

Practice: 612 - Tree/Shrub Establishment

Scenario: #1 - Hardwood Establishment, Direct Seeding

Scenario Description: This practice involves planting of tree and shrubs through direct seeding after the site has been prepared for seedling growth and establishment. Planting rate will be approximately 3000 seed per acre. The productivity of the site is good and will handle a medium density planting rate. The resource concerns addressed is degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes tree seed, equipment and labor to seed, and foregone income for the land taken out of crop production. 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: The land has a little or no tree cover and has been intensively row cropped. Soil condition is degraded due to the loss of the native forest ecosystem (organic matter in top soil depleted). Native wildlife habitat is lacking. The main resource concern is degraded plant condition and inadequate structure and composition

After Situation: Seed from native species are collected or purchased and planted at prescribed rates. 5 acres of land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 5

Total Scenario Cost: \$4,088.24

Scenario Cost/Unit: \$817.65

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.59	8	\$188.68
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	\$39.23	8	\$313.87

Equipment Installation

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	\$2.08	8	\$16.62
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$24.37	8	\$194.94
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.43	8	\$171.42

Mobilization

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$251.62	1	\$251.62
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Materials

Trees and shrubs, seed	1871	Tree or shrub seed, e.g., acorns, to establish trees. Includes materials and shipping only.	Pound	\$4.67	150	\$700.95
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Foregone Income

FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$453.83	2.5	\$1,134.57
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$446.23	2.5	\$1,115.58

Practice: 612 - Tree/Shrub Establishment

Scenario: #2 - Hardwood Establishment, Direct Seeding, no Foregone Income

Scenario Description: This practice involves planting of tree and shrubs through direct seeding after the site has been prepared for seedling growth and establishment. Planting rate will be approximately 3000 seed per acre. The productivity of the site is good and will handle a medium density planting rate. The resource concerns addressed is degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes tree seed and equipment and labor to seed. 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: The land has a little or no tree cover, or is stocked with the wrong tree species. Competing vegetation is a before and after planting concern. Soil condition is degraded due to the loss of the native forest ecosystem (organic matter in top soil depleted). Native wildlife habitat is lacking. The main resource concern is degraded plant condition and inadequate structure and composition

After Situation: Seed from native species are collected or purchased and planted at prescribed rates. 5 acres of land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 5

Total Scenario Cost: \$1,838.10

Scenario Cost/Unit: \$367.62

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.59	8	\$188.68
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	\$39.23	8	\$313.87

Equipment Installation

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	\$2.08	8	\$16.62
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$24.37	8	\$194.94
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.43	8	\$171.42

Mobilization

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$251.62	1	\$251.62
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Materials

Trees and shrubs, seed	1871	Tree or shrub seed, e.g., acorns, to establish trees. Includes materials and shipping only.	Pound	\$4.67	150	\$700.95
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Practice: 612 - Tree/Shrub Establishment

Scenario: #3 - Hardwood Establishment, Bareroot

Scenario Description: This practice involves planting of bare-root hardwood tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will support a planting rate of 436 trees per acre (10' x 10' spacing). Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes bare-root seedlings, equipment and labor to plant, and foregone income for the land taken out of crop production. 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: The land has a little or no tree cover and has been intensively row cropped. Soil condition is degraded due to the loss of the native forest ecosystem (organic matter in top soil depleted). Native wildlife habitat is lacking. The main resource concern is degraded plant condition and inadequate structure and composition

After Situation: The land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 10

Total Scenario Cost: \$7,852.62

Scenario Cost/Unit: \$785.26

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.59	4	\$94.34
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	\$21.71	4	\$86.84
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	\$39.23	4	\$156.93

Equipment Installation

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	\$6.84	4	\$27.34
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$24.37	4	\$97.47
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.43	4	\$85.71

Mobilization

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	\$169.24	1	\$169.24
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Materials

Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.60	4360	\$2,634.46
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Foregone Income

FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$453.83	5	\$2,269.13
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$446.23	5	\$2,231.15

Practice: 612 - Tree/Shrub Establishment

Scenario: #5 - Shrub Establishment, Bareroot

Scenario Description: This practice involves planting of bare-root shrub seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will support a planting rate of 1210 shrubs per acre (6' x 6' spacing). Plantings are in either uplands or bottomlands. The site lacks ground level habitat structure and diversity for wildlife. Resource concern is inadequate habitat for fish and wildlife - habitat fragmentation. Payment includes bare-root seedlings, equipment and labor to plant, and foregone income for the land taken out of crop production. 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: The land has a little or no shrubby cover and has been intensively row cropped. Soil condition is degraded due to the loss of the native forest ecosystem (organic matter in top soil depleted). Native wildlife habitat is lacking. The main resource concern is degraded plant condition and inadequate structure and composition

After Situation: Multiple small blocks of shrubs are planted that total 1 acre. The blocks are based on a habitat appraisal that determines the specific size and location to maximize habitat structure and diversity.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 1

Total Scenario Cost: \$1,529.81

Scenario Cost/Unit: \$1,529.81

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

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	\$21.71	4	\$86.84
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	\$39.23	4	\$156.93

Equipment Installation

Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	\$12.04	4	\$48.17
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.43	4	\$85.71

Materials

Shrub, seedling or transplant, bare root, 18"-36"	1507	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.58	1210	\$702.13
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Foregone Income

FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$453.83	0.5	\$226.91
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$446.23	0.5	\$223.12

Practice: 612 - Tree/Shrub Establishment

Scenario: #6 - Conifer Establishment, Bareroot

Scenario Description: This practice involves planting of bare-root conifer tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will support a planting rate of 436 trees per acre (10' x 10' spacing). Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes bare-root seedlings, equipment and labor to plant, and foregone income for the land taken out of crop production. 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: The land has a little or no tree cover and has been intensively row cropped. Soil condition is degraded due to the loss of the native forest ecosystem (organic matter in top soil depleted). Native wildlife habitat is lacking. The main resource concern is degraded plant condition and inadequate structure and composition

After Situation: The land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 10

Total Scenario Cost: \$7,703.36

Scenario Cost/Unit: \$770.34

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.59	4	\$94.34
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	\$21.71	4	\$86.84
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	\$39.23	4	\$156.93

Equipment Installation

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	\$6.84	4	\$27.34
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$24.37	4	\$97.47
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.43	4	\$85.71

Mobilization

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	\$169.24	1	\$169.24
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Materials

Tree, conifer, seedling, bare root, 2-1	1514	Bare root conifer trees, 2-1 (3 years old). Includes materials and shipping only.	Each	\$0.57	4360	\$2,485.20
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Foregone Income

FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$453.83	5	\$2,269.13
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$446.23	5	\$2,231.15

Practice: 612 - Tree/Shrub Establishment

Scenario: #7 - Bareroot Trees and Shrubs, Each

Scenario Description: Bare-root trees and/or shrubs to be planted or interplanted to establish woody plants in any area where they can be grown for wildlife, erosion control, water quality improvement, carbon sequestration, forest products, and aesthetics. Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes bare-root seedlings and equipment and labor to plant. Foregone income is not included with this scenario. 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: The land has little/no tree cover, is understocked, or is stocked with the wrong tree species. Competing vegetation is a before and after planting concern. Soil condition is degraded due to the loss of the native forest ecosystem (organic matter in top soil depleted). The main resource concerns are degraded plant condition and inadequate structure and composition

After Situation: The land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Each

Scenario Typical Size: 4360

Total Scenario Cost: \$3,380.79

Scenario Cost/Unit: \$0.78

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.59	4	\$94.34
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	\$21.71	4	\$86.84
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	\$39.23	4	\$156.93

Equipment Installation

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	\$6.84	4	\$27.34
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$24.37	4	\$97.47
Trailer, enclosed, small	1503	Small enclosed trailer (typically less than 30' in length) pulled by a pickup to transport materials and equipment. Truck not included.	Hour	\$7.12	4	\$28.46
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.43	4	\$85.71

Mobilization

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	\$169.24	1	\$169.24
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Materials

Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.60	4360	\$2,634.46
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Practice: 612 - Tree/Shrub Establishment

Scenario: #8 - Bareroot Tress and Shrubs, with Tree Shelters, Each

Scenario Description: Bare-root trees and/or shrubs to be planted or interplanted to establish woody plants in any area where they can be grown for wildlife, erosion control, water quality improvement, carbon sequestration, forest products, and aesthetics. Seedlings are protected from deer browsing by installing tree tube shelters. Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes bare-root seedlings, tree shelters, and equipment and labor to plant and install shelters. Foregone income is not included with this scenario. 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: The land has little/no tree cover, is understocked, or is stocked with the wrong tree species. Competing vegetation is a before and after planting concern. Soil condition is degraded due to the loss of the native forest ecosystem (organic matter in top soil depleted). The main resource concerns are degraded plant condition and inadequate structure and composition

After Situation: The land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Each

Scenario Typical Size: 4360

Total Scenario Cost: \$14,905.66

Scenario Cost/Unit: \$3.42

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.59	4	\$94.34
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	\$21.71	12	\$260.51
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	\$39.23	4	\$156.93

Equipment Installation

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	\$6.84	4	\$27.34
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$24.37	4	\$97.47
Trailer, enclosed, small	1503	Small enclosed trailer (typically less than 30' in length) pulled by a pickup to transport materials and equipment. Truck not included.	Hour	\$7.12	4	\$28.46
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.43	4	\$85.71

Mobilization

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	\$169.24	1	\$169.24
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Materials

Cable ties, plastic	1575	Plastic cable ties (typ. 8-12") to assist in securing items. Materials only.	Each	\$0.05	8720	\$420.05
Stakes, wood, 3/4" x 3/4" x 36"	1581	3/4" x 3/4" x 36" wood stakes to fasten items in place. Includes materials only.	Each	\$0.72	4360	\$3,139.20
Tree shelter, solid tube type, 3-1/4" x 30"	1560	3-1/4" x 30" tree tube for protection from animal damage. Materials only.	Each	\$1.79	4360	\$7,791.94

Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.60	4360	\$2,634.46
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