

Lake Bottom Mysteries

Tasty Treats for Fish and Birds

By Sandy Wickman, CLMN Regional Coordinator, UWEX Lakes and
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Fishery Research Unit, Aquatic Biomonitoring Laboratory, CNR, UWSP

This installment of Lake Bottom Mysteries is dedicated to the largest inland lake in Wisconsin and goes beyond the lake's bottom. Lake Winnebago, spanning several counties, is 131,939 acres and boasts 11 public parks and natural areas. Lots of interesting critters call Lake Winnebago home. The Winnebago system is one of the best walleye lakes in the nation and harbors nearly 40,000 lake sturgeon! Freshwater drum, burbot and catfish are all found in the big lake, but perhaps the most underappreciated creature is a non-biting fly resembling a giant mosquito. (Giant mosquito? Hmm, I wonder if that's why it's underappreciated...)



Lake Tides

The newsletter for people interested in Wisconsin lakes

Chironomus plumosus is the scientific name of this non-biting midge. Midges, or Chironomids, comprise a large group of insects, the adults of which are known by different names depending on location and species. Around Lake Winnebago they are known as lake flies or bay flies. If you have ever been near the lake around Mother's Day (it was a little later in 2014 because of the lengthy, cold winter), you can't miss them. Swarms of these lake flies permeate the skies and can cover buildings and cars. Their sheer numbers may be a nuisance to humans, but they pose no health threat and are extremely important to migrating birds. Another small, secondary hatch of lake flies often occurs in late August.

"When I was a kid, I remember the city brought out snow plows to clear the roads when the hatch was on."

Adults of *Chironomus plumosus* hatch and live for only three to eleven days. So, even if we are annoyed by their mass numbers, it's short-lived. There are no functional mouthparts on either the male or female (hence, the non-biting descriptor), so adults do no feeding. On calm evenings in

photo by GreggMP - Flickr Creative Commons



2014 brought the largest hatch of lake flies from Lake Winnebago that folks have seen in over a decade!

late spring, you may hear a large group of these insects create a low-intensity, high-pitched hum. Look skyward – if ambient conditions are just right, you will see a gauzy gray cloud high in the sky. It may appear to be something straight from a Stephen King novel, but it's really a bunch of lake flies hooking up! The females fly into the swarms for mating, then head out over the lake or river to deposit their eggs.

Masses of about 1,500 eggs each are laid on the water's surface. When the masses absorb water, they sink to the lake bottom, and the eggs hatch

(Continued on page 2)

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Wisconsin Lakes Partnership

Lake Winnebago lake fly larvae help to support the largest self-sustaining lake sturgeon population in the world!

This bloodworm is bright red from the hemoglobin that helps it store oxygen.

Photo by Alfredo Eloisa, Flickr Creative Commons



(Lake Bottom Mysteries, continued)

in three to fourteen days. So what happens between the egg and lake fly stages? Ah, here is where we get to the mystery at the bottom of the lake! The first instar (a stage in the life of an insect between two successive molts) is free swimming. Not a bad way to start your life – just hanging out in the ebb and flow of Lake Winnebago. The next three instars are spent in a U-shaped tube (constructed from mud and saliva) at the bottom of the lake or river. Small posterior prolegs (fleshy, short legs) are used to anchor the larvae in the tube while the body is extended out of the tube, collecting food in the loose organic material at the bottom of the lake. While in this stage, Lake Winnebago lake fly larvae help to support the largest

self-sustaining lake sturgeon population in the world!

The larvae of some species of lake fly midges are bright red and called bloodworms. The red color is a result of hemoglobin, the same blood

pigment that makes our blood red. Hemoglobin helps the larvae store oxygen for times when there is little or no oxygen in the muddy lake bottom. The presence of bloodworms can indicate organic enrichment.

The larvae pupate and transform from aquatic to terrestrial life forms at the water's surface.

photo by Christoph Quintin, Flickr Creative Commons



The male lake fly has large feathery antennae.

This transformation can take a few minutes, during which time Mother Nature sets an abundant table for panfish.

Adult lake flies are a yummy treat for purple martins and warblers. The peak migration of warblers is timed perfectly to the hatching of lake flies, which provide these tiny birds with the food they need to get to northern Wisconsin and Canada. Nesting songbirds already raising families in the area also take advantage of the food source for their growing young.

The lake fly hatch can be a spectacular event, but biologists have been concerned that it has not been as successful as it was twenty or thirty years ago. Then came 2014, with the biggest hatch seen in a decade or more! It is possible that the lake fly hatch is dependent on water quality and that the water quality is improving. The hatch last year was like the days of old – lake flies coated buildings and roads in an opaque cloak. If you are near Lake Winnebago this spring, keep a lookout for this short-lived, but important piece of the food chain that started its life at the bottom of the lake. ♡

Rob Zimmer took this photo of the swarms of lake flies at High Cliff State Park, on the shores of Lake Winnebago in 2014.

Dreaming of Springtime

February is the time to browse through your seed catalog and dream up the perfect lakefront landscape. We would like to help jump-start your plant selection by offering some of the best woody plants and flowers suitable for native plant landscaping and habitat restoration projects here in the Midwest. Keep these plants in mind as you think about lakeshore restoration, meadow plantings or wetland rehabilitation.

Over the last five years, Douglas W. Tallamy, Ph.D., and chair of the Department of Entomology and Wildlife Ecology at the University of Delaware, has been specifically researching the usefulness of native woody shrubs (and other flora) as host plants for our native caterpillars. These plants will in turn support moths, butterflies and other beneficial wildlife. See Dr. Tallamy's lists below.

Did you know...

the oak tree provides sustenance for 557 species in our food webs? The lilac only supports 40.

Top Native Wildflowers

Common name	Genus/ Scientific name	Number of species of caterpillars supported
Goldenrods	<i>Solidago</i>	115
Asters	<i>Aster</i>	112
Sunflowers	<i>Helianthus</i>	73
Joe pye weed; Boneset	<i>Eupatorium</i>	42
Morning glory	<i>Ipomoea</i>	39
Sedges	<i>Carex</i>	36
Honeysuckle (natives)	<i>Lonicera</i>	36
Lupine	<i>Lupinus</i>	33
Violets	<i>Viola</i>	29
Geraniums	<i>Geranium</i>	23
Black-eyed susan	<i>Rudbeckia</i>	17



photo by Patrick Gossin

Did you know...

a chickadee will gather from 390 to 570 caterpillars to feed their young each day? To rear one clutch, they must catch 6,000 to 9,000 caterpillars!

This beautiful monarch could be gracing your backyard asters, too!

Top Native Woody Trees/Shrubs

Common name	Genus/ Scientific name	Number of species of caterpillars supported
Oaks	<i>Quercus</i>	557
Cherries	<i>Prunus</i>	456
Willows	<i>Salix</i>	455
Birches	<i>Betula</i>	411
Poplars	<i>Populus</i>	376
Maples	<i>Acer</i>	297
Blueberries	<i>Vaccinium</i>	294
Alders	<i>Alnus</i>	255
Hickories	<i>Carya</i>	235
Elms	<i>Ulmus</i>	215
Pines	<i>Pinus</i>	201



photo by Paul Skawinski



photo by Nancy Field

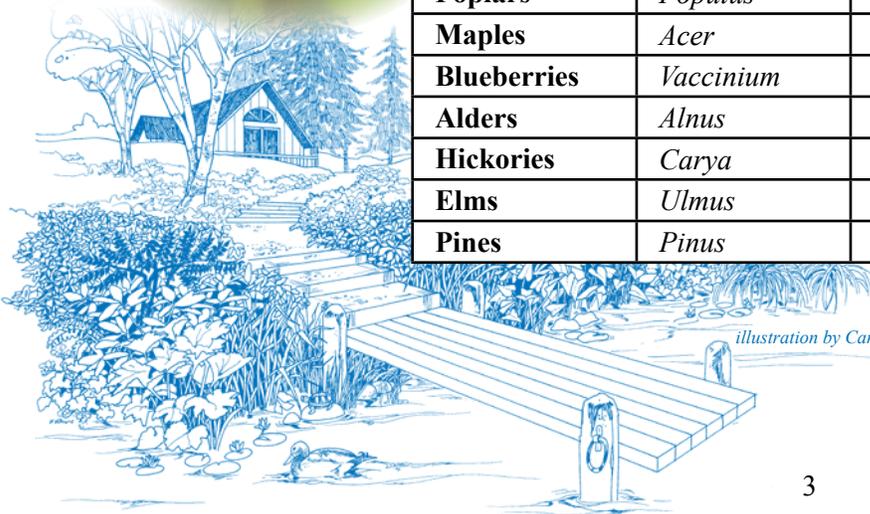


illustration by Carol Watkins

This eastern tiger swallowtail butterfly is resting on a cottonwood tree, a type of poplar.





CLMN Superstar



Wisconsin is fortunate to have many talented and knowledgeable people acting as Citizen Water Quality Scientists on their lakes. We would like to highlight some of the accomplishments of the volunteers in the Citizen Lake Monitoring Network (CLMN). Want to see a CLMN volunteer acknowledged in Lake Tides? Please send information to Amy Kowalski, Lake Tides Editor, at akowalsk@uwsp.edu.

By Sandy Wickman, CLMN Regional Coordinator, UWEX Lakes

We are very fortunate to have Rollie Alger, of Phelps, in Wisconsin's CLMN program. Rollie has been an exceptional water clarity and chemistry volunteer for fourteen years! He is talented and efficient, and readily shares his time, as well as his expertise, with new and existing volunteers. Rollie distributes spring sampling supplies, is the keeper of the CLMN Hach dissolved oxygen meter (kept at the Phelps Library) and is currently serving on the CLMN Advisory Team, which is charged with determining the future course of the network.

But Rollie does so much more! He is President of the Vilas County Lakes and Rivers Association and is instrumental in planning the annual North Central Wisconsin County Lakes Workshop. Rollie has been actively involved with the Phelps Town Lakes Committee since its inception and has served as Secretary for many years.

Ted Ritter, Vilas County AIS Coordinator, says, "Rollie has been a supporter of the Vilas County AIS Partnership from day one and few people have stayed as close to the partnership's activities and helped promote it as Rollie."

Rollie doesn't just monitor lakes – he monitors streams as well. Kris Stepenuck, Volunteer Stream Monitoring Program Coordinator, works with Rollie and says, "Rollie does a fantastic job of stream monitoring and has trained many people over the past several years for the Water Action Volunteer Program. He also leads school groups on stream monitoring field trips, and has monitored two sites on the Deerskin River in Vilas County since 2005." He often helps Kris with an advanced macro-invertebrate identification course and has co-taught stream ecology at Northland Pines High School. In 2006 he was recognized for outstanding achievement in citizen-based monitoring.

Rollie has a bachelor's degree in botany and identifies botanical specimens when called upon. He



later obtained a PhD in educational administration and was an Assistant Principal in Rhinelander and a Principal in Ripon.

He has been very supportive of the Vilas County Shoreland Stewardship Initiative. He helps train the evaluation team, contacts shoreland owners and helps them get involved in the program.

Rollie served on the Advisory Council of LoonWatch and is a long time LoonWatch volunteer. He is the steward for the Imogene Lake artificial loon nesting platform.

Lastly, Rollie is a Wisconsin Lake Leader graduate (Crew 6) who serves on the Headwaters Trails Committee for the Phelps area and is a Nature Mapping Instructor.

Rollie is involved in every aspect of our natural world, and everything he does is done with precision. A good friend describes Rollie as "a rather serious Type A guy – dependable, earnest and energetic." Rumor has it that he also flies model aircraft and will climb pretty high to rescue his plane from an unexpected tree landing.

Thank you, Rollie, for all that you do!

Volunteers





Volunteers Help to Shape the Future of the CLMN

Over 250 Citizen Lake Monitoring Network (CLMN) volunteers provided valuable feedback in a survey designed to identify the strengths and weaknesses of the CLMN program. We have already begun to implement this feedback by re-constructing our CLMN website to make it more informative and easier to navigate. Check it out at www.uwsp.edu/uwexlakes/clmn. We are also developing training videos to serve as “refreshers” for active monitoring volunteers, and increasing our outreach activities. If you received an email or postcard invitation to take our survey and have not yet provided your comments, please do! Your feedback is very important to us!

www.uwsp.edu/uwexlakes/clmn

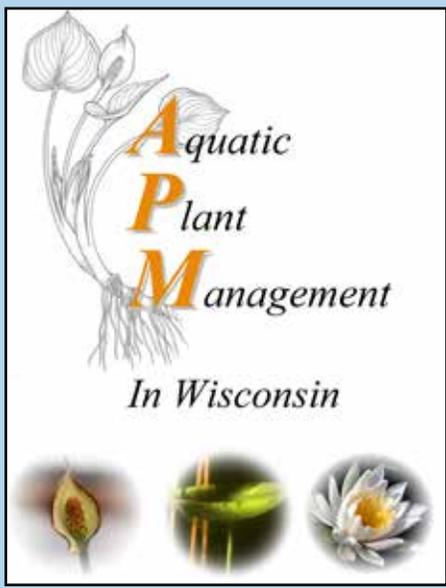
We Want Your Feedback!

The Department of Natural Resources (DNR) is asking for public input on updates to our Lakes Partnership aquatic plant management (APM) guide. This guidance outlines how to assess a lake’s plant community, gather information relevant to any treatment being considered and how to evaluate treatments.

Why are we making changes?

We would like to update the technical aspects of our APM planning guidance based on what we have learned over the past seven years. We hope to incorporate lessons learned from research and many lake herbicide treatment evaluations into meaningful guidelines for APM planning. The updates will include suggestions for management goals for controlling aquatic invasive species (AIS) and improving data collection relevant to many of our APM issues.

The *Aquatic Plant Management in Wisconsin* guide was published as a collaborative effort of the Lakes Partnership in 2005. When first written, the DNR public comment process was not available, and we may not have received input from all of you. Since that time, we have learned a great deal about controlling our most problematic invasive aquatic plants through research partnerships that included the DNR, Army Corps of Engineers, lake planning consultants, APM management consultants and lake groups.



APM plans are critical for APM permitting and AIS control grants. Realizing that much of this AIS control work is undertaken by local lake organizations in consultation with DNR and private APM professionals, we would like feedback from all of you on whether these updates will help meet your planning needs and the information needs of the Lakes Partnership. **The guidance will be open for a 21-day comment period beginning in mid-February.** Look for the link under the Highlights section of the UWEX Lakes website (www.uwsp.edu/uwexlakes), or sign up to be notified of this and other new DNR program guidance at the following website: <http://dnr.wi.gov/news/input/guidance.html>. All comments will be considered, revisions will be made to the guidance document as warranted and a *Response Summary and Final Guidance* document will be made available on the DNR guidance webpage.



Slowing the Spread of AIS

Friendly Conversations are Making An Impact

By Erin McFarlane, Aquatic Invasive Species Volunteer Coordinator, UWEX Lakes

Watercraft inspections took a more conversational approach this past boating season, thanks to our dedicated watercraft inspectors and a renewed emphasis on supporting their educational efforts. The Watercraft Inspection Report form used by inspectors was simplified and updated for 2014 to better aid inspectors in talking with boaters about aquatic invasive species (AIS) prevention. Inspectors shared the prevention steps required by law with boaters, explaining the reasons for the steps, and answering any questions the boaters had about the laws. They also asked boaters if they had been contacted by another inspector this season in an attempt to cut down on boater frustration.



We will roll out a few training videos this spring as a resource for new and seasoned inspectors alike.

According to various county and regional AIS staff, boaters and inspectors alike seem to enjoy this new approach. “This new form and conversation style has been well received overall in my county,” says Michele Sadauskas, Oneida County’s AIS Coordinator. “Our inspectors say the form is much easier to use. Having the ability to personalize some of the new forms was an unexpected and

exciting opportunity. This allowed my team and volunteers to share locally important information and better connect with boaters and anglers.”

Since the CBCW updates have been well received (and to keep from driving our committed inspectors crazy by updating materials too often), **there will be no changes to the CBCW forms for the 2015 boating season.** The program’s emphasis on providing our watercraft inspectors with the training and resources they need to make their educational efforts successful at the boat landings will continue. For example, we will roll out a few training videos this spring as a resource for new and seasoned inspectors alike.

For more watercraft inspection results, and to view data for specific counties and landings, go to <http://dnr.wi.gov/lakes/invasives> and click *Watercraft Inspection Data* (on the right hand side of the page) under *Data & Maps*. 💧

photo by Robert Korth



Watercraft Inspection Data: 2014 Fast Facts (data as of 1/20/15)

- 120,021 boats were inspected by volunteer and paid inspectors
- 249,708 people were contacted about AIS prevention
- 70,351 hours were spent conducting watercraft inspections
- 97% of boaters contacted were willing to talk with inspector
- 19% boaters reported their watercraft had been used on a different waterbody in the past five days

AIS - How Do They Get Here? Part Two

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

provided by Wisconsin Sea Grant

In the last issue of *Lake Tides*, we discussed what OIT invasion pathways are. Do you remember what OIT stands for? If you said *Organisms In Trade*, you would be correct. Once you are done celebrating your correct answer, continue to read more about two related OIT invasion pathways – aquaculture and bait release.

Aquaculture

Aquaculture is the raising of aquatic organisms such as fish, crustaceans and plants in controlled environments. In Wisconsin, both food and bait fish species are raised. Current regulations combined with voluntary practices by the industry keep the risk low for aquatic invasive species (AIS) to be introduced through aquaculture. The AIS Hazard Analysis and Critical Control Point (HACCP) program, developed by Michigan and Minnesota Sea Grant, is one example of a voluntary program used by the industry to identify AIS risk and take action to correct it. The HACCP program actually has NASA roots – it used HACCP to develop food to send to the moon!



University of Wisconsin-Stevens Point's Northern Wisconsin Aquaculture Demonstration Facility

Bait Release

Understanding the bait release pathway can be a little trickier. The bait itself could be an invasive species (try distinguishing juvenile silver carp from gizzard shad), or bait water can be contaminated with an invasive species (zebra mussel veligers are invisible to the naked eye). Buying bait from a licensed bait dealer is a good first step to make sure that your bait is not contaminated. Once you have your bait, **never reuse bait on a different body of water if you have added lake water to your bucket - it is illegal.** That could add those hard-to-see invasive species to your bucket. Lastly, always dispose of unused bait in the trash, and never dump bait into a lake or river. This will ensure that any potential invasive species are not introduced into the environment. 💧

Buying bait from a licensed bait dealer is a good first step to make sure that your bait is not contaminated.

Always dispose of unused bait in the trash, and never dump bait into a lake or river.



photo by Seller Family - Creative Commons



Lake Tides

Forty Years and Counting

Forty years has come and gone for the Lake Tides newsletter, and some of you have been along for the ride. It doesn't seem that long for many of us, but for some it is a lifetime ago and for others "ancient history"! In these 40 years, Lake Tides has brought you news about everything from acid rain to zebra mussels. There have been ups and downs in statewide funding for lakes, and many great educators and contributors have come and gone. But, through it all, lake lovers like you have made a crucial difference in protecting and preserving our beautiful lakes.



We want to make sure that this newsletter continues to provide a resource that readers find helpful in their efforts! That is why in the fall of 2013, we partnered with a University of Wisconsin-Stevens Point class in the College of Natural Resources and Dr. Kristin Floress to survey a sample of *Lake Tides* readers. We were interested in understanding your opinions on all aspects of this publication, from the quality of the writing to your preferences in how it is delivered. We also wanted to know whether *Lake Tides* readers were different from lakeshore residents in Wisconsin who were not reading the newsletter, so we asked some non-subscribers who own lakeshore property to answer questions as well. You may have participated in this survey.

60% of readers said they share their paper copy of *Lake Tides* with at least one other person – that's fantastic!

“Keep up the good work. Lake Tides is a terrific educational tool, but it is very difficult to get past the peer pressure to have pristine lawns and do what is right to protect our natural resources. The majority of society will follow their neighbors and try to compete to have the “prettiest” lawn regardless of the consequences to our watershed. Many people in our market are simply interested in having water to float their pontoon. Thank you for doing great work for our natural resources.”

~ From a *Lake Tides* reader

A total of 675 people responded to the survey. Lakeshore property owners made up almost two-thirds of our *Lake Tides* subscribers. Most of the respondents – readers and non-readers – are over 55. While this makes sense in terms of who owns lakefront property, we would also like to engage younger audiences in lake related information.

The vast majority (~78%) of subscribers surveyed indicated that they were moderately or highly interested in *Lake Tides*. Similarly, more than 80% of the readers surveyed indicated that they were satisfied with the information, content, writing and layout. And 60% of readers said they share their paper copy of *Lake Tides* with at least one other person – that's fantastic! We hope to continue our tradition of sharing quality information about Wisconsin lakes with you!

We have all felt the pressure of tightening budgets over the past several years, and while *Lake Tides* will remain a free publication for the foreseeable future, we wanted to know how much you value this newsletter. When we asked how much you would be willing to pay for an annual subscription to *Lake Tides*, only ~36% of you said you would not be willing to pay for it. Almost half were willing to pay something for it, and 12% said you would be willing to pay more than \$10! That's great! Our partnership is thrilled that you value *Lake Tides* so highly.



We also wanted to find out if readers are different from non-readers. The easiest way to do this was to take a sample of lakeshore owners in Wisconsin who were not subscribing to *Lake Tides* and ask them the same questions we asked you. Respondents were asked to rank the importance of eight threats to Wisconsin lakes. Readers ranked the top six listed here as more important when compared to rankings from non-readers. This is evidence that you are all taking to heart some of the lessons from our articles!

- Habitat loss*
- Lack of shoreline plants*
- Shoreline development*
- Lawn and garden fertilizers*
- Lawn and garden pesticides*
- Climate change*
- Aquatic invasive species*
- Polluted runoff*

Oftentimes social scientists find a direct connection between what people think they are able to do and what they actually do. A follow-up question asked whether you agreed you were able to take actions to protect Wisconsin lakes from those same eight threats. Interestingly, we did not see much of a difference between readers and non-readers on this question; both groups usually agreed they could do something about each threat. The notable exception was climate change where readers felt more strongly that they could take actions to protect lakes.

We found it interesting that when we asked how often people actually took actions to protect lakes, readers were more active compared to non-readers. For example, more than 30% of readers currently volunteer time to protect lakes, while only 14% of non-readers do. Almost 20% of readers reported using a rain barrel while only 12% of non-readers do. Happily, both readers and non-readers are doing some things, like reducing or eliminating fertilizer application on lawns and gardens.

We plan to use the information from the survey in a variety of ways. First off, the results are encouraging in that they suggest reading *Lake Tides* can lead to a more informed lake community! We will continue to promote new subscriptions to *Lake Tides*, and we have even

There is a lack of info about what you can and cannot do when it comes to your lakefront property. We purchased lake front property two years ago and assumed we would get a packet of info after the exchange of property ownership but we didn't. We only heard small bits and pieces from other land owners.

~ From a non-subscriber

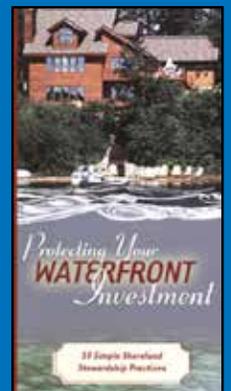
created an easy-to-use subscription form on our website (www.uwsp.edu/uwexlakes). We also plan to feature more examples of actions that landowners and lake organizations are taking to promote lake health. We believe that sharing these examples - and inviting you to share them with others - will help foster new norms in lake stewardship. Finally, we plan to regularly survey our readers as well as the general lakeshore public to track our successes over time and ensure that we are meeting your expectations and needs. Of course, you do not have to wait until a survey shows up in your mailbox to let us know what you think! Just email or call us with your feedback (uwexlakes@uwsp.edu or 715-346-2116). 💧

SUBSCRIBE
Now
It's FREE!

Send your friends and neighbors to our website to sign up for Lake Tides today! Go to www.uwsp.edu/uwexlakes and click Newsletter in the left navigation bar.

Simple Steps to Protect Your Waterfront Investment

- Step #1:** Choose zero-phosphorus fertilizer for your lawn and garden.
- Step #2:** Properly dispose of household hazardous waste, or better yet, minimize your use of toxic products.
- Step #3:** Minimize erosion by leaving the natural shoreline intact.
- Step #4:** Inspect and maintain your septic system regularly.
- Step #5:** Reduce the hard surfaces like rooftops and driveways on your property.
- Step #6:** Plant trees and shrubs to protect your land and lakeshore. (See page 3 of this issue for ideas.)
- Step #7:** Direct downspouts onto your lawn or landscaping, not onto hard surfaces.
- Step #8:** Install a rain barrel.
- Step #9:** Build a rain garden.
- Step #10:** Protect or restore your shoreland buffer.



For more detailed information on these steps, go to our bookstore and get the full publication *Protecting Your Waterfront Investment: 10 Simple Shoreland Stewardship Practices*.

www.uwsp.edu/uwexlakes



2015 Wisconsin Lakes Partnership Convention

April 23-25, 2015 ~ Stevens Point, WI

Agenda *...at a glance*

Thursday, April 23

Pre-convention Workshops/Sessions

8:00am	Registration opens
9:00am-4:30pm	All-day Workshops
9:00am-Noon	Morning Workshops
Noon-1:30pm	Lunch on your own (pre-register for onsite)
1:30-4:30pm	Afternoon Workshops
2:30-3:00pm	Refreshment break
4:45-5:45pm	Special Technical Sessions
5:45-7:00pm	Networking time - Dinner on your own
7:00-11:00pm	Welcome Reception

Friday, April 24

6:45-7:45am	Sunrise Yoga
7:30am	Registration opens
8:00am	Exhibits open (until 6:00pm)
8:00-8:50am	Concurrent Sessions 1
9:00-10:45am	Welcome and Kick-off Keynote Panel
11:00am-Noon	Concurrent Sessions 2
12:15-1:30pm	Lunch
1:45-2:25pm	Concurrent Sessions 3
2:35-3:15pm	Concurrent Sessions 4
3:15-3:45pm	Refreshment break
3:30-5:00pm	Poster Presentations
	Visit Exhibitors and Educational Displays
5:00-6:00pm	Networking time
6:00-8:00pm	Lake Stewardship Awards Banquet
8:00-11:00pm	Lakes Partnership After Hours

Saturday, April 25

7:30am	Registration opens
8:00am	Exhibits open
8:00-8:40am	Concurrent Sessions 5
8:50-9:50am	Keynote Speaker Marion Stoddart
9:50-10:20am	Refreshment break
10:30-11:30am	Concurrent Sessions 6
11:45am-1:15pm	Closing Luncheon
1:30-4:30pm	Afternoon Workshops

Agenda subject to change.

Healthy watersheds make for healthy lakes; healthy lakes make for healthy people! This year's annual Wisconsin Lakes Partnership Convention will have a special focus on health – the health of our lakes, their watersheds, and how water and lake ecology impact people. Join us for the latest in lake science and research, and hear real-world examples of successful lake initiatives across the state. You will also have a chance to learn more about the brand new *Healthy Lakes* initiative that the DNR is introducing in 2015 to make it easier and more rewarding for landowners to take simple steps that promote clean water and lake health!

Our Friday plenary panel will feature three people who collectively have shaped Wisconsin's lake programs over the last forty years. Stephen Born, William O'Connor and Jim Holperin will share the stage to reflect on the origins of the Wisconsin Lakes Partnership, its challenges over time and the prospects for its future. We are convening these three leaders as a tribute to Lowell Klessig, who passed away last summer. Read more about their connection on our website (www.uwsp.edu/uwexplakes). Their collective wisdom will help all of us to reflect on what the Partnership has accomplished and what we need to do in the coming years to ensure lake health for future generations!

Saturday's agenda is designed to be accommodating and helpful to folks who may be attending this statewide gathering for the first time. Saturday morning's keynote speaker, Marion Stoddart, will remind us that we can make a difference in this world by sharing her inspirational story (*see pg. 13*).

The more lake advocates and action-takers there are, the healthier our lakes and watersheds will be. Please share this newsletter and your convention experiences with others in your lake community and invite them to join you for the Wisconsin Lakes Partnership Convention in Stevens Point! 💧

Secure and convenient online registration at

www.uwsp.edu/uwexplakes



Thursday Pre-convention Workshops

Pre-registration
required.

For more in-depth descriptions of workshops, tours and main convention sessions, go to our website at www.uwsp.edu/uwexplakes.

Thursday, April 23 9:00 am - 4:30 pm

Using WordPress to Build Your Organization's Website (Limit 12)

Using WordPress is an inexpensive way to create websites without any programming experience. This full day workshop will take you through all the steps of creating and maintaining your organization's website. Participants will need to provide their own laptop or tablet with wireless internet capability for creating and editing webpages throughout this hands-on workshop.

Thursday, April 23 9:00 am - Noon

Aquatic Plant Ecology and Identification (Limit 24) - additional \$25 fee

In this workshop, participants will learn to identify aquatic plants using real plant specimens and a variety of plant keys and other resources. We will focus on distinguishing plants with similar growth forms and among species in the larger genera. There will be a packet of materials for each participant to help guide you through plant identification.

How to Build, Fund & Implement a Healthy Lakes Project (Limit 25)

Join DNR, UW-Extension, and County partners to learn about our new *Healthy Lakes* initiative. We will share Wisconsin's 2014-2017 Healthy Lakes Implementation Plan, technical information on lakeshore best practices and funding options. We will also discuss communication, planning and partnership strategies for local implementation. ****This workshop is also offered on Thursday afternoon from 1:30 - 4:30 pm.****

Lake District Commissioner Training – Beginner (Limit 50)

Are you a new member of a Lake District Board of Commissioners? Maybe your lake district recently formed. This workshop will walk you through the basics of lake districts and explain the important roles that elected and appointed commissioners play in making them work. We will cover the basics of Chapter 33, the state statute that governs lake districts and other relevant rules and laws that every commissioner should know.

Shoreline Erosion Control – Advanced (Limit 50)

Looking for technical details or methods to restore or enhance a shoreline? This workshop is intended to focus on more advanced techniques in shoreland restoration and management. The presenters will give an overview of techniques used to alleviate soil erosion and restore shorelands. They will present the technical details of planning and implementation, and answer NR Chapter 30 questions.

GIS Training (Limit 25)

Participants will learn the basics of free GIS mapping software and discover a variety of free GIS and web-based mapping programs. The first half of the workshop is an ideal starting point for those new to GIS. For those with existing ArcGIS experience, the second part of the workshop will further advance your technical skills by exploring new and improved geoprocessing tools, editing workflows, and achieving enhanced functionality with ArcGIS products.

2015 Wisconsin Lakes Photo Contest

Catch of the Day by Carol Warden won honorable mention at the 2014 Wisconsin Lakes Partnership Convention Photo Contest. You could win too! Get more information on our website: www.uwsp.edu/uwexplakes ~ **Deadline: April 2, 2015**



Thursday Morning Workshops
9:00 am - Noon



Lake Tides 40(1)

SWIMS and the Lakes and Aquatic Invasive Species

Map Viewer (Limit 25)

Interested in learning more about SWIMS and the Lakes and AIS Viewer? Come get a general walk-through and get more in-depth information of how to maximize the available tools. Demos provided will include how to add, find, and update information in the SWIMS database as well as how to create a quick map, add graphics, share maps and add your own data to the viewer.

Lake District Commissioner Training - Advanced (Limit 50)

This advanced workshop is designed for lake district commissioners looking for new ideas and examples. You will learn from fellow commissioners who have successfully implemented lake restoration and protection projects, and take home ways to achieve a healthier lake by leveraging your lake district capabilities.

Shoreline Erosion Control 101 (Limit 50)

Want help restoring your shoreline? This workshop is intended for the novice who is not sure what or who to ask about restoring or enhancing a shoreline. The presenters will give an overview of the different techniques used when doing a shoreline restoration, funding opportunities for landowners and a quick lesson about healthy shoreline stewardship practices.

Lake District Treasurer Workshop (Limit 25)

This workshop is designed specifically for Lake District Treasurers. Managing a lake district budget is not the same as working with a lake association or other type of organization. This workshop will provide you with the tools and knowledge needed to create and manage your lake district's budget. We will cover specific compliance rules that lake districts need to follow.

Shoreland zoning: Protecting lakes through a partnership between citizens, county zoning staff, county boards, DNR, UW-Extension and more (Limit 50)

Why do we have shoreland zoning in Wisconsin and what are we trying to accomplish with it? In this workshop we will talk about the history of shoreland zoning, how it works today and recent changes. Our guests will include lakefront property owners who are helping to achieve the goal of healthy lakes and good fishing through shoreland zoning. You will even get a chance to "test drive" being a zoning board member.

Introduction to Lake Eutrophication Modeling and Using WiLMS (Limit 25)

Lake eutrophication modeling uses characteristics of the lake and watershed to better understand the current trophic condition of a lake and evaluate how that has or could change. This workshop will examine some of the principles of lake eutrophication modeling and introduce attendees to the Wisconsin Lake Modeling Suite (WiLMS) for lake water quality evaluation and planning. Participants will need to provide their own laptop computer as this session will include hands-on applications of WiLMS.

Groundwater – Brewery Tour (Limit 20 Off-site, shuttle included) - additional \$20 fee

Wisconsin's freshwater resources have long supported a vibrant brewing industry. Beer producers are increasingly realizing the importance and value of water and are developing strategies to use water more wisely and make their operations more sustainable. Join groundwater experts on a fun and fact-filled tour of the Stevens Point Brewery. We will highlight the connections between the beverages we enjoy and groundwater quality and quantity. We will also explore the impact of groundwater use on lakes and rivers.

****This workshop is also offered on Saturday from 1:30 - 4:30 pm.****

Get All the Details Online

More details about speakers, special sessions, concurrent sessions and more can be found on the convention website. Just look under *Events* at: www.uwsp.edu/cnr/uwexlakes.

If you do not have access to our website, please give us a call and we would be happy to help you (715-346-2116).



Saturday Afternoon Workshops

Pre-registration
required.

Saturday, April 25 1:30 - 4:30 pm

Strong Towns Workshop (Limit 50)

Many lake communities are driven to seek “growth” as a solution to high property taxes and struggling local economies, but not all growth is created equal! The Strong Towns movement is an effort to educate citizens and officials about the hidden costs of modern suburban growth along with the financial and environmental challenges.

LoonWatch Loon Ranger Training (Limit 50)

For over 35 years, LoonWatch has engaged an active volunteer network of “Loon Rangers” as its primary tool to collect critical long-term data on loons in Northern Wisconsin. Through this workshop, you will learn how to monitor loons, hear what’s new in the world of loon research, and meet other loon enthusiasts.

Getting to Know Wisconsin’s Amphibians: A Hands-on Experience with the Frog Guy (Limit 50)

Get ready to use your senses to learn all about frogs. Randy Korb will share Wisconsin frogs, toads and salamanders with you in an entertaining, hands-on and interactive fashion. He will explain the unique characteristics of each species, how they use shoreline and wetland habitats and actions that we can take to protect amphibians.

Planning for Financial Success: Fundraising BMPs for Lake and River Organizations (Limit 50)

In dealing with problems on our lakes and rivers, we often think of using *best management practices*. The same can be said for fundraising projects for our organizations. This workshop will cover the basics of an integrated, year-round set of BMPs for fundraising, looking at questions like, “How do we solicit contributions from individuals and businesses, apply for grants, or hold events?” We will take a look at your organization’s current fundraising “health” and you will leave with a good start towards a sustainable fundraising plan.

Manual Removal of Eurasian Watermilfoil: Effective and Efficient (Limit 40)

Manual removal strategies have been utilized to drastically reduce and even eliminate Eurasian watermilfoil (EWM) from many central Wisconsin lakes. When conducted properly and employed early, manual removal can be a highly effective, low-cost strategy with minimal negative impacts to the native aquatic plant community. We will discuss identification of EWM and similar species, as well as mapping, removal and disposal.

Did you know rivers can get better with age?

DYK

The Nashua River, one of the ten most polluted rivers in the country during the 1960s, is on its way to becoming a part of the National Wild and Scenic Rivers System this year! The woman who helped catalyze and maintain this amazing transformation is Marion Stoddart, a citizen leader committed to a lifetime of grassroots organizing. Marion is a true testament in mobilizing a community to action and showing people that change is possible even when it seems impossible. Marion has received many awards including the United Nations Environmental Programme’s Global 500 Award. She also founded a worldwide adventure business that joins women from diverse backgrounds around the world to learn from one another.

The Nashua River Wild and Scenic River Study Act was just passed on January 12, 2015!

Join Marion at the 2015 Wisconsin Lakes Partnership Convention and get inspired! She simply states, “What I wanted to do was to make a difference in the world – which is what we all want to do – and can do.”

Visit <http://www.workof1000.com/> to learn more about Marion and her work.



Saturday Afternoon Workshops
1:30 - 4:30 pm



Wisconsin's 1964 Landscape Resource Inventory Gets A New Life

By Dan McFarlane, GIS Specialist, Center for Land Use, UW-Stevens Point

provided by Dan McFarlane



Photo of the full-size, original map.

[Lewis] found that 90 percent of features that local citizens identified as having natural or cultural value were found within, or in close proximity to environmental corridors.

Fifty years ago, Wisconsin Governor Gaylord Nelson recruited renowned landscape architect Phil Lewis to inventory the state's cherished cultural and natural resources. With input from citizens, outdoor clubs and local officials, Lewis and his team of landscape architect students from UW-Madison produced an impressive 12-foot tall map depicting over 38,000 landscape and cultural features across Wisconsin. The goal of the project – advise legislators which parcels of land the state should buy for protection in order to meet the growing demand for outdoor recreation.

The UW-Stevens Point Center for Land Use Education transformed the paper maps into a spatially-referenced digital layer in an effort to make the data more accessible and easier to visualize. The original map contained 220 unique man-made and natural resource icons. The large map was imposing and the extensive legend made it difficult to interpret individual points. Therefore, a GIS point layer was also generated and points were placed in the approximate location of the icons on the original map. Users can now interact with the data by turning layers on/off and clicking a point to view its meaning rather than having to sift through the long legend to find a particular icon.

What makes Lewis' landscape planning work so impressive is that it predates computers. He was one of the first to use manual overlay techniques for landscape planning. Lewis combined transparent maps of wetlands, steep slopes and surface water to identify *environmental corridors*. When Lewis and his team started the daunting task of overlaying the cultural and natural features on the environmental corridors map, patterns started to emerge. He found that 90 percent of features that local citizens identified as having natural or cultural value were found within, or in close proximity to environmental corridors. Lewis' recommendation was to protect and enhance environmental corridors. That way, a majority of features and values that people cherish on the landscape would be protected.

Lewis' objective was to inform policymakers about which lands were best suited for land acquisition based on what was important to the public. To do that, he displayed the large map in the capitol building for all legislators to see, and it worked. At the time, the state had \$50 million from a one-cent sales tax on cigarettes dedicated specifically for land purchases. A proximity analysis reveals that public land acquisition since Lewis' inventory targeted areas that are important to citizens.

photo by Elvis Kennedy, Flickr Creative Commons



Environmental corridors are areas in the landscape that contain and connect natural areas, open space and scenic or other resources. They often lie along streams, rivers (like Devil's River in Denmark, Wisconsin shown here) or other natural features. This definition comes from the University of Illinois Extension: <http://urbanext.illinois.edu/lcr/environmental.cfm>

The Landscape Resource Inventory is a snapshot of Wisconsin in the early 1960s and is a reflection of both the resources and infrastructure on the landscape 50 years ago. Access to such a comprehensive survey from the past may be useful to anyone interested in tracking changes in Wisconsin's resources over time. 💧



Current AIS Research Available Online

The Center for Limnology has created a catalogue where anyone can learn about aquatic invasive species research that is going on right now! You can search by species, location, agency, or individual. Or you can browse through all the current research. Check in often as new projects are always being added and current projects have been updated.

Find this tool at http://cfllibrary.uwcfli.org/ais_projects

If you have any projects you would like added to the list or you need to update an existing project, contact AIS specialist Carol Warden of UW-Trout Lake at warden@wisc.edu or (715) 356-9494.

photo by Carol Warden



Aquatic plant study area.

CALL ENDS

March 3-4, 2015 – Fox-Wolf Watershed Alliance Conference, Oshkosh, WI

For more information: www.fwwa.org/conference-registration/

March 9-11, 2015 – WLWCA Annual Conference, Appleton, WI

The Wisconsin Land and Water Conservation Association's 62nd annual conference will be held at the Radisson Paper Valley Hotel in Appleton this year.

For more information: <http://wisconsinlandwater.org/events/annual-conference>

March 12, 2015 – Red Cedar Watershed Conference, Menomonie, WI

Whether you farm, live along the water or live in town, your actions impact everyone. Join us for a day of exploring how we can all be a part of Land, Water and People Coming Together.

For more information: www.uwstout.edu/profed/redcedar

March 19, 2015 – Wisconsin River Water Quality Improvement Symposium, Stevens Point

For more information: <http://www.uwsp.edu/cnr-ap/watershed/Pages/WRQI-Symposium2015.aspx>

March 24-27, 2015 – Wisconsin Rural Water Association (WRWA) Technical Conference, Green Bay

For more information: <http://www.wrwa.org/>

March 30-April 1, 2015 – American Water Resources Association Summer Conference, Los Angeles

Theme: Climate Change Adaptation For more information: <http://www.awra.org/>

April 2, 2015 – Early-bird deadline for 2015 Wisconsin Lakes Convention (pgs. 10-13)

April 13, 2015 – Wisconsin Conservation Congress County Meetings

Each county across the state will be holding a public hearing regarding DNR spring wildlife and fisheries proposed rules. Get your questions answered and provide your input.

For more information: <http://dnr.wi.gov/About/WCC/springhearing.html>

April 23-25, 2015 – Wisconsin Lakes Partnership Convention, Stevens Point

Theme: Healthy Watersheds, Healthy Lakes, Healthy People – more details on pages 10-13.

For more information: <http://www.uwsp.edu/uwexlakes>

May 13-14, 2015 – Lakeshore Habitat Restoration Training, Green Lake

This three-day course is designed for those who perform and/or oversee lakeshore habitat restoration projects on inland lakes. There will be a field day in mid/late September.

For more information: <http://www.uwsp.edu/uwexlakes> under *Events*

Lake Tides -- PRJ85HX

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Reflections

Watersheds: A Haikou

Tireless draining
Life giving, clean, clear, water
All in a day's work

~ Wayne Mittelstaedt
(Student in Thomas Eddy's Environmental Science/Bio 191 class at UW-Fond du Lac)

