

Riparian Forest Buffers



What are they?

Riparian forest buffers are areas of trees, shrubs and other vegetation along streams, shoreline or riverbanks that provide a transitional zone between a forested, terrestrial environment and an aquatic one. Riparian buffer zones provide a number of benefits to a river ecosystem: regulating the water temperature, providing food and essential habitats to migratory birds and other animals, and preventing pollutants from entering the waterway.

Destruction of the forest

In the early 1600's, forests covered over 95 percent of the Potomac watershed; by the early 1990's only 60 percent of the forest remained and an additional 100 acres-a-

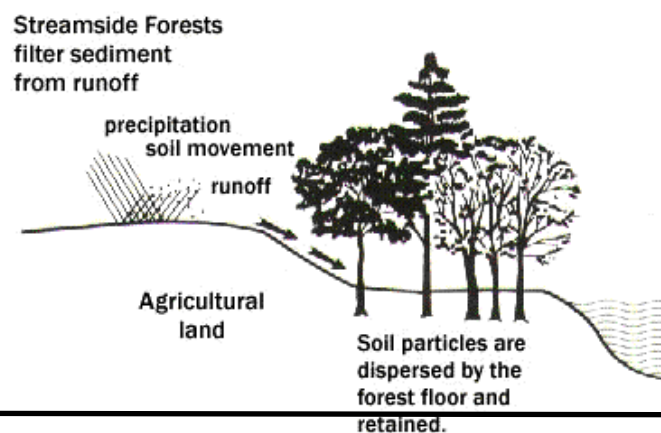
day are now lost to development. If the present rate of forest destruction continues, Maryland alone will lose over 500,000 acres of forests and farmlands to urban sprawl in the next 25 years—as much as has been lost the last 300 years.

Riparian Forest Buffers: Protectors of the River

Buffers divert major pollutants from entering streams and rivers: sediment and sediment-born pollutants, fertilizers and animal waste.

- S Sediment:** Buffers trap the sediment from farmland or other areas with soil disturbance, such as construction sites, by slowing the speed of surface water runoff, allowing sediments to settle out of water. Forested buffers are less expensive and more efficient than man-made sediment removal techniques.
- S Phosphorus and Nitrogen:** Fertilizers and animal waste contain nitrogen and phosphorus, known as nutrients, that help the crops grow. When fertilizers are applied to crops in excess of the crops' needs they create harmful runoff that flows into rivers or tributaries and cause algae blooms and fish kills. Forest buffers hinder the harmful flow of nutrients, absorbing

excess fertilizer for their own use. Forest buffers remove an estimated 80 percent of the Phosphorus and Nitrogen from agricultural runoff.



Supporting Aquatic Communities

Forest buffers are an important link to the aquatic food web. Fallen leaves from streamside trees provide nutrients and habitat for aquatic insect larvae, crayfish and other invertebrates. Minnows, fungi, bacteria, and algae also feed off of the disintegrated leaf material. This is critical to aquatic ecosystems because fish feed on the insect larvae and other small aquatic creatures which are in turn a food source for larger animals. Forest buffers also shade the stream helping to maintain a stable water temperature—without the shade, summer and winter temperature fluctuations would render the water uninhabitable for many fish species that spawn in the streams and rivers.



Supporting Terrestrial Communities

Because of the diversity of habitats in a riparian forest buffer, they generally support more wildlife than inland forests. The long corridors of forest provide important flyways for migrating birds such as goldfinches, warblers, and hummingbirds. The forest also provides a great variety of vines, shrubs and trees for nesting and food. Animals frequenting the forests in the Potomac River watershed include turtles, river otters, beavers, muskrats, water snakes, deer, squirrels, wood duck, cottontail rabbits, herons, eagles and songbirds. Also, the temporary pools provide a great habitat for frogs, toads and salamanders. The wider the forest buffer, the greater the diversity of animals.



Personal Benefits of a Buffer

Homeowners can save as much as 25 percent a year in energy costs by planting deciduous trees to shade their home and evergreens to block the wind. Buffers block noise pollution and increase privacy. Forest buffers also can provide a nature sanctuary in your backyard and a cool shaded refuge from the summer heat.

What you can do

1. Plant native trees and shrubs along your stream.
2. Reduce or eliminate fertilizer and herbicide use. Runoff from fertilizers, pesticides and other chemicals used in the household and on residential lawns is a major cause of water pollution.
3. Join Potomac Conservancy volunteer projects designed to protect and restore forest buffers.
4. Protect you streamside land. If you own land along side a stream or river contact the Conservancy to learn more about conservation options.

Contacts and Websites

Potomac Conservancy: 703.276.2777, www.potomac.org

Chesapeake Bay Program 800.YOUR.BAY, www.chesapeakebay.net/ripar1.htm

Maryland Department of Natural Resources: www.dnr.state.md.us/forests/publications/buffers.html

Maryland Native Plant Society: www.mdflora.org

Virginia Department of Forestry: www.dof.state.va.us/rfb/riparian/riparian.htm

Virginia Native Plant Society: www.vnps.org

The Potomac Conservancy

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