

Why is my streambank eroding?

Streambank erosion is a natural process that occurs in all streams. Erosion can be accelerated by land use changes, channel straightening, clearing of riparian vegetation, and lack of storm water management.

What are some steps I can take to control streambank erosion on my property?

- **DO NOT MOW** to the edge of your stream. This is the most effective step a landowner can take to control streambank erosion.
- **PLANT RIPARIAN VEGETATION.** Vegetated streambanks are more stable and resistant to erosion.
- **KEEP STRUCTURES AWAY.** Streams meander naturally, keeping structures away from streams minimizes the risk of damage and limits the impact of upstream increases in impervious cover and storm water volume.
- **MAINTAIN FLOODPLAINS.** Functioning floodplains allow streams to dissipate energy during high flows and minimize streambank erosion.
- **USE TREE REVETMENTS** and other natural techniques to stabilize your streambanks.

Are tree revetments the only solution?

No. Each eroding stream site needs to be evaluated on its own merits to determine the most appropriate technique to control erosion and minimize future damage.

Who can I contact to find out if tree revetments are right for my erosion problem?

- **Ohio Department of Natural Resources** (614) 265-6739 or Northeast Ohio Scenic Rivers Coordinator (330) 527-4184
www.dnr.state.oh.us/odnr/water/pubs/onlnpubs.html
- **Cuyahoga Soil and Water Conservation District** (216) 524-6580
- **Lake Soil and Water Conservation District** (440) 350-2730
- **Geauga Soil and Water Conservation District** (440) 834-1122
- **Portage Soil and Water Conservation District** (330) 297-7633
- **Oxbow River and Stream Restoration** (614) 362-4134

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OhioEPA



**Chagrin River
Watershed Partners, Inc.**



FOR MORE INFORMATION

OR TO VISIT PROJECT SITES CONTACT :



**Chagrin River
Watershed Partners, Inc.**

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Chagrin River Watershed Partners, Inc. strives to preserve and enhance the scenic and environmental quality of the ecosystem of the Chagrin River and its watershed in a manner that assures a sustainable future for people, plants and animals.



**Chagrin River
Watershed Partners, Inc.**

Streambank Erosion?



BEFORE



AFTER

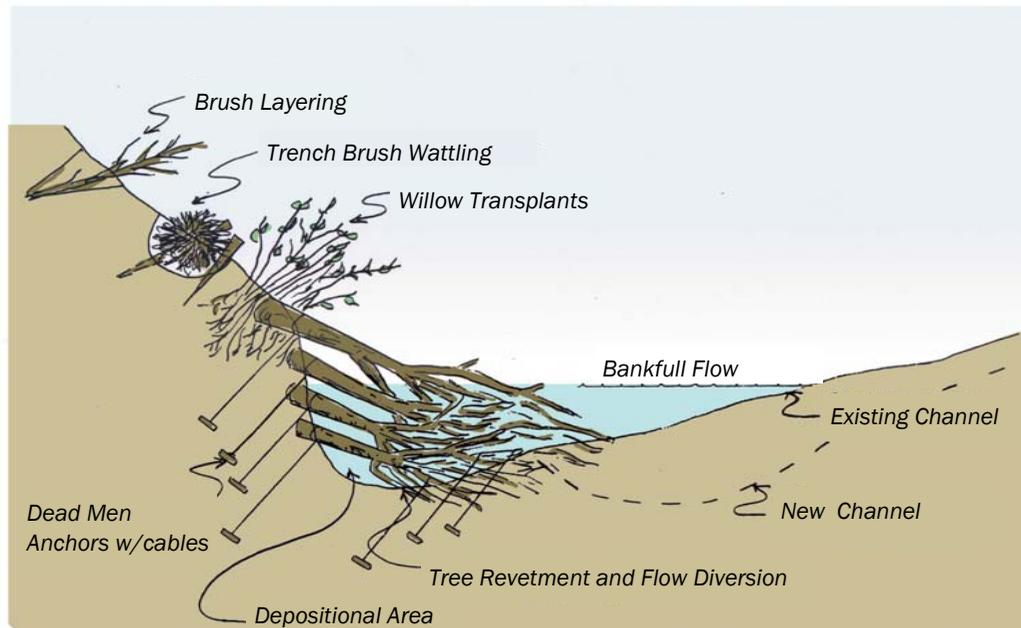
**Tree revetments
may be the answer.**

What are tree revetments?

Tree revetments are constructed by cabling logs and densely packing brush into eroding streambanks to deflect, absorb, and diffuse a stream's erosive force. Large woody debris found in the stream and stream corridor is anchored to the eroded streambank and deflects stream flow away from the unstable bank area. To facilitate sediment settling, brush is densely packed around the large logs. Tree revetment projects that will ensure long term bank stability must also include planting vegetation, such as willows, dogwoods, or other compatible species, along the streambank and eliminating mowing near the stream's edge. Tree revetments reduce streambank erosion and minimizes the transport of woody debris downstream where it can cause damage to bridges and other structures. Tree revetments can work in tandem with other streambank stabilization techniques, such as willow posting, brush layers, biologs/coconut fibers, and lunkers/a-jacks.

What are the benefits of using tree revetments for streambank stabilization?

- **SAVE MONEY:** Tree revetments are generally less expensive to construct and maintain than traditional approaches to streambank stabilization, such as gabion baskets and rip rap. If large woody material is available onsite, the largest cost to tree revetment installation is labor.
- **ENSURE LONG TERM STABILITY:** Appropriately selected native plant species grow better at the water's edge and will not spread outward or clog stream channels. These plants limit erosion and allow trees and other appropriate vegetation to grow.
- **PROTECT WATER QUALITY:** The logs, brush packing, and streambank plantings of a tree revetment slow stream flow, allowing sediment and chemicals to filter out.
- **PROVIDE HABITAT:** The logs, brush packing, and streambank vegetation of a tree revetment also provide valuable in-stream habitat for aquatic organisms.
- **CONSTRUCT AESTHETICALLY PLEASING STRUCTURES:** Many landowners prefer the natural look of tree revetments when compared to rock or concrete structures.



Demonstration Projects

While traditional bank stabilization features may work, they are expensive, require more extensive permitting, and will not provide the other benefits listed above.

- CRWP installed tree revetments at 3 sites to demonstrate the applicability of this technique to common erosion problems.
- East Garden Park, City of Eastlake—Ward Creek
 - Russell Township Park District—Chagrin River
 - Mathers Property, Russell Township—Chagrin River
- To find suitable sites and complete construction, CRWP worked with Oxbow River & Stream Restoration Inc., the ODNR Scenic Rivers Program, and interested CRWP members. CRWP will monitor the projects for 2 years.

East Garden Park

◀ **Before Construction**
Nearly vertical bank with exposed roots, little riparian vegetation, and severe erosion.



▲ **During Installation**
Kicker logs and brush packing collected on site.

▶ **After Construction**
Bank stabilized with vegetation. Tree revetment catches sediment, limiting erosion and improving water quality.

