

VOLUME EQUATIONS FOR
YOUNG GROWTH SOFTWOOD AND HARDWOOD SPECIES
AT BOGGS MOUNTAIN DEMONSTRATION STATE FOREST

ABSTRACT

Local and standard volume equations for Ponderosa pine (*Pinus ponderosa* Laws), sugar pine (*Pinus lambertiana* Dougl), Douglas-fir (*Pseudotsuga menziesii* Mirg), canyon live oak (*Quercus chrysolepis* Liemb), black oak (*Quercus kelloggii* Newb), and Pacific madrone (*Arbustus menziesii* Pursh) were developed for Boggs Mountain Demonstration State Forest. For the three softwood species local and standard equations were developed for total volume in cubic feet and cubic meters and Scribner and International 1/4 inch in board feet. For the three hardwood species equations were developed in both cubic feet and cubic meters for three utilization standards: 1) total volume (TVOL) of a tree includes all segment and terminal branch volume plus the volume of the stump and bark. It does not include the volume of the roots and foliage, 2) wood volume (WVOL) of a tree includes the volume of all segments from stump height to a 4 inch top (10 cm) minus the bark volume. As with total volume it does not include the volume of the roots and foliage, and 3) saw-log volume (SVOL) of a tree includes the volume of all segments for trees 11 inches (28 cm) and larger; volume was computed from stump height to a 9 inch (23 cm) top outside bark for straight sections 8 feet (2.5 meters) long or longer; excludes roots, bark and foliage

A total of between 36 and 51 trees were measured for each species from stands representing a broad range of environmental, topographic and site quality conditions. Additionally, sample trees were chosen to represent a broad range of sizes. For softwoods the diameters ranged from 10

inches (25 cm) to 45 inches (100 cm) and heights ranged from 30 feet (12 meters) to 110 feet (35 meters). For hardwoods diameters ranged from 4 inches (12 cm) to 40 inches (122 cm) and heights from 29 feet (9 meters) to 80 feet (35 meters).

KEYWORDS: Boggs Mountain Demonstration State Forest, Local Volume Equations, Local Volume Tables, Standard Volume Equations, Standard Volume Tables, Ponderosa pine, sugar pine, Douglas-fir, canyon live oak, black oak, Pacific madrone, hardwood volume tables, softwood volume tables.

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