The North American Tree-Ring Fire Scar Network

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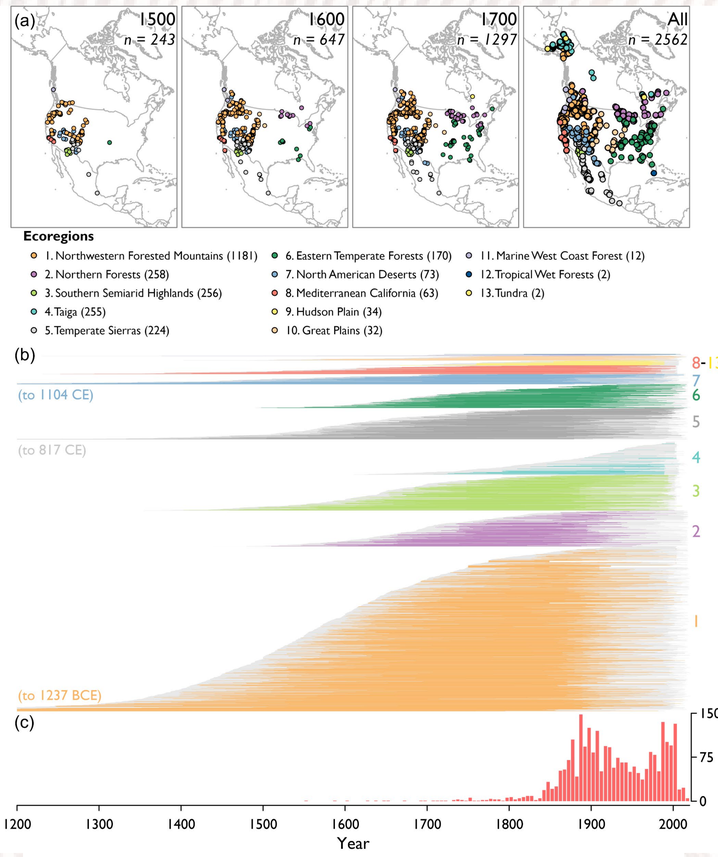
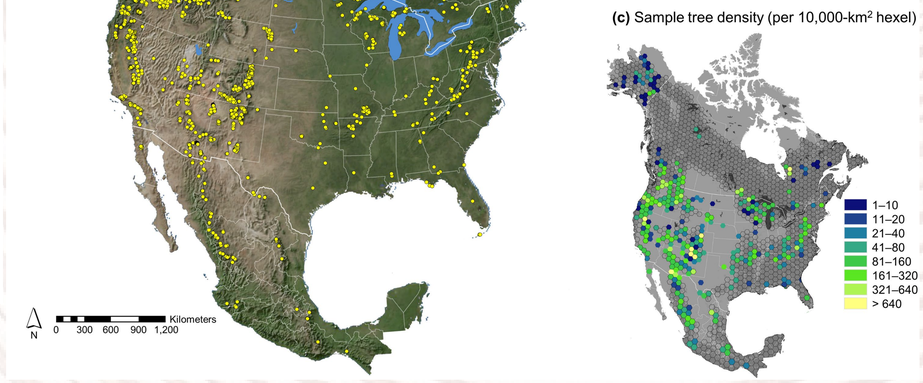
The North American fire scar network (NAFSN) is a compilation of more than 2,900 tree-ring sites collected over the last 40 years.

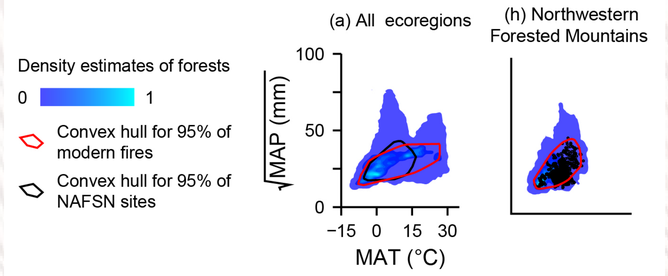
It includes >37,000 trees and >75,000 annually-dated fire scars. The NAFSN can provide spatiotemporally precise, multi-century information on past wildland fire regimes.

Our team is capitalizing on this unprecedented fire history dataset with analyses on the climate, vegetation, and human drivers of fire, as well as using the network to contextualize contemporary fire activity.

What it has





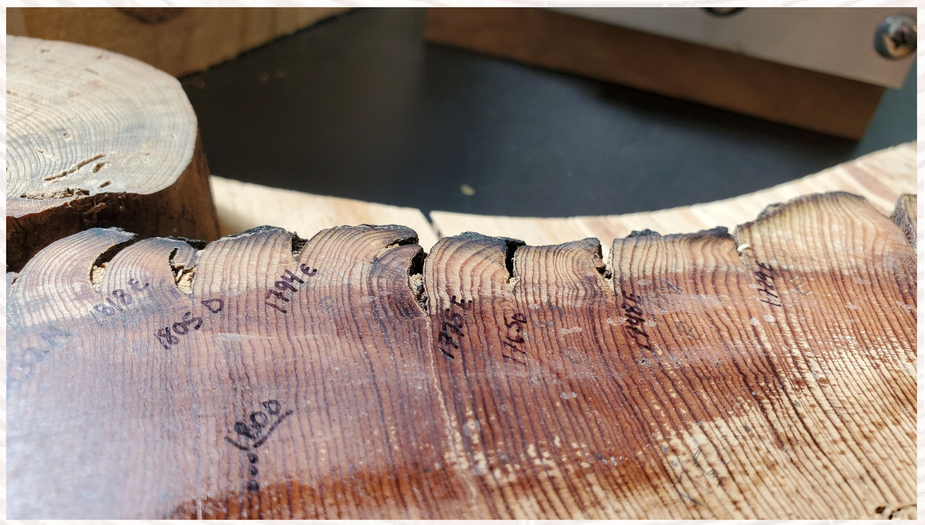


Broadly representative of the climate space of contemporary forests, the network captures most of the range of modern wildfire at the continental scale, and all of it in the western mountains.

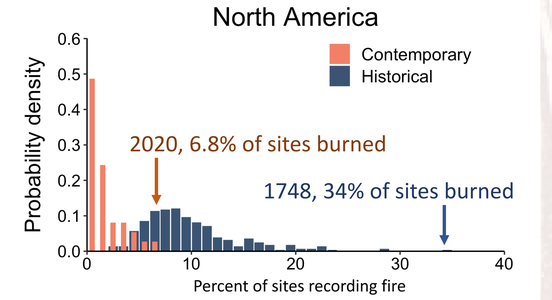
This exceptional geographic coverage
Is matched with temporal depth, covering much of the last 300-500 years in many regions

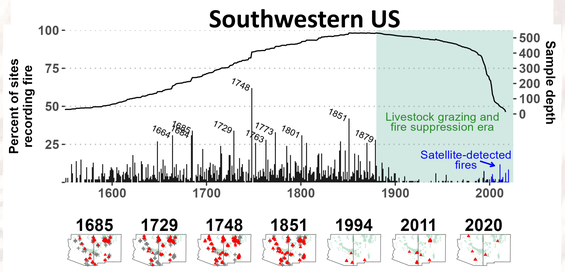
* Margolis, Guiterman, and 84 co-authors, 2022, *Ecosphere*

Explore it for yourself!



What we're learning





The fire deficit

2020 was a record fire year 2020 with >10 million acres burned. By comparison that's only a 1-in-3 year event historically.

Across Arizona and New Mexico, modern fire activity is on the rise, but is yet to reach background levels of historical fire activity

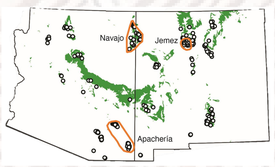
* Papers in progress

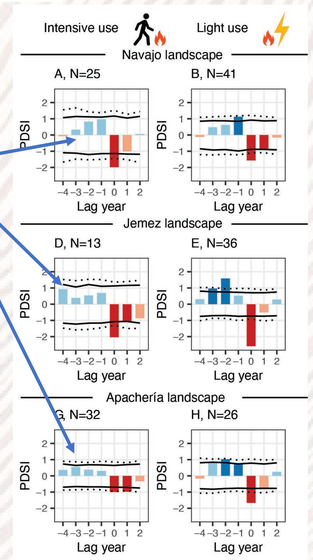
Indigenous fire management

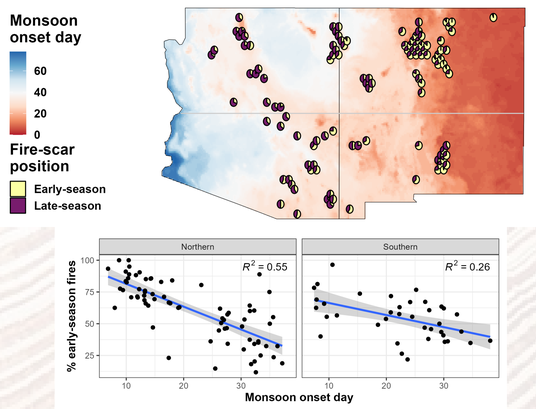
In spaces and during times of more intensive (nongrazing) land use, three different cultural groups show the same pattern of burning in years with relatively low fuel abundance.

This contrasts widespread fire years in spaces and during times when lightning was probably the primary ignition source

* Roos, Guiterman et al. 2022, *Science Advances*







Seasonal progression

The timing of fire shifts from spring to mid-summer ahead of the North American Monsoon.

The build-up of fuel moisture, here quantified as the number of days until 10 mm precipitation has fallen since June 1, acts to extinguish fire spread.

* Paper in progress