

# California Wildfires

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GEOGRAPHY 450

## INTRODUCTION:

For our project, we turned our focus on the state of California's fire management. Historically, Indigenous communities have managed fires through controlled or prescribed burning practices. A controlled burn is a fire started in an area intentionally to burn up dead, dried leaves and other plant debris so that these areas are less susceptible to major burning when a wildfire occurs (cite). For some time (since 1850) this practice was outlawed by the government and it was not until recently (1968) that the state has realized its benefit. The idea of burning the forest to help save it is not new, "the Yurok, Karuk, Hupa, Miwok, Chumash and hundreds of other tribes across California and the world used small intentional burns to renew local food, medicinal and cultural resources, create habitat for animals, and reduce the risk of larger, more dangerous wildfires" (Cagle 2019). Indigenous people have used this method of prevention for thousands of years.

California has seen two of the largest recorded fires in history in the last year. There is reason to believe that modern fire suppression techniques are to blame and a return to Indigenous prescribed burning would create a landscape less susceptible to uncontrollable blazes. Through research the efficacy of prescribed burns will be presented as a viable and superior alternative to our current fire management.

- ★ Are prescribed burns the answer to stopping large uncontrollable fires in California?
- ★ What are the benefits of prescribed burning practices?
- ★ How will the Indigenous community be integrated into this shift in fire management?



A volunteer uses a drip-torch to start a controlled burn during the Klamath River Prescribed Fire Training Exercise. Stormy Staats (right)

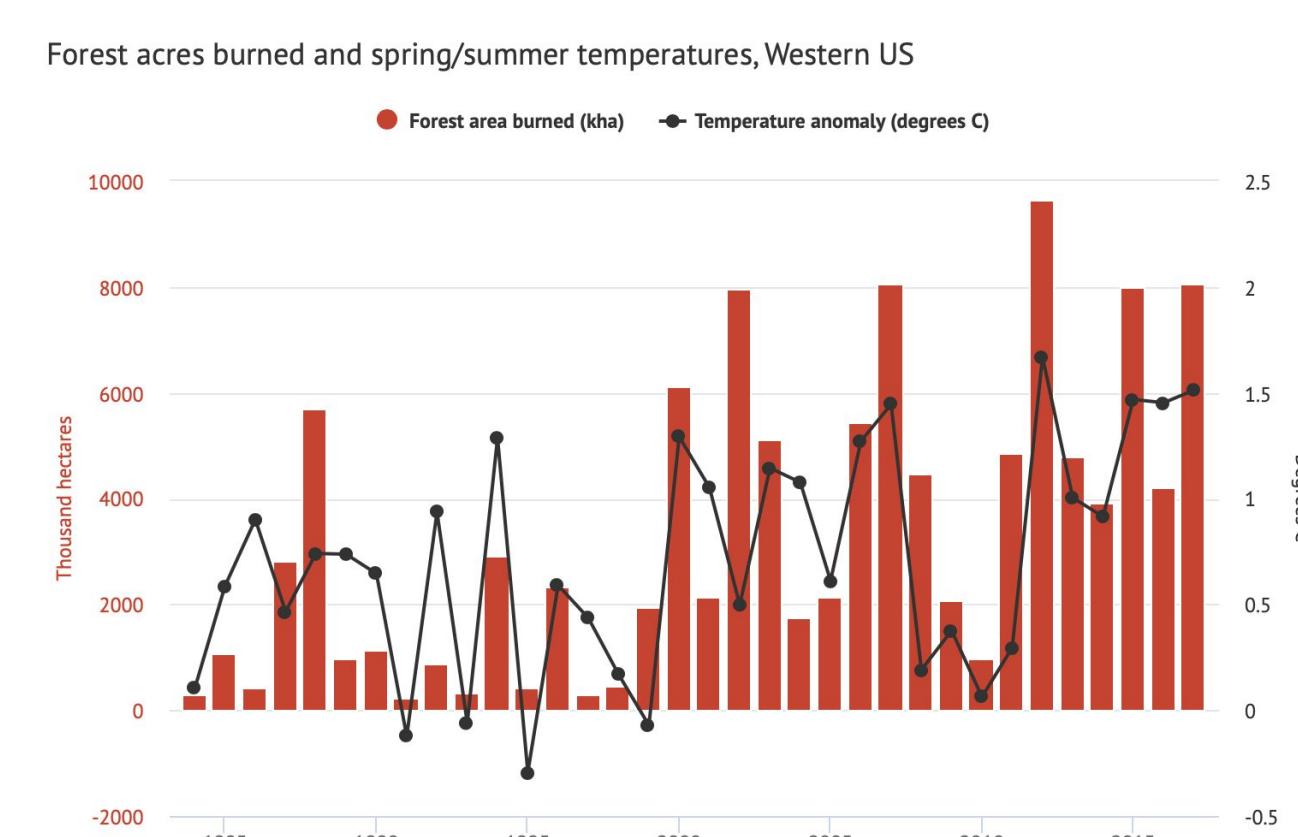
American Indians in the Southeast, burning the understory of a pine stand. Saw palmetto is often an understory associate with long leaf pine and native grasses. Courtesy of the Longleaf Alliance, 2012. (left)



## Source of Data/Information

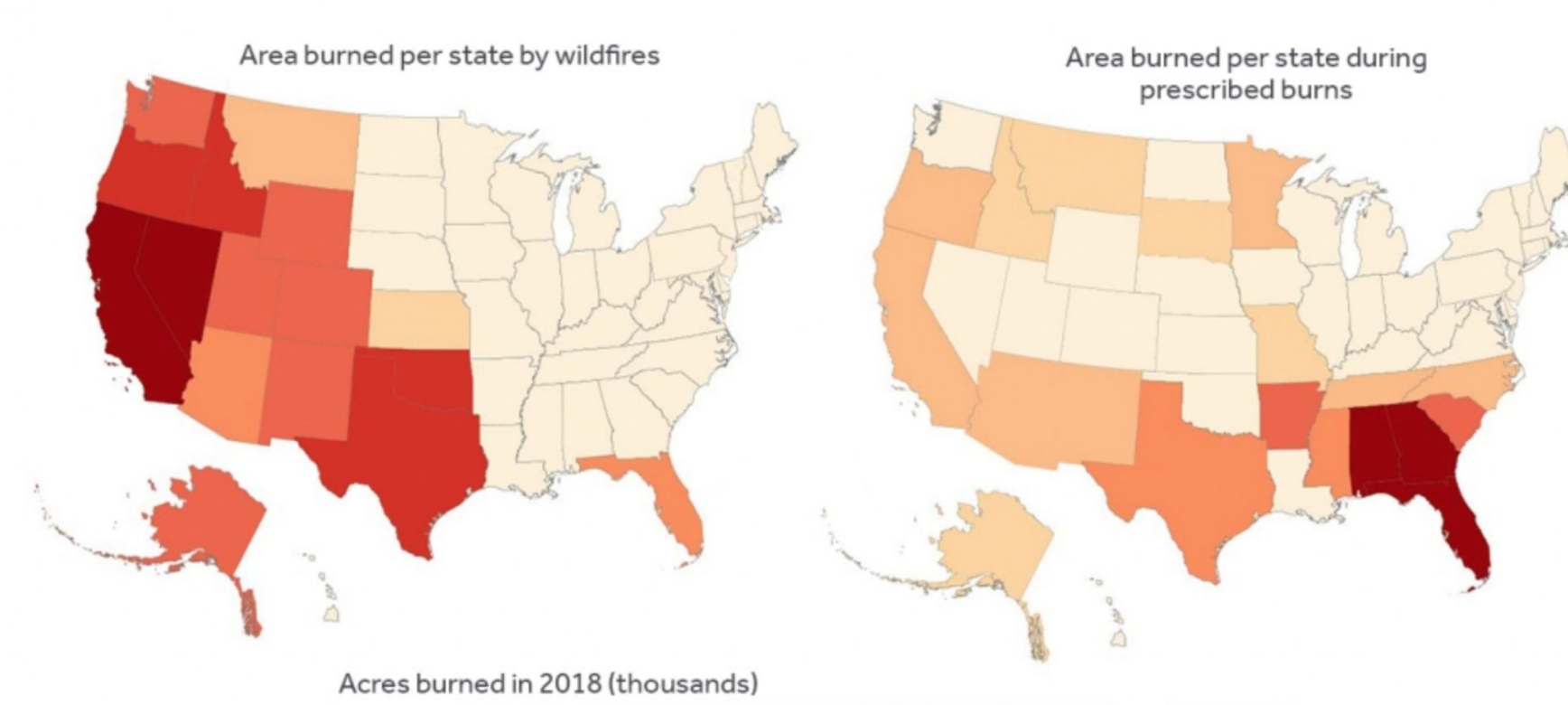
Through our data research we explored how the changes of fires have increased throughout California's history. As the tools and technology are not the same as they were thirty years ago we must find better ways to mitigate these wildfires throughout our land. Carbon brief studies how global warming from anthropogenic activities has raised global temperatures and ultimately increased the amount of wildfires throughout California.

Articles such as "Wildfires and Forest Management" and "With Wildfires on the Rise", discuss the initial pushback that agencies like the US Forest Service had when it came to integrating Indigenous techniques into fire control programs. This was due to the historical connotation that fires, no matter what size, were to be suppressed. Unlike, Indigenous techniques that allowed for small fires to be lit during dry periods to moderate and better manage the ecosystem.



Red bars show western US forest area burned (in thousand hectares) using data provided to Carbon Brief by Prof John Abatzoglou, updated from the data used in Abatzoglou and Williams 2016. Black line shows March-August temperature anomalies relative to a 1961-1990 baseline period for the US west of 102 degrees longitude using data from NOAA. Chart by Carbon Brief using Highcharts.

Wildfires vs. Prescribed Burns



Climate Central analysis of National Interagency Fire Council data

CLIMATE CENTRAL

## FINDINGS:

Indigenous burning practices were common in California, but since colonization, these traditional practices have been outlawed (Hankins 2015). The state currently manages fire through fire suppression techniques, such as extinguishing, containing, or preventing fires. Since the 1980s, California is experiencing larger and more intense fires (CDFW 2021). The California Department of Fish and Wildlife (CDFW) reports that "15 out of the 20 largest wildfires in California history have occurred since 2000, and 10 of the most costly and destructive fires to life and property in the state have occurred since 2015" (CDFW 2021). In 2020, California exceeded 4 million acres burned, breaking the state's previous record (Stelloh 2020). As a result, fire suppression may no longer be an adequate method in managing the state's wildfires (paired with climate change). Researchers have argued that fire suppression intensifies wildfires because it has led to long-term accumulation of vegetation (Fernandes 2015). The accumulation of vegetation acts as fuel for fires, making it easier for fires to spread (Steel et al. 2015). Additionally, fire suppression can impact fire intensity. Hankins (2015) stated that fire suppression in the California oak woodlands have increased in intensity due to the increase in vegetation.

- Areas that see controlled burns suffer less from deforestation and other ecological dangers than through Western fire suppression methods.
- Controlled burns allow Giant sequoia trees to flourish (reason for CA lifting ban on prescribed burning).
- Burning flammable vegetation at a lower heat as a controlled burn does, allows for forests to naturally allow regrowth, whereas wild higher heat fires scorch the earth to an impairable status. (Cagle 2019)
- Allowing indigenous tribes the opportunity to control burn not only benefits those residing in California affected by wildfires, but also benefits nature:
  - Indigenous people use small fires to the land to renew plants and watersheds for food, wildlife habitat, medicine, basketry and other cultural uses. (Kerlin 2020)
  - Low fire smoke allows shade for fish in the river, lowering the temperatures in the summer (Norgaard and Worl 2019)
- Using Indigenous Cultural approaches allows us to see fire less as a threat, and more as a tool for forest regrowth and safety measure. (Kerlin 2020)

## CONCLUSIONS:

Through the research done, it can be said that California's current fire management is not environmentally sustainable nor sustainable for California fires in the long run. With a shift to controlled burns, it will allow for California to have a sustainable management on wildfires. By having prescribed and controlled burns, this will allow for California to gain benefits of less intense fires during fire seasons as well will this allow for California's greenery to return and replenish itself.

It is recommended that California proceed with its shift away from fire suppression techniques and to controlled burns. It is also recommended that California should expand on its educational assistance to residents in fire prone areas. There are obviously benefits to controlled burns, especially with it dating back thousands of years. Not only would we be giving Indigenous people their right to practice back but it would also allow for wildlife to benefit as well.

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