8TH INTERNATIONAL WILDLAND FIRE CONFERENCE | GOVERNANCE PRINCIPLES: Towards an International Framework

Indigenous fire use can facilitate climate adaptation: contemporary examples

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8th INTERNATIONAL WILDLAND FIRE CONFERENCE

Fire Ecology Volume 7, Issue 1, 2011
doi: 10.4996/fireecology.0701040

FORUM ARTICLE

THE PRESENT STATUS OF FIRE ECOLOGY, TRADITIONAL USE OF FIRE, AND FIRE MANAGEMENT IN MEXICO AND CENTRAL AMERICA

Dante Arturo Rodríguez-Trejo[1*], Pedro Arturo Martínez-Hernández[2], Héctor Ortiz-Contla[1], Manuel Román Chavarría-Sánchez[1], and Faustino Hernández-Santiago[3]

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Current Forestry Reports (2022) 8:257–276
https://doi.org/10.1007/s40725-022-00168-9

FIRE SCIENCE AND MANAGEMENT (ME ALEXANDER, SECTION EDITOR)

Centering Indigenous Voices: The Role of Fire in the Boreal Forest of North America

Amy Cardinal Christianson[1,2] · Colin Robert Sutherland[3] · Faisal Moola[4] · Noémie Gonzalez Bautista[5] · David Young[1] · Heather MacDonald[6]

REVIEW ARTICLE

J. For. 115(5):343–353
https://doi.org/10.5849/jof.2016-043R2

fire & fuels management

Returning Fire to the Land: Celebrating Traditional Knowledge and Fire

Frank K. Lake, Vita Wright, Penelope Morgan, Mary McFadzen, Dave McWethy, and Camille Stevens-Rumann

Figure 2. Klamath River TREX 2015 (Oct. 10, 2015). Karuk and Yurok ignitors prescribe burning in the wildland-urban interface (Lake property, near Orleans, CA) to reinstate traditional burning in a modern context for fuels reductions, acorn research, and tribal food gathering enhancement. (Courtesy of Frank K. Lake, USDA Forest Service and Karuk Tribe.)

Received: 11 November 2020 | Revised: 9 August 2021 | Accepted: 12 August 2021

DOI: 10.1002/jwmg.22140

FEATURED ARTICLE

THE JOURNAL OF WILDLIFE MANAGEMENT | THE WILDLIFE SOCIETY

Understanding Yurok traditional ecological knowledge and wildlife management

Seafha C. Ramos

8th INTERNATIONAL WILDLAND FIRE CONFERENCE

Hualapai Tribe
Arizona, USA

Rarámuri (Tarahumara)
Chihuahua, México

Foto: Dan Binkley

https://upload.wikimedia.org/wikipedia/commons/thumb/1/12/Copper_canyon_3.jpg/1000px-Copper_canyon_3.jpg

8TH INTERNATIONAL WILDLAND FIRE CONFERENCE

Accepted: 7 March 2022
DOI: 10.1002/ecs2.4159

ARTICLE

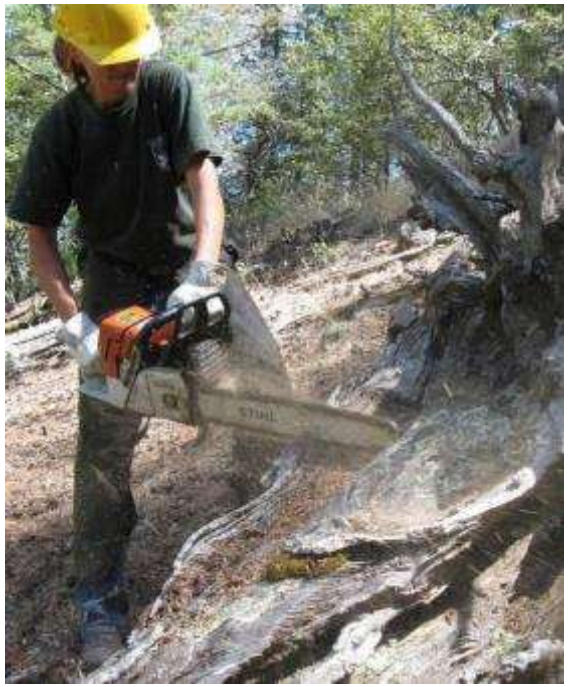
ECOSPHERE
AN ESA OPEN ACCESS JOURNAL

The North American tree-ring fire-scar network

Ellis Q. Margolis[1] | Christopher H. Guiterman[2] | Raphaël D. Chavardès[3] | Jonathan D. Coop[4] | Kelsey Copes-Gerbitz[5] | Denyse A. Dawe[6] |

Dendrochronology

Sampling Fire-Scarred Trees:



Dr. Larissa Yocom

Jaime Yazzie

Dr. Citlali Cortés Montaño

Figura 2. (A) Obtención de muestras con apoyo de motosierra en la Reserva de la Biosfera Sierra de Manantlán, Jalisco, (B) sección parcial de *Pinus douglasiana* con excelentes registros históricos de incendios (7 cicatrices) posterior a su preparación y fechado, y (C) muestra un acercamiento microscópico de la cicatrización del incendio de 1998, que permite definir la posición de la cicatriz en el anillo de crecimiento (mitad de la madera temprana) que define la época en el año en que se registró.

BOSQUE 36(1): 41-52, 2015 DOI: 10.4067/S0717-92002015000100005

Historia de incendios en un bosque de pino de la sierra de Manantlán, Jalisco, México

Fire history in a pine forest in Sierra de Manantlán, Jalisco, Mexico

Julián Cerano-Paredes [a*], José Villanueva-Díaz [a], Rosalinda Cervantes-Martínez [a], Peter Fulé [b], Larissa Yocom [b], Gerardo Esquivel-Arriaga [a], Enrique Jardel-Peláez [c]

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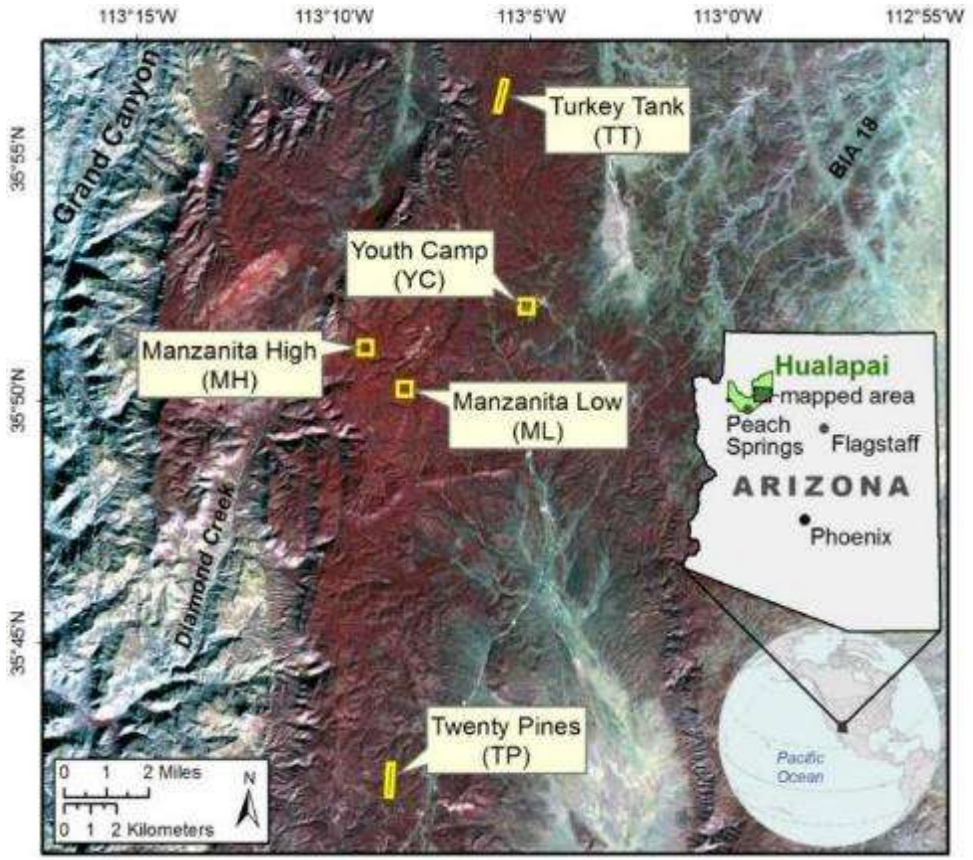
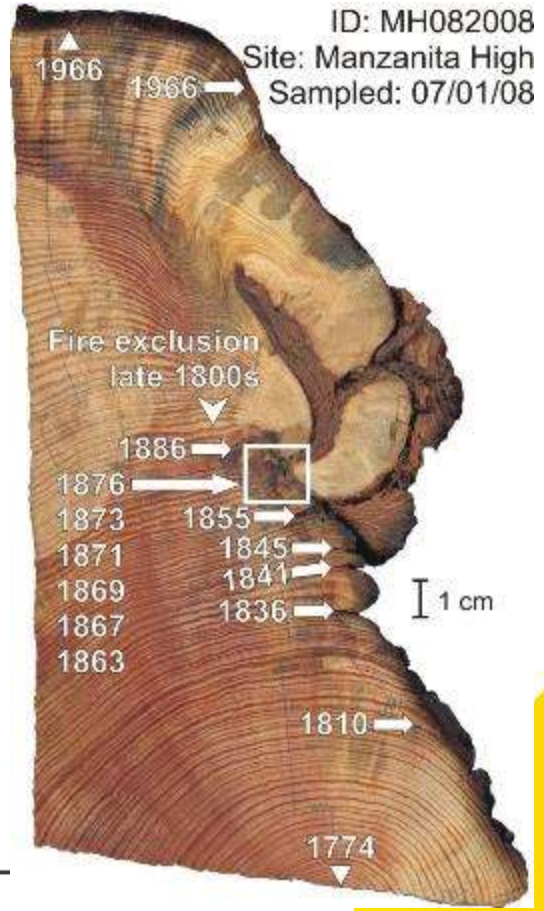


- Hualapai Tribe: “People of the Tall Pines”
- Fire regime interrupted after 1886
- Resumed burning around 1960
- Forest managed with uneven-aged silviculture

Stan, A.B., P.Z. Fulé, K. Ireland, and J. Sanderlin. 2014. Modern fire regime resembles historical fire regime in a ponderosa pine forest on Native American lands. *International Journal of Wildland Fire* 23:686–697. http://dx.doi.org/10.1071/WF13089

Fire history: Hualapai forest



CSIRO PUBLISHING
International Journal of Wildland Fire 2014, *23*, 686–697
http://dx.doi.org/10.1071/WF13089

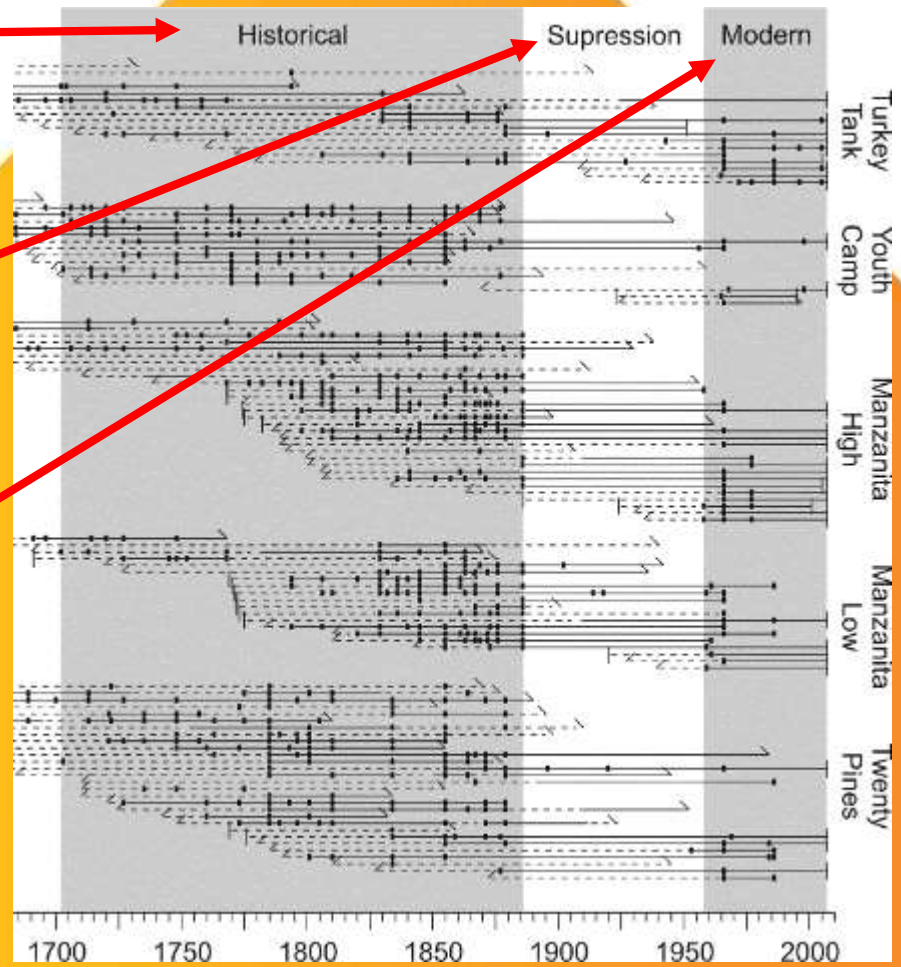
Modern fire regime resembles historical fire regime in a ponderosa pine forest on Native American lands

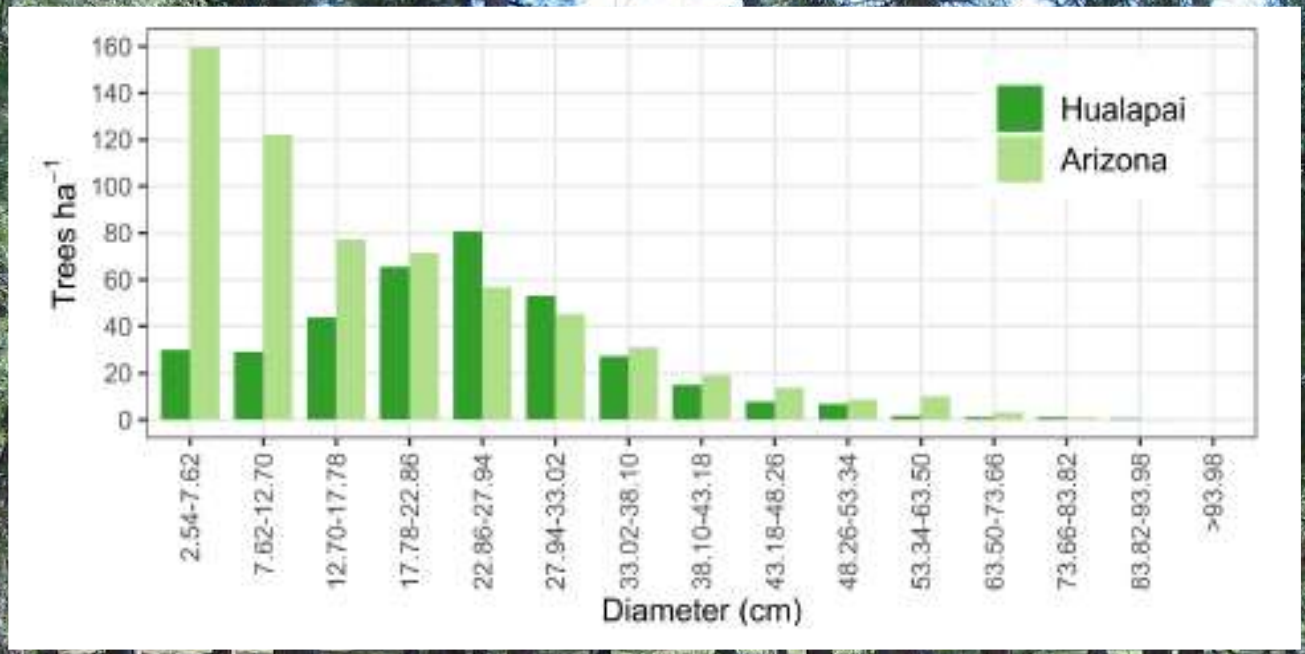
Amanda B. Stan[A,D], *Peter Z. Fulé*[A], *Kathryn B. Ireland*[A] and *Jamie S. Sanderlin*[B]

Many fires in the past

Fire exclusion for a century

Burning resumed ≈ 1960





Trees, Forests and People 10 (2022) 100325

Contents lists available at ScienceDirect

Trees, Forests and People

journal homepage: www.sciencedirect.com/journal/trees-forests-and-people

Reduced forest vulnerability due to management on the Hualapai Nation

Amanda B. Stan [a,*], Peter Z. Fulé [b], Melvin Hunter Jr. [c]

Does fire use help forests adapt to climate change?

Rarámuri Forest at Ejido Pino Gordo

Pino Gordo, Chihuahua: forest under traditional Indigenous management

Fulé et al. 2012, Ecological Applications

Photos courtesy Citlali Cortés Montaño

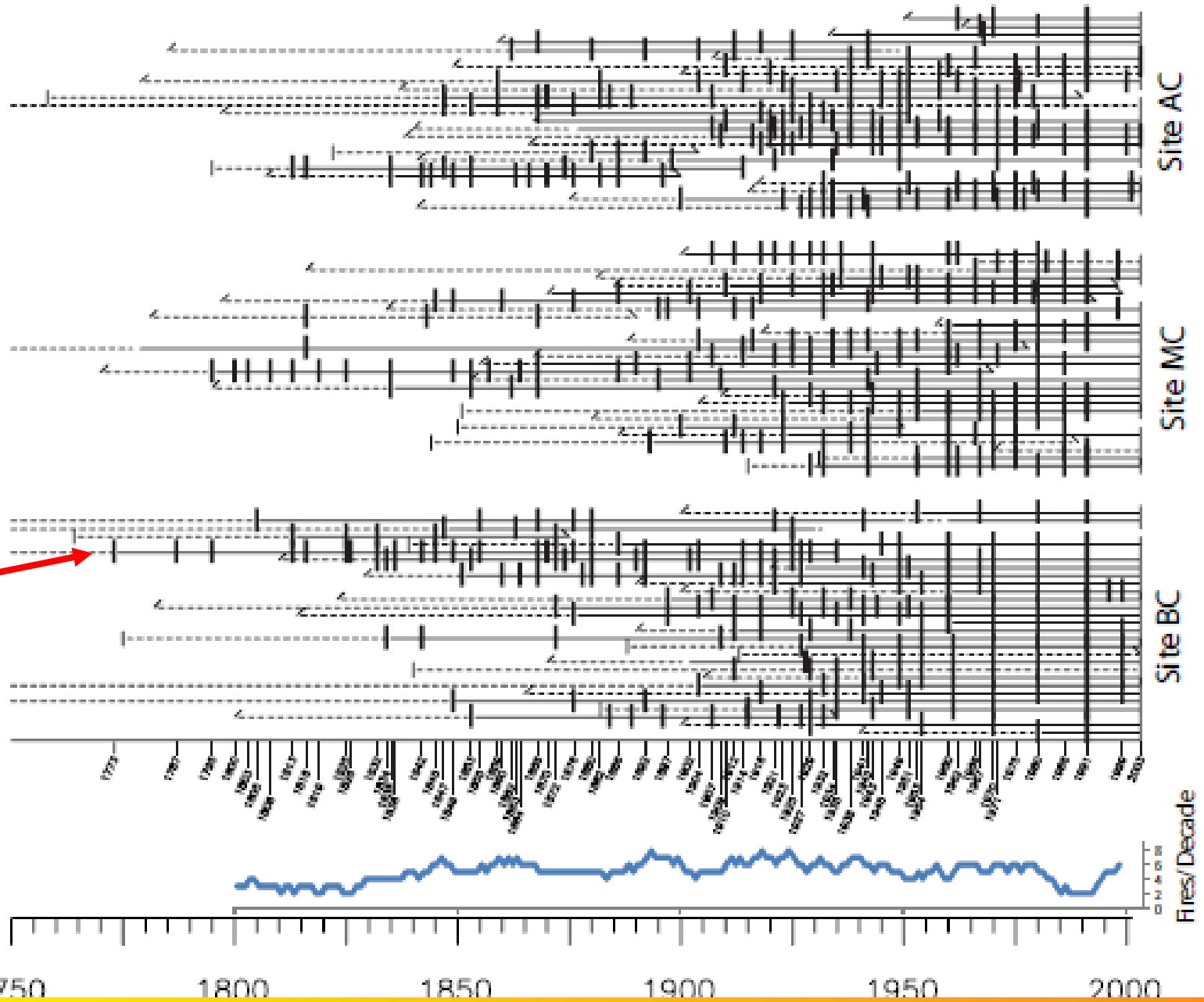
Fire history, Pino Gordo

- 92 fire-scarred trees sampled from 3 sites, 2480-2565 m elevation.
- 20 plots to measure forest structure in *Pinus-Quercus* forest.
- We asked local people about traditional use of fire.

Pino Gordo, fire history

Horizontal lines are timeline of the sample tree

Vertical bars are fires

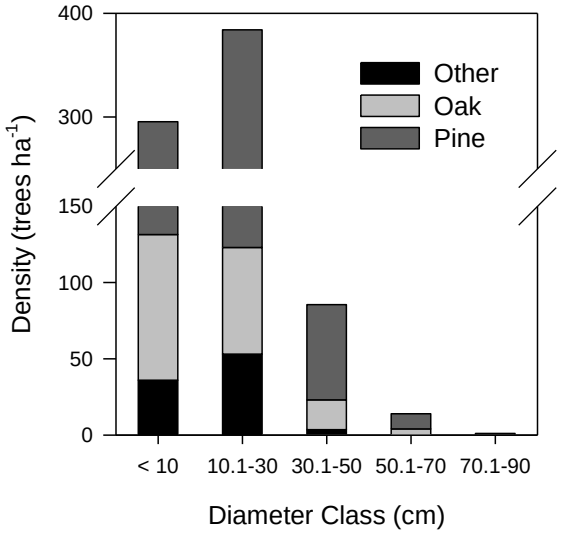


Forest Structure Comparison
Pino Gordo vs. harvested sites

- We compared Pino Gordo (fire regime, no harvest) to two harvested sites ≈ 40 km N: Cerro Grande (Guachochi) and Cabórachi (Miller & Chambers 2007)

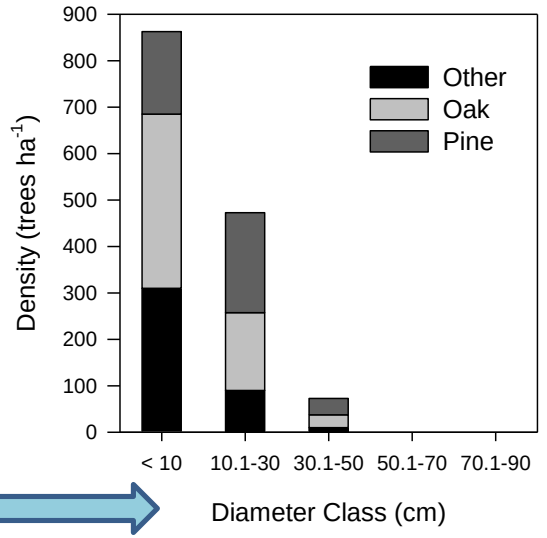
Barranca Sinforosa

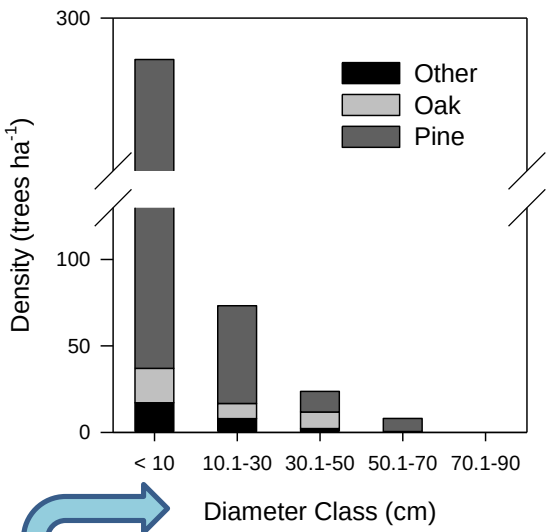
Cerro Grande



Pino Gordo: not harvested, ongoing fire regime

- Trees ≥ 50.1 cm: 15 trees ha^{-1}
- Pines ≥ 50.1 cm: 10 trees ha^{-1}
- Pine stumps: 0.5 ha^{-1}





Cerro Grande: harvested

- Trees ≥ 50.1 cm: 0 trees ha^{-1}
- Pines ≥ 50.1 cm: 0 trees ha^{-1}
- Pine stumps: 17.5 ha^{-1}

Cabórachi: harvested

- Trees ≥ 50.1 cm: 8.2 trees ha^{-1}
- Pines ≥ 50.1 cm: 7.5 trees ha^{-1}
- Pine stumps: 26.0 ha^{-1}

Conclusions:

- Two forests of southwestern North America with evidence of frequent surface fire regimes.
- **Hualapai:** interruption of the fire regime for nearly a century, followed by fire restoration.
- **Pino Gordo:** fire regime uninterrupted up to the present; forest with large trees.
- **Both:** open forests, few fuel ladders, resilience under climate change.

Outreach activities at Hualapai tribal forest, AZ