

Wildfires and Western Forests in Context

- FILM: "Bring Your Own Brigade" (CBS Films, 2021) – available on Paramount+
 - Summary: This impactful documentary is one of the most comprehensive accounts and analyses of the Camp and Woolsey wildfires, which burned swaths of destruction through Paradise and Malibu respectively in 2018. It begins with the harrowing drama of urban wildfire from the perspective of survivors, and then zooms out into a broad, systemic view of California forests, tracing the historical actions – political, economic, and scientific approaches to forests on the landscape level - that have resulted in extreme vulnerability to wildfires in the context of climate change.
- Sugihara, Neil and Michael Barbour. "Fire and California Vegetation." Chapter 1 in Sugihara et al, eds. *Fire in California's Ecosystems*, University of California Press, 2006.
<https://ucanr.edu/sites/fire/files/279634.pdf>
 - Summary: This brief chapter provides an overview of California's ecological regions and its long history of fire adaptation over geological time scales. It also outlines the scale and consequences of large-scale transformation of species composition in multiple California bioregions as a result of colonization, compromising California's fire-adapted ecosystems and increasing vulnerability to catastrophic wildfire.
- Prichard et al. "Adapting western North American forests to climate change and wildfires: 10 common questions." *Ecological Applications* 31(8), December 2021.
<https://esajournals.onlinelibrary.wiley.com/doi/10.1002/eap.2433>
 - Summary: This review article summarizes the latest scientific literature on climate change and wildfires in western North American forests, critically addressing some of the most common assumptions and controversies regarding forest management. According to the abstract, "Although some current models of fire management in wNA (western North America) are averse to short-term risks and uncertainties, the long-term environmental, social, and cultural consequences of wildfire management primarily grounded in fire suppression are well documented, highlighting an urgency to invest in intentional forest management and restoration of active fire regimes."
- MacCleery, Doug. "Re-Inventing the United States Forest Service: Evolution from Custodial Management, to Production Forestry, to Ecosystem Management" *FAO*, 2008.
<https://www.fao.org/3/ai412e/AI412E06.htm>
 - Summary: This comprehensive historical review of the Forest Service, and the evolution of the agency's priorities and approaches in Western forests over the course of its existence, helps to explain: 1) how the changing management priorities of the Forest Service contributed to the current vulnerable condition of National Forest lands to wildfires, particularly in the latter half of the 20th century, as the boom in production forestry from the post-WWII housing boom led to conservationist backlash and a "hands-off" approach to forest management; and 2) the lag in organizational adaptation to new and emerging priorities in National Forests and generational turnover in agency management, as forest managers navigate decision-making and engagement with diverse and conflicting interests among stakeholders in federal forest lands.

- Hessburg et al. “Wildfire and Climate Change Adaptation of Western North American Forests: A Case for Intentional Management.” *Ecological Applications* 31(8), December 2021. <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/eap.2432>
 - Summary: This review article offers recommendations for climate change adaptation and changes in forest management based on a synthesis of the latest scientific evidence, addressing common questions and arguing for a multi-dimensional, comprehensive approach to intentional forest management based on ecosystem health outcomes given the uncertainties and devastating consequences of climate change.
- Hoefft, Alex. “Debriefing Caldor.” *Moonshine Ink*, March 11, 2022. <https://www.moonshineink.com/tahoe-news/debriefing-caldor/>
 - Summary: This overview and analysis of the Caldor Fire that impacted the Lake Tahoe area of California (Washoe Territory) gives a starkly comprehensive view of the current realities of wildfire in California, and the need for a shift from fire suppression to adaptation to living with fire.

Wildfire Disaster Response

- Congressional Research Service. *Wildfire Statistics*. October 4, 2021 <https://sgp.fas.org/crs/misc/IF10244.pdf>
 - Major points:
 - 70% of total wildfire acreage in 2020 burned on federal lands
 - 76% of all wildfires in 2020 burned on federal lands
- DHS Office of the Inspector General. *Lessons Learned From Prior Reports on Disaster-Related Procurement and Contracting*. OIG-18-29, December 2017. <https://www.oig.dhs.gov/sites/default/files/assets/2017-12/OIG-18-29-Dec17.pdf>
 - Summary: This government report examines several post-disaster case studies and addresses FEMA’s ongoing failure to monitor how (mostly state-level) grantees manage federal procurement policies and regulations, leading to widespread problems with disaster response, including: 1) failure to provide full and open competition on contracts, leading to favoritism and corruption; 2) failure to engage/include local and minority community interests in contracting and economic recovery; 3) failure to fulfill contract provisions; and 4) failure to fully vet contractors for eligibility based on past practices, and subsequent failure to protect taxpayers from risk of financial abuse and fraud from unethical contractors.
- Anderson, et al. *Inequality in Agency Responsiveness: Evidence from Salient Wildfire Events*. Resources Institute, Dec. 16, 2020. <https://www.rff.org/publications/working-papers/inequality-agency-responsiveness-evidence-salient-wildfire-events/>
 - Summary: This working paper examines the efforts federal agencies undertake in the aftermath of a fire. It finds that agencies increase fuel management only near affected communities with high socioeconomic status. It also explores how socioeconomic disparities operate to produce greater vulnerabilities and damages to disadvantaged communities both during and after wildfire events.

- Von Kaenel, Camille. “Tribes Ask for Greater Share of Disaster Recovery Work for Locals.” *Chico Enterprise-Record*, Feb 27, 2020. <https://www.chicoer.com/2020/02/27/tribes-ask-for-a-greater-share-of-disaster-recovery-work-for-locals/>
 - Summary: This newspaper article provides an account of Butte County Tribal forestry workers and cultural practitioners who visited (not ‘stormed’) a Camp Fire recovery meeting and asserted their rights to Tribal inclusion in disaster recovery operations and contracting. It outlines how FEMA and Cal OES (state-level grantee of disaster funding) addressed Tribal compliance solely for cultural monitoring of archaeological resources during post-Camp Fire recovery and did not consider additional resources and capacities of Tribal and local communities for disaster recovery, and the reaction of climate refugees and a displaced community to the use of disaster funding to house out-of-area contractors rather than survivors.
- VIDEO: The Lookout, “Forest Management and the Dixie Fire.” <https://the-lookout.org/2021/11/13/forest-management-and-the-dixie-fire-video/>
 - Summary: This video shows how a major wind event in early August, 2021, created extreme fire behavior west of Chester, California. We use satellite-derived forestry data to investigate whether past forest management had any effect on survival of trees in the approximately 100,000-acre area affected by the firestorm. This video is focused on forest conditions and fire behavior in the area around Chester and Swain Mountain. Fire behavior throughout the almost 1,000,000 acre Dixie Fire had a large amount of variety.
- VIDEO: The Lookout, “Dixie Fire Effects – 2 Videos.” <https://the-lookout.org/2021/09/12/dixie-fire-effects-2-videos/>
 - Summary: This blog post from fire ecologist Zeke Lunder compares two areas of the Dixie Fire: 1) conventionally managed timberlands and 2) recently repatriated Tribal land managed by the non-federally recognized Tribal community Maidu Summit Consortium. The videos show dramatically different wildfire effects on these landscapes, and how fire damage was substantially less severe on Tribally managed lands.

Indigenous Perspectives on Forest Management

- Hankins, Don. "Reading the California Landscape for Fire." *Bay Nature*, January 3, 2021. <https://baynature.org/article/reading-the-landscape-for-fire/>
 - Summary: This beautiful read from Miwok geographer and cultural fire practitioner Don Hankins illustrates his syncretic Indigenous and scientific perspective on California landscapes and forests, the history of apocalyptic environmental change in California since colonization, and the multidimensional benefits of cultural fire on the landscape, based on his experiences both in his native California and working with Aboriginal fire practitioners in Australia.
- Clark, Sara, Andrew Miller, and Don Hankins. *Good Fire: Current Barriers to the Expansion of Cultural Burning and Prescribed Fire in California and Recommended Solutions*. Karuk Tribe, 2021. <https://the-lookout.org/wp-content/uploads/2022/01/Karuk-Prescribed-Fire-Rpt-FINAL.pdf>
 - Summary: This report, prepared for the Karuk Tribe, outlines the multiple barriers that still exist to inhibit Tribal cultural burning practices in California.
 - From the Introduction: "The barriers to cultural burning are even more significant, including recognition of tribal rights and skills, land access, and funding. While there is common knowledge of the use of fire by Indigenous peoples, the ability to utilize cultural burning is largely curtailed by state and federal policies rooted in paternalistic governance and the legacies of racism, which conflict with traditional law and cultural practices for burning. Central to this issue is the lack of recognition of sovereignty and self-determination. Cultural obligations to uphold stewardship responsibilities across ancestral territories, including burning, have not been surrendered. California, however, lacks ratified treaties with Tribes and lacks any formal recognition of Native Title. As such, access to sites to engage in stewardship is often difficult to navigate among the diverse public and private land tenures currently recognized by state and federal law. Similarly, conflicting legal frameworks between traditional law and the laws of local, state, federal, and even some Tribes create confusion surrounding the ability to burn, even where the basic tenets of self-determination are recognized within federal and state law. The issue spans beyond fundamental differences between traditional law and colonial laws, but includes unclear or conflicting language within colonial law itself. This situation makes the presence of Indigenous people within the bureaucracy essential in order for change to happen from within."
- Hankins, Don. *Restoring Indigenous Prescribed Fires to California Oak Woodlands*. Gen. Tech. Rep. PSW-GTR-251. Berkeley, CA: USDA Forest Service, Pacific Southwest Research Station, 2015 <https://www.fs.usda.gov/treearch/pubs/49977>
 - Summary: This technical report outlines the ecological and cultural benefits of returning Indigenous cultural fire practices to California landscapes at risk of destruction from climate change impacts, including sudden oak death and wildfires. According to the abstract: "As society grapples with the devastating impacts of wildfires and the loss of biological diversity, many Indigenous people see traditional fire use as a key to mitigation of devastating losses while retaining traditional livelihoods associated with burning. Indigenous burning in California is a keystone process, which creates heterogeneity of species and habitats while also promoting many culturally significant foods, materials and other resources of value to Indigenous communities and society."

- Armstrong et al. “Historical Indigenous Land Use Explains Plant Functional Trait Diversity.” *Ecology and Society* 26(2), 2021. <https://www.ecologyandsociety.org/vol26/iss2/art6/>
 - Summary: This groundbreaking scientific article examines the historical cultivation of landscape-scale “forest gardens” by Indigenous peoples in the Pacific Northwest, and how native ecosystems co-evolved with Native peoples on the landscape, affecting the genetic traits of native plants.
 - A popularized summary of the article’s findings for a broad audience can also be found here: <https://www.science.org/content/article/pacific-northwest-s-forest-gardens-were-deliberately-planted-indigenous-people>
- Flores, David; Russell, Gregory. “Integrating tribes and culture into public land management.” Chapter 5.5 in: Dumroese, R. K.; Moser, W. K., eds. *Northeastern California plateaus bioregion science synthesis*. Gen. Tech. Rep. RMRS-GTR-409. Fort Collins, CO: USDA Forest Service, 2020. <https://www.fs.usda.gov/treearch/pubs/60223>
 - Summary: This report provides an overview of Native American land management practices throughout North America, rooted in an Indigenous worldview and “sense of place” specific to each Tribal territory. It also examines the problems faced by Tribes when attempting to interface with colonial land managers, and issues with land management agencies with integrating cultural practices, stemming from the ontological differences between Western and Indigenous perceptions and approaches to the land. These differences often seem irreconcilable, but the article also offers a way forward based on mutual respect in government-to-government relationships and an understanding of the core principles of Traditional Ecological Knowledge.
- Lake, Frank K. “Working with American Indian tribes on wildland fires: protecting cultural heritage sites in northwestern California.” *Fire Management Today* 71(3), 2011. <https://www.fs.usda.gov/treearch/pubs/60825>
 - Summary: This article by California Native scholar Frank Lake provides an overview of the statutory authorities through which Federal land management agencies can and should fulfill the Federal Trust Responsibility to Tribal governments on Federal lands in ancestral territories; and the mechanisms available to land managers and Tribes that can facilitate better government-to-government relationships toward “collaborative and cooperative fire management for the protection, security, and mitigation of impacts to tribal trust and cultural and heritage resources.”

Tribal Co-Management Case Studies

- FILM: “pananu’thívthaaneen xúus nu’êethiheesh: We’re Caring For Our World” (Karuk Media, 2020) <https://vimeo.com/367538820>
 - Summary: This beautiful film explores the cultural values of the Karuk people in their ancestral territory (lower Klamath River basin / Six Rivers National Forest), and their efforts to return cultural fire to their landscapes, including cooperative stewardship agreements with the Forest Service and the creation of the first TREX (prescribed fire training exchange) program in Karuk territory.
- Manning, Beth Rose, and Kaitlin Reed. “Returning the Yurok Forest to the Yurok Tribe: California's First Tribal Carbon Credit Project.” *Stanford Environmental Law Journal* 39(71), 2019. <https://www-cdn.law.stanford.edu/wp-content/uploads/2019/02/39StanEnvtlJ71.pdf>
 - Abstract: The Yurok Tribe's 57,578-acre land acquisition is significant for its size (one of the largest tribal conservation land acquisitions in the US), funding mechanisms (carbon offsets, State Revolving Loan fund, nonpoint source loans, and new market tax credits), innovation (the first forest carbon offset project under the California Compliance Offset Protocol) and partnerships (conservation, tribal, private, and state). It exemplifies the exercise of inherent tribal sovereignty to achieve economic development, land reclamation, and recognition of Indigenous ecological authority. The Yurok Tribe incorporated management of the forest to sequester carbon into its own cultural stewardship framework, and did so in a way that changed the terms of the California carbon offset program to enable tribal participation. The Tribe has exercised its status as a sovereign entity to influence natural resource policy in the state, create international diplomatic relations with Indigenous peoples in other nations considering cap-and-trade, and to insert Indigenous values into climate change policy. Focusing on the Yurok forest carbon offsets, this article highlights the possibilities of using the sale of carbon offsets for assertions of Indigenous traditional knowledge, selfgovernance, and self-determination.
- Diver, Sibyl. “Co-management as a Catalyst: Pathways to Post-colonial Forestry in the Klamath Basin, California.” *Human Ecology* 44, October 2016. <https://link.springer.com/article/10.1007/s10745-016-9851-8>
 - Summary: This case study specifically examines the negotiation process between the Karuk Tribe and the Forest Service for co-management of Karuk ancestral territories within National Forest lands. While existing land management policies present limitations and vulnerabilities for Tribal sovereignty and cultural land stewardship practices, it also outlines how the Karuk have been able to navigate the complex territory of conflicting perspectives and policies on land management to create co-management agreements that address colonial legacies and advance Tribal self-determination goals, “simultaneously following existing state policies and subverting them to shift federal forest management.”

- Long, Jonathan W. and Frank K. Lake. “Escaping social-ecological traps through tribal stewardship on national forest lands in the Pacific Northwest, United States of America.” *Ecology and Society* 23(2), 2018. <https://www.jstor.org/stable/26799109>
 - Summary: This review article explores the ways in which colonial government policies have led to both ecological and cultural degradation of Tribal ancestral landscapes in the Pacific Northwest, and how Tribes in the region are attempting to navigate those legacies in the interests of ecological and cultural preservation; and how long-standing policies that have been instituted to specifically exclude Native peoples from forest landscapes and land-based cultural practices need to be re-examined in light of new challenges and priorities, as Tribal interests are often found to align with ecosystem health priorities that benefit the wider community.
- Institute of Tribal Environmental Professionals and Southwest Climate Adaptation Center. *Status of Tribes and Climate Change Report*, 2021. <https://sites.google.com/view/stacc2021-itep/home>
Direct Link: <https://drive.google.com/file/d/1M0HSRD2avCvF4WeQwZHhwNi3sZQ2N0uv/view>
 - Summary: This comprehensive document outlines the diverse efforts and initiatives of Tribes across the United States to adapt to climate change and mitigate its impacts on Tribal and surrounding communities. It also outlines several policy recommendations for government-to-government consultation and support for Tribal and Tribally led climate adaptation projects.