Riparian Forest Buffer

Conservation Practice Job Sheet *ME-391*

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, cover and connectivity for wildlife, helps aquatic life by lowering water temperatures by shading the stream or waterbody, and slows out-of-bank flood flows. In addition, the vegetation closest to the stream or waterbody provides litter fall and large wood important to fish and other aquatic organisms as a nutrient source and structural components to increase channel roughness and habitat complexity. Also, the woody roots increase the resistance of streambanks and shorelines to erosion caused by high water flows or waves. Some tree and shrub species in a riparian forest buffer can be managed for timber, wood fiber, and horticultural products.

Where used

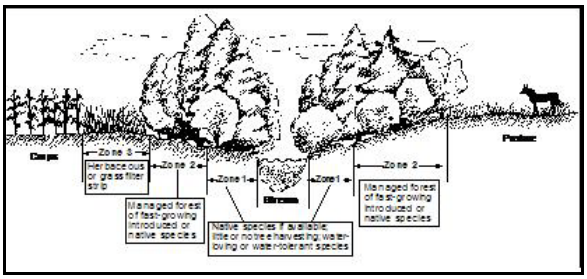
Buffers are located along or around permanent or intermittent streams, lakes, ponds, wetlands, and seeps in a variety of settings, such as cropland, rangeland, forest land, and urban areas.

Operation and maintenance

Replace dead and dying woody species in newly established plantings. Trees and shrubs in a riparian forest buffer can eventually become crowded slowing their growth and the growth, survival and composition of understory species. As the buffer matures, periodic harvesting of some of the overstory trees and shrubs becomes an important activity for maintaining plant health and buffer function. To maintain proper function of a planting, excessive water flows and erosion must be controlled upslope of the riparian forest buffer (filter strip, diversion, critical area planting, residue management). New plantings must be protected from grazing during establishment (prescribed grazing, use exclusion) period, as well as pests, including competing vegetation and animal pests (deer, beaver and mice).

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 ME NRCS Field Office Technical Guide. See practice specification guide sheets Riparian Forest Buffer, code 391, Tree/Shrub Establishment, code 612, and Tree/Shrub Site Preparation, code 490 where appropriate.



A riparian forest buffer includes the forested area closest to the stream or waterbody, and the forested area adjacent to and up gradient from there. If periodic and excessive water flows, erosion, and sediment from upslope fields or tracts are anticipated, an area of herbaceous plants or grass and a diversion or terrace may also be needed upstream.

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Name:	*County:* *Town:*
Field(s):	*Farm #:* *Tract #:*
Designed By:	*Approved By:* *Signature:*
Date:	*Date:*

Purpose (check all that apply)	
☐ Create shade to lower water temps/improve aquatic habitat	☐ Provide a harvestable crop of timber, fiber, forage, fruit, or other wood-tree related crops consistent with other purposes
☐ Provide detritus/large woody debris for aquatic/terrestrial organisms	☐ Provide protection against scour erosion within the floodplain
☐ Create wildlife habitat and establish wildlife corridors	☐ Restore natural riparian plant communities
☐ Reduce excess sediment, organic material, nutrients, pesticides in surface runoff and excess nutrients/chemicals in shallow ground water flow	☐ Moderate winter temperatures to reduce freezing of aquatic over-wintering habitats
	☐ Increase carbon storage

Layout - Refer to ME 391 Specification Guide Sheet.		
Water body/course type and name, other:		
Minimum buffer zone widths (ft) – specify left and right of stream [facing upstream/downstream (circle appropriate one)] for a two-side buffer; use left only for water bodies, such as lakes and ponds; include herbaceous species when needed or refer to other jobs sheets (393). Refer to ME Standard 391 Specification Guide Sheet for appropriate buffer width determination.		
15 feet from top of streambank	**Remaining buffer Area Width:**	**Herbaceous Area (optional)**
Left: Right:	Left Right:	Left: Right:
Notes:	Notes:	Notes:
Buffer zone length (ft):		
Additional location and layout requirements:		

Woody Plant Materials Information - Refer to ME 391 Specification Guide Sheet for species to plant in riparian areas. For plants per acre and avg. spacing, refer to ME 391 Specification Guide Sheet. **NOTE: Minimum of two different species each of trees/shrubs is required.**

Species/cultivars:	Plants/ac:	Total # of Plants:	Kind of stock[1]:	Planting dates:	Avg. Spacing[2]:
First 15 Feet (minimum of two rows)					
1					Ft X Ft
2					Ft X Ft
3					Ft X Ft
4					Ft X Ft
Remaining buffer area Width:					
1					Ft X Ft
2					Ft X Ft
3					Ft X Ft
4					Ft X Ft

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

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Temporary Storage Instructions (Refer to ME Standard and Specification 612)
Planting stock that is dormant may be stored temporarily in a cooler or cool, moist, darkened area up to 3 days. For more than 3 days or 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. *Additional requirements:*

Site Preparation (Refer to ME Standard and Specification 490)
Remove debris and control competing vegetation to allow enough spots or sites for planting and planting equipment. The following method of site preparation is planned: ___ *Mechanical means such as plowing, disking or rototilling,* ___ *Chemical control of vegetation,* ___ *Hand scalping the area where trees are to be planted,* ___ *Other:* _____ *Additional requirements (include width of streambank adjacent to the water left undisturbed if plowing, disking or rototilling):*

Planting Methods (Refer to ME Standard and Specification 612)
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. Pest Management including weed control is required. Vegetation Mat-Size_____#_____ Tree Shelter-Size_____#_____ Other _____ Additional requirements:

Operation and Maintenance
The buffer must be inspected periodically and protected from damage so proper function is maintained. Replace dead or dying tree/shrub stock to provide adequate plant densities as described in the 391 standard and continue control of competing vegetation to allow proper establishment for at least 3 years. Periodic harvesting of trees and shrubs in zone 2 may be necessary to maintain the health and vigor of mature stands. Keep large dead and dying trees for cavity nesting birds and a source of large wood in aquatic habitats. Additional requirements:

NEPA requirements met, including ESA & cultural resource assessment?_____ Permits required?___ Permit No._____ (if Yes)

COMPLETION/CHECKOUT CERTIFICATION

I have job approval authority and certify this practice as applied meets NRCS Standards and Specifications:

NRCS Representative name and title (type or print):		
NRCS Representative Signature:		Date:
As-Built Notes (include date completed by client, treated acres and describe any changes to original design):		

Questions regarding the planting or maintenance of the buffer planting should be directed to [name of technical specialist], at [phone number].

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If needed, an aerial view or a side view of the practice can be shown below. Other relevant information, complementary practices and measures, and additional specifications may be included.

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

Additional Specifications and Notes:

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LANDOWNER/OPERATOR ACKNOWLEDGES:

a. They have received a copy of the specifications and understand the contents including the scope and location of the practice.
b. They have obtained all necessary permits and/or rights in advance of practice application, and will comply with all ordinances and laws pertaining to the application of this practice.
c. No changes will be made in the installation of the job without prior concurrence of the NRCS.
d. Maintenance of the installed work is necessary for proper performance during the life of the practice. The practice life is _____.

I have reviewed all specifications and agree to install as specified:

Landowner/operator name and title (type or print):		
Landowner/operator Signature:		Date: