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# Impacts of Incorrectly Measured Heights on Timber Appraisals

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**Impacts of incorrectly measured heights on timber appraisals**

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Heights are commonly measured using the tangent of angles. Many traditional hypsometers produce height estimates based on establishing the vertex of the angle from a known, instrument calibrated distance. Unless corrections are made when the vertex is established at a distance other than the calibrated distance, heights will be incorrect. Using incorrect heights in say tree volume equations will produce errors in timber appraisals. Timber appraisals are conducted to determine the value of a forest to calculate how much revenue should be received for the standing timber. This simple study quantified the potential impacts of such errors when conducting loblolly pine (*Pinus taeda* L.) timber appraisals.

In a stand of 50 trees that are 80 ft tall, and when the desired distance for the hypsometer is 66 ft, but one stands 62 ft from the tree, the estimated per acre value is $3,830. If truly standing 66 ft from all 50 trees the estimated per acre value is $3,598. This is a difference of $231. In a 40 acre stand this is a meaningful error amount of $9,253. If, for example, a forester coordinates 30 timber sales a year these errors could become extremely meaningful.