

Practice: 314 - Brush Management

Scenario: #1 - Mechanical, Hand tools

Scenario Description:

Using hand tools, such as axes, shovels, hoes, nippers, brush pullers, and including chainsaws to remove or cut off woody plants at or below the root collar. Typical area is moderate rolling to gentle sloping, moderately deep to deep soils that have stands of woody and non herbaceous species that are in the early phases of invasions. Typical unit is 10 acres.

Associated Practices: Early Successional Habitat Development and Management (647), Restoration of Rare and Declining Habitats (643), Shallow Water Development and Management (646), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644)

Before Situation:

Area is in the very early phases of woody non herbaceous species encroachment that degrades habitat for desired wildlife species. Future degradation of key forage species and ecological site condition promoting noxious and invasive species and increased soil erosion if woody species are allowed to expand.

After Situation:

Woody species are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition continues to progressing in an upward trend, hydrology and plant health and vigor are sustained.

Scenario Feature Measure: Acres treated

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$2,890.22

Scenario Cost/Unit: \$289.02

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Brush Chipper, 6" capacity	938	Brush Chipper, 6" capacity, typically 35 HP. Includes chipper and power unit. Labor not included.	Hour	\$24.29	25	\$607.25
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$40.86	2	\$81.72
Pruning tools, hand tools	1318	Pruning tools, hand tools, shears, loppers, pole saw, handsaw. Material costs only. Labor not included.	Hour	\$1.09	25	\$27.25
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$6.92	25	\$173.00
Labor						
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$33.20	25	\$830.00
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	\$20.29	50	\$1,014.50
Mobilization						
Mobilization, very small equipment	1137	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$78.25	2	\$156.50

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Scenario: #2 - Hand Tools and Chemical Treatment

Scenario Description:

Using hand tools, such as axes, shovels, hoes, nippers, brush pullers, and including chainsaws to remove or cut off woody plants at or below the root collar. Typical area is moderate rolling to gentle sloping, moderately deep to deep soils that have stands of woody and non herbaceous species that are in the early phases of invasions. Typical unit is 10 acres.

Associated Practices: Early Successional Habitat Development and Management (647), Restoration of Rare and Declining Habitats (643), Shallow Water Development and Management (646), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644)

Before Situation:

Area is in the very early phases of woody non herbaceous species encroachment that degrades habitat for desired wildlife species. Future degradation of key forage species and ecological site condition promoting noxious and invasive species and increased soil erosion if woody species are allowed to expand.

After Situation:

Woody species are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition continues to progressing in an upward trend, hydrology and plant health and vigor are sustained.

Scenario Feature Measure: Acres treated

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$4,467.35

Scenario Cost/Unit: \$446.74

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Brush Chipper, 6" capacity	938	Brush Chipper, 6" capacity, typically 35 HP. Includes chipper and power unit. Labor not included.	Hour	\$24.29	25	\$607.25
Chemical, spot treatment, single stem application	964	Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included.	Hour	\$62.22	20	\$1,244.40
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$40.86	3	\$122.58
Pruning tools, hand tools	1318	Pruning tools, hand tools, shears, loppers, pole saw, handsaw. Material costs only. Labor not included.	Hour	\$1.09	25	\$27.25
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$40.86	2	\$81.72
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$6.92	25	\$173.00
Labor						
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$33.20	25	\$830.00
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	\$20.29	50	\$1,014.50
Materials						
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$42.03	5	\$210.15
Mobilization						
Mobilization, very small equipment	1137	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$78.25	2	\$156.50

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Scenario: #3 - Mechanical, Light Equipment

Scenario Description:

Removal of small woody vegetation of heavy infestations on gentle sloping to moderately deep to deep soils. The practice entails the removal of brush by the use of mechanical cutter, chopper or other light equipment in order to reduce fuel loading and improve ecological site condition. Brush density has exceeded desired levels based on ecological site potential. Only the infestation of the area is treated. Typical unit is 10 acres.

Associated Practices: Early Successional Habitat Development and Management (647), Restoration of Rare and Declining Habitats (643), Shallow Water Development and Management (646), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644)

Before Situation:

Area consist of excessive stands of shrub species degrading health and vigor of native herbaceous species promoting noxious and invasive species and degrading wildlife habitat.

After Situation:

Woody species are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and improved wildlife habitat.

Scenario Feature Measure: Acres planned

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$1,340.34

Scenario Cost/Unit: \$134.03

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$40.86	4	\$163.44
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$55.83	10	\$558.30
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.74	10	\$237.40
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	\$190.60	2	\$381.20

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Scenario: #4 - Mechanical, Heavy Equipment

Scenario Description:

Removal of large woody vegetation of heavy infestations on gentle sloping to moderately deep to deep soils. The practice entails the removal of brush by pushing, grubbing, masticating, chaining then raking or piling in order to reduce fuel loading and improve ecological site condition. Brush density has exceeded desired levels based on ecological site potential. It has been determined that the brush is at the heavy infestation. Only the infestation of the area is treated. Infestation covers over 60% of the field. Typical unit is 10 acres.

Before Situation:

Area consist of excessive stands of shrub species degrading health and vigor of native herbaceous species promoting noxious and invasive species and degrading wildlife habitat.

After Situation:

Woody species are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and improved wildlife habitat.

Scenario Feature Measure: Acres planned

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$7,573.94

Scenario Cost/Unit: \$757.39

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Mechanical cutter, chopper	943	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$141.17	40	\$5,646.80
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$40.86	6	\$245.16
Labor						
Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$27.88	40	\$1,115.20
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$283.39	2	\$566.78

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Scenario: #5 - Light Mechanical and Chemical

Scenario Description:

Removal of small woody vegetation of heavy infestations on gentle sloping to moderately deep to deep soils. The practice entails the removal of brush by the use of mechanical cutter, chopper or other light equipment followed by an application of low cost chemicals in low volumes of material in order to reduce fuel loading and improve ecological site condition. Brush density has exceeded desired levels based on ecological site potential. It has been determined that the brush is at the heavy infestation. Only the infestation of the area is treated. Typical unit is 10 acres.

Before Situation:

Area consist of excessive stands of shrub species degrading health and vigor of native herbaceous species promoting noxious and invasive species and degrading wildlife habitat.

After Situation:

Woody species are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and improved wildlife habitat.

Scenario Feature Measure: Acres planned

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$4,956.64

Scenario Cost/Unit: \$495.66

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Chemical, spot treatment, single stem application	964	Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included.	Hour	\$62.22	30	\$1,866.60
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$40.86	4	\$163.44
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$55.83	30	\$1,674.90
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.74	30	\$712.20
Materials						
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.83	10	\$158.30
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	\$190.60	2	\$381.20

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Scenario: #6 - Chemical, Individual Plant Treatment

Scenario Description:

This Practice is for the implementation of brush management on range, pasture or native pasture using Individual Plant Treatment (IPT). The typical method of control is application of herbicides (basal or foliar location) on selected individual plants. Associated Practices: Early Successional Habitat Development and Management (647), Restoration of Rare and Declining Habitats (643), Shallow Water Development and Management (646), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644)

Before Situation:

Brush species exceed desired levels resulting in degraded plant condition, loss of forage production, or degraded wildlife habitat. Densities of brush exceed levels indicated in the ecological site descriptions.

After Situation:

Brush has been treated to a level which results in improved plant condition, forage production, or wildlife habitat. The typical method of control is application of herbicides (basal or foliar location) on selected individual plants.

Scenario Feature Measure: Acres treated

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$954.64

Scenario Cost/Unit: \$95.46

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$40.86	3	\$122.58
Chemical, spot treatment, single stem application	964	Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included.	Hour	\$62.22	10	\$622.20
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$33.75	2.5	\$84.38
Labor						
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	\$41.42	1	\$41.42
Materials						
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$42.03	2	\$84.06

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Scenario: #7 - Chemical, Intense Individual Plant Treatment

Scenario Description:

Individual plant treatment (IPT) is applied to high density, heavy brush for treatment of a sensitive area, such as bog turtle habitat. The typical method of control is application of herbicides (basal or foliar location) on selected individual plants.

Associated Practices: Early Successional Habitat Development and Management (647), Restoration of Rare and Declining Habitats (643), Shallow Water Development and Management (646), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644)

Before Situation:

The existing stand consists of unwanted/undesirable species and the stocking rate exceeds the recommended level. Undersirable species consist of hardwoods and shrubs that can propogate via root systems that make commercial control unfeasible.

After Situation:

Brush has been treated to a level which results in improved plant condition, forage production, or wildlife habitat. The typical method of control is application of herbicides (basal or foliar location) on selected individual plants at a rate of 100 stems per acre.

Scenario Feature Measure: Acre treated

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$334.46

Scenario Cost/Unit: \$334.46

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Chemical, spot treatment, single stem application	964	Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included.	Hour	\$62.22	3	\$186.66
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$40.86	3	\$122.58
Materials						
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$42.03	0.6	\$25.22