

Understory vegetation response to dry forest restoration: short-term vs. long-term

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Background

Managers increasingly use mechanical thinning and controlled burning to restore dry, mixed-conifer forests of the inland Northwest that have suffered from a century of fire suppression. Despite extensive use of these treatments, our understanding of their ecological outcomes is limited by the short time frames of most studies.

How do the effects of thinning and burning on understory diversity differ between the short- and long-term?

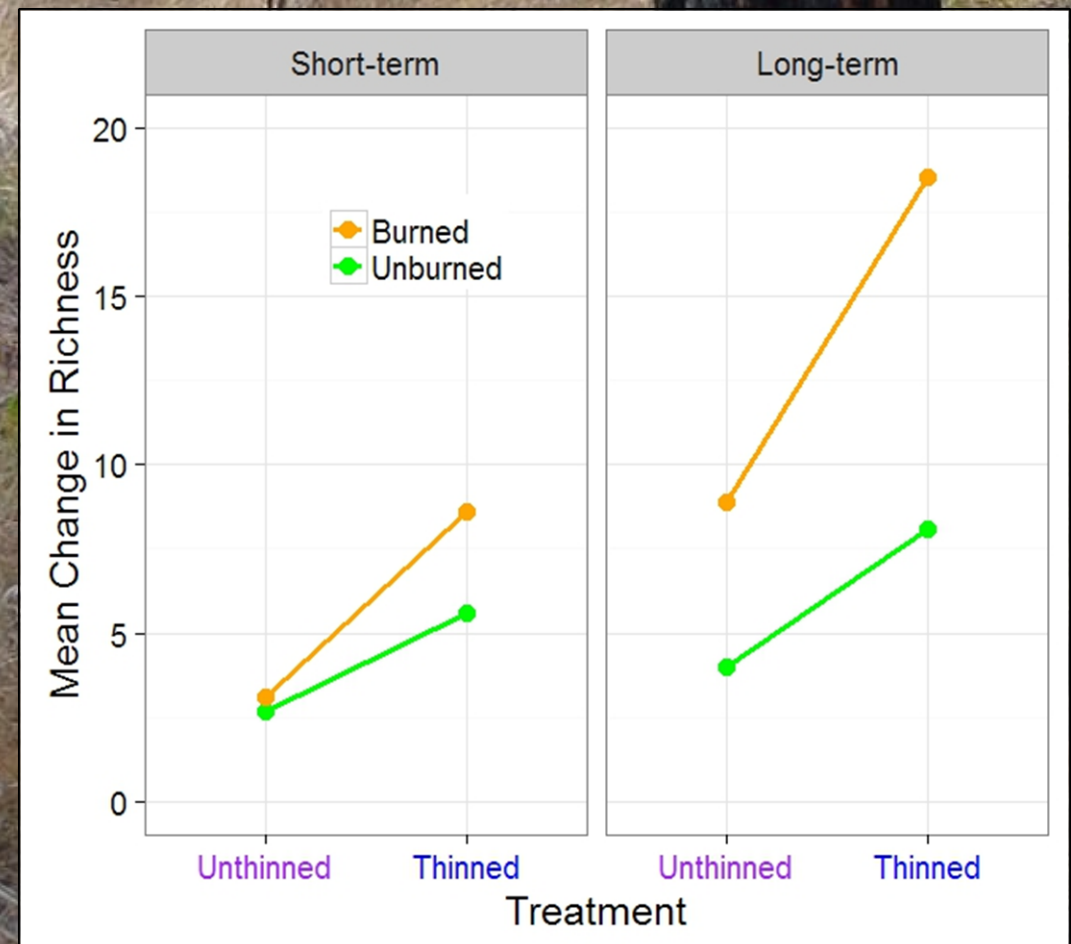
Methods

1. 8 experimental units in central Washington of control, thin-only, burn-only, or thin & burn.
2. Identified understory plants before treatment, 2 years after treatment, and 9-12 years after treatment.
3. Permutation-based MANOVA to test effects of thinning, burning, and post-treatment time period.

Before treatment



9 years after thin & burn



Average change in the number of understory species from before to two years after (short-term) and 9-12 years after (long-term) thinning and/or burning.

Results

1. In the short-term, **thinned** units gained significantly more species than **unthinned** units, while **burned** units did not differ from **unburned** units.
2. In the long-term, **thinned** units gained even more species over **unthinned** units than in the short-term, and **burned** units had now gained more species than **unburned** units.

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