

What is a Riparian Vegetative Buffer?

A riparian vegetative buffer, or simply a “buffer,” is a wide strip of vegetation adjacent to a stream or lake that is free of row crops and regular livestock pasturing. The term riparian comes from “river” and refers to things living or located near water.

Buffers typically are planted predominantly to grass with areas of broadleaf plants, shrubs, and trees added for improved wildlife habitat. They benefit water quality by reducing the amount of sediment, nutrients, organic matter, and pesticides that enter streams and lakes. In one study, buffers were shown to reduce the amount of sediment entering a stream by 80% and the amount of total nitrogen and phosphorous by 50%.

Water quality benefits

Buffers remove pollutants from runoff water in two ways: by slowing the speed of runoff and soaking up runoff into

the soil. Water must move to carry sediment and other particles. The faster it moves, the more material it carries. Buffers slow the speed of runoff by spreading out the flow and making it pass through dense vegetation. As the speed of the runoff drops, sediment, pollutants attached to sediment, and organic matter solids settle out and are retained in the buffer.

Soils under the natural vegetation of buffers readily soak up runoff water. As runoff water is soaked up and moved down through the soil into groundwater, it is cleansed of most pollutants. The soaking up of runoff into the soil also helps stabilize water supplies. It reduces flooding during wet periods and recharges groundwater, the source of seepage that keeps streams flowing when the weather is dry.

Buffers also prevent soil erosion from occurring in the first place. Eroding streambanks and cropland are two common sources of sediment. By keeping streambanks and nearby uplands in undisturbed vegetation, they are better protected from erosion caused by rainfall and flowing water.

A home where wildlife roam

Protecting streams with buffers can result in increased game fish populations. Once the source of sedimentation is reduced, streams can start the process of cleansing themselves. Pools and shallow rocky areas (riffles) will flush clean of accumulated sediment during spring flows. The pools will again provide cover for fish, and the rocky areas will once more be home to aquatic insects, which provide food for fish. These rocky areas will also provide spawning areas for many fish.

As a transition zone between moist lowlands and drier, more open uplands, buffers often contain the diverse habitat conditions that wetland and upland wildlife need – providing a source of food, water, and shelter. Waterfowl will frequent stream corridors and nest in the natural cover. Fish-eating birds will take advantage of the healthy fishery.

Current recommendations from the National Resource Conservation Service - USDA is that a stream flowing through gently rolling cropland with good erosion control should have a buffer 30 feet wide on each bank. Hillier land, or land with less erosion control, will require wider buffers for adequate water quality protection.

Deer will bed down in the thicket cover and birds will nest along grassy spaces. Hawks will search these areas for rabbit and mice.

The value of buffers to wildlife increases with their width. Narrow buffers may actually have a detrimental impact on prey species by providing an easily hunted corridor for such predators as foxes, raccoons, hawks, and humans. As buffers reach 100 feet in width, the advantage they give to predators over prey diminishes.

How wide?

How wide a buffer should be is a real issue with landowners since creating buffers often requires taking land out of crop production. The recommended width for buffers for water quality varies with the lay of the land and the type of

land use. Current recommendations from the National Resource Conservation Service - USDA is that a stream flowing through gently rolling cropland with good erosion control should have a buffer 30 feet wide on each bank. Hillier land, or land with less erosion control, will require wider buffers for adequate water quality protection. As noted before, the wider a buffer is, the better its wildlife benefit.

Financial assistance available

There are several programs that provide financial assistance to landowners who establish vegetative buffers along streams and lakes. Programs include the USDA's Conservation Reserve Program (CRP), county Agricultural Shoreland Management Programs, and the state's Stewardship Program and Priority Watershed Program. Contact your County Land Conservation Department office to learn which of these programs may be available in your area.

In addition to information on financial assistance, County Land Conservation Department staff can assist landowners in the designing and laying out of buffers. They are your first and best source for riparian vegetative buffer information.

