

## **From Bare Banks to Better Buffers**

Sediment is one of the most common pollutants in our streams and rivers. It is estimated that over half of the sediment in our waterways occurs due to erosion associated with human activities. As communities grow there is often more asphalt and concrete. When it rains, stormwater runs off these paved surfaces and can result in urban streams carrying a lot of fast-moving water. This erodes and destabilizes stream banks, changing the natural shape of the stream channel. Compounding this effect is loss of floodplain vegetation. The common practice of mowing to the stream's edge suppresses growth of deeply rooted plants, like trees and shrubs, and encourages growth of plants with shallow root systems. Shallow roots are insufficient to hold stream bank soil in place. This further weakens bank walls and accelerates the erosion process.

***What's the Issue?*** Excess sediment in our streams causes several problems for aquatic organisms. For one, it decreases water clarity. The more suspended sediment a stream carries, the cloudier or more turbid the water. Murky water makes it difficult for fish to find food and for aquatic plants to photosynthesize. It also contributes to increased stream temperatures which decreases the oxygen holding capacity of water. Aquatic life will not thrive in streams with low dissolved oxygen levels. As excess suspended sediment settles out of the water, it builds up on the stream bed and fills the void spaces between rocks. This reduces available habitat for fish and other organisms and can inhibit reproduction. Streams impaired by sediment may have low species population and diversity, resulting in an imbalanced and unhealthy ecosystem.

Sediment pollution creates problems for terrestrial organisms as well. Excess sediment clogs streams and piping contributing to flooding. It transports pollutants such as nutrients, metals, and bacteria. These pollutants further degrade aquatic habitat and limit a stream's ability to support wildlife and provide for human recreation. Polluted water is also more expensive to treat before distributing it as drinking water.

***Better Buffers:*** If you live along a stream and have erosion concerns, consider reestablishing the riparian buffer zone. This is the transition zone between the stream and adjacent land area. The buffer zone is subject to periodic stream flooding and, in naturalized areas, contains plants suited to this environment. Trees and shrub species dominate the area closest to the stream bank. Native perennial grasses and flowers occur in drier areas along the margins of the floodplain.

***How does it work?*** Vegetated buffers play an important role in reducing erosion and improving water quality. Denser and deeper root systems of riparian vegetation anchor soils in place, helping to stabilize stream banks. Riparian buffers dissipate the energy of surface water runoff, promoting infiltration. This reduces the intensity and volume of runoff to the stream and allows time for the soil and plants to capture and filter pollutants. Trees and shrubs planted near the water's edge provide an added benefit of shading, which helps maintain water temperatures in a range favorable for more diverse aquatic life.

***Want to find out more?*** Contact your Cooperative Extension Services office for additional resources and assistance.

### **SOCIAL MEDIA CONTENT:**

**BARE BANKS:** Lack of a stream buffer zone can accelerate erosion. Erosion equals loss – of property, aquatic habitat, water quality, and stream function. Help restore stream health by creating a no mow zone and establishing native vegetation. Refer to the links below and contact your County Extension Agent for more information.

**BETTER BUFFERS:** Riparian buffer zones are an important component of a healthy stream. They help stabilize stream banks and improve water quality by decreasing nutrient and sediment levels in our streams. They also provide wildlife habitat and help maintain stream temperatures that promote diverse aquatic life.

Resources:

Planting Along Your Stream, Pond, or Lake HENV-202

<http://www2.ca.uky.edu/agcomm/pubs/HENV/HENV202/HENV202.pdf>

Riparian Buffer ENRI-109

<https://water.ca.uky.edu/files/enri109.pdf>

Planting a Riparian Buffer ID-185

<http://www2.ca.uky.edu/agcomm/pubs/id/id185/id185.pdf>

Restoring Streams AEN-122

<http://www2.ca.uky.edu/agcomm/pubs/AEN/AEN122/AEN122.pdf>

Streambank Erosion AEN-124

<http://www2.ca.uky.edu/agcomm/pubs/AEN/AEN124/AEN124.pdf>