Riparian Forest Buffer

Conservation Practice Job Sheet ***391***

Natural Resources Conservation Service (NRCS) ***April 1997***

Landowner_____

Definition

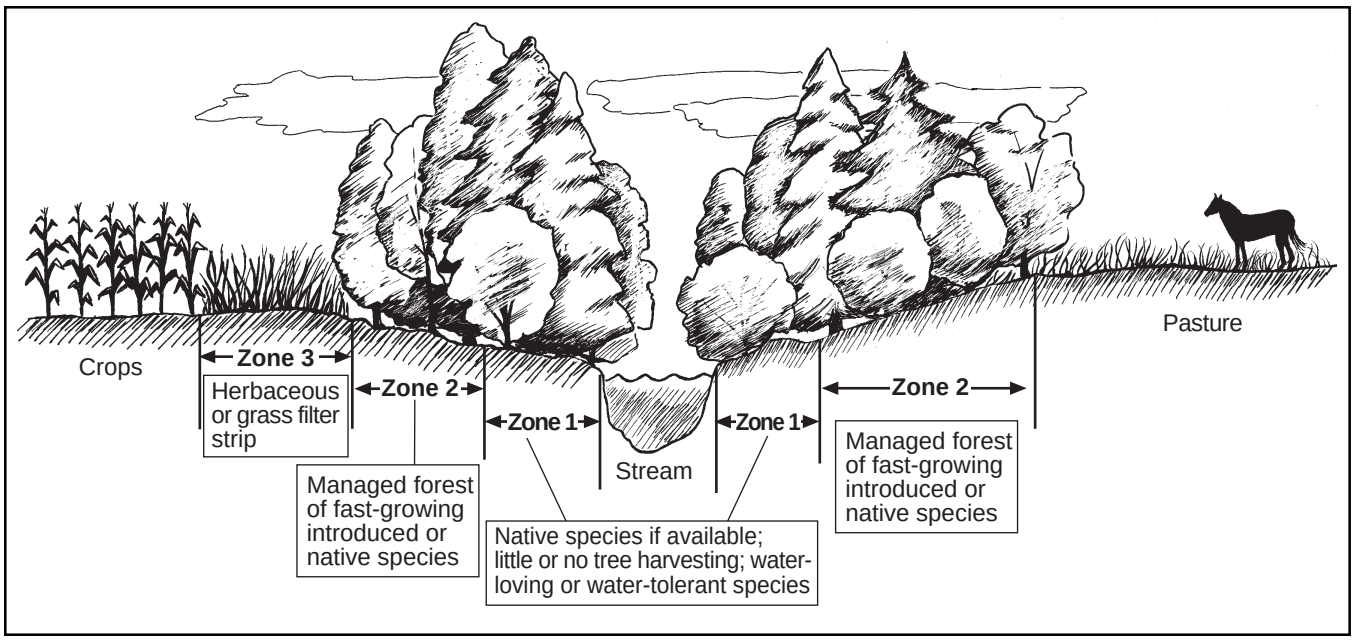
A riparian forest buffer is an area of trees and shrubs located adjacent to streams, lakes, ponds, and wetlands.

Purpose

Riparian forest buffers of sufficient width intercept sediment, nutrients, pesticides, and other materials in surface runoff and reduce nutrients and other pollutants in shallow subsurface water flow. Woody vegetation in buffers provides food and cover for wildlife, helps lower water temperatures by shading waterbody, and slows out-of-bank flood flows. In addition, the vegetation closest to the stream or waterbody provides litter fall and large woody debris important to aquatic organisms. Also, the woody roots increase the resistance of streambanks and shorelines to erosion caused by high water flows or waves. Some species established or managed in a riparian forest buffer can be managed to provide timber, wood fiber, and horticultural products.

Where used

Buffers are located by permanent or intermittent streams, lakes, ponds, wetlands, and seeps. Many of these areas have year-round or seasonal beneficial



A riparian forest buffer includes zone 1, the area closest to the waterbody or course, and zone 2, the area adjacent to and up gradient of zone 1. Trees and shrubs in zone 1 provide important wildlife habitat, litter fall for aquatic organisms, and shading to lower water temperature. This zone helps stabilize streambanks and shorelines. Trees and shrubs in zone 2 (along with zone 1) intercept sediment, nutrients, pesticides, and other pollutants in surface and subsurface water flows. Zone 2 can be managed to provide timber, wood fiber, and horticultural products. A third zone, zone 3, is established if periodic and excessive water flows, erosion, and sediment from upslope fields or tracts are anticipated. Zone 3 is generally of herbaceous plants or grass and a diversion or terrace, if needed. This zone provides a "first defense" to assure proper functioning of zones 1 and 2.

moisture, which allows woody species to establish quickly. A new riparian forest buffer can rapidly benefit a variety of settings, such as cropland, rangeland, forest land, and urban areas.

Conservation management system

Riparian forest buffers are normally established concurrently with other practices as part of a conservation management system. For example, adjoining streambanks or shorelines must be stabilized before or in conjunction with the establishment of the buffer (streambank and shoreline protection). To maintain proper functioning of a planting, excessive water flows and erosion must be controlled upslope of the riparian forest buffer (filter strip, diversion, critical area planting). New plantings must be protected from grazing during establishment.

Wildlife

Connecting a buffer with existing perennial vegetation, such as woodlots and woody draws (tree/shrub establishment) or hedgerows (windbreak/shelterbelt establishment), benefits wildlife and aesthetics. Select species and a planting pattern that benefits the wildlife species of interest.

Operation and maintenance

Trees in the buffer as well as adjacent forested areas are periodically maintained and harvested (forest stand improvement and forest harvest trails and landings). As the buffer matures, periodic harvesting of some of the trees becomes an important activity for maintaining plant health and buffer function.

Specifications

Site-specific requirements are listed on the specifications sheet. Additional provisions are entered on the job sketch sheet. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See practice standard Riparian Forest Buffer code 391.

Riparian Forest Buffer – Specifications Sheet

Landowner _____ Field number_____

Purpose (check all that apply)	
☐ Intercept sediment, nutrients, pesticides, other contaminants	☐ Wildlife habitat
☐ Lower water temperature	☐ Other (specify):

Location and Layout		
Water body/course type and name, other:		
Minimum buffer zone widths (ft.) - specify left and right of stream (facing upstream) for a two-side buffer; use left only for water bodies, such as lakes and ponds; include herbaceous species in zone 3 notes or refer to other job sheets:		
Zone 1	**Zone 2**	**Zone 3**
Left: Right:	Left: Right:	Left: Right:
Notes:	Notes:	Notes (refer to filter strip job sheets):
Buffer zone length (ft):	Buffer zone area (ac):	
Additional location and layout requirements:		

Woody Plant Materials Information				
Species/cultivars: Spacing[2]:	Plants/acre:	Kind of stock[1]:	Planting dates:	Average
Zone #1				
1				
2				
3				
4				
Zone *#2*				
1				
2				
3				
4				

[1]BAreroot, COntainer, CUtting; include size, caliper, height, and age as applicable. [2]Average spacing between plants to achieve plants/acre.

Temporary Storage Instructions
Planting stock that is dormant may be stored temporarily in a cooler or protected area. For stock that is expected to begin growth before planting, dig a V-shaped trench (heeling-in bed) sufficiently deep and bury seedlings so that all roots are covered by soil. Pack the soil firmly and water thoroughly.
Site Preparation
Remove debris and control competing vegetation to allow enough spots or sites for planting and planting equipment. Additional requirements:
Planting Method(s)
For container and bareroot stock, plant stock to a depth even with the root collar in holes deep and wide enough to fully extend the roots. Pack the soil firmly around each plant. Cuttings are inserted in moist soil with at least 2 to 3 buds showing above ground. Additional requirements:

Buffer Maintenance
The buffer must be inspected periodically and protected from damage so proper function is maintained. Replace dead or dying tree and shrub stock and continue control of competing vegetation to allow proper establishment. Periodic harvesting of trees and shrubs in zones 1 and 2 may be necessary to maintain the health and vigor of mature stands. Additional requirements:

Riparian Forest Buffer – Job Sketch

If needed, an aerial view or a side view of the vegetation types, widths of zones 1, 2, and 3 (as applicable to this site), a direction arrow, and the type of water body or water course are shown below. Other relevant information, such as shoreline or bank shape, upslope field conditions including crop types, and complementary practices, and additional buffer specifications may also be included.

Scale 1"=_____ ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")

Additional Specifications and Notes: