

**Scenario Worksheet**

**Practice and Scenario Description:**

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Forestry
Practice Code/Name	391 - Riparian Forest Buffer
Scenario ID	3
Scenario Name	Bare-root, hand planted
Scenario Description	Establish a buffer of trees and/or shrubs into a suitably prepared site to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body extending a minimum of 35 feet wide. The planting will consist of hand planted bare-root shrubs, evergreen, and deciduous trees. One third of the area will be planted to each woody plant type. Planting for shrubs will be done at 6' x 6' spacing, evergreen tree spacing will be 12' x 15' and deciduous tree spacing at 15' x 15'. Tree shelters will be placed on the hardwoods and evergreens. Resource concerns to be addressed are Soil Erosion - excessive bank erosion; Water Quality - excess sediment and organics in surface waters and elevated temperature; Degraded Plant Condition - inadequate structure and composition; and Inadequate Habitat for Fish and Wildlife - habitat degradation.
Before Practice Situation	Typical sites include former riparian forests and habitat used for forage, cropland, speculation property, or other nonforest condition which contains undesirable amounts or types of vegetation. Active bank erosion is depositing sediment, nutrients and organics in the riparian area. Water temperature is high due to lack of shade. Habitat is not desirable for wildlife.
After Practice Situation	A buffer of trees and shrubs will be established along the riparian corridor which will provide stability, filtration, shade, and desirable habitat to address the above mentioned resource concerns.
Scenario Feature Measure	Area of planting
Scenario Unit	Acre
Scenario Typical Size	3

**Cost Summary:**

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$899.86	\$299.95
Equipment/Installation	\$210.62	\$70.21
Labor	\$298.72	\$99.57
Mobilization	\$74.20	\$24.73
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$503.07	\$167.69
Total	\$1,986.47	\$662.16

**Cost Details:**

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1513	Tree, conifer, seedling, bare root, 1-1	Bare root conifer trees, 1-1 (2 years old). Materials only.	Each	\$0.06	242	\$14.52
Materials	1510	Tree, hardwood, seedling or transplant, bare root, 16-36"	Bare root hardwood trees 18-36" tall. Materials only.	Each	\$0.26	194	\$50.44
Materials	1507	Shrub, seedling or transplant, bare root, 18"-36"	Bare root hardwood trees 18-36" tall. Materials and shipping.	Each	\$0.69	1210	\$834.90
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	\$9.44	16	\$151.04
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$26.31	2	\$52.62
Equipment/Installation	1503	Trailer, enclosed, small	Small enclosed trailer (typically less than 30' in length) pulled by a pickup to transport materials and equipment. Truck not included.	Hour	\$3.48	2	\$6.96
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.67	16	\$298.72
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.55	4	\$74.20
Foregone Income	1959	F1, Corn Dryland	Dryland Corn is Primary Crop	Acre	\$167.69	3	\$503.07

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**Practice and Scenario Description:**

<b>Information Type</b>	<b>Data</b>
Region	Appalachian
State	North Carolina
Discipline Group	Forestry
Practice Code/Name	391 - Riparian Forest Buffer
Scenario ID	4
Scenario Name	Bare-root, machine planted
Scenario Description	Establish a buffer of trees and/or shrubs into a suitably prepared site to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body extending a minimum of 35 feet wide. The planting will consist of machine planted bare-root shrubs, evergreen, and deciduous trees. One third of the area will be planted to each woody plant type. Planting for shrubs will be done at 6' x 6' spacing, evergreen tree spacing will be 12' x 15' and deciduous tree spacing at 15' x 15'. Tree shelters will be placed on the hardwoods and evergreens. Resource concerns to be addressed are Soil Erosion - excessive bank erosion; Water Quality - excess sediment and organics in surface waters and elevated temperature; Degraded Plant Condition - inadequate structure and composition; and Inadequate Habitat for Fish and Wildlife - habitat degradation.
Before Practice Situation	Typical sites include former riparian forests and habitat used for forage, cropland, speculation property, or other nonforest condition which contains undesirable amounts or types of vegetation. Active bank erosion is depositing sediment, nutrients and organics in the riparian area. Water temperature is high due to lack of shade. Habitat is not desirable for wildlife.
After Practice Situation	A buffer of trees and shrubs will be established along the riparian corridor which will provide stability, filtration, shade, and desirable habitat to address the above mentioned resource concerns.
Scenario Feature Measure	Area of planting
Scenario Unit	Acre
Scenario Typical Size	3

**Cost Summary:**

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$899.86	\$299.95
Equipment/Installation	\$141.96	\$47.32
Labor	\$379.10	\$126.37
Mobilization	\$100.30	\$33.43
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$503.07	\$167.69
Total	\$2,024.29	\$674.76

**Cost Details:**

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1513	Tree, conifer, seedling, bare root, 1-1	Bare root conifer trees, 1-1 (2 years old). Materials only.	Each	\$0.06	242	\$14.52
Materials	1510	Tree, hardwood, seedling or transplant, bare root, 16-36"	Bare root hardwood trees 18-36" tall. Materials only.	Each	\$0.26	194	\$50.44
Materials	1507	Shrub, seedling or transplant, bare root, 18"-36"	Bare root hardwood trees 18-36" tall. Materials and shipping.	Each	\$0.69	1210	\$834.90
Equipment/Installation	1600	Mechanical tree planter	Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	\$4.38	6	\$26.28
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$19.28	6	\$115.68
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.62	6	\$117.72
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.67	14	\$261.38
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.55	2	\$37.10
Mobilization	1138	Mobilization, small equipment	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$63.20	1	\$63.20
Foregone Income	1959	FI, Corn Dryland	Dryland Corn is Primary Crop	Acre	\$167.69	3	\$503.07