

WATER

Sediment

Soil

Water

Excess Water

Insufficient Water

Water Quality
Degradation

Nutrients

Pesticides

Pathogens

Salts

Petroleum and
Heavy Metals

Sediment

Elevated Water
Temperature

Air

Plants

Animals

Energy

Water Quality Degradation - Sediment

Off-site transport of sediment from sheet, rill, gully, and wind erosion into surface water that threatens to degrade surface water quality and limit use for intended purposes.

What is it?

Wind or water erosion is the physical and chemical wearing of the earth's surface and is a natural ecosystem process. Problems arise when excess fine sediment enters surface water at rates and volumes greater than under natural conditions, resulting in turbidity and sedimentation. Typically, erosion related to human activities generates excessive sediment and should be controlled to acceptable levels.

Why is it important?

Sediment can have a significant impact on water quality and aquatic habitat. Not only does sediment carry nutrients and pesticides that can negatively impact water quality, but the physical characteristics of sediment can clog stream channels, silt in reservoirs, cover fish spawning grounds, and reduce downstream water quality. Sediment makes the water more turbid and restricts light penetration into the water, which impacts the ability of aquatic plants to perform photosynthesis. Suspended sediments can clog the gills of aquatic organisms and cause death. Sediment build up on the stream bottom can lead to the suffocation of fish eggs and macro invertebrates and impact natural spawning. Additionally, with an increased amount of particles in the water, dissolved oxygen levels may be reduced due to elevated water temperatures. Excessive sediment also impacts coastal area water quality as it can smother and kill coral tissue and reduces light levels and food supplied to the coral by symbiotic algae.

What can be done about it?

The issue of excessive sediments for water quality is managed by addressing the source and/or transport of soil. Controlling the source of soil erosion involves maintaining a protective cover on the soil and modifying the landscape to control runoff amounts and rates. Specific practices include growing perennial crops in rotation or as permanent cover, growing cover crops, managing crop residue, shortening the length and steepness of slopes, and increasing water infiltration rates. Controlling the transport of soil into water bodies involves buffers and edge of field treatments. Specific practices include grassed waterways, field borders, filter strips, and riparian forest/herbaceous buffers.

Sediment at a Glance

Problems / Indicators - Cloudy or muddy water, stream/water body soil deposition	
Causes	Solutions
<ul style="list-style-type: none"> Bare or unprotected soil Long and steep slopes, Intense rainfall or irrigation events when residue cover is at a minimum, Decreased infiltration by compaction 	<ul style="list-style-type: none"> Residue management Crop rotations with high biomass crops Cover crops Terraces Strip cropping Windbreaks Buffers and filter strips to address the transport of sediment