

Resource Concerns

Shoreline, Bank and Channel Erosion

Soil

Soil Erosion - Shoreline, Bank and Channel Erosion

Sediment from banks, shorelines or conveyance channels threatens to degrade water quality and limit use for intended purposes.

Soil Erosion

Sheet, Rill and
Wind Erosion

Concentrated Flow
Erosion

Shoreline, Bank
and Channel
Erosion

Soil Quality
Degradation

Water

Air

Plants

Animals

Energy

What is it?

Stream stability is an active process, and while streambank erosion is a natural part of this process, it is often accelerated by altering the stream system. Streambank erosion is that part of channel erosion in which material is eroded from the streambank and deposited at the base of the slope or in the channel. Streambank erosion is usually associated with erosion of the streambed. It occurs along perennial, intermittent, and ephemeral streams.

Why is it important?

The benefits of proper streambank stabilization go far beyond preventing loss of land and keeping sediment out of streams. Streambank erosion increases sediment in the stream degrading water quality and resulting in the loss of fertile bottomland. The quality of wildlife habitat is impacted both on land and in the stream. Streambank erosion increases the stream's sediment load and changes its shape and function. When this happens the stream loses its ability to transport sediment which causes it to become wide and shallow. The stream channel can become braided, quality habitat is lost and the increased sediment can reduce overall biological productivity.

What can be done about it?

Determining the cause of accelerated streambank erosion is the first step in solving the problem. Development in the watershed often alters the stream equilibrium by changing rainfall-runoff relationships. Many of the traditional methods of dealing with streambank erosion, such as rock revetments, are expensive to install and maintain. While hard solutions are often needed to protect infrastructure, these treatments may solve the problem at the expense of habitat and stream corridor aesthetics. There are some promising developments in the area of streambank stabilization and stream restoration. Greener and more natural treatment alternatives are being more widely adopted. Soil bioengineering practices, native material revetments, combinations of rock and vegetation, and in-stream structures help to stabilize eroding banks. These techniques can be used to move a stream toward a healthy, stable and self-maintaining system.

Shoreline, Bank and Channel Erosion at a Glance

Problems / Indicators - Eroding Banks, degrading streambed, and manipulated stream channels	
Causes	Solutions
<ul style="list-style-type: none"> Increased runoff due to land use changes in the watershed Eroding or unstable streambanks Exposed tree roots along banks Large runoff events Degraded riparian areas Uncontrolled livestock access 	<ul style="list-style-type: none"> Bank armor and protection Soil bioengineering practices In-stream structures Native material revetments Riparian areas with native or locally adapted vegetation Control livestock access to the water bodies