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Influence of Region, Seasonality, and Species on Weight to Volume Relationships of Commercial Sawlogs in Idaho

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The Idaho Department of Lands (IDL) has begun selling timber sales on a weight basis, rather than on traditional scaled board foot volumes. The University of Idaho and IDL are conducting analyses to develop statewide, regression-based weight to volume relationships. These relationships and their accuracy are vital to the cooperation and understanding of weight scaling between landowners, logging contractors, and mills. The project is supported by IDL, University of Idaho, and Associated Logging Contractors. We hypothesize that seasonal temperature and precipitation will prove significant predictors of weight to volume relationships for sawlogs. Additionally, we believe average sawlog small-end diameter, harvest region, and species will significantly affect weight scaling conversions. Comprised of statewide scaling data from 2010–2013, more than 10,000 sawlog truckloads are included in the study. All study data contains Scribner gross and net volumes, as well as average length and diameter, net weight, species, and harvest region in order to identify the significant factors affecting the weight to volume relationship. Initial analysis has shown clear connections between net weight and scaled Scriber volume prior to inclusion of the climate data. Average small-end diameter and harvest region also have shown significant effect in predicting volume as additional variables to net weight. More detailed analysis will be conducted as data collection concludes in 2013. While weight scaling is common in other U.S. regions, no large study evaluating potential variability in weight to volume relationships influenced by mountain topography, species, and seasonal climate has been conducted in the northwestern United States.