

WINGRA WATERSHED NEWS

Promoting a healthy Lake Wingra through an active watershed community.

Fall 2017 • VOLUME 14 • ISSUE 3

Fall Leaf Control Study Continues in the Lake Wingra Watershed

By Roger Bannerman

The Friends of Lake Wingra (FoLW) have been cooperating with the city of Madison for over four years to determine how selected leaf control efforts in the fall can reduce the amounts of phosphorus reaching Lake Wingra. Results from the fall of 2016 are especially exciting. By increasing the leaf pickup to once a week, the potential reduction of phosphorus is about 70 percent. A high vacuum street cleaner and a vacuum truck collected the leaves (Figure 1). Although this frequency of pickup is probably not practical, it demonstrates the potential of improving leaf collection efforts. These results were made possible by hard working groups of volunteers and the cooperation of the City of Madison.



Figure 1. Vacuum assisted equipment used to do weekly leaf pickup in the Wingra study area.



Figure 2. Badger Volunteers weighing leaves for leaf control surveys.

Two types of surveys were conducted by volunteers to document the benefits of improved leaf control. The first survey estimated the weight of leaves in the street. Undergraduate students (Badger Volunteers) from UW Madison collected leaves in select streets and weighed them in leaf bags (Figure 2). Pictures taken at each site provided a correlation between the weight of the leaves and each weight's visual appearance (Figure 3). A volunteer team with FoLW conducted a survey each week at the test site to determine the weight of the leaves in the streets by referencing the pictures. To make the study useful, the FoLW surveys at the test site were complemented by surveys done (continued on page 2)



Figure 3. Calibrated weight of leaves in curbs – 5 lbs., 10lb., and 16 lbs. respectively.

(continued from page 1)

by the city of Madison at a control site outside the Wingra Watershed where the leaves were not collected until the end of the fall.

Last fall the homeowners in the Lake Wingra test area had a very high level of leaf control, but this fall we are documenting the opposite condition. The city will not pick up any leaves until the end of the fall. This is a lot to ask from our neighbors and we want to compliment them on their patience. Just as the comparison with the no control in the 2016 fall study, it is important to understand the leaf accumulation with no control at the Lake Wingra study site.

The studies of leaf control will continue until we have an appreciation of the benefits of a range of leaf control programs. However, enough data has

been collected to demonstrate how homeowners can help reduce the impact of leaves in the fall. Some of this data is being collected at four other study sites outside the Lake Wingra watershed, but still in the City of Madison. Collection of water quality samples from these other sites clearly shows the importance of the leaves in the street. It appears rain water running through the leaves in the street leaches some of the phosphorus from the leaves. **These leaves in residential streets appear to be a more important source of phosphorus than any other source of phosphorus in residential areas.** Homeowners can help reduce the amount of phosphorus reaching Lake Wingra in the fall by keeping leaves out of the street and storing them on the terrace (Figure 4).



Figure 4. Before and After photo of leaves put on the terrace from the curb.



We Have a Wish List!

As always we appreciate the support, donations, and words of affirmation our followers bestow upon us. We are now functioning as an independent 501(c)(3) organization, and your financial support is more important than ever. Please consider making an end of year contribution now!

As we continue to strengthen our organizational capacity, we are looking for anyone willing to donate new or used (must be in good condition) items to help enhance our event experience. Please contact our program manager Casey Hanson at volunteer@lakewingra.org if you would like to donate one of the following items:

- Two (2) tablets
One tablet will allow us to receive donations and sell our FoLW merchandise via debit/credit card transactions. The second tablet will help us take a step towards going paperless at events by allowing people to sign up for our newsletter online. By not having to manually enter people into our system after the event, this frees up our staff and volunteer time to do more outreach and programming.
Each tablet must have the following features:
 - 7-inch minimum screen
 - Sim-card slots
 - Internet access (via WiFi or cellular data network)
 - iOS version 7.0 and later, or Android version 4.0 or later, and Windows 8.1
 - 3.5 mm headset jack with microphone
- Two (2) six-foot white folding tables
We will use these tables at our events to display our games, info, and other outreach materials.
- Two (2) sturdy folding chairs
We will use these chairs for our volunteers to sit at during events.

Worth One's Salt: Reducing Salt Application to Protect Our Lakes

By Casey Hanson

Have you heard the superstition that spilling salt is bad luck and that if you did, throwing a pinch over your left shoulder should help avert any evil omens you've just incurred? Maybe they were talking about road salt application the whole time! Let us explain. For years, a majority of cities applied road salt and now the long-term consequences are catching up to us. Now, we are at present day with a bad omen of high chloride levels threatening our health, infrastructure, and aquatic life. So what's the pinch of salt we're planning to throw over our left shoulder? You'll have to keep reading!

In the Lake Wingra Watershed nearly half of the chloride that enters the Lake is from commercial, multifamily, or institutional properties. These types of properties typically utilize commercial contractors for winter snow removal.

Therefore, it requires a collaborative effort between many parties (e.g., winter maintenance professionals, the City, FoLW, property managers) to identify the best ways to reduce winter salt use. From December 2015 – March 2017 Friends of Lake Wingra worked on a road salt reduction project to better understand how rock salt application levels could be reduced through (1) teaching private salt applicators about appropriate salt application rates, and (2) utilizing brine as a pre-treatment. If you are unfamiliar with brine, brine solutions are effective down to 15-17°F and under the right conditions prevent snow or ice from bonding to the pavement. This increases plowing efficacy; when more snow is removed, less salt is needed.

Looking at our brine observation study here's what we found:

KEY FINDINGS

- FINDING 1** In general, brine applications reduced salt application by one-third to half the amount.
- FINDING 2** Brine combined with high traffic is especially effective, but only to a point. Heavy traffic can still cause ice to form.
- FINDING 3** Brine performed significantly better on parking lots with good surface conditions. Older, cracked blacktop adsorbs brine reducing its efficacy.

the creation of a video to promote this project and research with the Madison Metropolitan Sewerage District. We will also be increasing awareness about the City of Madison's new salt applicator certification program. It is a voluntary program, open to all in Dane County. This program encourages winter maintenance professionals to use the least amount of de-icing material necessary in order to keep parking lots, roads, sidewalks and driveways safe.

Ways You Can Help Reduce Salt Use:

1. Spread the word about the City of Madison's new salt applicator certification program. Think of any companies or property owners you may know or do business with frequently.
2. Tell businesses and organizations you support any steps they take to reduce the amount of salt used in winter.
3. Visit WI Salt Wise to see what steps you can take to improve your own salt use!
<https://www.wisaltwise.com/homeowner>

WHY STUDY CHLORIDES?

Soluble and mobile in the environment, chlorides can easily enter the soil, ground and surface water, and vegetation.



No natural process exists to remove chlorides from the environment.



Chlorides in surface water can be toxic to aquatic life.



Chloride concentrations are increasing in Madison's groundwater.



High concentrations of salt impact vegetation's health.

WHAT ARE CHLORIDES?

Chlorides are negatively charged ions. This project refers to chlorides originating from chloride-based salts, like sodium chloride (NaCl).



Brine application as a pretreatment is observed to reduce salt usage. However, these findings suggest a cookie-cutter application approach will not work and brine cannot be used in every winter-weather scenario. To understand why, check out our two-page fact sheet on our study! <https://www.lakewingra.org/download/chlorides-salt/2017-08-30-FoLW-Chlorides-Fact-Sheet.pdf>

Moving forward we are discussing

Monarchs for Kids in 2017

By David Thompson

As the monarchs make their migration to Mexico, we reflect on another exciting year of Monarchs for Kids and eagerly look ahead to the next year. This year we served roughly 124 classes in 36 schools, preschools, day care centers, and nature centers. This is an amazing feat considering we began the program in 2013 by spending \$100 to supply Wingra School with a mere 12 painted lady butterflies!

With the positive feedback we received from the Wingra School experience, we thought: "If we raise butterflies ourselves, it will be more affordable AND allow us to serve more schools." We switched to monarchs because their lifestyle is awe-inspiring and their population is crashing. So, the next phase--Monarchs for Kids--began.

Every year our primary focus has been the same: to promote environmental stewardship and awareness in children's lives through hands-on experiences. Since teachers require support, we provide eggs, equipment, manuals, teacher workshops, milkweed plants, exchanges with classrooms in Mexico, and milkweed food for monarchs in the classroom.

During the summer, we raise monarchs for the upcoming school year. But just as important, we utilize summer events to recruit and train new teachers and the volunteers on which the program depends. This past summer, we brought monarchs to 21 events, including the Monroe Street Festival, Butterfly Action Day, and neighborhood picnics. *At the Festival, the tame butterflies we released lingered in the area, saying "hello" to pedestrians and tasting flowers in front of stores.*

Looking ahead to 2018, the Monarch for Kids program will experience some changes. Up to now, I have coordinated the program, thankful for the help of many talented volunteers including *Jessy Rowe, Amy Callies, Bonnie Wiesel, Dawn Daley, Julie Rothwell,*

Diane Drives, Karen Faller, Melissa LeBlanc, Kevin Thies, Jodi Pahs, Nick Sanek, Mischa Wagner, and Tom Hemaian--to name a few. Next year, I no longer can continue the same intensive level of involvement, so Friends of Lake Wingra will help us transition to a more sustainable structure. In 2018 a grant from the Besadney Foundation will allow our Program Manager, Casey Hanson, to provide planning, publicity, communication with schools, and coordination of volunteers.

During this time, Friends of Lake Wingra will create an operating framework to ensure the long term success of Monarchs for Kids. Two crucial



Teacher Diane Drives wrote: "We LOVED starting the school year bonding over monarchs! Every student had their very own egg and everything that we did that first five weeks involved monarchs!" At Preschool of the Arts, students took their little caterpillar home with them each afternoon. Photo by Michael R. Anderson.



Two hundred people attended the feeding and release of 100 butterflies on Sept. 2. Summer events like this help recruit new teachers and volunteers. Photo by Michael R. Anderson.

components of this are to have (1) a point person for each participating school and (2) neighbors and parents to help deliver eggs to the schools and bring food for the caterpillars. During the summer we need volunteers to breed butterflies (and kids to feed the laying females), families to raise eggs, helpers for public events, and butterfly gardeners. Pick a role and join the crew! Each year, learn something new about monarchs.

Thank you again for your continued support and enthusiasm for monarchs! Our mission is to promote a healthy watershed through an active community. Monarchs for Kids gives people an opportunity to be active and connect with nature. Monarchs might seem an unlikely mascot for the lake since they spend their life cycle on land, yet they are found everywhere within the watershed. They move along the lakeshores and stream borders, while laying eggs on marsh milkweed and common milkweed all around the lake. They are vulnerable to the same forces that threaten Lake Wingra--pesticides, global warming, and habitat destruction. Living among us, they really are the proverbial "canary in the coal mine."

Right now, monarchs are arriving in the mountains of Mexico, so until next year, "Adios!"

New Structure Planned to Catch Lake Wingra Runoff Debris

By Phil Gabler, City of Madison Engineering

An innovative underground screen structure in design for Wingra Park will offer the public a peek at what debris can be kept out of the lake, while providing treatment to an area of the Wingra watershed that is currently receiving almost no treatment.

The underground device will be installed near the Arbor Drive Circle on the west edge of Wingra Park. The

structure will be completely underground and marked by a butterfly garden on top.

The screen structure will capture road grit, leaves and trash before it can enter Lake Wingra. Water quality modeling of the device predicts that it will capture 36 pounds of phosphorus and 7 tons of sediment each year. To put this into perspective, Monroe Street contributes

18 pounds of phosphorus and 4 tons of sediment to Lake Wingra each year. The material collected in the device will be vacuumed out periodically.

The screen structure is a step towards implementing the Wingra Watershed Plan and provides treatment to an area of the Wingra watershed that is currently receiving almost no



This is how the structure will appear above ground, with the addition of a butterfly garden above the structure.

treatment. An additional feature of the screen structure will be the installation of view ports within the garden that will allow park visitors to peek inside and see what material has been collected. The design and placement of the screen structure has been a collaborative effort between the City's Engineering Department, the Parks Department and citizens participating in the public input process for the Monroe Street Reconstruction Project.

photo by City of Madison



A view of what the sediment structure will look like, except it will be underground.

Volunteer with Friends of Lake Wingra

Let us know if you want to get involved with us to help improve the health and quality of our beautiful Lake Wingra. Sign up for our monthly e-newsletter on our website www.lakewingra.org.

Opportunities include education programs, working with schools, rain garden installation/planting/maintenance, graphic design, newsletter editing, event planning, marketing and grant writing and review.

Friends of Lake Wingra Board Meetings

Friends of Lake Wingra board meetings are usually held at the Sequoya Library the first Thursday of the month from 6:30-8:30 p.m. and are open to the public. Any location or time changes will be announced on our website (www.lakewingra.org/events).

If you have an item to discuss with the board please email info@lakewingra.org a few days in advance of the meeting to be placed on the agenda.

Become a Friends of Lake Wingra Board Member

Do you want to help Lake Wingra on a deeper level? Consider becoming a board member! Start off by attending one or more of our board meetings (1st Thursday of the month 6:30-8:30 p.m.) or by emailing your interest to info@lakewingra.org.

We can arrange a personal meeting with a current board member or staff person to explore opportunities.

Shoreline Erosion Control Coming to Wingra Park

By Casey Hanson

Lake Wingra's natural setting and calm waters may lead you to believe that erosion is not a large concern there, but it is at Wingra Park. Erosion, a natural process that results in part from wave energy, can occur at slow rates, but human activities can accelerate the process.

Wingra Park is subject to a variety of human activities like log rolling, paddling, and motorized boating that have contributed to eroding the shoreline at a rapid rate over the last several years. To combat this erosion, the City of Madison Engineering and Parks Divisions will be stabilizing 350 linear feet of the severely eroded shoreline in 2018 between the Wingra Park boat launch and the east property line of the park.

The design incorporates a variety of soft and hard armor erosion control practices. Soft armor imitates natural systems and therefore can integrate into the ecosystem. Natural vegetation not only provides habitat for wildlife, but is great for slope stabilization. Roots help keep soil in place as waves wash up on the shoreline. Aside from the environmental benefits, soft

armoring also can reduce maintenance costs. Hard armoring is when man-made structures are used to stabilize a shoreline, like rock riprap. While this may be necessary in some settings, too much hard armoring can worsen erosion in other parts of the shoreline since it will redirect the wave energy elsewhere and does not mimic natural settings.

The City plans to use the following erosion control practices along Wingra Park's shoreline:

Rock riprap



photo by City of Madison

Rock riprap is large rock placed in the water and up along the shoreline. At Wingra Park geotextile fabric will line

the shoreline underneath the riprap to prevent wave action from removing soil and rocks below it.

Soil encapsulated lifts



photo by Jane Herbert, MSU Extension

Soil encapsulated lifts. Lifts create an aesthetically pleasing view while helping reduce erosion. They form a desired slope by layering biodegradable blankets full of soil. Each layer contains seeded and planted natives.

Native sedges and forbs less than three



Wingra Shoreline Design Layout

feet in height and tolerant of fluctuating water levels will complement these erosion control practices. While new vegetation will be added, existing trees along the shoreline will be preserved with the exception of one maple near the shoreline, which is in unhealthy condition.

In addition to stabilizing the shoreline, the project will also enhance water-access opportunities. The park will have a new dock, a replaced asphalt pathway, limestone steps to the water, and a new small canoe and kayak

launch. The design will also move the UW boating pier from the current dock and place it further west along the shore, towards Wingra Boats.

We will keep you updated on the project; it is one we've engaged with the City on since the early planning stages along with other key park users like Wingra Boats, UW rowing, and Madison logrolling. Since Wingra Park is thoroughly enjoyed by many of you and Lake Wingra's wildlife, we've communicated our preference to the City to request for qualified contrac-

tors with experience in shoreline stabilization projects to the extent it complies with their bidding process. We believe such a request will ensure protection for this sensitive area during the construction process.

If you'd like to learn more about the project and review the presentation from the public meeting on September 7, 2017, visit the project web page at: <https://www.cityofmadison.com/parks/projects/wingra-park-shoreline-restoration>

Shop to Support

Here are some additional ways you can help fund our efforts to protect Lake Wingra!

T-shirt

Wear the latest Friends of Lake Wingra fashion. Stand out in a crowd with an adapted version of our logo in this soft and cozy Caribbean blue t-shirt!

Cost: \$20

<https://www.lakewingra.org/shop-to-support>

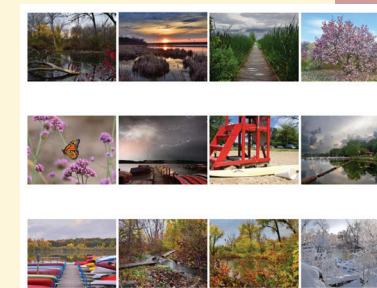
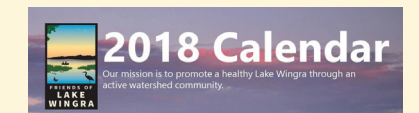


Calendar

Brighten up your home or office with beautiful photos of the Lake Wingra watershed! This calendar provides monthly volunteer opportunities and includes coupons and freebies from some of our local sponsors such as a serving of free frites at Brasserie V, 15% off your purchase at Wine and Hop shop, and a free ice cream with your rental at Wingra Boats.

Cost: \$10

<https://www.lakewingra.org/shop-to-support>



Since we are a small volunteer-led organization with minimal staff time, please allow for 2 -3 weeks to receive your t-shirt or calendar purchase. Thank you for your support! Interested in purchasing something, but don't want to do it online? Please email us at info@lakewingra.org.

Amazon Smile

We are now on Amazon Smile! Visit AmazonSmile and choose Friends of Lake Wingra as your charitable organization. Then, when every time you shop on AmazonSmile, 0.5% of the price of eligible purchases you make will be donated to us. <https://www.smile.amazon.com>

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

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Wingra Watershed News

Fall 2017, Vol. 14, No. 3 Wingra Watershed News is published twice yearly by Friends of Lake Wingra, Inc.



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To become a Friend of Lake Wingra,

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Friends of Lake Wingra, Inc.

PO Box 45071

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Please make checks to:

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