



WINGRA WATERSHED NEWS

Promoting a healthy Lake Wingra through an active watershed community

SPRING 2025

As this newsletter is being written, spring is moving forward at a pace that always amazes me. Each day brings a new wildflower in bloom and a new bird arriving on migration. Bloodroot (*Sanguinaria canadensis*) is one of the earliest blooming native wildflowers around Lake Wingra that marks the beginning of our growing season. Bloodroot is named after the dark red color inside its stem and roots. Its white flower opens with the sun each day and its leaves protectively curl around its stem until the flower is in full bloom. Keep a look out for these beauties before their flowers disappear. – Sarah Pabian



Zebra Mussels and the Future of Lake Wingra

By David Ortiz, Board Member

During the yearly removal of docks from Wingra Boats (in Wingra Park) in October 2024, zebra mussels were found for the first time within Lake Wingra. Surprisingly, it took nearly 15 years for zebra mussels to reach Lake Wingra—especially since Lake Monona is just half a mile away. “I was saddened when I pulled up the pier section and saw the mussels, but not surprised as I see them on our piers in Lake Monona and Mendota” said Tyler Leeper, the president of Wingra Boats. Tyler also mentioned that he hoped “Lake Wingra would remain the undisturbed gem of Madison” while expressing concern for what

this new disturbance will mean for the cherished lake.



Juvenile zebra mussels from Lake Mendota. Photo by David Ortiz

When zebra mussels invade a new lake, there is a wide range of possible ecological, environmental, and economic effects. However,

predicting how those effects will manifest specifically in Lake Wingra is nearly impossible, especially when taking into consideration how zebra mussels will interact with other aquatic invasive species (AIS) already present (Eurasian watermilfoil, curly leaf pondweed, and purple loosestrife).

One attribute that is working in favor of Lake Wingra is the lack of hard lake bottom, which zebra mussels prefer. We will likely only see dense clusters of adult zebra mussels (~8 mm in length) on the few areas of gravel and docks. However, the dense aquatic plant community in Lake Wingra may (Continue on page 5)

Welcome to our New Executive Director

By Sarah Pabian

We just hired an Executive Director, which the organization has been without since 2021. Here is a little background on Sarah Pabian, in her own words:

I am excited to be selected as the new executive director of FoLW. I have lived in the Lake Wingra watershed for over 10 years and am passionate about maintaining the health of the lake and surrounding lands for the benefit of the environment and our enjoyment.

I come from a science background with a PhD in ecology and over 20 years of community and school outreach experience.

I am a UW alumna and returned to Madison 10 years ago to raise my family. I am thrilled to have the opportunity to use my background and interests to benefit the environment and community that I call home.

Current threats to our lake include chloride, phosphorus and invasive species, and I look forward to using my skills in science and research to understand these threats and collaborate with other organizations to plan the best ways to monitor and manage our watershed.

Our organization's goals include improving everyone's understanding and enjoyment of the lake. I am excited to start working on educational outreach opportunities at local schools and at community events.

Through all our activities, I will strive to empower community members through volunteer opportunities and through educational opportunities to learn how everyone can help improve the watershed.

To introduce myself to the community, I will be offering

several "Nature Hikes with the Executive Director" through spring. These hikes will be a casual way for me to find out what our community members value about the Lake Wingra watershed and will give me a chance to share what I know about birds, plants, Lake Wingra ecology.

See dates, times and location in events table on page 8.



Photo by Addie Gear

Don't Judge a Lake by Its Color: Understanding What Water Clarity Really Means

By Kyungdoe "Doe" Han, Board Member

Most people assume that a crystal-clear, blue lake is the ultimate sign of health, and it certainly looks inviting. But it's easy to mistake clarity for purity.

In Wisconsin, we often hear complaints about lakes and rivers that appear brown, murky, or

"dirty", with people insisting the water must be cleaned up.

However, this reaction overlooks important ecological context. Not all clear lakes are healthy, and not all brown lakes are dirty. Water clarity can result from many factors, some natural, others not.

Before jumping to conclusions based on just clarity and color alone, it's important to understand what's actually happening in the lake. True lake health comes from ecological balance, not just how clear the water looks.

Clear Water Doesn't Always Mean a Healthy Lake

Numerous substances contribute to a lake's color and haziness, from dissolved ions to organic molecules released by decaying vegetation. These natural and human-made components can reduce transparency, but don't necessarily mean the water is unhealthy.

The real danger lies in assuming that clear water means clean water. A lake may appear pristine but still harbor invisible pollutants, such as fertilizer runoff. Clear water can contain harmful contaminants like bacteria, heavy metals (such as mercury), or synthetic chemicals that don't affect water color. These invisible threats pose serious risks to both human and ecological health.

On the other hand, cloudy or colored water isn't automatically a sign of pollution. Many healthy lakes have naturally dark or tea-colored water due to tannins from



Lake Wingra. Photo by Doe Han

surrounding wetlands or forests. In these cases, the coloration is part of a long-standing, balanced ecosystem.

Why Do Lakes Have Different Clarity and Colors?

Lakes come in a spectrum of blues, greens, and browns. And each color tells a story about what's in the water. A lake's color is shaped by a mix of dissolved substances and suspended particles, each revealing clues about its biology, chemistry, and surroundings.

Clear blue water generally indicates low levels of algae and sediment. Many deep, nutrient-poor lakes appear blue because there's little material to cloud the water. The blue hue comes from the way water absorbs and scatters light.

However, an important caveat: if a lake that once had more color or life suddenly becomes too clear, it may signal a problem, such as invasive mussels filtering out the base of the food web.

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Volunteer with Friends of Lake Wingra

We could use volunteers to:

- Grow our board of directors
- Plan fundraising events
- Maintain rain gardens
- Help with web and poster design
- Assist in marketing and social media strategies

Let's chat! We can also discuss other opportunities. info@lakewingra.org

Friends of Lake Wingra Board Meeting

We love to see new faces at our board meetings! Anyone is welcome to attend. Have something you want to talk about? Email us at least a week in advance so it can get on the agenda.

When: Second Wednesday of the month from 7:00-8:00 pm.

Where: Sequoia Library, check with front desk for the room location.

Email info@lakewingra.org if you want to attend

Become a Friends of Lake Wingra Board Member

We're on the lookout for experience in:

- Nonprofit law
- Accounting and budgeting
- Fundraising
- Youth education
- Marketing/communications
- Business-nonprofit partnerships
- Information technology
- Grant writing

A Goldfish Named Henry David Thoreau

By Sarah Pabian



Photo by Sarah Pabian

After school last September a group of students from Thoreau Elementary were playing in “the creek” behind school. “The creek” is really an open stormwater channel that eventually flows into Lake Wingra. It is lined with boulders and surrounded by a strip of trees, shrubs and plants that give it a wild feeling. It is a very popular space for outdoor free play after school.

On this day, the water was getting low, leaving shallow, disconnected puddles along its course. The kids often find small fish trapped in these puddles, but to their surprise, they found a rather large goldfish.

Parents often arm their children with rubber boots, dip nets and buckets, so they were well prepared to execute a rescue mission for the trapped goldfish that would certainly die as the water continued to dry up. The captured goldfish was subsequently transferred to a holding container while the adults joined in to decide what to do with the fish.

The fish was eventually named Henry David Thoreau and went home with a loving family. Henry David is still living happily today in a fish tank in their home.

It was an exciting event those kids will always remember, but even the kids knew that finding a goldfish in the creek was not natural and that someone had to have released it into the water.

The story highlights the problem of releasing exotic fish into natural bodies of water. There are many alternatives to releasing unwanted pets. They can be given to local pet stores for resale, given to another person, humane society, or organization, or, if no other options are available, can be euthanized by a veterinarian or fishery biologist.

For more options see [USGS recommendations](#).

Released pets often die, but those that don’t can cause lots of problems. According to the US Geological Survey (USGS), releasing exotic fish into the wild isn’t good for the environment. If released fish survive and reproduce, they can be nearly impossible to control and eradicate. They can compete with or feed on native species, as well as infect native fish with exotic parasites or diseases.



Photo by Sarah Pabian

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serve as a nursery for juvenile zebra mussels. As a community, we can help protect Lake Wingra by staying vigilant for zebra mussels while enjoying the water, ensuring all recreational equipment follows the Clean Boats, Clean Waters program's recommended protocols ([link](#)), and reporting observed changes we notice in the lake to the Wisconsin Department of Natural Resources.

Zebra mussels are small freshwater species originating from Eastern Europe and Western Asia. However, they were introduced into North America in the late 1980s. With few natural predators in North American waters, zebra mussels have spread rapidly and unchecked, invading new lakes and rivers.

Female zebra mussels have been estimated to produce at least 30,000 eggs a year. Zebra mussels have been documented to reach densities of 20,000 individuals per square meter within the Great Lakes soon after their introduction before their population stabilizing at approximately 2,000 mussels per square meter. This similar pattern has occurred in the Zebra mussel population within the Yahara chain of lakes, with them being first identified in 2015; with their populations reaching high densities before transitioning to a relatively small but stable population.

Zebra mussels are ecosystem engineers as they can alter how a whole lake ecosystem functions.

Each zebra mussel can filter up to 402 ml of water per hour and have been accredited with increasing the water clarity of Lake Mendota by almost a meter. However, they also had several other serious economic and ecological consequences while doing so. Zebra mussels can concentrate nutrients on lake bottoms through their excrement



Zebra mussels attached to UW-Madison Hoofers dock on Lake Mendota. Photo by David Ortiz

which, when paired with more light reaching further into the water column, can elevate macrophyte (aquatic plant) growth. There is also strong evidence that small concentrations of zebra mussels do not increase water clarity but can increase access to nutrients for elevated algae growth.

Zebra mussels have been credited with decreasing dissolved oxygen concentration throughout a lake and causing shifts in entire aquatic food webs. Altering food webs means changing fish, zooplankton, benthic invertebrates, and native mussel

community composition, their abundance, and how they interact with each other.

Zebra mussels are also infamous for clogging hydroelectric and drinking water plants, damaging boats, and leaving beaches with sharp, feet-cutting shells.

Wisconsin has spent approximately 12 million dollars, between 2021 and 2024, on educating Wisconsinites about the risks AIS present, monitoring programs, and conducting population management. Unfortunately, zebra mussels and other AIS are efficient hitchhikers on boats, trailers, and recreational equipment.

With great timing, the Center for Limnology, in collaboration with Clean Lakes Alliance, piloted a zebra mussel monitoring program throughout the Yahara lakes this last year. They also documented the presence of zebra mussels in Lake Wingra. Friends of Lake Wingra hopes to collaborate on the monitoring program this year to establish population estimates, address any questions you may have about zebra mussels (or connect you with someone who can), and share updates on our findings to keep the community informed and engaged in protecting Lake Wingra.

(This article was shorted for the newsletter. To see the entire article and supporting references, please go to www.lakewingra.org/blog).

Continued from page 3, Han

Brown lakes often get their color from tannins, natural organic compounds released as leaves, peat, or pine needles decompose in upstream wetlands. These “tea-stained” waters are common in forested or boggy regions and are usually completely harmless. In fact, the richness of the brown shade often reflects the amount of wetland in the watershed. A dark, coffee-colored is likely in great ecological health.

Green water typically comes from algae. Specifically, microscopic phytoplankton and cyanobacteria that contain chlorophyll, the green pigment responsible for photosynthesis. A light green tint can be normal and even beneficial, supporting a vibrant aquatic food web. But when the green becomes vivid, soupy, or scummy, it usually means a nutrient overload (often from phosphorus), fueling a harmful algal bloom. In summer, these blooms may appear as thick blue-green paint-like slicks caused by cyanobacteria. These can be toxic to both people and pets, so they’re one color you don’t want to ignore.

When lake water appears cloudy or opaque, it's usually due to high turbidity, lots of suspended particles like silt, clay, or organic debris. After storms, sediment-laden runoff can turn a lake muddy brown, while wind or boat traffic in shallow lakes can stir up bottom

sediments and temporarily reduce clarity.

Sometimes, lakes look like chocolate milk following a rainstorm. It is not dangerous, but a sign of erosion and possible ecosystem stress. Suspended sediments can smother fish eggs, block sunlight, and carry attached pollutants like phosphorus into the water. Still, some lakes are naturally turbid, particularly those influenced by clay-rich inflows or high microscopic life.

How Do We Measure Water Clarity?

The simplest tool is a Secchi disk, a circular disk (approximately 8” in diameter) painted in black-and-white quadrants. It’s attached to a rope or pole and lowered into the water until it vanishes from sight. The depth at which the disk is no longer visible is the Secchi depth, which indicates how clear the water is. The deeper you can see the disk, the clearer the water.



Secchi Disk submerged in water.

Turbidity, a measure of water cloudiness, is usually measured with an electronic turbidity meter or sensor, which shines light through a sample and detects how much is scattered. High turbidity

means the water is more cloudy or muddy.

To specifically gauge how much algae is in the water, scientists often measure chlorophyll-a. Chlorophyll-a is the primary green pigment in algae and aquatic plants. Higher chlorophyll means more algae in the water.

When “Too Clear” Is a Warning Sign

Clear water can sometimes signal ecological trouble. One of the most striking examples is the invasion of zebra mussels and their close relatives, quagga mussels (see article by David Ortiz). These small, invasive mollusks are incredibly efficient filter feeders: each one can filter over a liter of water per day, removing plankton and suspended particles. As they proliferate, they drastically increase water clarity, not by improving water quality, but by stripping the base of the aquatic food web.

Other stressors can also degrade lake quality, even if the water looks clear. For example, the prolonged use of road salts can raise chloride concentrations in nearby lakes. High chloride levels disrupt aquatic plant communities and can lead to the collapse of zooplankton populations. Without these tiny grazers, algae can proliferate unchecked, turning the water murky despite its previous clarity.

Peter Gascoyne of Friends of Lake Wingra has been monitoring chloride trends for years. “Lake

Wingra’s chloride concentration is highly anomalous,” he warns, “and the rising trend compared to other lakes is very concerning.” His ongoing research into lake water chemistry calls for continued investment in monitoring and protecting our urban lakes from invisible but significant threats.

What Can We Do as a Community?

Don’t judge a lake by its color alone. When in doubt, check with local environmental officials, but chances are, the lake is just doing what it’s always done, and supporting a healthy ecosystem.

Learn to read green water wisely. A little green in the summer isn’t unusual. It means algae are present, which form the base of the aquatic food web and support fish and zooplankton. However, if the water

turns extremely green, smelly, or scummy, it may signal excess nutrient pollution or a harmful algal bloom (HAB). If your lake looks like pea soup or has blue-green, paint-like streaks, stay out of the water, keep pets away, and report it to the authorities. Cyanobacteria, the cause of many HABs, can produce toxins dangerous to humans and animals. In the long run, addressing nutrient pollution, such as runoff from fertilizers, requires community-wide efforts.

If every rainfall turns your lake a chocolate brown, it’s likely sediment. This indicates erosion somewhere in the watershed.

Communities can take action by installing rain gardens, using sediment-control fencing at construction sites, and restoring streambanks to reduce soil loss. Planting native vegetation along

shorelines and drainageways is another powerful way to filter out sediment before it reaches the lake. Reducing stormwater runoff helps keep the lake clearer, and also cuts down on pollutants like phosphorus that often hitch a ride on soil particles.

Limnologically speaking (that’s the scientific term for the study of lakes), maintaining the right chemical and biological balance in lake water is essential for a healthy ecosystem. Friends of Lake Wingra works continuously to protect and improve lake water quality, among many other efforts that benefit the lake and its surrounding community.

(This article was shortened for the newsletter. To see the entire article and supporting references, please go to www.lakewingra.org/blog).

Lake Water Appearance	Primary Causes	Scientific Definitions
Clear, blue (or aqua)	<ul style="list-style-type: none"> • Low algae • Low suspended sediment • Limestone or white lakebed • Extensive bivalve activities 	Oligotrophic Lake ¹
Brown or tea-colored	<ul style="list-style-type: none"> • High dissolved organic matter • Can often be seen in lakes near forests and wetlands 	Dystrophic Lake ²
Green or pea-soup	<ul style="list-style-type: none"> • High algae • High phosphorus and nitrogen • Pea-soup color/texture signals an algae bloom 	Eutrophic Lake ³
Cloudy or murky	<ul style="list-style-type: none"> • Suspended particles (sediment, debris) • Boat waves stirring the lakebed • Microscopic plankton/detritus 	

¹ High oxygen, low plant nutrients, low productivity
² Low oxygen, high dissolved organic matter but low plant nutrients
³ Varying to low oxygen, high plant nutrients, high productivity

Upcoming Events

Lake Wingra Shoreline Clean-up

- Come help clean the shoreline of Lake Wingra in a Wingra Boats canoe or bring your own watercraft!
- Saturday, April 26, 10 am – noon
- Wingra Boats, 824 Knickerbocker St.
- See <https://lakewingra.org/lake-cleanup-day> for more info and to sign up for a boat

Nature Hikes with the Executive Director

- Wednesday, May 7, 8:30-9:30 am, Glenwood Children’s Park (meet at the south end of the park, with parking available on Cross St. and Glenwood St.), “Wildflowers and Erosion”
- Thursday, May 15, 8:30-9:30 am, Arboretum parking lot on the corner of Monroe St. and Arbor Dr., “Warblers and Springs”
- Sunday, May 18, 8:30-9:30 am, Edgewood (meet at the Vilas Park Parking lot at the end of Edgewood Ave.), “Bird songs and Marshes”
- Check our [Facebook](#) and [Instagram](#) for updates in case of bad weather.

First Friday

- Look for us at *First Friday Music by the Water*. We will have t-shirts for sale and a kid-friendly activity.
- Friday, June 6, 5:00 – 8:00 pm
- Wingra Boats, 824 Knickerbocker St.

Mission

We promote a healthy Lake Wingra through an active watershed community.

Become a Friend

Send your tax-deductible contribution using our address:

Please make checks to: “Friends of Lake Wingra”

Or visit our website and click “Donate”

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