



## Back to the Point

### Wisconsin Lakes Partnership Convention Returns to its Central Wisconsin Roots

**T**aking a look backwards, at times, is a useful way to make sure you are still on the trail and heading in the right direction. In planning for 2014's statewide gathering of lake lovers, we've decided to do just that. The Lakes Convention has its early roots in Stevens Point.

Shortly after Wisconsin's lake district law (Chapter 33) was enacted in 1974, UW-Extension began holding regional meetings to address questions and challenges that citizens faced in carrying out the new form of governance. Participating lake district commissioners suggested that a statewide meeting would help connect people from a wider range of lakes and bring everyone under a shared roof. In 1979, UW-Extension took the lead in offering the first statewide Lake District Commissioners' Convention on the UW-Stevens Point campus.

That first meeting drew about 200 commissioners representing nearly all of the 115 districts that had formed by that time. The program rapidly grew in the early 1980s as the Wisconsin Lakes Partnership took on funding challenges and sought greater political clout. The 1984 convention featured Governor Tony Earl, who took the occasion to sign AB 284 into law, directing the Board of Commissioners of Public Lands to make lake districts eligible for low-cost loans (at that time, "low cost" meant 8% interest!) U.S. Senators Gaylord Nelson, Bob Kasten, Bill Proxmire, Herb Kohl, and Russ Feingold were all presenters at the convention in the 1980s and 90s, as was Governor Tommy Thompson. Attendance swelled to over 600, filling the available space at the Holiday Inn "Holidome" to the brim.

The size of the event and the decline of the (now demolished) Holidome forced a change in venue, and for the last 11 years the gathering has been held in

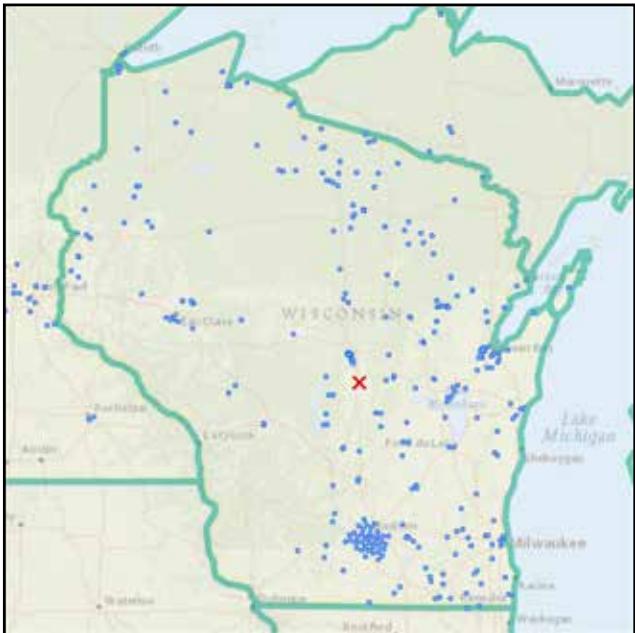
(Continued on page 2)



Long-time volunteer for the Citizen Lake Monitoring Network, Howard Lang of Green Lake, works with fellow lake lovers at a Lakes Convention in the early 1980s in Stevens Point.



Dan McFarlane



Green Bay. In 2012, we used GIS analysis to map where the attendees hailed from and identified the geographic “center” for all the participants. We were somewhat surprised that the most central location for everyone involved was about 20 miles south of Stevens Point! For the last several years, we explored

will feature all the great research updates participants have come to expect, as well as discussions of local, state, and national lake management laws and policy. Saturday will be geared more to the needs of lake district or lake association board members and lake stakeholders, with a greater emphasis on organizational effectiveness and the basics of lake health and care. The organizing committee is really hoping that Saturday will attract a large number of “newbies” who have only heard about the convention, but until now have not been able to attend. In the center of Friday and Saturday is the Wisconsin Lakes Partnership Stewardship Awards Banquet, a great cause for bringing everyone together at the same table. The main program will be sandwiched by half-day à la carte workshops and tours on Thursday and Saturday.

the possibility of returning to Stevens Point and holding the meeting at the new Holiday Inn Hotel and Convention Center, constructed in 2008. This next year was the first time we were able to successfully align the convention calendar with the venue’s and we are excited to be bringing the meeting back to Stevens Point.

The schedule for the 2014 convention is something of a throwback as well. The meaty “science and policy” part of the program will be focused on Friday April 25<sup>th</sup>. This day

Please join your lake-loving colleagues, friends and neighbors from around the state in April as we get “Back to the Point” in Stevens Point. Details about workshops, concurrent sessions and other speakers will be available in the Winter/Spring edition of Lake Tides, as well as on the 2014 Wisconsin Lakes Partnership Convention website: [www.uwsp.edu/uwexlakes/conventions/](http://www.uwsp.edu/uwexlakes/conventions/).

**Early bird  
deadline:  
April 3**

**2-day deal  
ONLY  
\$120!!!**

**\$15 workshops offered  
Thursday and Saturday**



Noah Berger



### Saturday Keynote Speaker: Tyrone Hayes

Biologist and herpetologist Tyrone Hayes, a professor of integrative biology at the University of California, Berkeley strongly believes scientific breakthroughs don’t begin and end in the laboratory. They also come from the field. Hayes’ interest in frog hormones, specifically those of a tiny reed frog common in Ethiopia and Uganda, sparked his interest in his current fieldwork. “Surprisingly, frog hormones are very similar, and in some cases identical, to human hormones,” he says. “So what affects a frog may also affect humans.” Hayes is perhaps best known for his research on the herbicide atrazine where his findings reveal a crucial new link between conservation and health.

UC Berkeley Associate Professor  
Tyrone Hayes is shown with an  
African Clawed Frog

<http://www.nationalgeographic.com/explorers/bios/tyrone-hayes/>



# Nominate a Local Lake Steward

**Deadline: February 7, 2014**

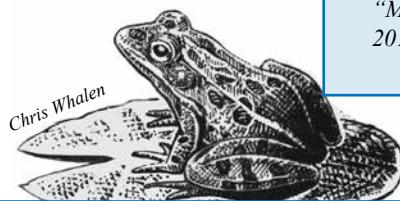
Do you know an outstanding person or group who dedicates time and talent to our state's water resources? We encourage you to nominate them for the prestigious Wisconsin Lakes Partnership Stewardship Award.

The categories are:

- Individual citizen
- Organized group
- Public service
- Youth (individual or group)
- Business

Recipients and all nominees will be recognized during a special awards ceremony on April 25, 2014, at the Wisconsin Lakes Partnership Convention.

For more information go to [wisconsinlakes.org](http://wisconsinlakes.org) or contact Wisconsin Lakes at 608-661-4313 or 800-542-5253 or [lakeinfo@wisconsinlakes.org](mailto:lakeinfo@wisconsinlakes.org).



# Call for Posters!

**Deadline: Feb. 17, 2014**

Including your poster in the Wisconsin Lakes Partnership Convention is a great way to share your research, project, or success story! For more information and to submit a proposal, go to [www.uwsp.edu/uwexlakes/conventions](http://www.uwsp.edu/uwexlakes/conventions) and click on "Call for Posters".

## "Point" and Shoot

Along with the 2014 Lakes Convention comes the 12<sup>th</sup> annual Wisconsin Lakes Partnership Photography Contest! It's time to sort through the mass of photos you have uploaded to your Facebook page and pick out your best lake photos. Not a Facebookeer? No worries - this contest is open to EVERYONE. You can even win \$100 for first place in each of two categories:

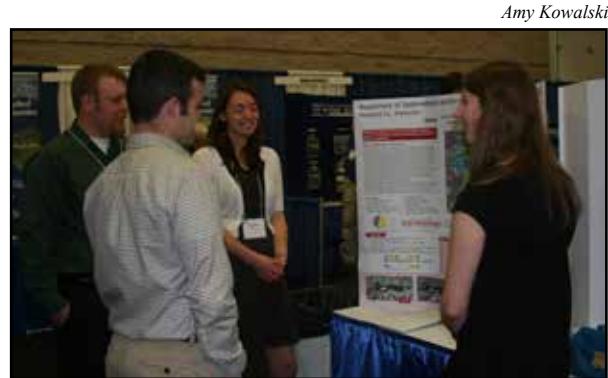
1. People enjoying Wisconsin lakes
2. Natural features in and around Wisconsin lakes and underwater

Go to [www.uwsp.edu/uwexlakes/conventions](http://www.uwsp.edu/uwexlakes/conventions) and click on "2014 Photo Contest" or contact Amy Kowalski at 715-346-4744 to get the official rules and an entry form.

All photos will be displayed at the 2014 Wisconsin Lakes Partnership Convention in Stevens Point, April 24-26.



*"Mommy"* taken by Michael Nevala received an honorable mention at the 2013 Wisconsin Lakes Partnership Photography Contest.



Amy Kowalski





## History Helps Us Look To the Future

**T**his winter, the Citizen Lake Monitoring Network (CLMN) will be creating another five-year work plan. In order to strategize for the future, we will invite staff from the Department of Natural Resources, UW-Extension Lakes, counties, not-for-profits, citizen-based monitoring groups, and, of course, CLMN volunteers. But first, we need to look at the past.

The last work plan was started in 1997. Since then, the Citizen Lake Monitoring Network has:

**"Life is changing,  
government is  
changing, and  
Self-Help Lake  
Monitoring is  
changing."**

~ Susan Graham,  
Water Resources  
Management  
Specialist

- Updated its data entry/retrieval system multiple times.
- Made reports available on the web for anyone to use.
- Added a phone-in data entry system, as well as an on-line data entry option.
- Reviewed and revamped the chemistry protocols.
- Worked on securing additional funding: sought donations; used small scale grants; and, finally, secured stable funding through the lakes grant program.
- Trained additional volunteers in Secchi & chemistry monitoring.
- Merged the Self-Help newsletter into a column in this statewide publication (*Lake Tides*).
- Recommended that volunteers join the Loon Watch project. This was accomplished in Northern Wisconsin.
- Added satellite imagery data.
- Added aquatic invasive species monitoring.
- Added lake level monitoring.

### So, where does our funding go?

These are approximate numbers.

Type of Monitoring	Startup Cost per Volunteer	Annual Maintenance Cost per volunteer, site or lake	How many volunteers, sites or lakes	Annual Cost to Maintain Volunteers
Water Clarity (Secchi)	\$50	\$5 per volunteer	1124 volunteers	\$5,620
Chemistry	\$300	\$300 per site	549 sites	\$164,700
Native Plant	\$100	\$25 per lake	30 lakes	\$750
Aquatic Invasive Species	\$100	\$5 per lake	300 lakes	\$1,500
Temperature	\$130	\$5 per lake	523 lakes	\$2,615
Dissolved Oxygen	\$60	\$30 per lake	361 lakes	\$10,830

### Big Bang for our Buck

Now that you have a sense of the amount we spend on volunteers, you need to know the huge return we are receiving! Secchi and chemistry monitoring volunteers spend about one and four hours respectively each time they gather a sample. Based on a \$12 hourly wage, our Secchi volunteers have saved us \$1,585,272 and our chemistry volunteers have saved us \$312,816! Now that's a lot of data!

During our review process, we will discuss the DNR's data needs, the CLMN goals, funding, the need for updates in protocols and data systems, and, most importantly, what the volunteers like and dislike about the network.

Susan Graham said it very well in 1998. "Life is changing, government is changing, and Self-Help Lake Monitoring is changing." In the next year, we will be considering these changes and adjusting the Citizen Lake Monitoring Network to reflect the needs of future stakeholders.

Contact Laura Herman [laura.herman@wisconsin.gov](mailto:laura.herman@wisconsin.gov) if you have suggestions for the future of CLMN. 



# Wisconsin Lake Leaders Institute

## Making a Difference Networking Inquiring Minds Public Policy Lake Science

Do these words pull on some thoughts that you've been mulling over lately? We would like to help you turn those thoughts into reality through the Wisconsin Lake Leaders Institute! Consider joining over 250 graduates by nominating yourself or a friend to participate in the next "crew." Recruitment begins now for our 2014 course, which is comprised of three 2-day sessions:

[May 21-22, 2014 Green Lake, WI](#)

[September 18-19, 2014 Woodruff, WI](#)

[October 16-17, 2014 Baraboo, WI](#)

### Costs

#### **Your time commitment**

*Each session builds on the previous session and participants are asked to commit to attending all three in order to successfully complete the Institute.*

**\$350** (which includes meals, lodging, and education materials)

*The Wisconsin Department of Natural Resources and past crewmembers are committed to the Lake Leaders Institute and are able to cover 50% of the cost for you! Recruits for 2014 (Crew 10) are asked to raise the other half (only \$350) – contact your local lake organization for support.*

### Get Involved

You may nominate yourself or someone you know by sending us the nominee's name and contact information along with a statement of why you feel you/they should be a Lake Leader.

Email: [uwexlakes@uwsp.edu](mailto:uwexlakes@uwsp.edu)

Snail mail: UW-Extension Lakes

800 Reserve Street  
Stevens Point, WI 54481

To learn more about Lake Leaders go to:

<http://www.uwsp.edu/cnr/uwexlakes/lakeleaders/>



R. Korth

Session 1: Society and Environment:  
Philosophy and Ethics of Lake Management



R. Korth

Session 2: Aquatic Ecology and Watershed  
Management: Impact of Development on Lakes



R. Korth

Session 3: Organizations, People, Politics



Lake Tides 38(4)

# Eating Invasives

By Michael S. Putnam, Water Resources Management Specialist, Wisconsin DNR  
Reprinted from the DNR Lakes Blog <http://lakes-1.blogs.govdelivery.com/>

**B**ob Wakeman, the Department of Natural Resources' statewide Aquatic Invasive Species (AIS) Coordinator, responded two years ago to a question by a citizen about the legality of collecting the invasive, but edible, Chinese mystery snail *Cipangopaludina (Bellamya) chinensis* for eating. A Department attorney provided the answer. Changing attitudes about food make this response as timely today.

This question prompts consideration of recent culinary developments. First, it reflects recent trends in food circles of people trying to do some good with their food practices. Some give credit to doing-good-through-eating to the Slow Food Movement, which started in Italy in response to the (invasive?) spread of fast food and the perceived decline of the nation's fabulous cuisine. Slow Food promotes local cuisine as an antidote to fast food. Others also credit author Wendell Berry's many writings on food and agriculture.

Leonard G. (Wikimedia Commons)



This sign is proudly displayed on a wall surrounding a restaurant in Santorini, Greece.

A Slow Food offshoot is the notion of becoming a “locavore” – a person that strives to obtain as much of her food as possible within a few hundred miles of home. This notion gained attention with ethnobotanist Gary Paul Nabhan's 2002 book Coming Home to Eat. Some claim that benefits from eating closer to home are

that local foods are fresher, require less travel, and support neighboring farms and the local economy.

With the stage set, a new movement in slow, local eating has emerged. Some are seeking to do good by being an “invasivore” – a person that eats invasive species. A group of graduate students, many associated with AIS expert Dr. David Lodge at the University of Notre Dame, started a website, [invasivore.org](http://invasivore.org), dedicated to

promoting the eating of invasive species of many kinds, including, yes, mystery snails, as a way to control their populations and raise awareness of the problems posed by invasive species.

After careful consideration, the attorney decided that the capture of AIS for personal consumption was legal with a few caveats. First, snails or any other AIS should not be transported in water, but transport on ice is acceptable. Second, AIS must be transported in an escape-proof container to comply with AIS laws. Finally, AIS cannot be “transferred,” which means to buy, sell, barter, give, receive, or offer to do any of these exchanges. In the end, the attorney recognized that eating an invasive species was a form of “disposal,” which is the “lawful discharge, deposit, dumping or placing of any invasive species into or on any land or water in a manner that prevents the establishment, introduction or spread of a disposed species.”

Although the poorly studied Chinese mystery snail does not appear to negatively affect native snail populations in Wisconsin, this species has been found to host parasites in other regions of North America and has the potential to alter the microbial portion of lake food webs with its powerful filter-feeding. Therefore, it is important that we stay vigilant in our quest to prevent its spread. So if anyone is interested in trying Chinese mystery snail cuisine as a means for “disposal,” check out [invasivore.org](http://invasivore.org).

May we suggest the mystery snail ceviche or the mystery snail fettuccine?

Bon appetit!



# Supercool(ing) Salamanders

By Matthew J. Rucker, UWSP Student

*It's that time of year again when the leaves have turned vibrant colors and fallen with the increasingly chilly wind, our breath begins to linger on the air, and mornings bring the crunch of the grass underfoot. Fall, for many, means fleeting opportunities to find some of our favorite animals before they enter their seasonal slumber. It is not uncommon to hear a startled clamoring while raking or winterizing our properties, as emigrating wildlife is discovered converging on the warmer microhabitats of our heated, insulated structures. This was how I first encountered my favorite animal: the salamander. My initial shock of seeing this alien-looking, four-limbed, slimy creature under damp leaves in the window well quickly gave birth to a lifetime pursuit of interest and questions.*

“**W**hat the devil? What is that, and what is it doing there,” soon gave way to “How can this creature survive the coming winter? Why is it so far from water? How many are around here?” Join me in uncovering the answers to these and other questions about salamanders in Wisconsin.

We are fortunate to have seven different species of salamanders in Wisconsin – there have been over 550 species identified worldwide! Salamanders are sometimes mistaken for lizards, however, they are amphibians and do not have scales or claws. Salamanders are generally recognized by their wet-skinned, slender bodies, however, most of Wisconsin’s are actually fat-bodied. They have short, rounded snouts and long tails - usually half their total size! These curious creatures are primarily nocturnal, taking advantage of the cooler, more humid hours, as they are highly susceptible to desiccation, or drying out. Salamanders are also secretive, often going unseen while living underground or under a log. If discovered, they will either remain completely still hoping to go unnoticed, or quickly escape to deeper, better cover.

During the spring and fall, when the weather is cooler, salamanders may make their home both on land and in water depending on their natural histories.

## Salamanders in the Water

Many an angler and swimmer have encountered two of our salamander friends – mudpuppies (*Necturus maculosus*) and Eastern newts (*Notophthalmus viridescens*). The mudpuppy is often hooked while fishing (particularly while ice fishing), and is still used as bait in some places to catch larger fish like

*(Continued on page 8)*

**The Red-backed salamander can actually drop its tail to save itself (similar to some lizards).**

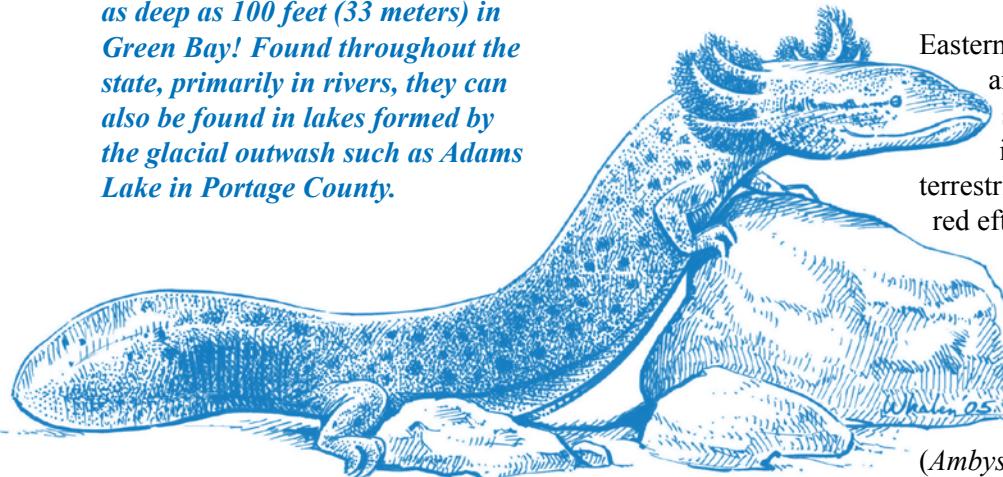
Paul Skawinski



*This salamander doesn't mind a little duckweed on his face as long as he stays wet and cool during the summer months.*



*Mudpuppies have been recorded as deep as 100 feet (33 meters) in Green Bay! Found throughout the state, primarily in rivers, they can also be found in lakes formed by the glacial outwash such as Adams Lake in Portage County.*



*(Supercool(ing) Salamanders, cont.)*

Northern Pike and Muskellunge. The reason we often catch these on our tip-ups is because they are the only amphibians in Wisconsin that do not hibernate! Instead, mudpuppies use the winter months to feed on aquatic invertebrates, like insect nymphs and mollusks. They're taking advantage of this time when their primary predators, the pike and musky, are less active because of decreased water temperatures.

Mudpuppies are able to survive near complete freeze-overs in their lakes because they have three modes of breathing. Their external gills are most efficient, as they conserve energy by either gathering oxygen from water flowing across them or by fanning only their gills instead of moving their entire body to find more oxygen in the water. Mudpuppies can also breathe through their skin, called cutaneous breathing, as well as use a rudimentary lung, which allows them to store enough oxygen (in the short term). They can survive as long as there is an air pocket in the ice, even if the water has become too hypoxic (depleted of oxygen) for its gills to be efficient.

*Stream salamanders can often be seen moving around even after snow has fallen.*

*An ectotherm is any animal whose regulation of body temperature depends on external sources, so-called “cold-blooded” animal.*

Eastern Newts (*Notophthalmus viridescens*) are fully aquatic as adults during the summer, but usually overwinter on land in the same kinds of refuges as other terrestrial salamanders. Juveniles, often called red efts, overwinter on land as well.

## Salamanders on Land

The mole salamanders (ambystomatids) in Wisconsin include the Blue-spotted (*Ambystoma laterale*), Tiger (*A. tigrinum*), and Spotted (*A. maculatum*) salamanders. The Red-backed salamander (*Plethodon cinereus*) and Four-toed salamander (*Hemidactylum scutatum*) are lungless salamanders (plethodontids) that rely on cutaneous breathing, so they need particularly humid environments to survive. All of these salamanders overwinter on land in rodent dens, natural cavities, root holes, or around foundations. However, the juvenile tiger salamanders, also called “waterdogs,” may overwinter for up to two seasons in, you guessed it, the water.

## Surviving the Winter

How can these ectotherms survive the cold winters we have here? Supercooling! Supercooling is the process where accumulated glycogens and lipids (from summer diets) are used to produce antifreeze compounds that lower the freezing point of bodily fluids by increasing the internal concentration of solutes. This process allows them to survive the early seasonal fluctuations where we experience a frost overnight, but still get above 60°F during the day. Supercooling can only lower the freeze point by 3° in salamanders. This adaptation is risky because if a single ice crystal begins to form inside the supercooled organism it will



rapidly freeze and die. If exposed to freezing temperatures just below their supercooling range for a full 24 hours, the salamander cannot recover, and will also die. This is what drives their emigration from their breeding ponds each season, seeking a microhabitat with sufficient warmth and moisture to survive the winter.

## Traveling Terrestrials

One lingering question is how far can they travel away from water? Historically, most of the studies and observations suggested no salamander would travel further than 100 meters (~300 feet) from its breeding pool. Recent studies, however, suggest this is true primarily of the males, but that females will travel up to 350 meters (~1150 feet), presumably to find the most suitable site, though it is unclear how much population densities may play a role in this dispersal range.

Let us raise our mug of cider to these remarkable animals as they hunker down for the coming winter. If we're lucky, we will see them in the coming spring as they emerge from their overwintering sites, and often traverse the lingering snow to their breeding pools! 

Want to know what kind of salamander you saw scuttle under the porch? Check out this salamander identification guide:  
<http://www.discoverlife.org/mp/20q?guide=Salamanders>

### References:

Duellman, William E. and Linda Trueb. *Biology of Amphibia*. 1986. (210). John Hopkins University Press, Baltimore.

Petraska, James W. *Salamanders of the United States and Canada*. 1998. Smithsonian Institution, Washington.

Regosin, Jonathan V. Bryan S. Windmiller, Rebecca N. Homman, and J. Michael Reed. *Variation in terrestrial habitat use by four pool-breeding amphibian species*. 2005. *Journal of Wildlife Management* 69(4):1481-1493.

"Salamander." Wikipedia.org. N.p., n.d. Web 19 Sept. 2013. <<http://en.wikipedia.org/wiki/Salamander>>

Storey, Kenneth B. and Janet M. Storey. *Freeze Tolerance and Intolerance as strategies of winter survival in terrestrially-hibernating amphibians*. 1986. *Comparative Biochemistry and Physiology, A*. 83(4):613-617.

Vogt, Richard Carl. *Natural History of Amphibians and Reptiles of Wisconsin*. 1981. The Milwaukee Public Museum. Milwaukee.

Wells, Kentwood D. *The Ecology and Behavior of Amphibians*. 2007. (148-150). University of Chicago Press, Chicago.

*The only Salamander north of the Arctic Circle is the Keyser Salamander in Siberia. It can tolerate temperatures down to -20°C, as it hibernates in aggregates of 25 salamanders no more than 7 cm below the ground's surface.*

*In spring, one of the first vertebrates to emerge is the salamander. They come from their overwintering sites with one goal in mind – breeding in their favorite (preferably fishless) pool.*

## Did you know how the salamander got it's name?



When the word "amphibian" comes into conversation, most of us think of frogs, turtles, and toads. While these amphibians are extremely well known and very common around our state, have you ever wondered about the salamander? Wisconsin is home to seven species of these creatures and they are much more common than any of us would think! Although there is so much to know about these fascinating creatures, one question many people ask is not for the intimate details of these great species, but how exactly they got their name.

Long ago (first recorded in the 16<sup>th</sup> century), when people would throw logs onto their fires, long slimy creatures would mysteriously appear and skitter out of the flames. After many reports of the actions of these critters, they were finally named salamander! This originates from the Greek word meaning "fire lizard." It was used to describe the attraction salamanders have to fire that was assumed by anyone who witnessed them. To this day, many people still associate the salamander with fire: in current video games, TV shows, and animation! How's that for a hot topic!



# What's In Your Well?

## Well Water Quality Viewer Provides a Window into Wisconsin's Buried Treasure

By Kevin Mesarik, Groundwater Education Specialist, Center for Watershed Science and Education

*Have you ever wondered about the water quality near where you live? For private well owners and others who have a vested interest in groundwater quality there is a new tool developed by the Center for Watershed Science and Education that assists homeowners and community leaders in locating information.*

**B**ecause groundwater originates as rain or snow melt that recharges locally, water quality problems are often a function of the nearby land-use or geology of a region. Typically, water in private wells originates from an area no farther away than 1/4 to 1/2 mile of the well, and the water is generally years old and in some cases, decades old. In areas of the state where there are fractured dolomite aquifers, wells sometimes access water that recharged within days or even hours after large rain events or spring snow melt.

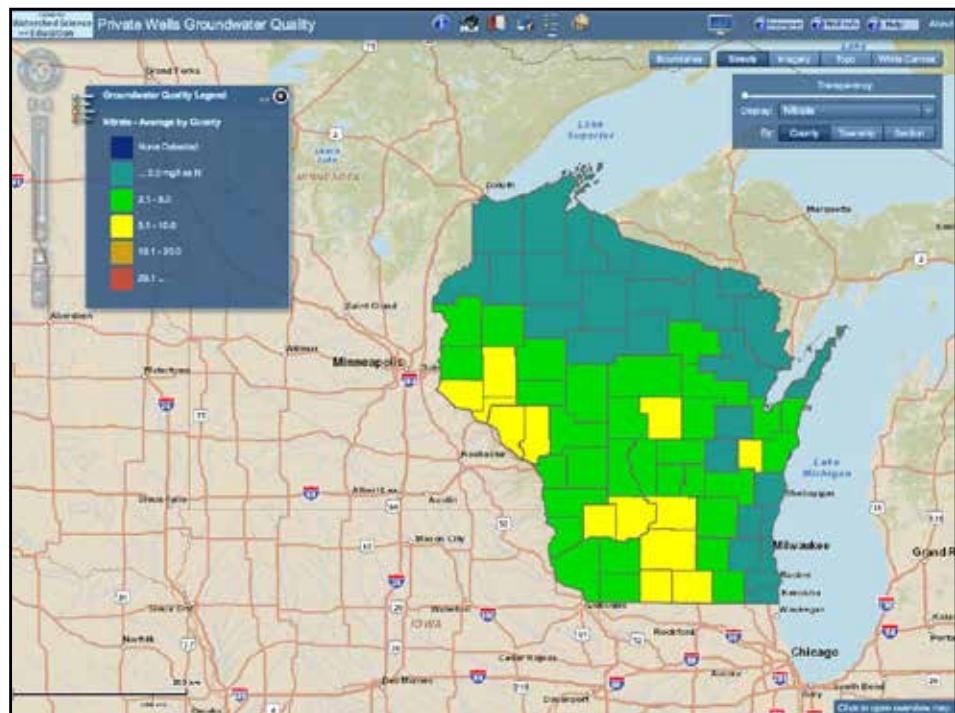
### What's an aquifer?

Groundwater is not an underground lake or river, rather it's contained in what we refer to as aquifers. Aquifers are geologic formations that consist of sand and gravel or various types of rock units (sandstone, dolomite, shale, crystalline).

The size and interconnectedness of the void space within the geologic material determines how much water an aquifer can hold and how quickly the groundwater can move. Groundwater typically moves very slowly, maybe only a foot per day in many aquifers. While in others, such as the dolomite in Eastern Wisconsin, groundwater can sometimes move hundreds of feet since the dolomite generally contains many well-connected cracks or fractures.

For the nearly 900,000 rural private well owners whose water does not have the same testing or oversight as a municipal water supply, little is often known about the quality of their well water. Testing is the only way to determine the types and amount of contaminants in water supplied by a private well. While water quality problems can sometimes be specific to an individual well or even a specific point in time, there are many times when elevated levels are indicative of a broader water quality issue that can only be addressed as a community. Patterns can clearly emerge that show the relationship between geology or land-use and well water quality.

*Often referred to as Wisconsin's buried treasure, nearly 75% of the state's population relies on groundwater to supply water to their homes and businesses.*



*The Well Water Quality Viewer is an interactive mapping tool that allows you to obtain information about groundwater quality in your area.*

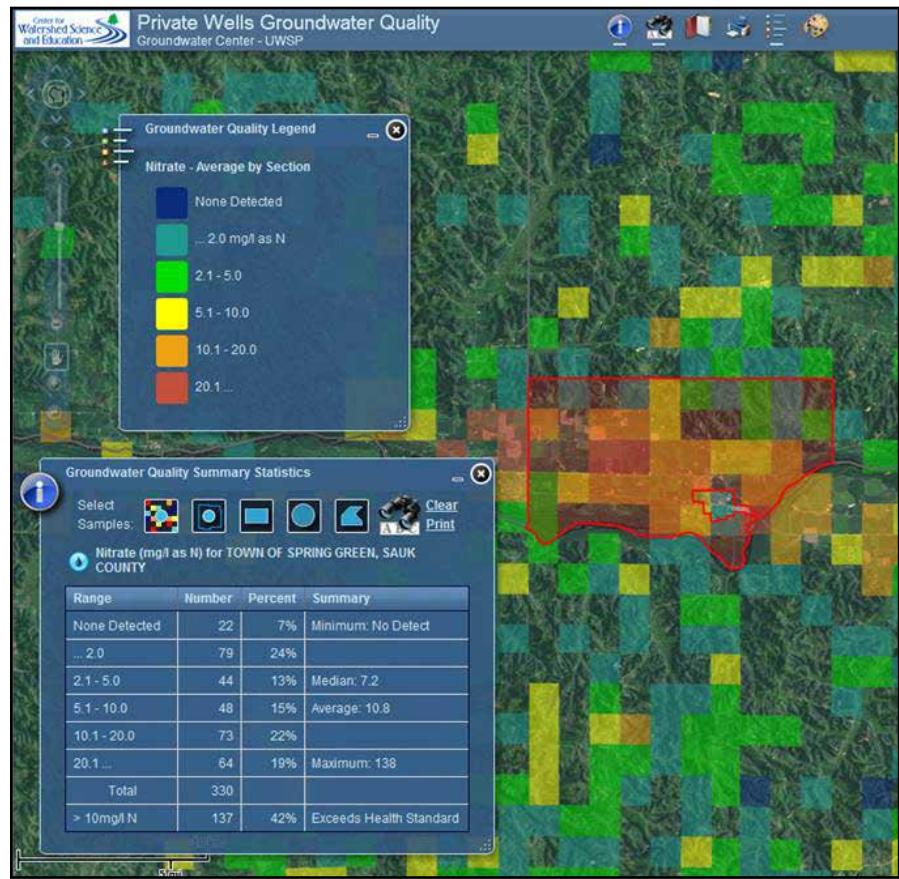


The Wisconsin Well Water Quality Interactive Viewer is an online mapping tool that allows people to obtain information about groundwater quality where they live. Data for the viewer comes mostly from the Central Wisconsin Groundwater Center and the Wisconsin Department of Natural Resources. It relies on large amounts of information to characterize groundwater typically accessed by private wells across the state. This interactive viewer is an educational tool. The data is not detailed enough to obtain information specific to an individual well or property, nor should it be used for such purposes because of the nature of this type of voluntarily submitted information. Any inconsistencies in the data are generally smoothed out by the large amount of data used to generate the mapping viewer.

The viewer generates color-coded maps showing water quality for common water quality constituents. Some of the tests such as nitrate and arsenic are health-related contaminants. Others have no health concerns but may indicate a greater likelihood for taste, color or odor issues to occur in an area. Still others are general water quality tests that show us how things like pH or total hardness vary throughout the state or even in a particular county. Areas that are not color-coded are locations where insufficient data exists to characterize water quality. Another feature of the viewer is the ability to generate groundwater summaries for a specific county, town, section or other user-defined area such as a watershed.

The interactive viewer is very useful in helping homeowners better understand the variety of water quality tests to consider. Community leaders can also use it to see areas where widespread groundwater contamination exists or conversely where there is a lack of groundwater quality information. Knowing more about groundwater quality allows well owners to make better decisions regarding their well water. Information generated by the viewer is just another way to help homeowners make those kinds of choices.

The ultimate goal is for all Wisconsin residents to have access to safe drinking water; encouraging more people to test their well is the first step.



The Center hopes that the Wisconsin Well Water Quality Viewer will help communities target well testing and water quality improvement efforts where they are needed most.

*The viewer was created by David Mechenich of the Center for Watershed Science and Education. If you have questions about how the viewer works or would simply like more information about groundwater quality in Wisconsin contact Kevin Masarik at 715-346-4276. ♡*

*The interactive Well Water Quality Viewer generates color-coded maps for common water quality descriptors. Data can be accessed at the county, town, section, watershed or other user-defined scale.*

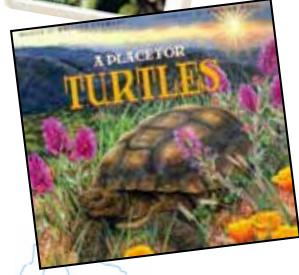
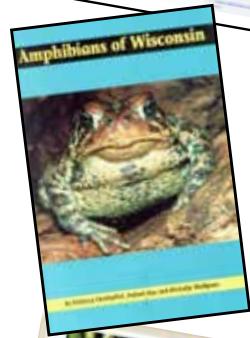
Amy Kowalski



# Keeping Lakes in the Family

## Sharing the Magic Through Stories

Kid stuff



Compiled by Lynn Markham, Center for Land Use Education

*After five years of recommending lake books for you to share with the children in your life, we have built quite a library! This year we're focusing on frogs and turtles that live along our lakes' shorelines, in wetlands and in the shallow water. What's more exciting for a child than catching a frog along the shoreline? Do you have frogs on your shoreline?*

### [Larry, the All-American Bullfrog](#)

*Written by John Haack, Bret Shaw and Travis Balinas. Vocal talent, Larry Meiller  
Produced and created by Travis Balinas.*

In this short, hilarious video, Larry the talking frog describes what kind of shoreline he needs to survive. It can be viewed at [www.uwsp.edu/uwexlakes](http://www.uwsp.edu/uwexlakes)

### [The Frog Scientist](#)

*Written by Pamela S. Turner  
Illustrated by Andy Comins*

In this impressive book Tyrone Hayes, a leading scientist at University of California Berkeley, comes across as both a dedicated scientist willing to work hard in pursuit of his scientific work, but also a regular person quick to laugh and joke with his family and the graduate students he mentors. Researching the effects of atrazine-contaminated water on vulnerable amphibians, Tyrone is surrounded by the "Frog Squad," a group of enthusiastic students pouncing on frogs in ponds or collecting careful data in the lab. Sharp, vivid photographs alternate between portrayals of the scientists—at work in field and laboratory settings, as well as relaxing at lab picnics and at home—and the frogs they study. Ages 8+

Watch a short video of Tyrone Hayes "Frogs: The Thin Green Line"  
[www.youtube.com/watch?v=nBbkwlGM7X0](http://www.youtube.com/watch?v=nBbkwlGM7X0)

### [Wisconsin Frog Identification](#)

Here is a quick and easy online resource that will help you identify Wisconsin's frogs (and the American toad) - many of them with short videos including their calls.  
<http://dnr.wi.gov/topic/WildlifeHabitat/herps.asp?mode=table&group=Frogs>

### [Amphibians of Wisconsin](#)

*Written by Rebecca Christoffel, Robert Hay and Michelle Wolfgram*

A 44-page full-color guide of the 19 frogs and salamanders that are native to the state. The book has a very informative introduction section including the impacts of people, a breeding calendar, species accounts with range maps, a user-friendly identification pie-chart key and 49 beautiful photographs. Available from the DNR at <http://dnr.wi.gov/topic/WildlifeHabitat/HerpBooks.html>

### [Wisconsin Frogs: Places to Hear Frogs and Toads Near Our Urban Areas](#)

This book includes a CD of Wisconsin frog and toad calls, color photos and maps, plus 11 recommended parks and nature areas. Although this is out of print, there are used copies on Amazon.com, and it can also be found in many libraries across Wisconsin.

### [A Place for Turtles](#)

*Written by Melissa Stewart  
Illustrated by Higgins Bond*

Turtles have lived on Earth for more than 220 million years, but modern environmental stressors make their existence in several regions of the world a tenuous one. Colorful and highly detailed acrylic illustrations accompany topics such as pollution, invasive species, and ecosystem destruction. While the topic of the book is clearly turtles, the narrative raises points of conversation on a host of environmental issues and will get young minds thinking about the interconnectedness of organisms, ecology, and the impact of human actions on the world around them. Ages 6-10

## Frogs! Strange and Wonderful

Written by Laurence Pringle

Illustrated by Meryl Henderson

Budding herpetologists will snap this book up faster than a frog can catch a fly. The author recognizes what will intrigue children as well as what they need to know to understand the subject. An enjoyable note describes the author's close encounters with frogs as a child, as a father, as a wildlife photographer, and as a neighborhood ecologist acting locally to protect and even create frog habitats.

Ages 7+

*"This is a good book for kids my age.*

*Lots of facts."* Tate, Age 8

## Frogs: The Thin Green Line

Written, produced and directed by Allison Argo

Frogs have been living on this planet for more than 250 million years, and over the centuries, evolved into some of the most wondrous and diverse creatures on earth. Today, however, all their remarkable adaptations and survival tactics are failing them. To learn more about why and what you can do to help, watch this free, one-hour movie at [www.pbs.org/wnet/nature/episodes/frogs-the-thin-green-line/introduction/4763/](http://www.pbs.org/wnet/nature/episodes/frogs-the-thin-green-line/introduction/4763/)

## Changes in Amphibian and Reptile Communities in Wisconsin

Written by Gary S. Casper

Chapter 20 The Vanishing Present: Wisconsin's Changing Lands, Waters and Wildlife

Gary Casper, who served as the regional herpetologist at the Milwaukee Public Museum for over 20 years, provides a summary about how changes across the Wisconsin landscapes are affecting frogs, salamanders, turtles and snakes. He describes how the populations and species of frogs have changed in the last 100 years on the Apostle Islands compared to Milwaukee County, and predicts future changes.



## Tadpoles and Frogs

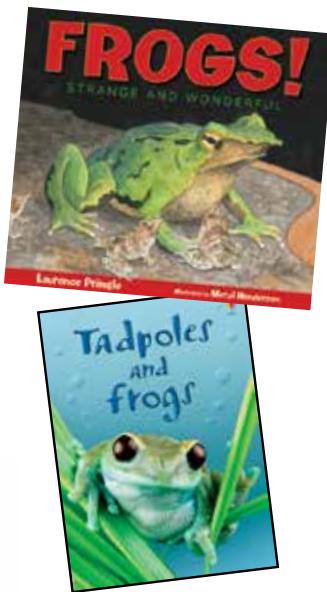
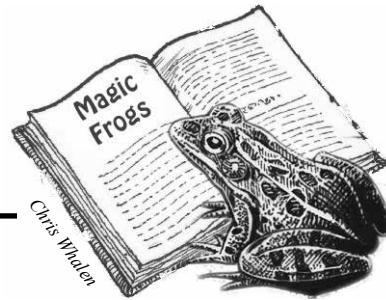
Written by Anna Milbourne

Illustrated by Patrizia Donaera & Zoe Wray

The information in this book is captivating - like the World Book Encyclopedia for little ones - and the illustrations are beautiful. It will help to instill a love for frogs and nature.

Ages 4+

*"I liked the pictures and the part about the frogs sticking out their butts."* Tessa, Age 4



## How Pesticides Affect Frogs and People

This colorful and informative UW-Extension fact sheet is featured on the next page and can be viewed and printed as a poster from [www.uwsp.edu/cnr-ap/clue/Documents/Water/HowPesticidesAffectFrogsandPeople2.pdf](http://www.uwsp.edu/cnr-ap/clue/Documents/Water/HowPesticidesAffectFrogsandPeople2.pdf)

Adult  
stuff

## Want to help find out how frogs are doing in your area?

If you'd like to get involved in monitoring frogs in your area – with or without a little person in tow – you can join the Wisconsin Frog and Toad Survey or a recent frog and toad phenology project. Look online at <http://wiatri.net/inventory/frogtoadsurvey/Volunteer/googlemaps/RouteFinder.cfm> and contact Andrew Badje at the Wisconsin DNR at [WFTS@wisconsin.gov](mailto:WFTS@wisconsin.gov) or 608-266-3336. The Wisconsin Frog and Toad Survey is a citizen-based monitoring program to determine the status, distribution, and long-term population trends of Wisconsin's twelve frog and toad species. Recent results from the Wisconsin Frog and Toad Survey are available at <http://wiatri.net/inventory/frogtoadsurvey/SurveyInfo/summaries.cfm>



# Q & A Lake Districts

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

## Q: Can a lake district borrow money?

**A. Yes.** Like any other local unit of government in Wisconsin, lake districts are granted the power to borrow money. It is not often that a lake district requires the amount of money commonly associated with issuing public bonds. More commonly, districts looking to finance a capital project work with the Board of Commissioners of Public Lands (BCPL), a state agency that lends to local governments and school districts. Lake districts can apply for up to \$10 million annually, and fixed interest rates vary from 2.5% to 4.5%, depending on the length of the loan. Unlike public bonds, BCPL loans have a relatively simple application process and timeline. Interest charged on BCPL loans is reinvested in public school libraries across the state. Last year the agency yielded over \$30 million for school libraries. Learn more on their webpage: <http://bcpl.wisconsin.gov/>

For more information on lake districts, see *People of the Lakes: A Guide for Wisconsin Lake Organizations*, [www.uwsp.edu/cnr/uwexlakes/districts](http://www.uwsp.edu/cnr/uwexlakes/districts).

CALENDAR

### December 31, 2013 – Application deadline for Lake Protection Grants

The applications deadline for 2013 lake protection grants has been extended until the end of the year. For more information contact your DNR Lake Coordinator or go to <http://dnr.wi.gov/lakes/grants/>

### January 8-9, 2014 – 2014 Wisconsin Ground Water Conference, Wisconsin Dells

For more information: [www.wisconsinwaterwell.com/convention.html](http://www.wisconsinwaterwell.com/convention.html)

### January 26-29, 2014 – Midwest Fish and Wildlife Conference, Kansas City, MO

The 74<sup>th</sup> annual conference will attract over 800 biologists and students from state, federal and tribal natural resource agencies across the 12 Midwestern states. Highlights include: over 400 technical talks, poster displays, plenary sessions, networking opportunities and social events.

For more information: [www.midwestfw.org](http://www.midwestfw.org)

### February 1, 2014 – Application deadline for Lake Planning and AIS Control Grants

For more information contact your DNR Lake Coordinator or go to <http://dnr.wi.gov/lakes/grants/>

### February 18-20, 2014 – Wisconsin Wetlands Association Conference, La Crosse

This year's conference theme is *Discovering Wetlands*. Gather with wetland scientists, managers, and other professionals and students from the Midwest to learn new identification and assessment approaches and techniques; hear about approaches to incorporating wetlands into community planning; and discuss the latest in wetland science, management, restoration, and protection issues. The early bird deadline is January 10, 2014.

For more information: [www.wisconsinwetlands.org/2014conference.htm](http://www.wisconsinwetlands.org/2014conference.htm)

### April 3, 2014 – Early bird Deadline, Wisconsin Lakes Partnership Convention

For more information: [www.uwsp.edu/uwexlakes/conventions](http://www.uwsp.edu/uwexlakes/conventions)

### April 24-26, 2014 – 36<sup>th</sup> Annual Wisconsin Lakes Partnership Convention, Stevens Point

Agenda details and online registration will be available in January 2014. Register before the April 3<sup>rd</sup> early bird deadline and save your hard-earned cash!

For more information: [www.uwsp.edu/uwexlakes/conventions](http://www.uwsp.edu/uwexlakes/conventions)



## Lake Tides -- 905032

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

NON-PROFIT ORG  
U.S. POSTAGE  
PAID  
PERMIT NO. 19  
STEVENS POINT, WI

Volume 38, No. 4  
Fall/Winter 2013



College of Natural Resources  
University of Wisconsin-Stevens Point

### IN THIS ISSUE

Back to the Point	
2014 Lakes Convention.....	1-3
CLMN - History to Future.....	4
WI Lake Leaders Institute.....	5
Eating Invasives.....	6
Supercool(ing) Salamanders.....	7-9
DYK how the salamander got its name?.....	9
What's In Your Well?.....	10-11
Keeping Lakes in the Family.....	12-14
Lake District Q&A.....	15
Calendar.....	15

### Wisconsin Lakes Partnership



Published Quarterly

Web site: [www.uwsp.edu/cnr/uwexlakes](http://www.uwsp.edu/cnr/uwexlakes)  
E-mail: [uwexlakes@uwsp.edu](mailto:uwexlakes@uwsp.edu)  
Phone: 715-346-2116  
Editor: Amy Kowalski  
Design & Layout: Amy Kowalski  
Regular Contributors: Patrick Goggin, UWEX & Carroll Schaal, WDNR  
Contributing Editors: Erin McFarlane & Eric Olson, UWEX  
Illustrations by: Carol Watkins & Chris Whalen

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

Printed on recycled paper with vegetable-based ink.

## Reflections

*H*istory abounds in examples of that continuity of life, the realization of which is necessary to give the reader a personal hold on the past and a right judgment of the present. For the roots of the present lie deep in the past, and nothing in the past is dead to the man who would learn how the present comes to be what it is.

~ William Stubbs

