

No Effects of Thinning With Riparian Buffers on Terrestrial Salamanders in Headwater Forests 5 to 6 Years Post-harvest in Western Oregon

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Poster Abstract

There are emerging concerns for wildlife species associated with forested headwater systems. Given that headwater streams comprise a large portion of the length of flowing waterways in western Oregon forests, there is a need to better understand how forest management affects headwater forest taxa and their habitats. Forest management strategies that consist of only partial canopy removal and retention of riparian buffers may help ameliorate management effects on headwaters, especially relative to historical clearcutting practices. Our study investigated effects of upland forest thinning coupled with riparian buffer treatments on riparian and upland headwater forest amphibians, their ground-cover habitat attributes, and species-habitat associations. Amphibian captures and habitat variables were examined 5 to 6 years post-thinning, within riparian and upland forests thinned to 80 trees per acre with streamside-retention buffer widths (~20 ft [6m] wide, each side of streams) and variable-width buffers (50 ft [15.2 m] minimum width, each side of streams), as well as unthinned reference stands. Distance-from-stream was found to be associated with amphibian abundance. However, no treatment effects of thinning or buffer widths were found. We observed that ground surface conditions (e.g., amount of rocky or fine substrate, microclimates) likely played a role in determining the response of riparian and upland amphibians to forest thinning along headwater streams. Moderate thinning and preservation of conditions in riparian and nearby upland areas by way of variable-width and streamside-retention buffers may be sufficient to maintain suitable habitat and microclimatic conditions vital to amphibian assemblages in managed headwater forests.

Keywords: plethodontid salamanders, timber harvest, density management, riparian reserves.

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