/give-now>

Step 2: Enter an amount in the appropriate space.

Step 3: Select Designation by choosing, "Other Specific Fund."

Step 4: Type "Wisconsin Lakes Partnership" in the box.

Step 5: Fill out the rest of the form and click the *Give Now* button.



Pitcher Perfect

By Paul Skawinski, Statewide Coordinator, Citizen Lake Monitoring Network, UW-Extension Lakes

Kathy Noel



Kathy Noel's photo "Open Wide" won 3rd place and the People's Choice Award in the 2015 Wisconsin Lakes Partnership Photography Contest.

Purple pitcher plants grow in deep Sphagnum moss bogs, that are commonly found throughout northern Wisconsin.

Out of the 1,000+ species of plants that call Wisconsin home, perhaps one of the most unique is the purple pitcher plant (*Sarracenia purpurea*). This strange plant is our only member of the pitcher plant family, although hundreds of other species occur across the world, mostly in tropical regions.

All pitcher plants are named for their leaves which have fused bases, and consequently form a cup or pitcher. This area holds rainwater and serves to capture and contain insects that are unfortunate enough to fall in. As one of the carnivorous plants that naturally inhabit Wisconsin, it joins other fascinating groups such as the sundews (*Drosera* species), bladderworts (*Utricularia*), and butterworts (*Pinguicula*). All of these have their own tricky ways to capture insects. Carnivorous plants tend to grow in difficult habitats where nutrients and/or minerals are scarce, and the bodies of the insects they capture are digested to supplement their nutrition.

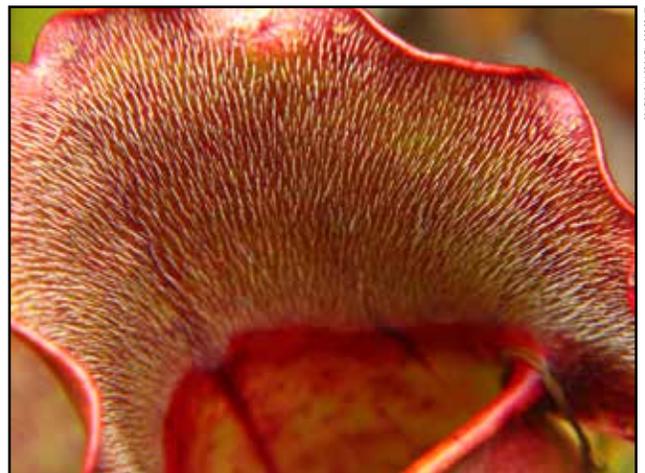
This close-up of the inside of a purple pitcher plant shows the stiff, downward-pointing hairs that keep insects from getting out, once they have slipped in.

The Lure

So how does a pitcher plant convince an insect to come in? Occasionally, it's just dumb luck. An insect may be out walking or jumping around, and it falls in. More often, the insects are lured in by sweet nectar glands produced on the inside of the pitcher "lip," a smooth, rounded edge at the top of the pitcher. Insects walk up to the slippery edge and lean down toward the nectar, unaware they are being lured to their death. Once the insect is inside, it struggles to climb back out of the pitcher, because the sides are super smooth, and one side contains large, stiff hairs that point downward. Any insect trying to climb these inside walls simply becomes exhausted and falls back into the water.

Home Sweet Home

The pitcher plant is in some ways a generous plant. Although the pitcher relies on nutrients and minerals from dead insects, it also provides a safe home to three of them. Purple pitcher plants are the home of the larvae of the pitcher plant mosquito (*Wyeomyia smithii*), a midge (*Metriocnemus knabi*) and a fly (*Blaesoxipha fletcheri*). Although the pitcher does produce digestive enzymes to help break down prey, the enzymes do not harm these three insect larvae. The larvae themselves feed on other insects that are trapped by the pitcher, with each one occupying a specific position within the pitcher's water pool. The fly feeds on



Paul Skawinski



insects that have recently died and are floating on the surface. The mosquito feeds on the decomposing prey as it sinks toward the bottom. The midge feeds on the broken-down remains that accumulate on the bottom of the pitcher. Each of these steps accelerates the decomposition of insect prey and transforms the insect bodies into more readily absorbed compounds that the plant can use.

The contents of an old pitcher often include wings, legs, and assorted body parts from a variety of flies, ants, and spiders. Even the occasional grasshopper can be found inside.

External Beauty

Aside from the beautiful green and red pitchers, the purple pitcher plant also produces a striking flower. Over two inches across and displaying five large, red sepals, it towers on a stalk about two feet above the pitchers. This ends up being a friendly gesture to the pollinators of the pitcher plant, keeping the flower far away from the lethal pitcher traps.

Purple pitcher plants grow in deep *Sphagnum* moss bogs, that are commonly found



Pitcher plant pollinators don't have to worry about getting eaten by the carnivorous plant, because its striking flowers tower about two feet above the lethal pitchers.

throughout northern Wisconsin. Bogs can be difficult to walk on, and sometimes are inaccessible from shore, but pitcher plants can often be viewed from a boat as you approach the bog from the water. The pitchers are easily broken, so be careful to just peer inside and admire the amazing plant-insect partnership within. 🍷

Did you know wild cranberries grow along the shores of many Wisconsin lakes?

DYK

Paul Skawinski

By Mitchel Block, UWSP Student

Any good Wisconsinite knows that Wisconsin is best known for its dairy, but did you know that Wisconsin is nearly as famous for its cranberries? Wisconsin is home to two native species of cranberries: the large cranberry (*Vaccinium macrocarpon*) and the small cranberry (*V. oxycoccos*). Wild cranberries can be found scattered amongst many other species on wet and acidic *Sphagnum* bogs and swamps, often near or along the shores of our lakes. The large cranberry is the most famous of the wild cranberries, producing a tart, yet tasty, red berry that averages about a half-inch across.



The large cranberry has also been selected for cultivation. In fact, Wisconsin produces more of these berries than any other state. Approximately 21,000 acres of land across central and northern Wisconsin are dedicated to the production of cranberries. Wisconsin has nearly 250 cranberry growers that supply the state with around 4,000 jobs and produce an astonishing 5.9 million barrels of cranberries each year - more than 60% of the nation's crop! To put that into perspective, Wisconsin harvests enough cranberries to supply everyone in the world with about 26 cranberries each year - not bad for a dairy state.

Keeping Lakes in the Family

Sharing the Magic Through Stories

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

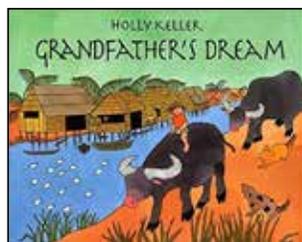
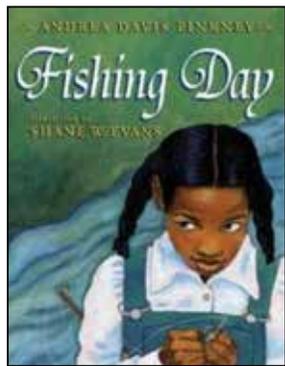
Tradition

Our recommended books this year focus on keeping our family and community lake traditions alive. For some, those traditions include swimming, bird watching, paddling, tubing and waterskiing, or other recreational activities. Others depend on their lake traditions like fishing and wild rice harvesting to feed their families. What lake traditions do you want to keep alive? Are there special plants and animals that you and your family value? Think about what you can do to make sure those creatures have a good home into the future.

A Different Pond

*Ages 6-9
Written by Bao Phi
Illustrated by Thi Bui*

A Vietnamese American boy's pre-dawn fishing outing with his dad is the subject of a narrative shaped by an exquisite accounting of details. The boy's dad recalls fishing at a similar pond as a child in Vietnam with his brother, who died during the war. Running through this story is the boy's happiness in their time together, a pleasure that extends feelings about his entire family when they gather at day's end. The evocative art masterfully and movingly conveys details of character, setting, and action while superbly reflecting the warmth and intimacy of the story. At volume's end, both the author and illustrator share memories of growing up in Vietnamese families that came to the United States when they were children. *Winner, 2018 Charlotte Zolotow Award ©2017 (Review by Cooperative Children's Book Center)*



Muskrat Will Be Swimming

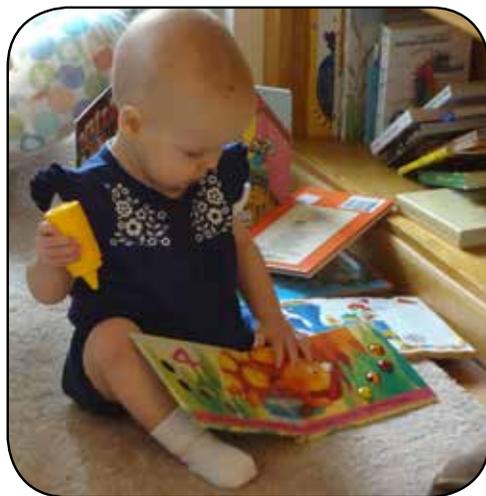
*Ages 4-8
Written by Cheryl Savageau
Illustrated by Robert Hynes*

This exquisite, multifaceted tribute to the power of story incorporates issues of cultural diversity, empathy, the environment, and most universally inter-generational guidance and love. A Native American girl is ostracized because she lives in "shanty town," a collection of trailers and abandoned vacation cottages along the lake. It is the gentle guidance of her grandfather that finally brings Jeannie from shame to appreciation. Beautiful illustrations show natural shoreline with plants and animals that the girl comes to appreciate.

Fishing Day

*Ages 5-9
Written by Andrea Davis Pinkney
Illustrated by Shane W. Evans*

Reenie and her mama love to go fishing down by the river, but the peace of their idyllic fishing spot is often marred by the appearance of Peter Troop and his daddy. Peter is "up-jumpy" and loud, scaring the fish away. Peter and his daddy are fishing for food; Reenie and Mama fish for fun. The Troops are white; Reenie and Mama are black. And in the Jim Crow South, it is this last difference that is most significant. One day, when the Troops' fishing reel breaks, Reenie overcomes their mutual fear and mistrust to help Peter - an act that holds the promise of friendship and understanding. This is a moving story about two children crossing boundaries of race, class and gender, and about small acts that make a big difference.



Erin McFarlane



Grandfather's Dream

Ages 4-10

Written and illustrated by Holly Keller

Nam lives with his parents, his grandfather, two lively puppies and assorted other animals in a small village in the Mekong delta. Before the Vietnam War, this area was home to the Sarus crane, considered to be a symbol of long life and happy families, but during the fighting, canals were dug to drain the wetlands and the cranes disappeared. In Keller's carefully crafted story, Nam's grandfather hopes that the building of new dikes will restore the wetlands and prompt the return of the birds that he remembers so fondly from his youth. The relationship between Nam and his grandfather is an affectionate one, as they share a love for animals and stories. After the monsoons come, the wetlands are restored, and eventually the cranes return and their magnificence wins over even the most practical villagers. This is a beautiful book with many layers of meaning and an important message. *(Review by School Library Journal on Amazon)*

Fish Hotel Kit for Educators

The Fish Hotel Kit contains a variety of instructional materials designed to help children and adults learn about the benefits of leaving trees in lakes. Trees in lakes not only provide areas for fish to spawn, but also offer shelter to help some species protect their incubating brood. Large submerged trees can host entire fish communities!

The Fish Hotel Kit includes the 30-page hardcover picture book, 20 companion booklets, lesson plans, posters, educator resource booklets and video links.

For more information or to order a kit, go to: <https://www.uwsp.edu/cnr-ap/clue/Pages/Fish-Hotel-Kit.aspx>



We All Live Downstream

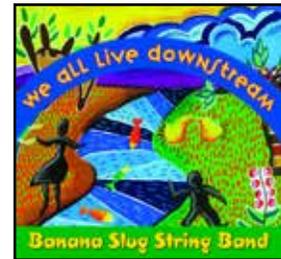
All ages

by Banana Slug String Band

If there's anything that the Banana Slug String Band knows how to do, it's to communicate sometimes complicated scientific ideas through the medium of song to school-aged children. This album includes 10 fun, water-related songs. Highlights:

- We All Live Downstream
- Thankful for the Watershed
- Storm Drain Blues

Available as a CD, MP3 file or streaming.



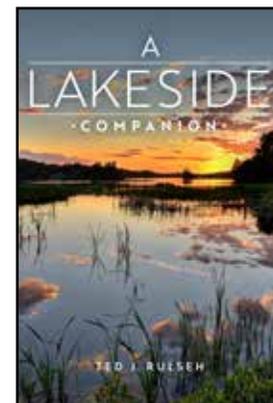
Books for adults

A Lakeside Companion

Written by Ted Rulseh

“Delivers the magic of lake living while conveying water science topics in a clear and engaging way. Whether you are on the lakeshore or far away, it will bring you back to the waters you love. A great read.”

- Michael Engleson, Executive Director, Wisconsin Lakes

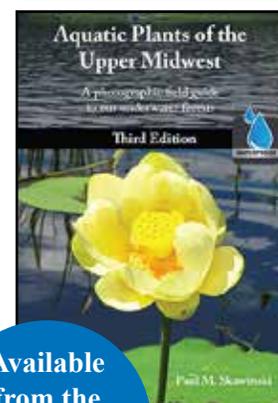


Aquatic Plants of the Upper Midwest: A Photographic Field Guide to Our Underwater Forests

Waterproof 3rd Edition (2018)

Written & Photography by Paul M. Skawinski

Over 570 high-resolution, color photographs fill this easy-to-use field guide. Beginners to the world of aquatic plants will enjoy the easy descriptions and abundant photographs, while more advanced biologists will appreciate the comprehensive treatments, dichotomous keys and other resources.

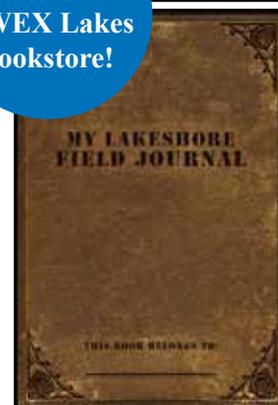


Available from the UWEX Lakes bookstore!

My Lakeshore Field Journal

Written by John Haack

Create a new family tradition at the lake! Find fun facts about plants, insects, and wildlife in and around Wisconsin's lakes. This unique, interactive journal invites youth and adults to explore lakeshore life by collecting plant samples, recording observations of fish and other animals and considering the basic issues of shoreland habitats.



Paying it Forward

2019 Wisconsin Lakes Partnership Convention and Water Action Volunteers Symposium

At the 2019 Wisconsin Lakes Partnership Convention and Water Action Volunteers Symposium, we will explore a number of ways that lake protection and restoration can help “pay it forward,” and that includes our two internationally-known keynote speakers.



Dr. Stephen Polasky

On Thursday, we will be joined by Dr. Stephen Polasky, a Regents Professor of Ecological Economics at the University of Minnesota. Dr. Polasky’s research focuses on issues at the intersection of ecology and economics, focusing on the impacts of land use and land management on the provision and value of ecosystem services and natural capital, biodiversity conservation, sustainability and environmental regulation. He is a member of the National Academy of Sciences and a Fellow of the American Association for the Advancement of Science. Dr. Polasky is a co-founder of the Natural Capital Project, a partnership between the University of Minnesota, Stanford University, The Nature Conservancy and the World Wildlife Fund. This project develops practical tools and approaches to account for nature’s contributions to society, so that leaders from the local to international level can make smarter decisions for a more sustainable future.

SAVE THE DATE
APRIL 10-12
2019

Dr. Douglas W. Tallamy



Friday’s keynote takes a closer look at how nature can (and does!) provide for itself through the complex web of life that is most often based on the relationship between plants and insects. Dr. Douglas W. Tallamy is a professor in the Department of Entomology and Wildlife Ecology at the University of Delaware, where he has taught for nearly forty years. Dr. Tallamy is the author of the best-selling garden book, Bringing Nature Home: How You Can Sustain Wildlife with Native Plants, and was awarded the 2008 silver medal by the Garden Writers Association. His research demonstrates the enduring connections between plants and the insects that feed on them. Though we may think of these insects as pests, they are in fact critical food sources for native birds and small mammals. Doug argues that we all can “pay it forward” to nature by including many more native plants in our domesticated landscapes, whether at an “up north” cabin or in the middle of Milwaukee; our deeds will be multiplied and eventually will return to us in the form of a more diverse and resilient natural community. 💧



Reserve Your Room Now

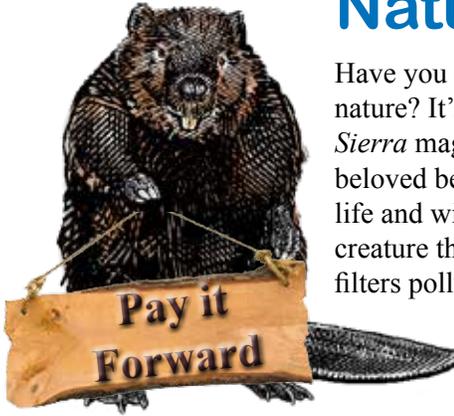
Rooms will likely sell out this year, so we encourage you to book your room early at the Holiday Inn Stevens Point - Convention Center. Just go to www.uwsp.edu/uwexplakes, navigate to the 2019 Lakes Convention page, then click on “lodging” for instructions.

Agenda At-a-glance

Your full convention agenda will be online in early 2019! www.uwsp.edu/uwexplakes



Nature Pays it Forward



Have you ever thought about how critters or plants might “pay it forward” in nature? It’s something we have been contemplating and, interestingly enough, *Sierra* magazine recently ran an article about a critter that does just that...the beloved beaver! Of course, every plant and animal has its place in the web of life and without one, the balance is tipped. However, the beaver is a remarkable creature that can engineer a wetland that provides habitat for numerous species, filters pollution from farm fields, traps carbon in organic sediment, helps recharge groundwater and prevents floods by slowing, spreading and storing water. Did you know that beavers also “pay it forward” to trumpeter swans, specifically, who like to nest on the top of the rodents’ lodges? Pretty cool, right?

A Tradition of Paying it Forward

Sharing your favorite lake photos is a great way to pay it forward by helping us brighten your convention space! Show us how you celebrate your lake traditions and pick your four best photos to enter into the Lakes/Streams Photo Contest - you could win \$100! Rules and entry forms found on the *Convention 2019* webpage.

<http://www.uwsp.edu/uwexplakes>

Deadline:
March 13, 2019

A Ricing Tradition was one of the many photos entered in the 2018 Wisconsin Lakes Partnership Photo contest.

Carol Warden



Call for Posters!

Deadline: March 13, 2019

Present a poster at the Wisconsin Lakes Partnership Convention to share your research, project or success story! Learn more or submit a proposal at www.uwsp.edu/uwexplakes; navigate to the Convention 2019 page and click on “Call for Posters.”



Doug Moore

Nominate a Local Lake Steward

Deadline: January 29, 2019

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 Lakes Stewardship Award.

Recipients and all nominees will be recognized during a special awards ceremony on April 11, 2019, at the Wisconsin Lakes Partnership Convention.

For more information go to <http://www.wisconsinlakes.org/lakestewardshipawards/>.





Preserving Water Quality in Wisconsin

The Wisconsin DNR has some new faces as part of the Wisconsin Lakes Partnership! You may recognize some of them, since they have just changed roles in the department.

Look for more new faces in our next issue!

WELCOME ABOARD!



▶ Gina LaLiberte's position has been made permanent and she will continue her role as Wisconsin DNR's statewide Bluegreen Algae Coordinator.

Gina.LaLiberte@wisconsin.gov (608) 221-5377



◀ Michelle Nault is Wisconsin DNR's new statewide Lakes and Reservoir Ecologist at central office in Madison.

Michelle.Nault@wisconsin.gov (608) 513-4587

▶ Jake is the data manager of DNR's Surface Water Integrated Monitoring System (SWIMS) database and works out of central office in Madison.

Jacob.Dickmann@wisconsin.gov (608) 264-6129



◀ Zach has been hired as Wisconsin DNR's new statewide Phragmites Researcher and works out of central office in Madison.

Zachary.Kron@wisconsin.gov (608) 267-9868

▶ Pamela Toshner took a new position with the DNR this year as the statewide Lake and Watershed Protection Specialist.

Pamela.Toshner@wisconsin.gov (715) 635-4073



◀ Jodi is the Lakes Biologist for 13 of the counties in Wisconsin DNR's West-Central region.

Jodi.Lepsch@wisconsin.gov (715) 838-8385

▶ Scott recently accepted the Lakes Biologist position that covers the 18 counties of DNR's Northern Region.

Scott.VanEgeren@wisconsin.gov (608) 264-8895



◀ Alex is Wisconsin DNR's Aquatic Invasive Species Coordinator for 19 counties in the West-Central Region.

Alexander.Selle@wisconsin.gov (715) 831-3278



Let's Make Healthy Lakes Together!

The Healthy Lakes 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 feature story to Pamela Toshner (pamela.toshner@wi.gov) or Amy Kowalski (amy.kowalski@uwsp.edu).

**Application
Deadline:
Feb. 1, 2019**

New Reporting and Reimbursement Tools

You asked, we listened! Healthy Lakes surface water grants provide funding for water quality and habitat best practices on lakeshore properties. About 70% of the lake associations, counties and other eligible applicants who apply are repeat customers who have shared some of the administrative hurdles of receiving this funding. The Healthy Lakes **Example Report** and **Financial Administration Fact Sheet** are two new tools to make it easier to set up and close out your Healthy Lakes grant projects.

The **Example Report** captures the core project deliverables, including required pre/post photos and data, plus an option to share lessons learned and other feedback. The **Financial Administration Fact Sheet** walks applicants through the reimbursement options and includes example forms. Both tools should ease the reporting and reimbursement burden, so you can get on with recruiting more participants and getting more projects in the ground!



Learn more here: <https://healthylakeswi.com/grants/>.

healthylakeswi.com

CALENDAR

December 10, 2018 - Planning Grant Deadline

Application deadline for lake and river planning, lake classification and ordinance development, AIS education, planning, prevention, and Clean Boats, Clean Water grants. For more information: <http://dnr.wi.gov/lakes/grants/>

January 25-27, 2019 – Lake Home and Cabin Show - Madison, WI

For more information: <https://www.lakehomeandcabinshow.com/>

January 27-30, 2019 – Midwest Fish and Wildlife Conference - Cleveland, OH

The 79th Midwest Fish & Wildlife Conference will be held at the Hilton Cleveland Downtown Hotel. The theme of the meeting is "Communicating Science to Fan the Flames of Conservation." For more information: <http://www.midwestfw.org/>

January 29, 2019 – Wisconsin Lake Stewardship Nomination Deadline

Let us keep celebrating the good work of our peers! See more on page 13 of this issue.

February 1, 2019 – Management Grant Deadline

Application deadline for lake and river protection (including Healthy Lakes) and AIS established population control grants. For more information: <http://dnr.wi.gov/lakes/grants/>

February 19-21, 2019 – Wetland Science Conference - Madison, WI

The annual Wetland Science Conference is a program of Wisconsin Wetlands Association. The two-day conference includes a keynote address, organized symposia, topical oral sessions, a poster session, working groups, a banquet, and field trips to area wetlands. For more information: <http://conference.wisconsinwetlands.org/>

February 25-28, 2019 – Midwest Aquatic Plant Management Society Conference - Chicago, IL

For more information: <https://www.mapms.org/conferences/2019-conference/>



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University of Wisconsin-Stevens Point
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Editor/Designer: Amy Kowalski
Regular Contributors: Patrick Goggin and Eric Olson, UWEX Lakes
Contributing Editors: Erin McFarlane and Paul Skawinski, UWEX Lakes
Illustrations: Chris Whalen and Carol Watkins

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www.uwsp.edu/uwexlakes
uwexlakes@uwsp.edu
715-346-2116

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Reflections

*In the deep fall
don't you imagine the leaves think how
comfortable it will be to touch
the earth instead of the
nothingness of air and the endless
freshets of wind? And don't you think
the trees themselves, especially those with mossy,
warm caves, begin to think*

*of the birds that will come — six, a dozen — to sleep
inside their bodies? And don't you hear
the goldenrod whispering goodbye,
the everlasting being crowned with the first
tuffets of snow? The pond
vanishes, and the white field over which
the fox runs so quickly brings out
its blue shadows. And the wind pumps its
bellows. And at evening especially,
the piled firewood shifts a little,
longing to be on its way.*

~ Mary Oliver

