

Evaluation of Forest Residue Bundling Technology

Issue: The National Fire Plan outlines a coordinated effort to address overstocked conditions in western forests. A recent inventory found that at least 110 million bdt of non-merchantable biomass (limbs, tops, and small-diameter stems) could be removed just from high-risk stands. A significant challenge to recovering non-merchantable material is the difficulty of handling and transporting many small pieces. Bundling or baling these residues offers the potential to reduce transport and handling costs. This technology is currently used in Scandinavia to recover biomass for energy production. However, there is little information available on its potential application in western fuel treatment conditions.



Study Description: The objective of this project is to quantify biomass bundler operation in a range of typical western conditions, documenting productivity, impacts, and treatment outcomes. Specifically, the project will examine effects of:

- Terrain and site layout (slope and travel distances)
- Species (pinyon-juniper, lodgepole pine, firs)
- Pre-treatment conditions (scattered logging slash, CTL residuals, landing piles)
- Stand conditions (volume per acre, material size, residual spacings)

The general approach is a series of project case studies. By using the same machine and operator at all locations, differences would be specific to the site conditions. Each project site will involve pretreatment measurements, elemental production study, post-treatment measurement of effects, and technology transfer through “field day” demonstration. Bundles produced at various locations will be available for utilization and samples will be taken to assess energy content.

Status: The studies will begin 2003-6-01 in Medford, OR and continue through the summer.

Benefits:

- *Improved utilization of forest residues for energy production*
- *Improved transportability of forest residues*
- *Alternative for areas where prescribed fire is not an option*

Partners: John Deere/Timberjack, USDA Forest Service—Forest Operations Research, Small Diameter Utilization Program, Forest Products Lab, State and Private Forestry R-1/4, Idaho Panhandle NF, Boise NF, Deschutes-Ochoco NF, Eldorado NF; Department of Interior Bureau of Land Management, Medford District

