

Long-term Effects of Thinning Second Growth Ponderosa Pine: A Case Study of Mortality Caused by Mountain Pine Beetle and Prescribed Fire

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Abstract: Stand characteristics and mortality rates of a 90-year-old second-growth ponderosa pine stand located near Baker City, Oregon, are summarized 36 years after precommercial thinning and one year following a prescribed burn. Established in 1967 to investigate the effectiveness of thinning for preventing mortality caused by mountain pine beetle, the study examines five spacing regimes, 3.5 x 3.5 m (12 x 12 ft), 4.5 x 4.5 m (15 x 15 ft), 5.5 x 5.5 m (18 x 18 ft), 6.5 x 6.5 m (21 x 21 ft), and control (no thin). Each treatment plot covers about 10 ha (25 ac). Most trees were 10 to 20 cm (4 to 8 in) and about 55 years old when thinning occurred. Plots were measured at 5 to 10 year intervals. This is a preliminary reporting on some of the data collected in this study. Our results show much higher rates of mortality in the control (unthinned) and 3.5 m (12 ft) treatments than in the wider spacings examined. Most of the observed mortality was attributed to mountain pine beetle or fire.

