

# Riparian Buffers

Understanding the Ecological Benefits for Your Watershed



## More than meets the eye...

The term riparian buffer is used to describe areas where banks of a surface waterway are lined with vegetation. They are often thin strips of native grasses, flowers, shrubs and trees that line stream banks. They are also called vegetated buffer zones. They can occur on one or both sides of the waterway and are known to protect the health of the aquatic ecosystem, slow down the flow rate of the stream, and promote the stabilization of a river's banks. However, they also perform other important services that might not be as obvious.

Riparian buffers are essential to feed, shelter, and provide travel paths to more than 95 percent of all terrestrial species in North America. Overhanging trees also provide shade and prevent thermal pollution in streams. Riparian buffers trap sediment, the most prevalent pollutant in Indiana waterways, and chemicals or nutrients are also prevented from entering our rivers when riparian buffers are in place. Floodwater is filtered by vegetation into the soil by deep root systems instead of flooding downstream towns. Pathogens that can harm human health are also prevented from contaminating our drinking and recreational water when riparian buffers exist to filter them out.

## Remember...

What we do on land often has negative impacts on water, but installing riparian buffers is one way we can help.



*A riparian buffer is a natural filter strip of vegetation located between upland landscapes and surface waters.*



*The absence of riparian buffers on stream banks harms aquatic ecosystems, but also affects the quality of life for people who use the water for drinking, swimming, fishing, or boating.*

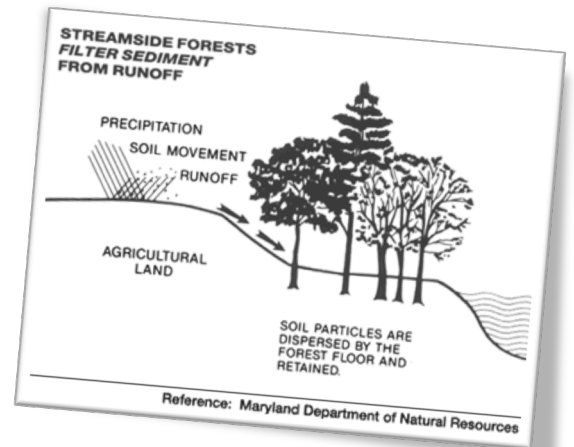


## Flood Mitigation

When floodwaters submerge urban and agricultural lands, pollutants such as chemicals, heat, salt, and trash are drained into waterways when the overflow subsides. A riparian buffers' vegetation has deep roots that allow water to drain down, rather than across, soils and other surfaces adjacent to waterways. This recharges groundwater and reduces a flood event's overall impact on pollution levels in surface waters.

## Sediment Loading

Sediment is the pollutant found in the highest concentration in Indiana waterways. Some erosion is natural, but too much sediment can smother stream bottom habitat and increase the potential for pathogens, such as *E. coli*, to grow. Many other poisons and chemicals receive a "free ride" into our waterways from sediment that washes into rivers, streams, and lakes.



## Pathogen Loading

When livestock have access to streams or septic systems start to fail, *E. coli* and other fecal bacteria that can be harmful to humans end up in our waterways. This can have major negative impacts on public health, downstream and also lead to beach closures that affect park revenue and water-based leisure activities.

## Nutrient Loading

Excess nutrients, especially nitrogen and phosphorus, enter waterways via runoff from urban and agricultural areas that use fertilizers. Algae blooms grow so thick in nutrient-rich streams that fish and other creatures can eventually suffocate. Algae aren't the only ones that like nitrogen: Mosquito larvae mature at rapid rates in the presence of nutrient enriched water, just as our children grow stronger and faster when their diets include extra nutrients.

