

# ORIGINAL RESEARCH article

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## Soil moisture and micrometeorological differences across reference and thinned stands during extremes of precipitation, southern Cascade Range

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Modern forest management generally relies on thinning treatments to reduce fuels and mitigate the threat of catastrophic wildfire. They have also been proposed as a tool to augment downstream flows by reducing evapotranspiration. Warming climates are causing many forests to transition from snow-dominated to rain-dominated precipitation regimes—in which water stores are depleted earlier in the summer. However, there are relatively few studies of these systems that directly measure the hydrologic impacts of such treatments during and following snow-free winters. This work compares the below-canopy meteorological and subsurface hydrologic differences between two thinning prescriptions and an unaltered Control during periods of extreme drought and near-record precipitation (with little snow). The field site was within a coniferous forest in the rain-snow transition zone of the southern