

Introduction to Wingra's Watershed

What is a watershed?

- A watershed is all the land around a body of water where – after a storm – the rain water runs down into that body of water.
- Think of a bathtub. When you turn on the shower, water that lands on the curtain or sides will eventually end up going down the drain.
 - **Side activity:** Take a shower or bath, splash water around and see where it goes. Follow its path. Does the water take different paths depending on where you put it?
- So, those areas are in the 'bathtub watershed.'
- Any water that splashes outside of those areas will not end up in the drain, so they are in a different watershed.
- In Madison, Lake Wingra has its own watershed.
 - **Side activity:** Visit the watershed map. See if you live in the watershed. What places do you visit in the watershed?
- Build a watershed activity -
https://pbskids.org/plumlanding/educators/activities/build_a_watershed_ed.html

Important Sources of Water for Lake Wingra & Pollution that Impacts Lake Wingra

- Lake Wingra doesn't have a river leading into it like other Madison lakes. Instead, springs are its primary source of water.
- What is a spring? Well, it's a place where groundwater bubbles up from underground to form a small body of water above ground. Our springs run to Lake Wingra.
- Lake Wingra had many springs a long time ago, but only a few remain now because of development in the watershed.
- When we refer to development, we are talking about surfaces that don't allow water to absorb into the ground or reach the lake through natural methods.
- Let's think about what that means. If springs come from underground, they need water from rain to replenish them (think of a sponge). If the ground is covered in material that doesn't let rainwater into the ground (think of aluminum foil sitting on a sponge), it's hard for the groundwater to recharge (or for the sponge to absorb the water dropped on top of it).
 - **Side activity:** Do an experiment with a sponge and aluminum foil. See what happens when the aluminum foil is on and off of the sponge.

- Can you think of some examples in the watershed where water might not be able to go in the ground?
 - In Lake Wingra’s watershed, development like parking lots, roads, sidewalks, and buildings mean less water is reaching the lake in ways it would have before humans lived in it.
 - **Side activity:** Walk around your block. Look for things that might prevent water from going into the ground.
- Even with development, the water still needs to go somewhere or we can experience flooding or large areas of standing water that make it hard for people or cars to move around, so cities have used storm sewers to move the rainfall to bodies of water like Lake Wingra.
 - **Side activity:** Check out the City’s storm sewer map. Can you trace where your water might go, or at least where the stormwater runoff generated near your house would enter the stormsewer?
- History and research tell us this isn’t always the best choice. Why? Let’s look at Lake Wingra, for example. With less water entering the ground, springs have dried up. Water quickly running in pipes directly to the lake also carry extra pollutants (things that make the lake sick) from leaves, cars, animals, fertilizers, pesticides, and other sources.
 - Lake Wingra has problems with phosphorus (a nutrient that lake plants need, but too much of it can harm the lake), chlorides (from road salt), and bacteria (primarily from goose poop), among other pollutants. Bacteria is the main reason Vilas Beach closes in the summer. If the water had time to travel through natural methods (e.g., groundwater, running slowly through tall grasses), nature has time to remove or lessen the amount of these pollutants in the water when it reaches the lake.

Why is it important to care about our watershed?

Watersheds matter because pollution in one area can be carried to all of the other areas by the water. Plants, animals, and of course people depend on clean water, so it is helpful to visualize a watershed as a biological community instead of a complicated hydrological system! And, small watersheds are part of larger watersheds, so everything is very connected. For example, we may live in the Wingra Watershed, but this water will eventually end up in the Mississippi River, so it’s also part of the Mississippi Watershed. What we do to our water could impact people all the way in Louisiana!

Who lives in the Wingra watershed?

- The Wingra watershed is home to over 33,000 people in 14 different neighborhoods. You might live in one of those neighborhoods!

- The UW Arboretum, Vilas Zoo, Edgewood College, 6 parks, 2 golf courses, and numerous public schools, churches, and community centers also call the Wingra Watershed home.
- Because of protected natural areas like the UW Arboretum, the Wingra Watershed is home to diverse ecological communities. Forests, prairies, and several kinds of wetlands support many plants including some rare species like the small white lady slipper and the prairie fringed orchid.
- The watershed is also home to numerous species of mammals, reptiles, amphibians, insects, birds, and fishes. Many of which you will see in the Wingra ABCs!
- While the watershed is home for many native plants and animals, invasive species have made it hard for native species to live in the watershed and changed the water quality in Lake Wingra.
- Urban landscapes are stressful environments for plants and animals, and invasive species are often better than native species at surviving and multiplying in these harsh urban environments.
- Invasive plant species can crowd out native plants by competing for resources such as light and nutrients.
- Invasive animals can alter native communities by feeding on native vegetation or animals, some of which you will see in the ABCs.

How to care for our watersheds?

- We can help all of our watersheds by making small changes at home, at school, and in our community. We can create opportunities for rainwater to enter the ground instead of sending it to the storm sewers.
- One way to do this is by constructing rain gardens in our homes or schools. Does anyone know what this is or have they seen one?
 - **Side activity:** Learn how you can site and design a rain garden on your property. Step by step!
- Rain gardens help restore spring flow and springs provide a native habitat for many species you might see in the ABCs.
- Raking leaves out of the street before a rainfall helps prevent algae blooms in our lakes because it reduces a pollutant called phosphorus from entering the rain water (could explain the metaphor of a tea bag or do a demonstration of making tea – where phosphorus is in a teabag and leaches into the water).
- Reducing the amount of road salt used on sidewalks and roads can also keep Lake Wingra a freshwater lake. Plants and aquatic life that live in it are not used to high levels of salt.
- Even just learning about the fun creatures that call Lake Wingra's watershed home is a very important first step in caring about this very special place. You have to learn what it is you want to protect, right?!