

**Practice: 314 - Brush Management**

**Scenario: #2 - 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 80 acres.

**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:** 80

**Scenario Cost:** \$7,943.11

**Scenario Cost/Unit:** \$99.29

**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	\$28.58	2	\$57.16
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$5.90	300	\$1,770.00
Pruning tools, hand tools	1318	Pruning tools, hand tools, shears, loppers, pole saw, handsaw Equipment costs only. Labor not included.	Hour	\$2.00	20	\$40.00
<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	\$18.84	320	\$6,028.80
<b>Mobilization</b>						
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	\$47.15	1	\$47.15

**Practice: 314 - Brush Management**

**Scenario: #3 - Mechanical, Small Shrubs, Light Infestation**

**Scenario Description:**

Removal of small woody vegetation of light 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. It has been determined that the brush is at a light infestation. Typical unit is 120 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:** 120

**Scenario Cost:** \$9,711.22

**Scenario Cost/Unit:** \$80.93

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Mechanical cutter, chopper	943	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$128.88	60	\$7,732.80
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$28.58	10	\$285.80
<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	\$20.61	60	\$1,236.60
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	\$33.98	10	\$339.80
<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	\$116.22	1	\$116.22

**Practice: 314 - Brush Management**

**Scenario: #4 - Mechanical, Small Shrubs, Medium Infestation**

**Scenario Description:**

Removal of small woody vegetation of medium 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. It has been determined that the brush is at the medium infestation. Typical unit is 120 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:** 120

**Scenario Cost:** \$11,953.57

**Scenario Cost/Unit:** \$99.61

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Mechanical cutter, chopper	943	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$128.88	75	\$9,666.00
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$28.58	10	\$285.80
<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	\$20.61	75	\$1,545.75
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	\$33.98	10	\$339.80
<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	\$116.22	1	\$116.22

**Practice: 314 - Brush Management**

**Scenario: #5 - Mechanical, Small Shrubs, Heavy Infestation**

**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. It has been determined that the brush is at the heavy infestation. Typical unit is 120 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:** 120

**Scenario Cost:** \$14,195.92

**Scenario Cost/Unit:** \$118.30

**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	\$28.58	10	\$285.80
Mechanical cutter, chopper	943	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$128.88	90	\$11,599.20
<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	\$33.98	10	\$339.80
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$20.61	90	\$1,854.90
<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	\$116.22	1	\$116.22

**Practice: 314 - Brush Management**

**Scenario: #6 - Mechanical, Large Shrubs, Light Infestation**

**Scenario Description:**

Removal of large woody vegetation of light infestations on gentle sloping to moderately deep to deep soils. The practice entails the removal of brush by pushing, grubbing, masticating, chaining and 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 light infestation. Typical unit is 120 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:** 120

**Scenario Cost:** \$24,248.11

**Scenario Cost/Unit:** \$202.07

**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	\$28.58	10	\$285.80
Dozer, 200 HP	928	Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included.	Hour	\$168.32	120	\$20,198.40
<b>Labor</b>						
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	\$25.88	120	\$3,105.60
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	\$33.98	10	\$339.80
<b>Mobilization</b>						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$318.51	1	\$318.51

**Practice: 314 - Brush Management**

**Scenario: #7 - Mechanical, Large Shrubs, Medium Infestation**

**Scenario Description:**

Removal of large woody vegetation of medium infestations on gentle sloping to moderately deep to deep soils. The practice entails the removal of brush by pushing, grubbing, masticating, chaining and 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 medium infestation. Typical unit is 120 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:** 120

**Scenario Cost:** \$39,784.11

**Scenario Cost/Unit:** \$331.53

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Dozer, 200 HP	928	Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included.	Hour	\$168.32	200	\$33,664.00
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$28.58	10	\$285.80
<b>Labor</b>						
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	\$25.88	200	\$5,176.00
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	\$33.98	10	\$339.80
<b>Mobilization</b>						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$318.51	1	\$318.51

**Practice: 314 - Brush Management**

**Scenario: #8 - Mechanical, Large Shrubs, Heavy Infestation**

**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. Typical unit is 120 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:** 120

**Scenario Cost:** \$49,806.91

**Scenario Cost/Unit:** \$415.06

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Dozer, 200 HP	928	Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included.	Hour	\$168.32	250	\$42,080.00
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$28.58	15	\$428.70
<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	\$33.98	15	\$509.70
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	\$25.88	250	\$6,470.00
<b>Mobilization</b>						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$318.51	1	\$318.51

**Practice: 314 - Brush Management**

**Scenario: #9 - Mechanical & Chemical, Small Shrubs, Light Infestation**

**Scenario Description:**

Removal of small woody vegetation of light 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 light infestation rate. Typical unit is 120 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:** 120

**Scenario Cost:** \$11,931.22

**Scenario Cost/Unit:** \$99.43

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Mechanical cutter, chopper	943	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$128.88	60	\$7,732.80
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$28.58	10	\$285.80
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$4.78	120	\$573.60
<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	\$20.61	60	\$1,236.60
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	\$33.98	10	\$339.80
<b>Materials</b>						
Herbicide, Picloram	337	A systemic herbicide used for general woody plant control. Product is typically used in these practices 314, 595, 666, and 645. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$12.63	120	\$1,515.60
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. Materials only.	Acre	\$1.09	120	\$130.80
<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	\$116.22	1	\$116.22

**Practice: 314 - Brush Management**

**Scenario: #10 - Mechanical & Chemical, Small Shrubs, Medium Infestation**

**Scenario Description:**

Removal of small woody vegetation of medium 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 medium infestation rate. Typical unit is 120 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:** 120

**Scenario Cost:** \$14,173.57

**Scenario Cost/Unit:** \$118.11

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Mechanical cutter, chopper	943	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$128.88	75	\$9,666.00
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$4.78	120	\$573.60
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$28.58	10	\$285.80
<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	\$20.61	75	\$1,545.75
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	\$33.98	10	\$339.80
<b>Materials</b>						
Herbicide, Picloram	337	A systemic herbicide used for general woody plant control. Product is typically used in these practices 314, 595, 666, and 645. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$12.63	120	\$1,515.60
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. Materials only.	Acre	\$1.09	120	\$130.80
<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	\$116.22	1	\$116.22

**Practice: 314 - Brush Management**

**Scenario: #11 - Mechanical & Chemical, Small Shrubs, Heavy Infestation**

**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. Typical unit is 120 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:** 120

**Scenario Cost:** \$16,728.72

**Scenario Cost/Unit:** \$139.41

**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	\$28.58	15	\$428.70
Mechanical cutter, chopper	943	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$128.88	90	\$11,599.20
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$4.78	120	\$573.60
<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	\$20.61	90	\$1,854.90
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	\$33.98	15	\$509.70
<b>Materials</b>						
Herbicide, Picloram	337	A systemic herbicide used for general woody plant control. Product is typically used in these practices 314, 595, 666, and 645. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$12.63	120	\$1,515.60
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. Materials only.	Acre	\$1.09	120	\$130.80
<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	\$116.22	1	\$116.22

**Practice: 314 - Brush Management**

**Scenario: #12 - 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.

**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:** 40

**Scenario Cost:** \$5,777.51

**Scenario Cost/Unit:** \$144.44

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$31.24	20	\$624.80
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$28.58	2	\$57.16
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	\$55.87	40	\$2,234.80
<b>Materials</b>						
Herbicide, Tebuthiuron	343	Product is typically used in this practice 314. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$69.25	40	\$2,770.00
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. Materials only.	Acre	\$1.09	40	\$43.60
<b>Mobilization</b>						
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	\$47.15	1	\$47.15

**Practice: 314 - Brush Management**

**Scenario: #13 - Chemical - Ground Applied**

**Scenario Description:**

Apply brush management on 160 acres of rangeland, grazed forest, or pasture thru the use of broadcast application of material using low cost chemical(s) to reduce or remove undesirable woody species (brush) in uplands and other areas not in or directly adjacent to streams, ponds, or wetlands.

**Before Situation:**

Plant, animal, or wildlife resource concerns associated with uplands and other areas not in or adjacent to stream, ponds, or wetland on grazed range, grazed forest, or pasture which are adversely affected by brush.

**After Situation:**

A 160 acre unit of pasture, grazed range, or grazed forest where reduction or removal of undesirable woody deciduous species have been accomplished by broadcast or spot treatment chemical application to address plant, animal, and wildlife resource concerns.

**Scenario Feature Measure:** Acres planned

**Scenario Unit:** Acre

**Scenario Typical Size:** 160

**Scenario Cost:** \$7,636.21

**Scenario Cost/Unit:** \$47.73

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$4.78	160	\$764.80
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$28.58	2	\$57.16
<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	\$33.98	2	\$67.96
<b>Materials</b>						
Herbicide, Triazine	1321	Broad spectrum herbicide. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$41.10	160	\$6,576.00
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$170.29	1	\$170.29

**Practice: 314 - Brush Management**

**Scenario: #14 - Chemical, Aerial Applied**

**Scenario Description:**

Apply brush management on 500 acres of rangeland, grazed forest, or pasture thru the use of broadcast aerial application of material with low cost chemical(s) to reduce or remove undesirable woody species (brush) in uplands and other areas not in or directly adjacent to streams, ponds, or wetlands.

**Before Situation:**

Plant, animal, or wildlife resource concerns associated with uplands and other areas not in or adjacent to stream, ponds, or wetland on grazed range, grazed forest, or pasture which are adversely affected by brush.

**After Situation:**

A 500 acre unit of pasture, grazed range, or grazed forest where reduction or removal of undesirable woody species have been accomplished by broadcast or spot treatment chemical application to address plant, animal, and wildlife resource concerns.

**Scenario Feature Measure:** Acres planned

**Scenario Unit:** Acre

**Scenario Typical Size:** 500

**Scenario Cost:** \$34,705.41

**Scenario Cost/Unit:** \$69.41

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Chemical, aerial application, fixed wing	947	Chemical application performed by fixed wing aircraft. Includes equipment, power unit and labor costs.	Acre	\$7.81	500	\$3,905.00
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$28.58	2	\$57.16
<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	\$33.98	2	\$67.96
<b>Materials</b>						
Herbicide, Triclopyr	338	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and a	Acre	\$61.01	500	\$30,505.00
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$170.29	1	\$170.29

**Practice: 314 - Brush Management**

**Scenario: #15 - Low Cost Chemical, Aerial Applied**

**Scenario Description:**

Apply brush management on 500 acres of rangeland, grazed forest, or pasture thru the use of broadcast aerial application of material with low cost chemical(s) to reduce or remove undesirable woody species (such as mesquite and or shinnery oak brush) in uplands and other areas not in or directly adjacent to streams, ponds, or wetlands.

**Before Situation:**

Plant, animal, or wildlife resource concerns associated with uplands and other areas not in or adjacent to stream, ponds, or wetland on grazed range, grazed forest, or pasture which are adversely affected by brush.

**After Situation:**

A 500 acre unit of pasture, grazed range, or grazed forest where reduction or removal of undesirable woody species (brush) have been accomplished by broadcast or spot treatment chemical application to address plant, animal, and wildlife resource concerns.

**Scenario Feature Measure:** Acres planned

**Scenario Unit:** Acre

**Scenario Typical Size:** 500

**Scenario Cost:** \$17,632.91

**Scenario Cost/Unit:** \$35.27

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Chemical, aerial application, fixed wing	947	Chemical application performed by fixed wing aircraft. Includes equipment, power unit and labor costs.	Acre	\$7.81	500	\$3,905.00
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$28.58	2	\$57.16
<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	\$33.98	2	\$67.96
<b>Materials</b>						
Herbicide, Triazine	1321	Broad spectrum herbicide. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$41.10	250	\$10,275.00
Herbicide, Picloram	337	A systemic herbicide used for general woody plant control. Product is typically used in these practices 314, 595, 666, and 645. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$12.63	250	\$3,157.50
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$170.29	1	\$170.29

**Practice: 314 - Brush Management**

**Scenario: #16 - Chemical, Aerial Applied Salt Cedar**

**Scenario Description:**

Apply brush management on 30 acres of rangeland, grazed forest, or pasture thru the use of broadcast aerial application of chemical(s) to reduce or remove undesirable woody species (salt cedar) in uplands and other areas.

**Before Situation:**

Plant, animal, or wildlife resource concerns associated with uplands and other areas on grazed range, grazed forest, or pasture which are adversely affected by brush or trees.

**After Situation:**

A 30 acre unit of pasture, grazed range, or grazed forest where reduction or removal of undesirable woody species have been accomplished by aerial chemical application to address plant, animal, and wildlife resource concerns.

**Scenario Feature Measure:** Acres planned

**Scenario Unit:** Acre

**Scenario Typical Size:** 30

**Scenario Cost:** \$3,392.24

**Scenario Cost/Unit:** \$113.07

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Chemical, aerial application, fixed wing	947	Chemical application performed by fixed wing aircraft. Includes equipment, power unit and labor costs.	Acre	\$7.81	30	\$234.30
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$28.58	5	\$142.90
<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	\$33.98	8	\$271.84
<b>Materials</b>						
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. Materials only.	Acre	\$1.09	30	\$32.70
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$11.04	30	\$331.20
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Product is typically used in these practices 314, 595, 666 and 645. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$79.31	30	\$2,379.30

**Practice: 314 - Brush Management**

**Scenario: #17 - Split-method event series**

**Scenario Description:**

The practice entails the control of woody vegetation by treating it up to three times during the multi-year treatment period in order to improve ecological site condition. The brush can be treated with the same method or by a combination of methods. Woody vegetation needs to be treated at least twice in order to fully control it. Generally, herbicide volumes are reduced as the last treatment will kill resprouting stems or those which survived the first treatment or newly sprouted seedlings. Brush density has exceeded desired levels based on ecological site potential.

**Before Situation:**

Area has excessive stands of woody species degrading health and vigor of desirable 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:** 120

**Scenario Cost:** \$18,694.82

**Scenario Cost/Unit:** \$155.79

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$19.28	90	\$1,735.20
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$4.78	120	\$573.60
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$46.51	120	\$5,581.20
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$28.58	5	\$142.90
<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	\$20.61	120	\$2,473.20
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	\$33.98	8	\$271.84
<b>Materials</b>						
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. Materials only.	Acre	\$1.09	120	\$130.80
Herbicide, Triclopyr	338	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and a	Acre	\$61.01	120	\$7,321.20
<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	\$116.22	4	\$464.88

**Practice: 314 - Brush Management**

**Scenario: #18 - PJ Mechanical Removal - Low Density**

**Scenario Description:**

Removal of pinyon/juniper trees in areas with low density encroachment of less than 100 trees per acre. The practice entails the removal of trees by mechanical means, either chainsaw or heavy equipment or a combination as appropriate in order to reduce fuel loading and improve ecological site condition. Tree density has exceeded desired levels based on ecological site potential and data collected as per state specifications to determine actual density. Typical unit is 500 acres in fairly remote areas.

**Before Situation:**

Area consists of excessive stands of pinyon juniper degrading health and vigor of native herbaceous species promoting noxious and invasive species and degrading wildlife habitat, especially for sage grouse areas.

**After Situation:**

Pinyon/Juniper trees 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:** 500

**Scenario Cost:** \$118,689.04

**Scenario Cost/Unit:** \$237.38

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Mechanical cutter, chopper	943	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$128.88	750	\$96,660.00
<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	\$18.84	750	\$14,130.00
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$20.61	375	\$7,728.75
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$170.29	1	\$170.29

**Practice: 314 - Brush Management**

**Scenario: #18 - PJ Mechanical Removal - Moderate Density**

**Scenario Description:**

Removal of pinyon/juniper trees in areas with moderate density encroachment between 101 - 250 trees per acre. The practice entails the removal of trees by mechanical means, either chainsaw or heavy equipment or a combination as appropriate in order to reduce fuel loading and improve ecological site condition. Tree density has exceeded desired levels based on ecological site potential and data collected as per state specifications to determine actual density. Typical unit is 500 acres in fairly remote areas.

**Before Situation:**

Area consists of excessive stands of pinyon juniper degrading health and vigor of native herbaceous species promoting noxious and invasive species and degrading wildlife habitat, especially for sage grouse areas.

**After Situation:**

Pinyon/Juniper trees 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:** 500

**Scenario Cost:** \$126,590.29

**Scenario Cost/Unit:** \$253.18

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Mechanical cutter, chopper	943	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$128.88	800	\$103,104.00
<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	\$18.84	800	\$15,072.00
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$20.61	400	\$8,244.00
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$170.29	1	\$170.29

**Practice: 314 - Brush Management**

**Scenario: #18 - PJ Mechancial Removal - High Density**

**Scenario Description:**

Removal of pinyon/juniper trees in areas with high density encroachment of over 251 trees per acre. The practice entails the removal of trees by mechanical means, either chainsaw or heavy equipment or a combination as appropriate in order to reduce fuel loading and improve ecological site condition. Tree density has exceeded desired levels based on ecological site potential and data collected as per state specifications to determine actual density. Typical unit is 500 acres in fairly remote areas.

**Before Situation:**

Area consists of excessive stands of pinyon juniper degrading health and vigor of native herbaceous species promoting noxious and invasive species and degrading wildlife habitat, especially for sage grouse areas.

**After Situation:**

Pinyon/Juniper trees 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:** 500

**Scenario Cost:** \$142,392.79

**Scenario Cost/Unit:** \$284.79

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Mechanical cutter, chopper	943	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$128.88	900	\$115,992.00
<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	\$18.84	900	\$16,956.00
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$20.61	450	\$9,274.50
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$170.29	1	\$170.29

**Practice: 314 - Brush Management**

**Scenario: #19 - PJ Removal - Chaining**

**Scenario Description:**

Site preparation of a field with 2 dozers and an anchor chain to uproot pinyon and juniper trees to achieve a conservation objective. Typical scenario is approximately 500 acres of trees to be cleared. The resource concern is determined by the conservation objective met with the final practice applied to the field, typically sage grouse habitat and/or forage improvement.

**Before Situation:**

Wooded juniper area of approximately 500 acres, with variable density tree canopy.

**After Situation:**

Crew uses 2 dozers and an anchor chain to clear trees and prepare field for conservation objective. Associated practices, like plantings, woody debris removal, other structures, or irrigation/drainage water management practices, would be contracted separately as needed.

**Scenario Feature Measure:** Acres planned

**Scenario Unit:** Acre

**Scenario Typical Size:** 500

**Scenario Cost:** \$41,042.51

**Scenario Cost/Unit:** \$82.09

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Dozer, 200 HP	928	Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included.	Hour	\$168.32	200	\$33,664.00
<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	\$18.84	100	\$1,884.00
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	\$25.88	200	\$5,176.00
<b>Mobilization</b>						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$318.51	1	\$318.51