

Introduction

The Bureau of Business and Economic Research at the University of Montana-Missoula is conducting a logging utilization study to characterize Idaho's timber harvest. This study will conclude in 2009.

Objectives

This study characterizes the state's timber harvest by:

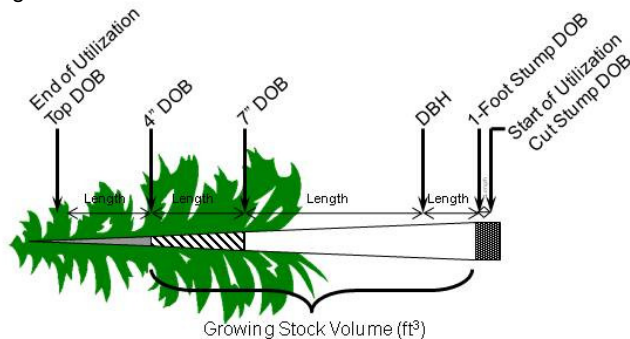
- Quantifying the proportion of timber delivered to mills that came from growing stock and non-growing stock sources
- Quantifying the volume of growing stock inventory that is left in the woods as logging residue
- Quantifying the proportion of harvested volume and trees by diameter at breast height (DBH)

Methods

Sampling sites were chosen by county and land ownership class in proportion to the Idaho's recent annual timber harvests (Morgan and Spoelma 2008, Songster and Morgan in preparation). Felling, yarding, and merchandising methods as well as silvicultural prescription and other harvest characteristics were assumed to be representative of the state's 2008 harvest. To date, 19 of 35 logging sites have been measured.

At each logging site, 25 felled trees with DBH $\geq 5.0''$ were randomly selected. The following diameter outside bark (DOB) and length measurements were taken on each sample tree to determine the cubic volume of utilized and unutilized portions of growing stock and non-growing stock (Figure 1):

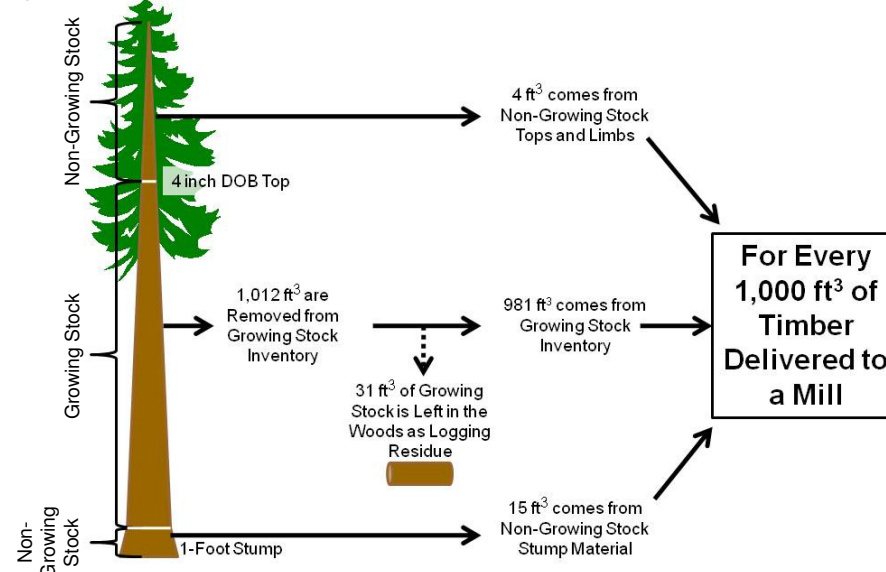
Figure 1. Harvested Tree Measurements



Literature Cited:

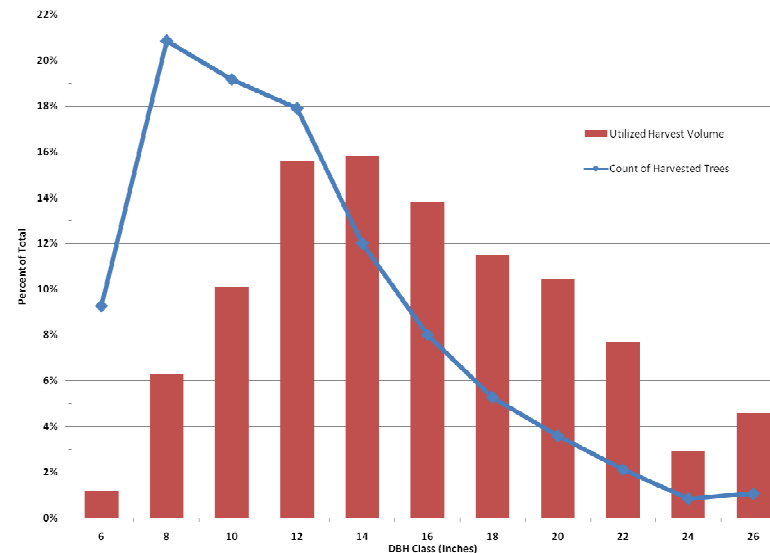
- Morgan, T. A., Spoelma, T. P. California logging utilization: 2004. *The Western Journal of Applied Forestry*, Volume 23, Number 1, January 2008, pp. 12-18(7)
- Songster, J.M. and T.A. Morgan. (In preparation). Idaho's forest products industry, 2006. Missoula, MT: The University of Montana, Bureau of Business and Economic Research.
- McLain, W.H. 1996. Logging utilization—Idaho, 1990. INT-RB-86. Ogden, UT: USDA Forest Service, Intermountain Research Station. 16p.
- Wilson, A.K., R.E. Green and G.A. Choate. 1970. Logging residues on sawlog operations, Idaho and Montana. INT-RP-77. Ogden, UT: USDA Forest Service, Intermountain Forest and Range Experiment Station. 12p.

Figure 2. Utilization of Harvested Trees



Results- Utilized volumes of growing stock and non-growing stock were quantified in proportion to mill-delivered volume (Figure 2). The vast majority of mill-delivered volume—981 ft³ per 1,000 ft³ (MCF)—came from the growing stock portion of harvested trees, while 19 ft³ per MCF came from non-growing stock portions. Logging residue, the volume of growing stock material left in the woods during harvesting, was 31 ft³ per MCF delivered to the mill, or just 3% of total growing stock removals (1,012 ft³). These preliminary results suggest substantial improvements in logging utilization from studies in earlier decades (McLain 1996, Wilson et al. 1970).

Figure 3. Proportion of Utilized Volume and Tree Count by DBH Class



Results- One-half of the harvested volume came from trees $\leq 15''$ DBH, whereas one-half of the trees harvested were $\leq 11''$ DBH (Figure 3). Although trees in the 16" to 26" DBH classes accounted for one-half of utilized volume, they represent just one-fifth of the total number of trees harvested. Compared to previous logging utilization studies (McLain 1996, Wilson et al. 1970), mills using Idaho timber are utilizing more small-diameter trees and fewer large-diameter trees.