

Thinning and Riparian Buffer Configuration Effects on Down Wood Abundance in Headwater Streams in Coniferous Forests

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Poster Abstract

Down wood is associated with the function, structure, and diversity of riparian systems. Considerable knowledge has been generated regarding down wood stocks and dynamics in temperate forests, but there are few studies on effects of silvicultural practices and riparian buffer design on down wood, particularly in headwater streams. We analyzed interactive effects of upland thinning and riparian buffer configuration on down wood volumes and decay classes at five managed forest sites in western Oregon. We tested the effects of two thinning treatments—an unthinned control and a moderate-density thinning with 200 trees ha⁻¹—and three riparian buffer widths: combined one and two site-potential tree heights (to 480 ft [146 m]); variable-width (50 ft [15.2 m] minimum); and streamside retention (~20 ft [6 m]), in coniferous stands dominated by *Pseudotsuga menziesii* and *Tsuga heterophylla*. Pre-harvest down wood volumes (59 to 128 m³·100 m⁻¹ reach length) in 29 stream reaches (193 to 792 m long) did not differ among thinning treatments and stream buffer configurations. One year after thinning, down wood volumes were 5–42 percent greater than pre-harvest levels, although thinning and stream buffer effects remained non-significant. Large increases in down wood volumes with time in our headwater streams may be the consequence of severe storms or other events not directly related to silvicultural practices.

Keywords: down wood, stream habitat, timber harvest, decay class, riparian reserves.

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