

## **Thinning Intensity and Ease-of-Access Increase Probability of Bear Damage in a Young Coast Redwood Forest**

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Precommercial thinning is an integral part of coast redwood (*Sequoia sempervirens* (D Don) Endl.) forest management but is often followed by bear damage in northern parts of redwood's natural range. We counted incidences of black bear (*Ursus americanus* Pallas) damage along transects oriented perpendicular to forest roads in thinned and unthinned stands. Damage decreased slightly at greater distances from roads, suggesting that bears were traveling along forest roads and damaging nearby trees that were easier to access. Frequency of damage was higher among larger trees in these conifer-dominated mixed even-aged stands. Redwood was more likely to be damaged than coast Douglas-fir (*Pseudotsuga menziesii* var. *menziesii* (Mirb.) Franco). Precommercial thinning (PCT) incited damage to redwood, and PCT to lower residual densities incited more damage in Douglas-fir. Unthinned control stands were least damaged. Increment cores collected from pairs of damaged and undamaged redwood trees confirmed that damage occurred after thinning and revealed that – at the time of bear damage – trees sustaining damage had been growing faster than undamaged trees of similar size. Our findings support mitigation strategies such as lighter thinning, leaving higher densities of redwood in anticipation of higher damage rates, and leaving unthinned buffers adjacent to roads and other paths travelled by bears.