

Practice: 314 - Brush Management

Scenario: #1 - Mechanical, general

Scenario Description:

Using small mechanical equipment to remove or cut off woody plants. Typical area is moderately rolling to gently sloping, moderately deep to deep soils that have stands of woody and non herbaceous species that are in the early phases of invasion. Typical unit is 30 acres.

APPROVED FOR USE ONLY WHEN MECHANICAL AND CHEMICAL SCENARIOS DO NOT APPLY, SUCH AS WITH NON-RESPROUTING SPECIES OR AS PART OF AN ORGANIC OPERATION.

Before Situation:

Area is infested with woody non-herbaceous species that degrade ecological sites or habitat for desired wildlife species. Future degradation of key forage species and ecological site condition promote 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 progressing in an upward trend, hydrology and plant health and vigor are sustained.

Scenario Feature Measure: Acres treated

Scenario Unit: Acre

Scenario Typical Size: 30

Scenario Cost: \$14,929.96

Scenario Cost/Unit: \$497.67

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	\$133.70	80	\$10,696.00
Brush Chipper, 6" capacity	938	Brush Chipper, 6" capacity, typically 35 HP. Includes chipper and power unit. Labor not included.	Hour	\$23.00	50	\$1,150.00
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	\$18.71	50	\$935.50
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.38	80	\$1,790.40
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	\$179.03	2	\$358.06

Practice: 314 - Brush Management

Scenario: #3 - Mechanical and Chemical, low infestation

Scenario Description:

Removal of woody vegetation on gently sloping to moderately deep to deep soils. The practice requires the felling of trees and brush using a mechanical cutter, chopper or other light equipment, and applying herbicide to cut stump resprouting tree/brush species, as necessary, in order to improve ecological site conditions. Brush density has met or exceeded low or light infestation (1-5% canopy depending upon species) levels based on ecological site potential as determined by state specific criteria. Typical unit is 80 acres.

Before Situation:

Area consist of low or light infestations of trees and shrub species which degrade desirable plant productivity, health and vigor of pasture or range units, thus promoting invasive non-herbaceous 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 wildlife habitat is improved.

Scenario Feature Measure: Acres planned

Scenario Unit: Acre

Scenario Typical Size: 80

Scenario Cost: \$5,137.43

Scenario Cost/Unit: \$64.22

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Skidsteer, 80 HP	933	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$44.93	10	\$449.30
Mechanical cutter, chopper	943	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$133.70	25	\$3,342.50
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.38	35	\$783.30
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	\$18.71	10	\$187.10
Materials						
Herbicide, Triclopyr	338	Refer to WIN-PST for product names and active ingredients. Materials and shipping	Acre	\$42.30	2.5	\$105.75
Herbicide, Surfactant	1095	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$1.32	2.5	\$3.30
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$266.18	1	\$266.18

Practice: 314 - Brush Management

Scenario: #4 - Mechanical and Chemical, medium infestation

Scenario Description:

Removal of woody vegetation on gently sloping terrain with moderately deep to deep soils. The practice requires the felling and piling of trees and brush using a mechanical cutter, chopper, or other light equipment, and applying herbicide to cut stump resprouting tree/brush species, as necessary, in order to improve ecological site conditions. Brush density has met or exceeded medium or moderate infestation (averaging 6-15% canopy depending upon species) levels based on ecological site potential as determined by state specific criteria. Typical unit is 80 acres.

Before Situation:

Area consist of medium or moderate infestations of trees and shrub species which degrade desirable plant productivity, health and vigor of pasture or range units, thus promoting invasive non-herbaceous species and degrade 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 wildlife habitat is improving.

Scenario Feature Measure: Acres planned

Scenario Unit: Acre

Scenario Typical Size: 80

Scenario Cost: \$12,970.39

Scenario Cost/Unit: \$162.13

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Skidsteer, 80 HP	933	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$44.93	32	\$1,437.76
Mechanical cutter, chopper	943	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$133.70	64	\$8,556.80
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	\$18.71	16	\$299.36
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.38	96	\$2,148.48
Materials						
Herbicide, Surfactant	1095	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$1.32	8	\$10.56
Herbicide, Triclopyr	338	Refer to WIN-PST for product names and active ingredients. Materials and shipping	Acre	\$42.30	8	\$338.40
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	\$179.03	1	\$179.03

Practice: 314 - Brush Management

Scenario: #5 - Mechanical and Chemical, heavy infestation

Scenario Description:

Removal of woody vegetation on gently sloping terrain with moderately deep to deep soils. The practice requires the felling and piling of trees and brush using a mechanical cutter, chopper, or other light equipment, and applying herbicide to cut stump resprouting tree/brush species, as necessary, in order to improve ecological site conditions. Brush density has met or exceeded heavy or high infestation (averaging >15% canopy depending upon species) levels based on ecological site potential as determined by state specific criteria. Typical unit is 10 acres.

Before Situation:

Area consist of heavy or high infestations of trees and shrub species which degrade desirable plant productivity, health and vigor of pasture or range units, thus promoting invasive non-herbaceous 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 wildlife habitat is improved.

Scenario Feature Measure: Acres planned

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$4,176.33

Scenario Cost/Unit: \$417.63

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	\$133.70	20	\$2,674.00
Skidsteer, 80 HP	933	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$44.93	10	\$449.30
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.38	30	\$671.40
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	\$18.71	5	\$93.55
Materials						
Herbicide, Triclopyr	338	Refer to WIN-PST for product names and active ingredients. Materials and shipping	Acre	\$42.30	2.5	\$105.75
Herbicide, Surfactant	1095	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$1.32	2.5	\$3.30
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	\$179.03	1	\$179.03

Practice: 314 - Brush Management

Scenario: #6 - Chemical, uplands

Scenario Description:

This practice is for the implementation of brush management on range, pasture or native pasture to reduce undesirable brush in uplands, and other areas not in, or directly adjacent to, streams, ponds, or wetlands. The typical method of control uses aerial or broadcast application of herbicides to control undesirable plants. Entire unit has infestation levels exceeding state identified levels; entire unit is treated with broadcast application.

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 select individual plants.

Scenario Feature Measure: Acres treated

Scenario Unit: Acre

Scenario Typical Size: 50

Scenario Cost: \$1,432.40

Scenario Cost/Unit: \$28.65

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.04	50	\$302.00
Materials						
Herbicide, 2,4-D	330	Broadleaf herbicide labeled for cropland and pasture. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$6.78	20	\$135.60
Herbicide, Picloram	337	Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$19.12	15	\$286.80
Herbicide, Triclopyr	338	Refer to WIN-PST for product names and active ingredients. Materials and shipping	Acre	\$42.30	15	\$634.50
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	\$73.50	1	\$73.50

Practice: 314 - Brush Management

Scenario: #7 - Chemical, riparian

Scenario Description:

Apply chemical brush management techniques on an isolated riparian area within a 80 acre planning unit which is directly adjacent to a stream (may include ponds or wetlands) associated with rangeland (may include grazed forest, pasture, or other landuses) to control undesirable deciduous species in order to improve ecological/range site condition. Treatment is applied to a 2 acres isolated area adjacent to a stream which uses broadcast/aerial specialized herbicide(s) application on the entire 2 acres to reduce or remove trees and/or brush which are not appropriate for the site(s).

Before Situation:

Plant, animal, or wildlife resource concerns associated with riparian areas and other areas in or adjacent to the stream (incl. ponds or wetlands) on grazed range (incl. grazed forest, pasture, or other landuses) which are adversely affected by undesirable trees and/or brush which degrade ecological site condition as identified by state specific ecological/range site description.

After Situation:

Isolated riparian community infested with undesirable tree and/or shrub species within a range unit (incl. grazed forest, pasture, or other landuse) where reduction or removal of undesirable deciduous species adjacent to a stream (incl. ponds or wetlands) has been accomplished through the use of appropriate chemical application to address plant, animal, and wildlife resource concerns, thus improving ecological/range site condition.

Scenario Feature Measure: Acres planned

Scenario Unit: Acre

Scenario Typical Size: 2

Scenario Cost: \$321.88

Scenario Cost/Unit: \$160.94

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.04	2	\$12.08
Materials						
Herbicide, Triclopyr	338	Refer to WIN-PST for product names and active ingredients. Materials and shipping	Acre	\$42.30	1	\$42.30
Herbicide, Surfactant	1095	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$1.32	1	\$1.32
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$266.18	1	\$266.18

Practice: 314 - Brush Management

Scenario: #8 - Chemical, foliar spot treatment

Scenario Description:

Apply foliar chemical brush management techniques (aerial fixed wing or ground rig) on isolated upland areas within a 80 acre planning unit (not directly adjacent to streams, ponds or wetlands) associated with rangeland (may include grazed forest, pasture, or other landuses) to control undesirable deciduous species in order to improve ecological/range site conditions. Treatment is applied to 10 acre isolated areas (not adjacent to a stream, wetland or pond), using broadcast/aerial herbicide(s) application, on the entire 10 acres to reduce or remove trees and/or brush which are not appropriate for the site(s). Foliar application of material using the most effective, low cost chemical(s).

Before Situation:

Plant, animal, or wildlife resource concerns associated with upland areas (not in or adjacent to streams, ponds, or wetlands) on grazed range (incl. grazed forest, pasture, or other landuses) which are adversely affected by undesirable trees and/or brush which degrade ecological site conditions as identified by state specific ecological/range site description.

After Situation:

Isolated upland areas infested with undesirable tree and/or shrub species within a range unit (incl. grazed forest, pasture, or other landuse) where reduction or removal of undesirable deciduous species (not adjacent to or within a stream, ponds, or wetlands) has been accomplished through the use of appropriate foliar chemical application to address plant, animal, and wildlife resource concerns, thus improving ecological/range site conditions.

Scenario Feature Measure: Acres planned

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$425.69

Scenario Cost/Unit: \$42.57

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$31.90	2.5	\$79.75
Materials						
Herbicide, 2,4-D	330	Broadleaf herbicide labeled for cropland and pasture. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$6.78	2	\$13.56
Herbicide, Picloram	337	Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$19.12	4	\$76.48
Herbicide, Triclopyr	338	Refer to WIN-PST for product names and active ingredients. Materials and shipping	Acre	\$42.30	4	\$169.20
Herbicide, Surfactant	1095	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$1.32	10	\$13.20
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	\$73.50	1	\$73.50