



STREAMSIDE STEWARDSHIP GUIDE FOR PROPERTY OWNERS

The stream on your property eventually drains to Lake Erie, the source of our region's drinking water. Your actions on the land can either help or hurt our waterways. You own the land that forms the stream channel, but the water in the stream is considered a "public good" and is owned by the State. Property owners can use the water, but not in ways that infringe on the rights of others. This means that you must be aware of how you use your property, so it does not negatively impact the quality of the water or cause problems for you or your downstream neighbors.



Northern two-lined salamander



Sulphur Springs coldwater habitat

WHAT'S COOL ABOUT THE CHAGRIN RIVER WATERSHED?

The Chagrin River drains approximately 267 square miles to Lake Erie in Northeast Ohio and has 71 miles designated as State Scenic River. State Scenic designated reaches of the Chagrin River are bordered by rich forested corridors and have exceptional aquatic habitat for fish, birds, and other wildlife.

There are also about 20 miles of coldwater habitat streams in the watershed, which is the most of any river in Ohio. Amphibians, aquatic insects, and sensitive coldwater fish like the Ohio brook trout (*Salvelinus fontinalis*) depend on the cold, clear water in small streams that feed into the Chagrin River to thrive. Shaded ravine areas provide habitat for nesting birds like the Dark-eyed Junco, Winter Wren, Louisiana Waterthrush, and Kirtland's Warbler.

Much of the Chagrin River watershed has healthy forest cover due to preservation and land management efforts. When forest canopy is removed and replaced with impervious surfaces like roads and buildings, polluted stormwater runoff increases and contributes to flooding, streambank erosion, and loss of fish habitat. Streamside forests help filter nutrients and sediment, shade and cool the water, and enhance recreational opportunities.

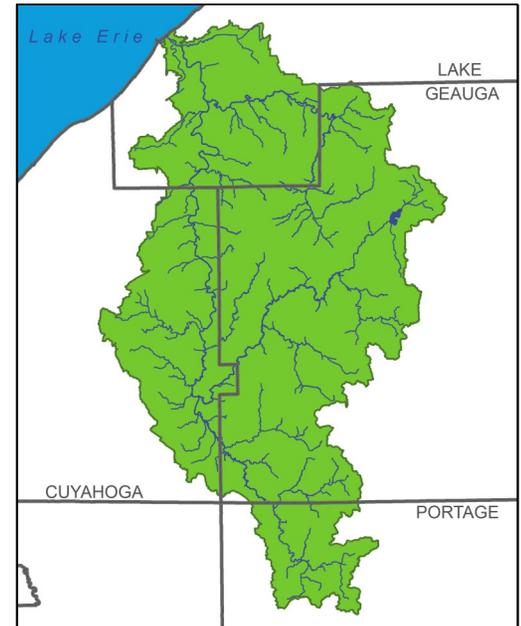
Chagrin River Watershed Partners was formed by communities, counties and park districts to help address flooding, erosion, and water quality issues as communities grow. Protecting and restoring streams, wetlands, and forested landscapes both benefits wildlife and cost-effectively minimizes flooding and erosion impacts on homes, businesses, and infrastructure. Good for nature, good for people.



Fly fishing the Chagrin River

HEALTHY STREAMS:

- Provide clean water
- Reduce flooding and erosion impacts to homes and businesses
- Provide habitat for wildlife
- Enhance property values

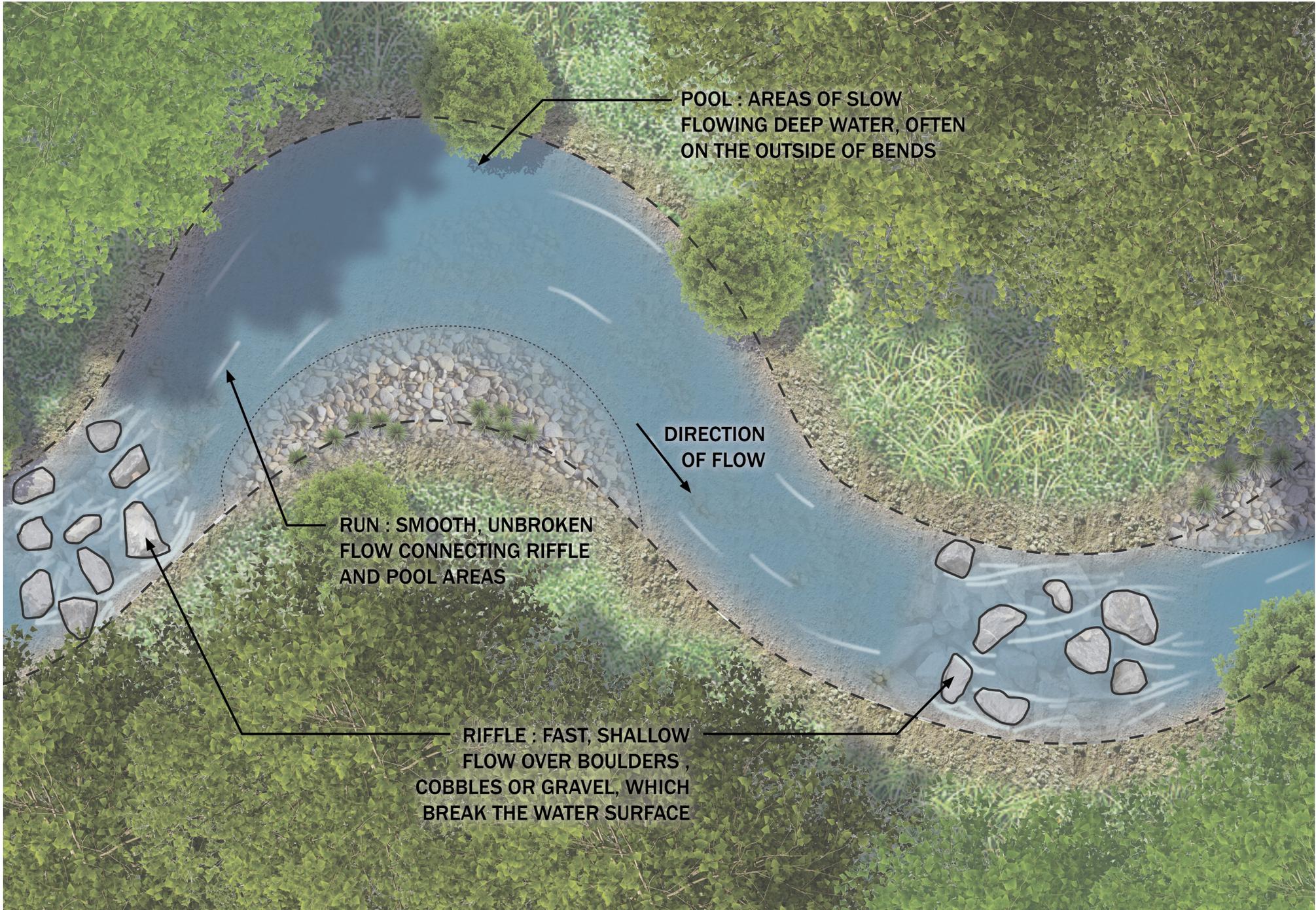


Chagrin River Watershed Map

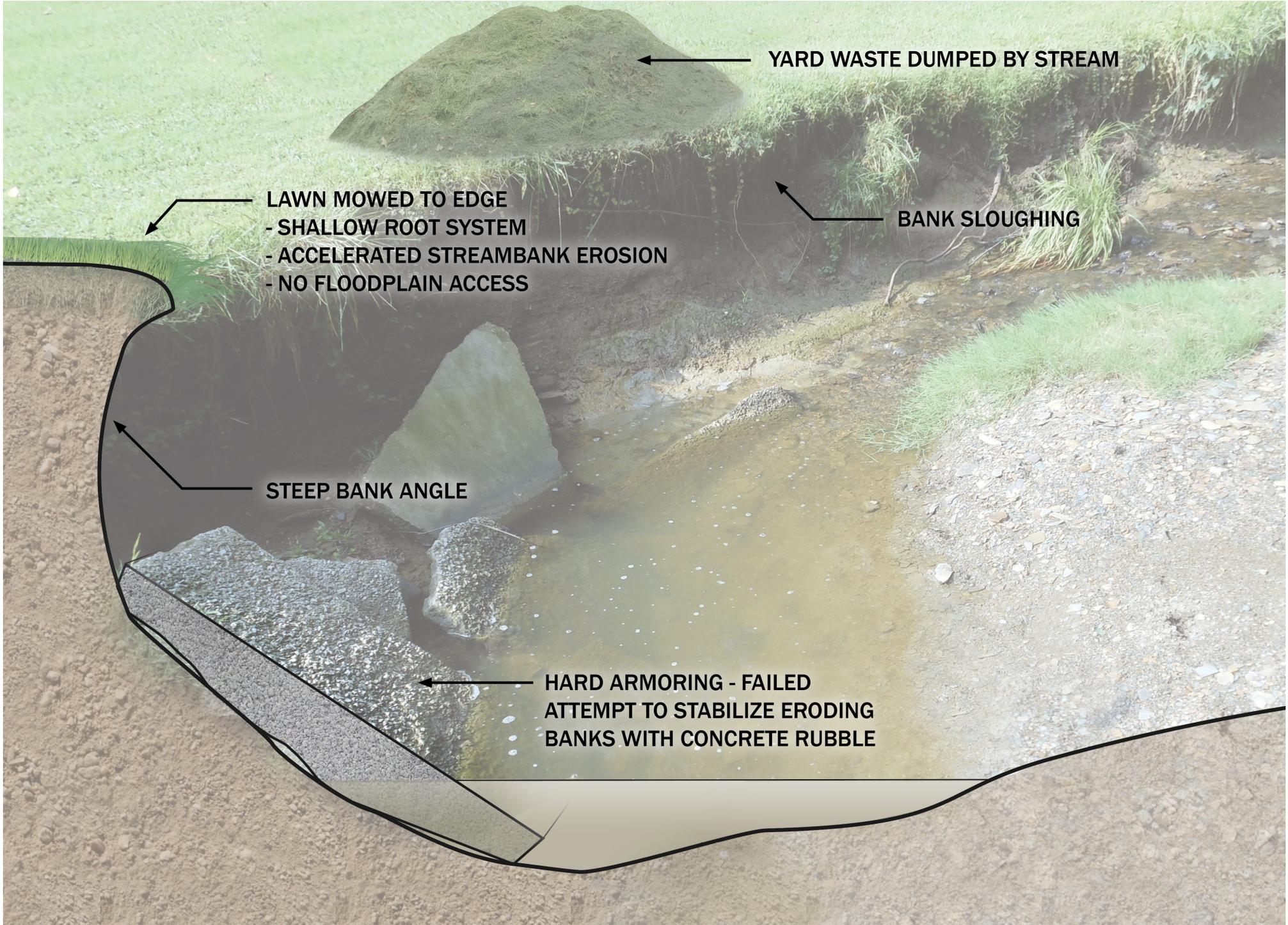


Chagrin River Valley photo credit: Nicholas Tanko

A HEALTHY STREAM LOOKS LIKE THIS:



THIS STREAM IS UNHEALTHY AND NEEDS HELP



I WANT A HEALTHY STREAM... WHAT DO I NEED TO DO?

LET IT BREATHE

Keep leaves, grass clippings, and other yard waste away from your stream and its banks. Yard waste and excess fertilizer can deplete oxygen levels in the stream, resulting in fish kills and algal blooms. Yard waste will also smother and kill woody plants like trees and shrubs that hold the streambanks in place, causing erosion and loss of land. Consider composting your yard waste away from the stream to recycle the yard waste into mulch or soil amendments for your garden and landscaped areas.

DON'T CHANGE THE STREAM'S COURSE

To balance the energy of flowing water, streams meander in s-shaped curves. Without natural meanders, streams often compensate by cutting a deeper or wider channel to slow down the flow. Eventually the carved-out, eroded streambank widens as the stream attempts to recreate the missing meanders. Floodplains often become disconnected from the stream due to this erosion, thus increasing the risk of flooding and erosion to downstream neighbors.

Haphazardly placing concrete rubble, railroad ties, or debris to stabilize failing streambanks increases stream flow velocity and will likely cause more erosion downstream. While this armoring initially appears to solve the problem, improper hard armoring eventually will lead to slumping streambanks or excessive erosion downstream.

Confining a stream to a pipe underground (culverting streams) results in the complete loss of the stream's natural function. Burying and piping streams transfers flooding and erosion issues further downstream. Piped streams also prevent fish from accessing upstream areas.



MAINTAIN A VEGETATED RIPARIAN ZONE

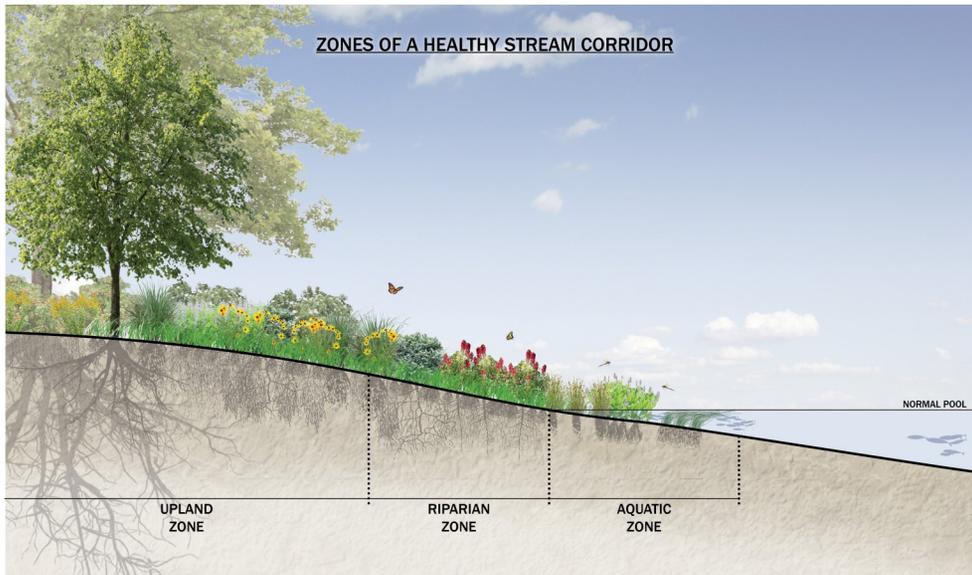
A stream's riparian zone is the area of natural vegetation along the stream or river. This area functions as an important buffer between the stream and modified landscapes that include lawns, buildings, and driveways that direct unfiltered stormwater runoff to streams.

HOW WIDE SHOULD A RIPARIAN ZONE BE?

The naturally vegetated riparian zone should be a minimum of 25 feet wide for headwater or small streams. Wider riparian zones are recommended for larger streams. Avoiding mowing and building structures within the riparian zone is essential for maintaining stream health. Your community may have specific riparian setbacks in place to protect your stream. Please check your community's regulations and ordinances or contact Chagrin River Watershed Partners or your County Soil & Water Conservation District if you have questions regarding riparian setback requirements.

WHAT SHOULD I PLANT?

Plant a mixture of native, deep-rooted wildflowers, sedges, rushes, grasses, ferns, shrubs, and trees along the stream. Trees should be planted at least five feet (5') from the edge of the streambank. Over time, these plants build a tangled mix of different root structures that help lock the streambank's soils in place. You can buy container-grown plants or install live stakes. Live stakes are dormant, unrooted cuttings (no visible buds, leaves or roots) of trees or shrubs like willows or dogwoods that you can install in late fall or early spring. Avoid growing turfgrass up to the edge of your stream. Turfgrass has shallow root systems that do little to stabilize the banks.



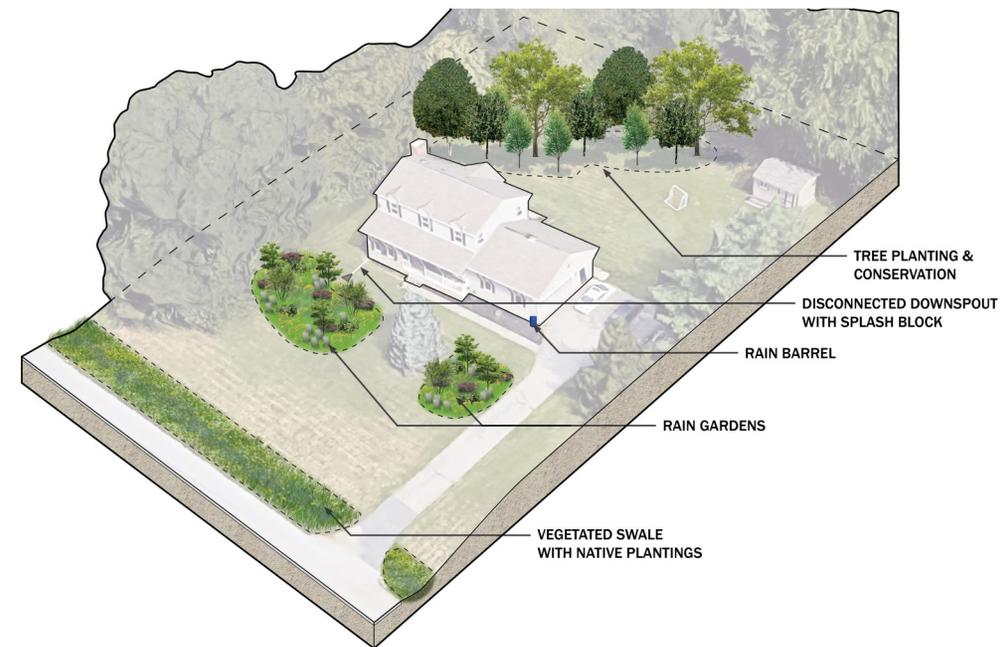
WHERE DO I GET ADVICE ON HOW TO PROCEED?

While vegetated riparian areas go a long way in controlling flooding and preventing erosion, your erosion problem may first require a bio-engineered solution that may include re-grading the banks to a more stable slope. Any work below the ordinary high-water mark of a stream requires federal and state permits. If your streambanks are significantly eroding, contact Chagrin River Watershed Partners or your County Soil & Water Conservation District for technical assistance and potential funding options. Additionally, if you are a Northeast Ohio Regional Sewer District (NEORS) customer, you may be eligible for assistance through their Regional Stormwater Management Program. Contact your NEORS Watershed Team Leader at 216-881-8247 to see if your stream might qualify.

WHAT ELSE CAN I DO?

HELP DEVELOPED AREAS BEHAVE MORE LIKE NATURAL LANDSCAPES

Developed areas can increase stormwater runoff and contribute to flooding, erosion, and water pollution. You can help minimize stormwater runoff by using rain barrels, cisterns, and rain gardens, disconnecting your downspouts and directing runoff from your roof to vegetated areas, and converting impervious surfaces such as patios, driveways, and walkways to permeable pavement. These practices slow the speed and reduce the volume of stormwater runoff that drains to our waterways by storing water or infiltrating water into the ground where it's absorbed and filtered by soil and plant roots. When NEORS customers make changes or improvements on their properties to reduce the amount of stormwater runoff affecting local streams and local storm sewers, they may be eligible for a stormwater fee credit, or a reduction in their stormwater management program fee. Visit www.neorsd.org or contact Chagrin River Watershed Partners for a site assessment.



PROTECT YOUR STORM DRAINS

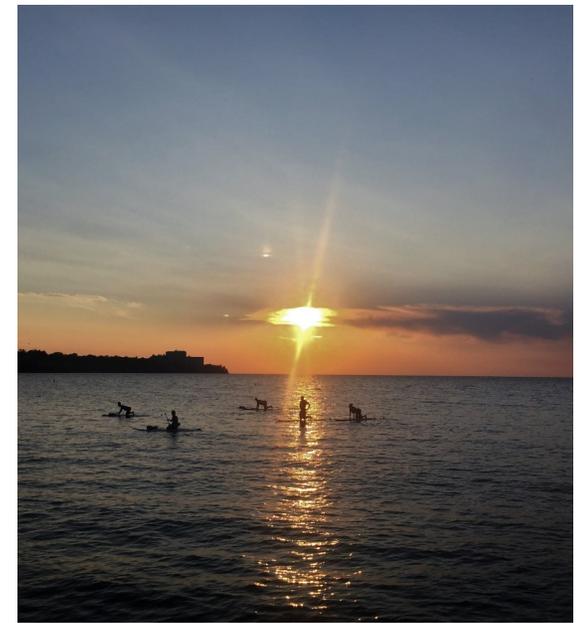
Storm drains and roadside ditches flow directly to streams and then to Lake Erie. Never deposit waste or trash into storm drains. They can become clogged and flood nearby basements, including your own! Also, sweep up and reuse fertilizer left on sidewalks and driveways. Always recycle used motor oil and anti-freeze. Contact your County Solid Waste District for information on recycling locations in your community.

MAINTAIN SEPTIC SYSTEMS

Your septic system can become a source of pollution if its parts malfunction or wear out and aren't fixed or replaced. Make sure to maintain your septic system and keep a regular schedule of inspections. Contact your County Board of Health for more information.

CONTROL NONNATIVE INVASIVE PLANTS

Invasive plant species crowd out native plants, reduce biological diversity, and threaten our wildlife which rely on native plant communities for food, shelter, and breeding habitat. Invasive plants can grow fast and aggressively spread and are difficult and costly to control. Some invasive plants produce fruit and seeds which local wildlife eat and disperse into natural areas, where the seeds establish, take over and negatively impact previously diverse, natural plant communities. Invasive species cost the United States economy over a hundred billion dollars each year in damages and losses! Do your part by controlling invasive, non-native plants on your property using appropriate methods and replacing them with native plant species from local nurseries. More information is available at <http://ohiodnr.gov/invasiveplants>



Stand Up Paddleboard Yoga at Cleveland Metroparks Edgewater Park



Native plants like New England aster make attractive landscaping and provide habitat for pollinators



Plants from your yard such as Japanese Barberry can invade and take over natural areas



Kayaking the Chagrin River



(440) 975-3870 | www.crwp.org



(216) 881-8247 | www.neorsd.org

This guide was produced by the Central Lake Erie Basin Collaborative and funded by the Northeast Ohio Regional Sewer District. The Collaborative is a network of organizations and initiatives that work collaboratively to protect and restore natural areas and promote stormwater solutions for healthy streams and Lake Erie. (<http://centrallakeerie.org>)