

**Practice: 391 - Riparian Forest Buffer**

**Scenario: #1 - Direct Seeding**

**Scenario Description:**

Establish a buffer of trees and/or shrubs to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body and extend the minimum required width. The planting will consist of trees or shrubs planted through direct seeding. Planting rate will be approximately 3000 seed per acre. Payment includes tree seed, equipment and labor to seed, and foregone income for the land taken out of crop production to install the riparian buffer. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. Additional associated practices may include: 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning, 484 Mulching

**Before 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 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 resource concerns of 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.

**Scenario Feature Measure:** Area of planting

**Scenario Unit:** Acre

**Scenario Typical Size:** 5

**Scenario Cost:** \$4,044.25

**Scenario Cost/Unit:** \$808.85

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$37.62	8	\$300.96
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.73	8	\$189.84
Mechanical nut planter	1601	Mechanical nut planter for direct seeding of trees and shrubs. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	\$1.99	8	\$15.92
<b>Foregone Income</b>						
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$432.87	2.5	\$1,082.18
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$426.49	2.5	\$1,066.23
<b>Labor</b>						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.06	8	\$176.48
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$37.40	8	\$299.20
<b>Materials</b>						
Trees and shrubs, seed	1871	Tree or shrub seed, e.g., acorns, to establish trees. Includes materials and shipping only.	Pound	\$4.35	150	\$652.50
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$260.95	1	\$260.95

**Practice: 391 - Riparian Forest Buffer**

**Scenario: #3 - Bare-root trees, each**

**Scenario Description:**

Establish a buffer of trees 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 and extend the minimum required width. The planting will consist of machine planted bare-root trees at spacings recommended in a tree/shrub planting plan. Payment includes trees, equipment and labor to plant, and foregone income for the land taken out of crop production to install the riparian buffer. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. Additional associated practices may include: 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning, 484 Mulching

**Before 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 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 resource concerns of 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.

**Scenario Feature Measure:**

**Scenario Unit:** Each

**Scenario Typical Size:** 2,180

**Scenario Cost:** \$3,843.93

**Scenario Cost/Unit:** \$1.76

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$37.62	2	\$75.24
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.73	2	\$47.46
Mechanical tree planter	1600	Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	\$6.37	2	\$12.74
<b>Foregone Income</b>						
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$426.49	2.5	\$1,066.23
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$432.87	2.5	\$1,082.18
<b>Labor</b>						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$37.40	2	\$74.80
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.06	2	\$44.12
General Labor	231	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	\$22.43	2	\$44.86
<b>Materials</b>						
Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.56	2180	\$1,220.80
<b>Mobilization</b>						
Mobilization, small equipment	1138	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	\$175.51	1	\$175.51

**Practice: 391 - Riparian Forest Buffer**

**Scenario: #4 - Bare-root shrubs, each**

**Scenario Description:**

Establish a buffer of shrubs, in conjunction with planted or existing trees, 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 and extend the minimum required width. The planting will consist of machine planted bare-root shrubs at spacings recommended in a tree/shrub planting plan. Payment includes shrubs, equipment and labor to plant, and foregone income for the land taken out of crop production to install the riparian buffer. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. Additional associated practices may include: 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning, 484 Mulching

**Before 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 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 resource concerns of 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.

**Scenario Feature Measure:** Area of Treatment

**Scenario Unit:** Each

**Scenario Typical Size:** 1,210

**Scenario Cost:** \$1,557.81

**Scenario Cost/Unit:** \$1.29

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$37.62	2	\$75.24
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.73	2	\$47.46
Mechanical tree planter	1600	Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	\$6.37	2	\$12.74
<b>Foregone Income</b>						
Fl, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$426.49	0.5	\$213.25
Fl, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$432.87	0.5	\$216.44
<b>Labor</b>						
General Labor	231	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	\$22.43	2	\$44.86
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.06	2	\$44.12
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$37.40	2	\$74.80
<b>Materials</b>						
Shrub, seedling or transplant, bare root, 18"-36"	1507	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.54	1210	\$653.40
<b>Mobilization</b>						
Mobilization, small equipment	1138	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	\$175.51	1	\$175.51