

## AN ABSTRACT OF THE THESIS OF

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Thinning of young Douglas-fir forests has the potential to enhance structural diversity and improve habitat for wildlife. I examined the effects of thinning and thinning intensity on abundance and demographic characteristics of forest-floor small mammals in the Coast Range of Oregon 5 and 6 years after thinning had occurred. Thinning resulted in greater densities of Townsend's chipmunks (*Tamias townsendii*), creeping voles (*Microtus oregoni*), and Pacific jumping mice (*Zapus trinotatus*), and densities of chipmunks and creeping voles were greater in heavily thinned stands than in moderately thinned stands. Movement of female chipmunks was less in heavily thinned stands and movement of female deer mice was less in thinned stands. Sex ratios of deer mice and creeping voles were skewed toward females in heavily thinned stands. Body mass of male deer mice was also greater in heavily thinned stands. Thinning had neutral effects on density of deer mice (*Peromyscus maniculatus*) and on populations of Trowbridge's shrews (*Sorex trowbridgii*), Baird's shrews (*Sorex bairdi*), Pacific shrews (*Sorex pacificus*), and shrew-moles (*Neurotrichus gibbsii*). Northern flying squirrels (*Glaucomys sabrinus*) were more abundant in unthinned stands than in thinned stands 5 years after thinning had occurred. Greater amounts of small-diameter down wood and slash, and increases in percent cover of low shrubs after thinning may partially explain the increases in abundance of chipmunks, Pacific jumping mice, and creeping voles in thinned stands.

Thinning young Douglas-fir forests appears to enhance habitat quality for most species of forest-floor small mammals. In addition, heavy thinning may hasten development of mature forest conditions that may provide optimal habitat for these species. However, because some species appear to prefer closed canopy forests, it is recommended that some unthinned stands be retained as a component of the forested landscape.