



## Riparian Buffers for Upstate Lakes

by Michael Dorn

**Riparian Buffer:** A naturally occurring or human made vegetated strip near a stream, river, lake, or pond. This vegetation can consist of any combination of canopy trees, sub canopy trees, shrubs, grasses (non turf types), herbaceous perennials, and ground covers.

While a vegetated strip consisting of any of the above vegetation serves as a riparian buffer, it is ideal to have a balanced combination of various types of vegetation that is not maintained or manicured with traditional landscape practices. Ideally the vegetation is native to the region, however, non-invasive exotic species can provide some of the same benefits as native vegetation.

**Function/Benefits:** Riparian buffers provide increased water quality by filtering out overland run-off before it gets into the water body, thus removing potential pollutants such as sediment, pesticides, fertilizer/nutrients, and bacteria. These buffers also provide soil stability, erosion control, and many benefits to wildlife, fish, and other aquatic life. Large trees provide shady water habitat that increases productivity and quality for aquatic life.

Many trees, shrubs, grasses, and perennials provide birds and wildlife with food and/or shelter. Finally, this vegetation provides air filtration and produces oxygen that is released into the atmosphere.

**Riparian Zones:** There are three zones in a riparian buffer. The wider the riparian buffer, the more ecological benefit it provides. The typical width is 25-50 feet. Below is a breakdown of the riparian zones as they would occur in an ideal situation.

**Zone 1** is closest to the water and usually the smallest zone. Its main function is to provide shady water habitat and shoreline or bank stability.

**Zone 2** consists mostly of shrubs and small trees. It is an excellent source of food and shelter for birds and wildlife, and also traps and/or absorbs any pollutants that may have gotten through Zone 3.



**Zone 3** is the outermost zone that consists mostly of native grasses and perennials, and does most of the filtration of pollutants. It also provides some habitat particularly for birds and small mammals. This zone should be mowed, bush hogged, or weed whacked once a year down to about 6-8 inches to keep it as grassland/meadow, otherwise succession could develop it into a forest.

The above zone descriptions lay out the ideal situation particularly when dealing with riparian buffers adjacent to homes, landscapes, agricultural areas, etc. In many cases, the riparian buffer may consist of mostly trees and understory vegetation throughout the entire area. Or, you may see a riparian buffer that consists predominately of shrubs or native grasses with fewer trees.

Regardless of the type of vegetation, the main point of a riparian buffer is to have a strip of vegetation between the upland and the aquatic environment. It is important that this area be free of human structures, pavement, manicured lawns or plant beds, and/or bare areas. It is also important that this area not receive fertilizer and/or pesticide applications except in a most extreme case.

#### **Preserving, Enhancing, or Creating a Riparian Buffer:**

The ideal riparian buffer is one that is created by nature. The species selection, density, and distribution are difficult to produce as well as nature does. Thus, whenever possible, it is ideal to leave the natural vegetation just as it is without any human modifications. This picture illustrates a naturally formed riparian buffer.

If someone has purchased property that has already been cleared or thinned within the buffer zone, the riparian buffer will need to be created or enhanced. Riparian buffer creation or enhancement can be approached in several different ways.

The following are a few things to consider: how much of my land (width) am I willing to dedicate to a riparian buffer (25-50' is ideal); am I willing to let it go completely natural or do I want to have some control of the growth; and will I mix trees, shrubs, grasses, and perennials, or leave out one or more of those plant types.

The ideal plan for creating or enhancing a riparian buffer is to plant a dense mixture of native trees, shrubs, grasses, and perennials in the zones listed above, help them get established, and leave the area alone for nature to take its course. See before-and-after buffer installations in the article, "Enhancing the Shoreline, One Home at a Time".



There are many forms, methods, and concepts for riparian buffers on the shorelines of lakes and streams. The main thing to see here is that regardless of the approach, these buffers are crucial to maintain water quality, natural shorelines, and an ideal environment for fish and wildlife.

**Suggested resources:**

Dorn, Michael L., *Native Woody Landscape and Restoration Plants of the Eastern United States (2010)*

Foote, Leonard E. and Jones, Samuel B. Jr., *Gardening with Native Wildflowers (1990)*

Porcher, Richard Dwight and Rayner, Douglas Alan, *A Guide to the Wildflowers of South Carolina (2001)*

Roth, Lin (ed.), *Life at the Water's Edge (2004)*