

Practice: 384 - Woody Residue Treatment

Scenario: #1 - Wood Residue Treatment

Scenario Description: The use of heavy equipment similar to those used in logging to treat slash resulting from catastrophic events such as fire, wind, severe pest outbreak, ice storm, etc. This scenario will remove/treat the larger material the size of which is consistent with the large equipment used. Methods of treatment: Lopping and scatter: Lopping is the cutting of limbs, branches, treetops, small diameter trees, or other woody plant residue into lengths so that the remaining slash will lie close to the ground. Scattering is the spreading of lopped slash evenly over the ground so that the remaining slash will lie close to the ground. Piling and burning: Piling is placing, laying, heaping or stacking of slash into piles to facilitate intended burning. Burning is igniting piled slash under prescribed conditions to reduce the amount and continuity of fuels. Chipping: This method includes the mechanical conversion of slash to chips and chunks of varying sizes to distribute on site or utilized offsite as landscape mulch. Crushing: This method involves the use of heavy ground-based equipment that crushes/grinds slash to a depth not exceeding 1 foot. Resource concerns include: Excessive plant pest pressure, Potential emissions of particulate matter, Wildfire hazard from excessive biomass accumulation, and Habitat degradation. If the land is being prepared for tree planting, use Tree/Shrub Site Preparation instead.

Before Situation: A large amount of slash and woody residue is created as a result of a non-silvicultural event such as a wind storm, wildfire, ice storm, pest outbreak, etc. Because the slash and residue is created by a catastrophic event that can cause tree-lodging, snags, broken tops, etc.; treatment is both difficult and dangerous. The presence of this material causes adverse effects on the forest include limiting access for management purposes, increasing the wildfire hazard, increasing the risk of potential harm to humans and livestock, and providing harboring sites for pests.

After Situation: The material resulting from the catastrophic event is reduced to a level that will minimize the resource concerns. The clean up should allow the forest land to be utilized as is intended and reduce the risk of catastrophic wild fire. Installation of the practice should be complete within 3 years of the event.

Scenario Feature Measure: Acres of affected forest

Scenario Unit: Acre

Scenario Typical Size: 20

Total Scenario Cost: \$9,307.43

Scenario Cost/Unit: \$465.37

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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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	\$27.99	60	\$1,679.12
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.04	40	\$881.73

Equipment Installation

Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$3.89	10	\$38.86
Log skidder	942	Equipment and power unit costs. Labor not included.	Hour	\$113.47	20	\$2,269.40
Mechanical cutter, chopper	943	Forestry mulcher, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$84.38	40	\$3,375.20
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$19.39	10	\$193.86

Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$434.63	2	\$869.26
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Scenario: #2 - Woody debris - Silviculture light

Scenario Description: Treating an area of forest slash to reduce hazardous fuels and remove diseased or damaged trees due to insects or high winds while improving the organic matter, water quality and wildlife habitat. Slash is treated both with hand (chainsaws, lopping, cutting, etc.) and mechanically (masticating, chipping, etc.). Typically done using both hand and light equipment. The resource concerns addressed include wildfire hazards from excessive debris, excessive down woody material to harbor insects and disease, plant health and vigor and inadequate wildlife habitat.

Before Situation: Excessive woody material resulting from a heavy infestation of insects, disease or wind storms. The woody material is a wildfire hazard, pest hazard and may negatively impact the residual plant health and vigor and wildlife habitat.

After Situation: Wildfire and pest issues are reduced with the woody debris cut, shredded, or chipped and spread out in better contact with the ground. The ground contact will speed up its decomposition improving the organic matter in the soil and allow the residual trees to benefit from these nutrients. Wildlife habitat is enhanced as sunlight can reach the forest floor where the former debris covered the site. Twenty acres is the typical scenario but larger or smaller acreages may be impacted.

Scenario Feature Measure: acres treated

Scenario Unit: Acre

Scenario Typical Size: 20

Total Scenario Cost: \$3,192.25

Scenario Cost/Unit: \$159.61

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	\$22.70	24	\$544.82
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.04	24	\$529.04

Equipment Installation

Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$3.89	24	\$93.27
Mechanical cutter, chopper	943	Forestry mulcher, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$84.38	24	\$2,025.12

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Scenario: #3 - Orchard/Vineyard - Woody debris treatment

Scenario Description: Woody debris created in an orchard/vineyard due to high winds, storms or insects/disease is chipped or mulched and removed from the site in order to accomplish one or more purposes: reducing wildfire fuels and insect/disease substrate; improving access; and/or reducing potential risk to livestock and humans. Air emission reductions are achieved by chipping or shredding the materials in lieu of burning them. Material may be incorporated in the soil, used as a dust suppressant on unpaved roads or traffic areas. Resource concerns include Wildfire hazard from excessive biomass accumulation and Emissions of particulate matter, plant health and vigor by reducing the risk of insects and disease and human by improving access and removing hazards.

Before Situation: Wood waste created in an orchard or vineyard due to weather related storms or insects and disease is either burned, creating an air quality issue, or left in place creating a wildfire hazard, an impediment to access, or a potential site for harboring pests.

After Situation: Treatment of orchard or vineyard debris is chipped and removed from the site which results in the reduction in air pollutants, improvement in access, and the reduction of sites that can harbor pests improving plant health and vigor.

Scenario Feature Measure: Acres of orchard/vineyard with slash created from pruning

Scenario Unit: Acre

Scenario Typical Size: 20

Total Scenario Cost: \$1,952.34

Scenario Cost/Unit: \$97.62

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	\$22.70	24	\$544.82
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.04	24	\$529.04

Equipment Installation

Brush Chipper, 6" capacity	938	Brush Chipper, 6" capacity, typically 35 HP. Includes chipper and power unit. Labor not included.	Hour	\$18.91	8	\$151.25
Skidsteer, 80 HP	933	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$39.69	8	\$317.49
Truck, dump, 8 CY	1401	Dump truck for moving bulk material. Typically capacity is 12 ton or 8 cubic yards. Includes equipment only.	Hour	\$51.22	8	\$409.75