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# *Fuels Planning: Science Synthesis and Integration*

## Economic Uses Fact Sheet : 9

# Mechanical Treatment Costs

Rocky Mountain Research Station

Pacific Northwest Research Station

North Central Research Station

Pacific Southwest Research Station

*Synthesizing Scientific Information for Fire and Fuels Project Managers*

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Fuels planning: Science synthesis and integration, an interagency research/management partnership to support the Ten-Year Fire Plan, led by Russell T. Graham, RMRS, and Sarah M. McCaffrey, NCRS.

## How Much Will It Cost to Use Mechanical Treatment?

Although fuel reduction treatments are widespread, there is great variability and uncertainty in the cost of conducting treatments. Given specific site variables and management objectives, how much will it cost to treat hazardous fuels using mechanical fuel reduction techniques? Researchers from the Rocky Mountain Research Station, USDA Forest Service, have developed a model for estimating the per-acre cost for mechanical fuel reduction treatments.

Implementing a mechanical fuel reduction treatment. The program can assist with predicting the cost of a mechanical treatment based on local variables (photo courtesy of John Szymoniak).

The data for this analysis come from a survey of USDA Forest Service District Fire Management Officers conducted during the spring of 2004. Mechanical treatments occurring between 2001 and 2003 identified within the National Fire Plan Operations and Reporting System (NFPORS) were sampled for Western Forest Service Regions (Regions 1–6). Data were collected on direct treatment costs, management objectives, and physical site characteristics. Although these models do a good job of identifying factors that influence the costs of treatments, individual fuel treatments are unique, and the associated costs remain highly variable. Therefore, these cost estimates should only be used as a rough first estimate.

## Factors Affecting Mechanical Treatment Cost

- Size of area to be treated
- Fire regime
- Elevation
- Fuel load
- Management objectives
- Whether site is in wildland-urban interface (WUI)
- Forest Service Region

The PNW Research Station has developed an interactive computer-based spreadsheet called My Fuel Treatment Planner (MyFTP, see RMRS-RN-20-4-WWW Revised) that can help with planning fuel reduction treatments. The cost model described in this fact sheet is contained within My Fuel Treatment Planner, which is available at: http://www.fs.fed.us/pnw/data/soft.htm.

Examples of mechanical fuel reduction treatment costs for four landscape scenarios are shown in table 1.

**Table 1**—Four examples of mechanical cost estimates.

| Variables | Estimated cost per acre |
|---|---|
| **100-acre Douglas-fir** | $167 |
| Fire Regime III (35–100 yrs. mixed severity) | |
| 3,000 ft elevation | |
| 20 tons per acre | |
| Fuel reduction objective | |
| WUI | |
| Region 6 | |
| **200-acre ponderosa pine** | $292 |
| Fire Regime I (0–35 yrs. light severity) | |
| 3,500 ft elevation | |
| 10 tons per acre | |
| Protect WUI objective | |
| WUI | |
| Region 1 | |
| **1,000-acre mixed conifer** | $35 |
| Fire Regime IV (35–100 yrs. stand replacement) | |
| 2,000 ft elevation | |
| 15 tons per acre | |
| Forest health objective | |
| No WUI | |
| Region 5 | |
| **20-acre lodgepole pine** | $117 |
| Fire Regime III (35–100 yrs. stand replacement) | |
| 5,000 ft elevation | |
| 15 tons per acre | |
| Forest health objective | |
| No WUI | |
| Region 6 | |

Factors affecting mecvhanical treatment cost include fuel load, elevation, and fire regime.

## Selected References


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## Economics Team Fact Sheets

Look for fact sheet topics from the Economics Team including prescribed fire costs, harvesting, log hauling, NEPA and other regulations, wood utilization, economic impacts on communities, markets for wood, and harvest equipment requirements.

## Fuels Planning: Synthesis and Integration

This fact sheet is one in a series being produced as part of a larger project supported by the USDA Forest Service to synthesize new knowledge and information relevant to fire and fuels management. Fact sheets address topics related to stand structure, environmental impacts, economics, and human responses to these factors. Information in the fact sheets is targeted for the dry forests of the Inland West, but is often applicable across broad regions of the country. For more information, please visit our Web site at:
www.fs.fed.us/fire/tech_transfer/synthesis/synthesis_index

*The Fuels Planning fact sheets are based on preliminary findings. Information from fact sheets will be synthesized in an upcoming publication.*