Respect Our Waters
Riparian Shoreline Erosion and Sediment Pollution Fact Sheet

***Riparian Zone**: the area of banks and shores where land and river/lake interact, the junction of terrestrial and aquatic environments.*

Lakes and rivers/ streams provide an abundance of enjoyment. Everything from drinking water, to recreational activities like boating and fishing, to purely aesthetic beauty, these grand environments provide endless opportunities. To preserve these sensitive riparian ecosystems, we must manage our land to reduce shoreline erosion and sediment pollution.

Problems Associated with Shoreline Erosion

Actively eroding shorelines can: undercut banks and destabilize infrastructure near the waterbody, like bridges and buildings; lead to a loss in shoreline; add significant amounts of sediment that leads to sediment pollution.
Sediment accumulation and deposition can: fill reservoirs and reduce holding capacity; clog rivers and streams that induce localized flooding; extend shorelines and change waterbody shape.
Excessive suspended sediment can: detrimentally affect fisheries and exacerbate algae growth; limit recreational activities like boating and fishing; make the water treatment process longer and more expensive

Causes of Shoreline Erosion

Poor Stormwater Management- stormwater that lands on impervious surfaces and gets channelized in a single direction can quickly scour the land and transport sediment into the nearest waterbody.
Exposed soil surfaces- without a surface cover and no vegetative roots to stabilize the soil, exposed soil surfaces are highly susceptible to erosion from wind, rain, and runoff.
Human Disturbances- areas that experience heavy foot traffic or are under construction can easily be dislodged.

As a shoreline destabilizes and erodes, it can quickly escalate in severity over a short period. That is why it is essential to be proactive and continuously monitor the shoreline.

Shoreline Erosion Mitigation Strategies

Proper Stormwater Management- Collect. Contain. Infiltrate. Use green infrastructure like rain barrels and rain gardens to decrease stormwater runoff volume, and redirect surface runoff from steep slopes to prevent gully formation.
Armor and Vegetation- Plant native vegetation over any exposed soil surfaces, they offer surface protection and provide deeper soil stability with their long roots. Riprap can be placed along shorelines to reduce wave impact erosion. However, be mindful of placement for poorly placed riprap can degrade aquatic habitats and cause erosion to occur in other places.
Reduced Human Activity- Avoid construction within 100 feet of water bodies. Avoid walking on steep slopes and areas of high foot traffic, less disbursement means less sediment dislodged.

Lakeshore vs. Stream/Rivershore Erosion Influencers

The rate of erosion for lakeshores is often influenced by weather conditions and human activity. With a surplus of wind and water available, lakeshores experience shoreline erosion daily. More waves impacting the shoreline means more erosion. When winter comes, ice movement can push shoreline soils and damage nearby infrastructure. Streamshore erosion is often influenced by the quantity and speed of the current, and by exposed soil bankshores. Fast-moving currents with lots of water have a strong ability to strip away sediment and cause the undercutting of banks at curves along the river/ stream. A lack of vegetative support exacerbates this process.

For more information on riparian land management and how to identify serious shoreline erosion, visit www.respectourwaters.org/streams-shore/ to learn more.

This Fact Sheet is brought to you by Respect Our Waters. Last Updated August 2022.
Sources: Causes of Lakeshore and Streambank Erosion Wisconsin DNR. (https://dnr.wisconsin.gov/topic/Waterways/shoreline/info-erosion.html). Last accessed August 15, 2022