Pioneering landscape-scale research releases first findings

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The May issue of the *Canadian Journal of Forest Research* presents the preliminary findings of 23 scientists involved in one of the first landscape-scale experiments on how forest management affects western Ponderosa pine ecosystems.

The Blacks Mountain Interdisciplinary Research team includes U.S. Forest Service, Humboldt State University, Oregon State University, U.C. Riverside, University of Georgia and Wildlife Conservation Society scientists collaborating in research on large-scale manipulation of an ecosystem type extending from Mexico to Canada.

They present their findings in seven articles published as a special forum called, “Ecological Studies in Interior Ponderosa Pine—First Findings from Blacks Mountain Interdisciplinary Research.”

The research is intended to examine how controlled burns and changes in forest structure affect fire risk, retention of old-growth trees, insect infestations, wildlife and soils. It involved 12 plots of about 250 acres each in the 10,000-acre Blacks Mountain Experimental Forest in Northern California’s Lassen National Forest.

The site was selected because stands of old-growth trees can still be found on the experimental forest and research data collected from the site dates back to 1938, one of the oldest records of manipulation of a North American forest.

The scientists thinned stands so they either maintained a variety of sizes reminiscent of pre-settlement conditions or created a single canopy layer of even-aged trees characteristic of when loggers harvested the largest trees. They also completed controlled burns in half of each plot.

The team found that five years after thinning occurred, tree and stand growth significantly increased, and was even higher in even-aged stands with a single canopy layer.

This suggests that in the absence of treatments like thinning and controlled burns, old-growth characteristics will be lost as a result of lower growth rates and higher tree mortality. The scientists reached this conclusion by evaluating decades of growth data obtained on the experimental forest.

Controlled burns had little effect on the growth of large trees, but killed or weakened some smaller ones. Bark beetles were also more likely to colonize these weakened trees and therefore cause higher tree mortality.

The team also discovered a genus and species of a previously unknown ground-dwelling spider. Their research indicated old-growth characteristics intensified fire effects on spider populations because of increased forest debris.

Wildlife findings included a general lack of response from birds to thinning and controlled burns when some large trees were retained and burns were of low intensity.

Source: US Forest Service