



Riparian Forest Buffer - 391

Massachusetts Conservation Job Sheet

Client:	Farm #:	Tract #:
Planned By:	Date:	



DEFINITION

A riparian forest buffer is an area of trees and/or shrubs located adjacent to and up-gradient from watercourses or water bodies.

PURPOSE

Riparian forest buffers intercept sediment and nutrients in surface water runoff and reduce nutrients and other pollutants in shallow subsurface water flow. Woody vegetation 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 woody buffer provides litter fall and large wood important to fish and other aquatic organisms. The roots of the woody plants increase the resistance of streambanks and shorelines to erosion caused by high water flows or waves.

SPECIFICATIONS

The minimum width of the buffer should be 35 feet (measured horizontally on a line perpendicular to the water body beginning at the normal water line, or top of bank) if the goal is to reduce excess amounts of sediment, organic material, nutrients and pesticides. The minimum width of the buffer should be 50 feet if the goal is to create wildlife habitat, wildlife corridors or restore natural riparian plant communities.

Plant Material

Use tree and shrub species that are native and non-invasive. Favor tree and shrub species that have multiple values such as those suited for timber, mast production, nesting, and aesthetics.

Bare root seedlings and *rooted cuttings* are grown in nursery beds. This type of stock is the most economical but requires the most care in handling and planting, and when not handled properly, can have high mortality.

Container grown stock has been growing in a container throughout its propagation or it was grown in a nursery bed and later transplanted to a container.

Balled and burlapped (B&B) plants are grown to a larger size in the field and are dug with a firm ball of soil around the roots. The soil ball is held in place with burlap, twine or a wire basket.

Containerized stock and B&B plants are more expensive than bare root stock, however they allow for a longer planting window, and because their roots are not disturbed at the time of planting they suffer little transplant shock.

Tree Tubes

Tree tubes are preformed plastic tubes used to provide protection from animal browsing and mechanical damage. They are manufactured in different colors, levels of translucence, and with and without vents. If tree tubes are needed, select those that contain vents and are translucent. This prevents excessive heat and moisture buildup and will allow seedlings to enter and break dormancy naturally. The support stake should be hardwood, 4-5 feet tall, and sunk at least 8 inches into the ground on the windward side of the plant before the tree is planted. After planting, the tube is placed over the tree, inserted 2 inches into the ground, and attached to the support post with fasteners. To prevent birds from entering the tube and getting stuck, netting should be placed over the top of tubes.

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Purpose (check all that apply)

Reduce excess sediment, organic material, nutrients, pesticides in surface runoff and excess nutrients/chemicals in shallow ground water flow

Create shade to lower water temps and provide detritus/large woody debris to improve aquatic habitat

Create wildlife habitat, establish wildlife corridors and restore natural riparian plant communities

Other (specify)

Buffer Layout/Location

One side of stream*

Both sides of stream

Pond/lake/wetland shore

* (Specify side when facing downstream) _____

Buffer Width: _____

Buffer Length: _____

Total Acres: _____

Establishment Method (check all that apply)

Planting

Retention *

Natural regeneration *

* Add specific details regarding establishment (e.g., species to be retained; seed source tree species and location; invasive species concerns, etc.)

Woody Plant Materials Information

Species/cultivars:	Check if Tree Tubes Required	Kind of stock ¹ :	No. Plants Needed	Planting dates:	Avg. Spacing ² :
	—				__ Ft. x __ Ft.
	—				__ Ft. x __ Ft.
	—				__ Ft. x __ Ft.
	—				__ Ft. x __ Ft.
	—				__ Ft. x __ Ft.
	—				__ Ft. x __ Ft.
	—				__ Ft. x __ Ft.
	—				__ Ft. x __ Ft.

¹BAreroot, COntainer, BB Balled and Burlapped. ²Spacing between plants.

Woody Plant Material - Temporary Storage Instructions

- If possible, store bare root seedling stock in cold storage (between 33 and 37 degrees Fahrenheit). Otherwise, place seedlings in a cool, moist location; mist with water as needed to keep moist, and plant within 7 days. For storage longer than 7 days, dig a V-shaped trench (heeling-in-bed) in well-drained soil in a shaded area. The trench should be sufficiently deep so that all roots are covered by soil. Pack the soil firmly and water thoroughly.
- B&B and containerized stock should be placed in a shaded area protected from wind, & watered as needed.
- *Other Storage Instructions:*

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Permits: The client is responsible for obtaining and complying with all applicable Federal, State, and local permits or approvals necessary for the implementation, operation, and maintenance of this conservation practice.

Site Preparation: Refer to Job Sheet 490 – Tree and Shrub Site Preparation- for specific requirements.

Planting Method (check appropriate method to be used)

Bare Root Seedlings and Small Containerized Stock:

- Bare-root seedlings and small containerized stock shall be planted in the spring after the ground thaws and before their buds open.
- Tree and shrub seedlings may be planted by hand using a planting bar, mattock, shovel or spade. Also, a mechanical tree planter may be used for bare root seedlings. Plant seedlings vertically with the root collars equal to or up to one inch below the soil surface.
- When planting bare root seedlings, the planting hole should be deep and wide enough to spread the roots out in a natural, uncurled position.
- Firmly pack the soil around the seedlings to eliminate air pockets. Water thoroughly immediately after planting and during dry periods during the first growing season.

Additional Requirements:

Balled and Burlapped and Large Containerized Stock:

- Ideally, B&B and large containerized stock should be planted in early spring; however, if irrigation is available, and mulch will be applied, they can be planted up until early summer. Deciduous species can also be planted in early fall. (Note: Fall planting of conifers is often unsuccessful thus should be avoided).
- Dig a hole 2 -3 times as wide as the root spread and at the depth of or slightly shallower than the root ball. Roughen the sides and bottom of the hole to allow the roots to more easily penetrate the soil.
- Remove all twine and/or wires, and open or pull back the top of the burlap. Completely remove plastic liners or synthetic burlap, if present.
- Plant the stock vertically with the top of the root ball ½ to 1 inch above the surrounding soil.
- Firm soil when backfilling the hole in order to eliminate air pockets, but do not over compact. Form a temporary water basin around the base to encourage water penetration to the root ball.
- Water thoroughly immediately after planting and during dry periods during the first growing season. For very large trees, water whenever weekly precipitation is less than 1 inch during the first growing season.

Additional Requirements:

Establishment (check all that apply):

Weed Control – Control competing vegetation until planting (or natural regeneration) is well established and able to out-perform competing vegetation (minimum of 3 years). Vegetation shall be controlled in a minimum 2 foot diameter circle around each plant. Weed control will be accomplished through: (check applicable method)

- **Mulching** – Refer to practice standard 484 – Mulching – for specific requirements.
- **Mowing** – Do not mow closer than 6 inches to the young plant to avoid damaging it. Hand weeding can be done to control weeds within 6 inches of the young plant, if needed.
- **Herbicide** – herbicide can be utilized but care should be taken to ensure that spray is kept well away from the planted stock.

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PRACTICE CERTIFICATION

- 1) Complete the 'applied' information tables below.
- 2) Modify the practice location map if applicable.
- 3) Include additional notes as needed.
- 4) Complete the certification statement:

Buffer Layout/Location			
<input type="checkbox"/> One side of stream* * (Specify side when facing downstream) _____	<input type="checkbox"/> Both sides of stream	<input type="checkbox"/> Pond/lake/wetland shore	
Buffer Width: _____	Buffer Length: _____	Total Acres: _____	

Woody Plant Materials Used					
Species/cultivars:	Check if Tree Tubes Used	Kind of stock ¹ :	No. Plants Used	Planting dates:	Avg. Spacing ² :
	—	_____	_____	_____	__ Ft. x __ Ft.
	—	_____	_____	_____	__ Ft. x __ Ft.
	—	_____	_____	_____	__ Ft. x __ Ft.
	—	_____	_____	_____	__ Ft. x __ Ft.
	—	_____	_____	_____	__ Ft. x __ Ft.
	—	_____	_____	_____	__ Ft. x __ Ft.
	—	_____	_____	_____	__ Ft. x __ Ft.
	—	_____	_____	_____	__ Ft. x __ Ft.
	—	_____	_____	_____	__ Ft. x __ Ft.
	—	_____	_____	_____	__ Ft. x __ Ft.

¹BA reroot, COntainer, BB Balled and Burlapped. ²Spacing between plants.

I certify that the installation meets does not meet NRCS standards and specifications and is in compliance not in compliance with any permits as applicable.

Inspector

Date Inspected

Additional Notes:

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