

Technical Reports

BC Coastal Forest Sector Hem-Fir Initiative

Comparison of Log Dimensions from a Laser Scanner to Dimensions from Manual Scaling

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Abstract

A comparison was made between the log dimensions and volumes measured manually and by a laser scanner at a sawmill. This trial was a follow-up to a previous study which showed that a laser scanner's accuracy was less than produced by manual scalers, and was conducted to test whether laser scanners could measure log dimensions with similar accuracy to manual scaling. Comparisons of length, top diameter, butt diameter, and volume were undertaken. Results showed that the scanner measured 98% of the top diameters and 92% of the butt diameters within ± 2 cm of the manual measurement. It also showed that 93% of the scanner length measurements were within ± 5 cm of the manual measurement and 46% within ± 3 cm. There was no statistically significant correlation between measuring error and the manual measurement in the top diameter, butt diameter and length. Volumes calculated with the segment formula from the scanner were within 0.04% of the manually-produced volumes using Smalian's formula.

Keywords: Laser scanner, Segment volume, Smalian, Precision, Butt flare, Scaling

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