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Landmark Study Finds Giant Sequoias Thrive in Severe Wildfire Areas

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A new [scientific study](#), published today in the peer-reviewed journal *Ecology and Evolution*, reports that iconic giant sequoias in California’s Sierra Nevada mountains are thriving in the 2017 Railroad fire near Yosemite, especially where it burned hottest. Giant sequoias evolved over 90 million years ago to depend on wildfires to reproduce. Tragically, they have been slowly dying off since the early 1900s due to a massive failure of reproduction caused by wildfire suppression policies. The new research finds that, for the first time in a century, a new generation of sequoias is vigorously growing in places where the fire burned most intensely.

“This is really encouraging news,” said Dr. Chad Hanson, lead author of the study and a research ecologist with the John Muir Project. “This new generation of giant sequoias is most abundant and growing fastest in these high-intensity fire patches,” he added. “Our field work in the High Sierra forces us to rethink sequoia management practices in general and U.S. Forest Service and the National Park Service forest fire management specifically,” said Dr. Michael Dorsey. “This is essential science demonstrating a species’ evolutionary adaptation to high-severity fire on the landscape and emphasizes the true benefits - reproductive success,” added Tonja Chi. “The intensely burned part of Nelder Grove would continue to support prolific growth and wildlife, if left intact,” said Maya Khosla. “Our findings in the Nelder Grove provide a glimpse into the future for groves that burned in more recent fires such as the 2020 Castle fire and 2021 KNP Complex—and that future is hopeful,” said Bryant Baker.

Over the past two years, land managers with the U.S. Forest Service and the National Park Service have subjected giant sequoia groves to industrial forestry management practices, claiming they are needed ostensibly to prevent higher-intensity fire. Based on unpublished estimates, never subjected to independent peer-review, land managers assumed that nearly 20% of all mature giant sequoias were killed in recent fires—a figure that has since been discredited as wildly exaggerated by a much [more comprehensive analysis](#) underway.

Recent industrial forest management in giant sequoia groves on public lands has included commercial logging under the rubric of “thinning”, post-fire clearcut logging, artificial tree plantations, and more fire suppression. Our new findings demonstrate that these forest management policies are both misguided for trying to prevent the higher-intensity fire patches that sequoias need to effectively reproduce, and ineffective at curbing wildfire intensity, which is driven by weather and climate. In addition, the logging machinery is crushing and killing most of the new generation of giant sequoias—a shocking 83% mortality of sequoias, where logging has occurred so far, according to our study.