

Conservation Matters

A monthly column focused on conservation education, as the result of collaboration among several area conservation commissions and organizations. If your town's commission or conservation organization would like to contribute articles, please contact Jessica Tabolt Halm jess_tabolt@hotmail.com

Title: Riparian Buffers – The Best “Local Control” for Clean Water

Submitted by: The Newfound Lake Region Association

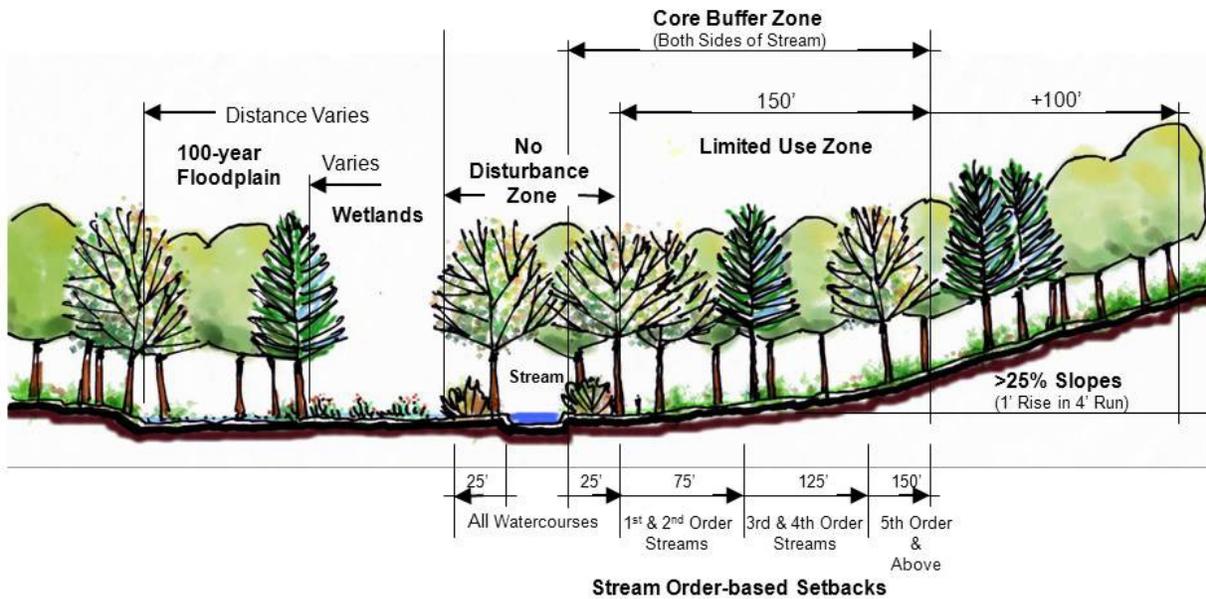
Riparian buffers are defined as “filter strips” of naturally vegetated land that abut surface waters. Research into the effectiveness of riparian buffers has shown that as little as 60 feet of forested land with a thick layer of organic duff can reduce storm water sediment loads by up to 85%.

The Center for Watershed Protection, a non-profit based in Maryland and dedicated to fostering responsible land and water management, has developed a tiered approach to defining riparian buffers based on stream order, which is a method of classifying streams by their size and position in a watershed. Order 1 streams are headwaters found high up on the ridges surrounding the watershed and are typically small. Two Order 1 streams combine to make an Order 2 stream, and so on down the watershed.

The Newfound Lake Region Association has adapted the tiered approach to riparian buffers as part of *Every Acre Counts*. As shown in Figure 1, all streams should have a 25-foot-wide “no disturbance” zone. This zone is the last line of defense in removing sediment from storm water, and must remain as thickly vegetated as possible. Abutting the no disturbance zone is the “limited use zone” that varies in width from 75’ for Order 1 and 2 streams to 150’ for Order 3 and higher watercourses. Together, the no disturbance and limited use zones form the core buffer zone.

The logic for a smaller limited use zone for Order 1 and 2 streams is that their watersheds are relatively small and overland flow of storm water is limited. Low-impact uses in the limited use zone are acceptable as long as the soil is not disturbed and the forest is allowed to accumulate organic materials naturally.

Figure 1 - Tiered Riparian Buffer and Stream Order



Beyond the standard limited use zone, there are other considerations and opportunities to augment the protective function of riparian buffers. Steep slopes that lead directly to streams are of special concern because the erosive potential of water is increased exponentially by slope. Limited use zones should be increased by an additional 100' in areas with slopes greater than 10%-15%. Wetlands and floodplains often abut streams, and both provide critical functions in trapping sediment and eliminating nutrients such as phosphorus and nitrogen. Adding wetlands and floodplains to existing limited use zones extends the reach and effectiveness of riparian buffers tremendously. In addition to providing clean water, core buffer zones also provide cooling shade for surface waters and critical migration corridors for wildlife.

The tiered riparian buffer approach to managing water quality is based on sound science, and is a practical approach to protecting clean water and habitat. However, other factors such as highly erodible soils and extensive steep slopes have a direct impact on the effectiveness of riparian buffers.

This article was prepared by project partner Dan Sundquist of GreenfireGIS. Dan is an expert land-use planner and GIS analyst, as well as a life-long educator, who can be reached at dsundquist@tds.net. For more information about riparian buffers, see Dan's full report at www.NewfoundLake.org under Watershed Information.