

Black Bear Damage to Northwestern Conifers in California: A Review

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A total of 789 black bear damaged trees were investigated over a multi-year period on seven different study sites chosen on lands of four participating timber companies. The sites ranged from 30-50 years of age. Four different conifer species were found to have black bear damage: Coastal redwood, Douglas-fir, Sitka spruce, and Western hemlock. Numerous variables were measured on each damaged tree (diameter at breast height [dbh], distance to nearest neighbor, height to beginning of damage, age of damage, and tree species).

Damaged trees varied widely in dbh from approximately 4 inches up to approximately 41 inches, with the overall average dbh of about 18 inches. Damaged coastal redwood trees were found to be growing alone about 33% of the population and 67% growing as multiple stump sprouts. The damage that occurred on any one tree varied from complete girdling to a small patch of bark removed near the base of the tree. Twice as many damaged redwood trees occurred in the 76-100% girdled-circumference group than occurred in the 1-25% girdled-circumference group. Mean trees damaged by black bears ranged from approximately 1.6 trees/acre to 15.4 trees/acre, with the average approximately 7.7 trees/acre.

Only redwood trees that had received 100% girdled-circumference were considered for an estimate of economic loss. Total volume lost on all transects, average volume lost per unit area, and total volume lost per site were calculated. Therefore, the total economic loss per site was calculated and will be presented.