

FIRE ECOLOGY

Altered fire regimes

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Fires shape land ecosystems, generating mosaics of landscape types characteristic of different regions. Human management and climate can change the pattern, frequency and intensity of fires, together called fire regimes. These regimes can change over space and time, a reality many reconstructions miss.

Alicia Azpeleta Tarancon of Northern Arizona University, USA, and colleagues reconstructed the historic and recent fire regimes of the Sacramento Mountains, New Mexico, part of which lies within the Lincoln National Forest and part within the Mescalero Apache Tribal Lands (MATL). Focusing on the MATL portion, the authors sampled eight fire-scar sites totalling 200 ha. Combining methods from dendrochronology, or tree-ring analysis, and statistics, they found evidence of

frequent fires, especially small fires, which often occurred during drought years and were affected by broader climate patterns (El Niño/Southern Oscillation). The fire regime throughout the Sacramento Mountains changed after 1900, likely due to changes in management including fire suppression and grazing, as well as uniform federal fire policy. Combined with our warming climate, ongoing suppression could increase the intensity of wildfires by increasing fuel loads. A data-intensive, landscape approach could better inform understanding of fire management and ecology going forward.

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