

Mixed-conifer forests at risk for high-severity wildfire

November 12 2015



Mixed-conifer forests comprise about two to three percent of the forest landscape.

Northern Arizona University scientists are calling for accelerated restoration of mixed-conifer forests in a paper published this month in *Forest Ecology and Management*. These landscapes are at extreme risk for uncharacteristic wildfire because of tree density, fire suppression and warmer temperatures.

Mixed-conifer forests are a combination of conifers, including pine trees, and broad-leaved trees such as elm, oak and maple trees at high elevations. The mixed-conifer forests, which comprise approximately two to three percent of the southwestern forests, support a variety of unique habitats and several endangered species.

"What we need to do now is provide for the future and create more resilient mixed-conifer forests," said Michael Stoddard, research specialist with NAU's Ecological Restoration Institute and lead author on the paper with contributors Andrew Sanchez Meador, Pete Fulé and Julie Korb. "We've shown in this case study that thinning and burning is a good solution to mitigate some of the problems."

"From a land management perspective, there are numerous problems in the [forest](#), setting the stage for catastrophic wildfire, and in some cases, the potential permanent loss of mixed-conifer forests," Stoddard said. Overcrowded forests and an abundance of smaller, shade intolerant trees like White Fir are creating ladder fuels, which allow fire easily into the tree canopies.

"The scenario is serious and when you throw warmer temperatures in the mix, the forest is susceptible not only to fire, but to pathogens and bug outbreaks," Stoddard said.

Stoddard and his collaborators call for increases in forest thinning and controlled burning to improve resiliency of the mixed-conifer landscapes and protect diverse habitats for species.

In the future, Stoddard predicts more managed wildfires as an increasingly preferred method of forest management. When lightning starts a forest fire, instead of putting the fire out, land managers can allow the [fire](#) to burn while monitoring its progress, a method of forest thinning that is less expensive than mechanical thinning.

More information: *Forest Ecology and Management*,
[www.sciencedirect.com/science/ ... ii/S0378112715003801](http://www.sciencedirect.com/science/.../ii/S0378112715003801)

Provided by Northern Arizona University

Citation: Mixed-conifer forests at risk for high-severity wildfire (2015, November 12) retrieved 20 April 2024 from
<https://phys.org/news/2015-11-mixed-conifer-forests-high-severity-wildfire.html>

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