



The National Fire Plan

Hazardous Fuel Reduction: Utilization of Small-Diameter Curved Trees for Laminated Structural Timber



The goal of this research project is to develop value-added uses for small-diameter curved trees. During logging or thinning operations, much of this low-value timber is left standing or left on the ground because mills are typically not equipped to handle this material.

In a partnership among the Forest Products Laboratory (Madison, WI), Wyoming Sawmill (Sheridan, WY), Genesis Laboratories (Batavia, IL), and University of Wyoming (Laramie, WY), several technologies are being combined to determine if small-diameter curved trees can be utilized to produce value-added structural products:



- Logs from Bighorn National Forest and Wyoming State Forest lands will be cut using special sawing equipment that “follows” the irregular shape of small-diameter curved logs.
- New drying methods will be tested for effective straightening of curved lumber during the drying process.
- A new process for utilizing low-grade or curved material will be tested for engineering and economic feasibility. In the Lam Lumber process (developed by Wyoming Sawmill), low-grade stud material is bonded to produce larger “billets” and then resawn to produce stronger and higher-value laminated structural members.

If such a processing system could be developed, an estimated 8.5 to 17 million board feet per year of additional low-value material could be removed from the forest to supply each mill using the process.



This 1.5- by 9-inch Lam Lumber beam will form the web section of an I-Beam. Laminated flanges will be formed and bonded to the top and bottom of the web. Curved lumber will thus be laminated into a straight beam.