

2023 Summer Newsletter

Murky Water? The Solution is Clear!

During our recent Educators' Workshop, we participated in an activity focusing on sediment and turbidity in the water from Project WET, Healthy Water, Healthy People, to help our participants better understand and present these concepts in the classroom. This activity inspired me to want to help our readers become more knowledgeable also. When we ask you to adopt environmentally friendly practices for improved water quality, we should let you know how the water quality problems originate and why these practices will work to solve them. So here is an abbreviated version of the soil erosion, stormwater runoff story.

When we seek answers to solve the problem of poor water quality, we must determine the reasons for poor water quality in the first place. Our investigation leads us to some primary culprits, which are soil erosion, stormwater runoff, and the resulting sediments deposited in the water, which also cause turbidity or cloudiness in the water. According to the United States Environmental Protection Agency, sediment carried over land during stormwater runoff is the most common source of nonpoint source pollution (pollution that can't be traced to any source or place on the land) in the United States.

Soil erosion that leads to sedimentation occurs any time soil is left uncovered, or is dislodged by the removal of vegetation, and then impacted by raindrops and transported by rainwater runoff. The resulting non-point-source pollution problem is heightened because eroded soil particles have the capacity to pick up and attach themselves to all sorts of pollutants like fertilizer, pesticide, herbicide, auto fluids, heavy metals, pet waste, and other chemicals on our lawns, sidewalks, and streets. The soil carries all these substances right into the water.



The plume of Sediment entering the Cuyahoga River before the Kelsey Creek Restoration.

Especially in urban and suburban settings, humans cause soil erosion and stormwater runoff through activities that disturb or remove vegetation, such as the construction of impervious surfaces like roads, parking lots, buildings, and other activities that decrease the area for stormwater to soak right into the land, therefore increasing runoff and sedimentation. Designated Summit SWCD staff members review and inspect construction activities to ensure that regulations are followed to implement environmentally healthy practices mandated by the Ohio EPA that combat erosion and sediment runoff on construction sites.

We also encourage residents to prevent soil erosion and stormwater runoff on their own land by shrinking their semi-impervious turfgrass lawn area and planting native herbaceous plants, vines, shrubs, and trees. Planting pollinator plots and raingardens, keeping their soil covered and establishing vegetated buffers around streams and other water bodies, and installing rainbarrels and pervious pavers, are also healthy landscaping practices people can use that will help improve water quality.

Sediments and suspended matter can be anything that is in the water column, ranging from sand, silt, clay, plankton, industrial wastes, sewage, lead, and asbestos, to bacteria and viruses. Some soil suspension in water occurs naturally, but the greatest suspension of soil is caused by human activities. Aquatic organisms are very susceptible to the effects of increased sediments and turbidity. Fish need clean water to see their prey, and prey species need clear water for avoidance. Stream bugs, macroinvertebrates, and their larvae, and fish eggs need oxygen-rich water running through clean gravel beds to survive. Sediments can smother fish eggs and aquatic insects on the bottom and can also suffocate clams, mussels, and oysters as they filter water through their bodies. Sediment and suspended solids also interfere with the aquatic plants' photosynthesis because needed sunlight cannot penetrate through the turbid water.

Because cloudy water absorbs more of the sun's energy than clear water, high turbidity raises water temperature. This affects aquatic organisms because some species are adapted to survive within narrow temperature ranges. As the water heats up, the amount of dissolved oxygen available for the aquatic organisms also decreases.

Sediment and turbidity also affect humans. According to the United States Environmental Protection Agency, sediment is one of the first substances filtered out of source water at the drinking water treatment plant and is one of the few water quality contaminants that must be monitored daily. Suspended solids can also hold harmful bacteria and can decrease the effectiveness of chlorination used to remove those harmful bacteria. There are also some economic impacts from sediment because the production of many products that we use like paper, food, and computer chips requires sediment-free water.

Anything that we can do to slow down and decrease the amount of runoff from our own yards is very important. Because soil erosion, sedimentation, and turbidity all owe their origin to stormwater runoff, we need to use healthy landscaping practices to decrease stormwater runoff in both volume and velocity, which will help eliminate the problem of sediment pollution.

This year, our Stormwater Theme is: *Slow it Down, Spread it Out, Soak it In*. I hope this little explanation about soil erosion and stormwater runoff has helped you understand why we ask you to be "Backyard Conservationists." Thank you for reading our newsletter. Resources: Project WET-Healthy Water, Healthy People.



Cascade Valley Summit Metro Parks Restoration

All Hands On Deck -Help Keep Our Lakes Clean!



Spending time on or near the lake is a cornerstone summer activity. While it's fun to cool off in the refreshing lake water, the cleanliness of that water depends on all of us, the lake users. In Summit County, our lakes and reservoirs not only provide us with recreational opportunities but can also serve

as a source of drinking water for many residents. These bodies of water also provide habitat and food for a variety of wildlife including fish and waterfowl. We can all do our part to keep our water clean by making lake-safe choices and using responsible water recreation practices. Here are some ways that we can work together to keep our recreational waters clean.

Make lake-safe choices in your landscape: What we do on land affects our lakes and waterways. Planting native plant buffer strips along the shoreline helps to control erosion, reduce water runoff, and minimize nutrient loss. Reducing the amount of non-pervious surfaces like pavement, will help rainwater runoff infiltrate into the ground and reduce the volume and velocity of runoff entering our waterways.

Stop aquatic hitchhikers: Before and after spending time on the water, inspect and remove any visible plant fragments, algae, and mud off your boat motor, trailer, paddles, shoes, and other gear. Drain your bilge, livewell, and bait buckets, and be sure everything is completely dry before entering another waterbody. This will help stop the transfer of invasive species from one water body to the next. **Respect the wildlife:** View wildlife from a safe distance and keep a respectful distance from nesting sites (recommend 200 feet). Do not harass, approach wildlife, or feed wildlife. Close encounters with wildlife disrupts their natural activities like resting, breeding, and feeding. Feeding wildlife can also create a nuisance and can lead to the spread of diseases among wildlife. Be sure to take all fishing line, bait containers, sinkers, and other spent fishing gear and trash with you. This trash becomes toxic to a variety of aquatic wildlife both on land and in water.

Our ability to collectively balance the protection, preservation, and use of our lake resources is key to ensuring our lakes are healthy and flourishing not only for us to enjoy now but in the future.

FUN FACT: Here in Ohio, there are 110 natural lakes larger than 5 acres. Summit county has the most lakes, coming in at 34 lakes larger than 5 acres in size!!

July is Lakes Appreciation Month - an effort started by the North American Lake Management Society (NALMS) to promote the value of clean lakes and reservoirs. Throughout the month, be sure to find us on our social media. We'll be sharing fun facts, ways you can help protect our lakes, and activities you can do in and around our lakes.



A Little Mess Can Leave a Leave Big Impact : How to Leave No Trace This Summer!

Each of us plays an important role in protecting our local parks, lakes, and natural spaces. As the weather warms up and we spend more time outdoors this summer it's important to be aware of the effects our actions have on the land, water, and each other when we recreate outdoors.

A well-researched and scientifically backed way to have a positive impact when we spend time taking part in outdoors activities is to follow the 7 Principles of Leave No Trace: 1) Plan Ahead and Prepare, 2) Travel and Camp on Durable Surfaces, 3) Dispose of Waste Properly, 4) Leave What You Find, 5) Minimize Campfire Impacts, 6) Respect Wildlife, and 7) Be Considerate of Other Visitors. These principles were created by a non-profit organization called the Leave No Trace Center for Outdoor Ethics, and although they grew out of a need for responsible recreation when hiking and camping on backcountry trails, they remain important lessons for everyone and anyone who plans to spend time outdoors. We all live in a watershed and it is important to leave the outdoor spaces we spend time in, in better shape than we found them no matter how we enjoy spending time outside -- whether that's when picnicking along a lake, walking our dog in our neighborhood, fishing on the Portage Lakes, biking in the MetroParks, camping, or birdwatching at the Bath Nature Preserve!

There are many ways to be a steward of the environment and practice Leave No Trace principles. This summer try to commit to incorporating one new principle into your recreation habits. Here is a list of ideas to help get you started recreating safely and responsibly this summer...

Principle 1 Plan Ahead and Prepare:

Remember to bring a reusable water bottle! It's hot out there and you don't want to get dehydrated.

Principle 2 Travel and Camp on Durable

Surfaces: Stay on the designated trail when hiking at the MetroParks this summer to prevent soil erosion. This helps prevent loss of habitat and food that that local wildlife need to survive!

Principle 3 Dispose of Waste Properly: If you're

fishing this summer, don't leave bait containers, fishing line, and other fishing gear at the lake when you're done for the day. If you can't find a spot to dispose of these materials properly, pack it up and take it home to dispose of there.

Principle 4 Leave What You Find: Wildflowers are beautiful -- hummingbirds, butterflies, and bees think so too! Instead of picking flowers on your next nature walk, take a picture so our important pollinators have enough to eat!

Principle 5 Minimize Campfire Impacts: If

you're going camping always make sure to completely put out your fire and follow local regulations. If you're unsure ask a park official for help and double-check the rules before you go!

Principle 6 Respect Wildlife: Wildlife is WILD. People food isn't for wild animals. It can actually make them sick, or they can get habituated to people and that isn't safe for them or you.

Principle 7 Be Considerate of Other Visitors: Give a smile and a wave! The outdoors is a place where we all should feel safe and welcome ©

Thanks for doing your part to help everyone have a beautiful summer in Summit County!



The Science Behind the Lake Erie "Walleye Boom"

Northeast Ohio is home to arguably the greatest walleye fishery in the world, and anglers from all over the country travel hundreds of miles to experience the natural resource that is, Lake Erie. Historically speaking, Lake Erie has always been considered a good fishery but since the 1980's, there's been a dramatic increase in the walleye population. Perhaps the biggest contributor to this was the ban of commercial netting in Ohio waters which was enacted in 1983. As you can imagine, this has had an overwhelmingly positive impact on the local walleye population. The ban of commercial netting as well as the formation of The Great Lakes Fishery Commission- Lake Erie Committee, which establishes conservation initiatives for the lake, provided decades of reliable fishing, but by the early 2000's things would only get better.

The lake, particularly throughout the central and eastern basins, has undergone some significant changes within the last 10 years. The water levels have risen substantially within these areas, creating additional habitat, and water quality continues to improve. Although we still have work to do, we've come a long way since the burning of the Cuyahoga River. Initiatives to improve water quality, coupled with the rising water levels have created the perfect storm for exceptional spawning habitat. Most Lake Erie walleye enthusiasts are familiar with the traditional spawning pattern of this predatory fish in which the overwhelming majority of fish would migrate to the western basin where the shallow, fertile reef complexes are abundant. "In years past the walleyes would migrate from the eastern end of the 10,000- square mile lake to the western basin. But a few years ago, we noticed they didn't migrate, and started spawning in deeper water. That has been a huge boon to the walleye population, and the fish are huge, too," says D'Arcy Egan, a Cleveland native and life-long walleye enthusiast (Bethge, 2023). It's important to point out that a large portion of the walleye population still does migrate to the western basin; however, the increase in viable spawning habitat along the central and eastern basin shorelines have dramatically increased spawning outcomes.

Another contributor to the recent "walleye boom" is the extent of baitfish available throughout the year. The lake continues to hold an exceptional population of Gizzard and Threadfin shad year after year, which are a preferred food source for hungry walleyes. The massive amount of baitfish in the lake plays a major role in the unprecedented growth rate of the walleyes where they reach an average of around 15 inches by year two and grow 1-3 inches a year after that. The extent of the baitfish population is also an excellent indicator of successful spawning outcomes. Like many other animals in the wild, female walleyes will typically "fatten up" during the months leading up to the spawn. This is because spawning can be very stressful for the fish, and they are not actively feeding throughout the duration of the spawn. After the spawn, the female walleyes will hang out in deeper water to recover. The recovery period can take anywhere from 1-4 weeks and during this time, feeding is also limited. So, as you can see, the prevalence of baitfish in the heavy feeding window leading up to the spawn is crucial for the overall success of walleye reproduction.

Without a doubt, the relatively recent Lake Erie walleye population boom is multifaceted and is a culmination of biological, physical, and human intervention. The factors that have been described here are a major reason why the last 7 out of 9 walleye hatches have been well above average, and several of these hatches being "record-setting". With the continued efforts for sustainability and water quality initiatives, there's no doubt in my mind the Lake Erie walleye population will continue to flourish for many years to come.

Tight lines!

Article and photo by Alex Weber, Stormwater Inspector



Alex Weber (SSWCD) with a 32.75" walleye caught off the Cleveland shoreline of Lake Erie in May 2023

Master Raingardener Class





Train to be a Master Rain Gardener! Summit SWCD is hosting a virtual Master Rain Gardener training class this summer where you will learn to design and install your own raingarden and be the raingarden expert in your neighborhood.

Raingardens work with nature to collect and filter rainwater that runs off impervious surfaces like rooftops and driveways, which helps to prevent surface runoff, water pollution, erosion, and flooding.

The class will start on August **8, 2023**. Cost for the class is: **\$25.00**. Register <u>here</u>. Registration and payment should be in our office by August 1, 2023. Please call 330-926-2452 for more information and any questions.



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Mission Statement:

Summit SWCD provides leadership and advocates for the stewardship of our natural resources and responsible land use through the provision of education, technical assistance, and partnerships in Summit County.

The Summit SWCD is an independent division of the Ohio Department of Agriculture and is funded by the State of Ohio, the Summit County Council, and the Summit County Communities for Clean Stormwater.

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