

WE

DIDN'T

START

THE

FIRE*

*ABOUT 84%
OF THE TIME



Introduction

If it seems like every year, California's wildfires break records for "biggest fire" and "most destructive," that's because they do. Fires in 2018 and 2017 were some of the largest on record with some of the highest body counts to match, and trends indicate that the danger won't stop anytime soon. Global climate change is the assumed reason for this phenomenon. However, new data and analysis demonstrate that the housing market and urban sprawl have a more active role in the story of California's wildfires.

“ The **wildland-urban interface (WUI)** is where development—whether an individual home or a whole community—**spreads into forestland** and other natural areas. The development can be as sparse as one structure per 40 acres. There are two kinds of WUI:

Interface WUI

Interface WUI... is more developed but is very close to extensive natural areas.

Intermix WUI

Intermix WUI has more than 50 percent vegetative cover.

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Climate change is making our fields, forests and grasslands drier and hotter for longer periods, creating a greater window of opportunity for human-related ignitions to start wildfires.

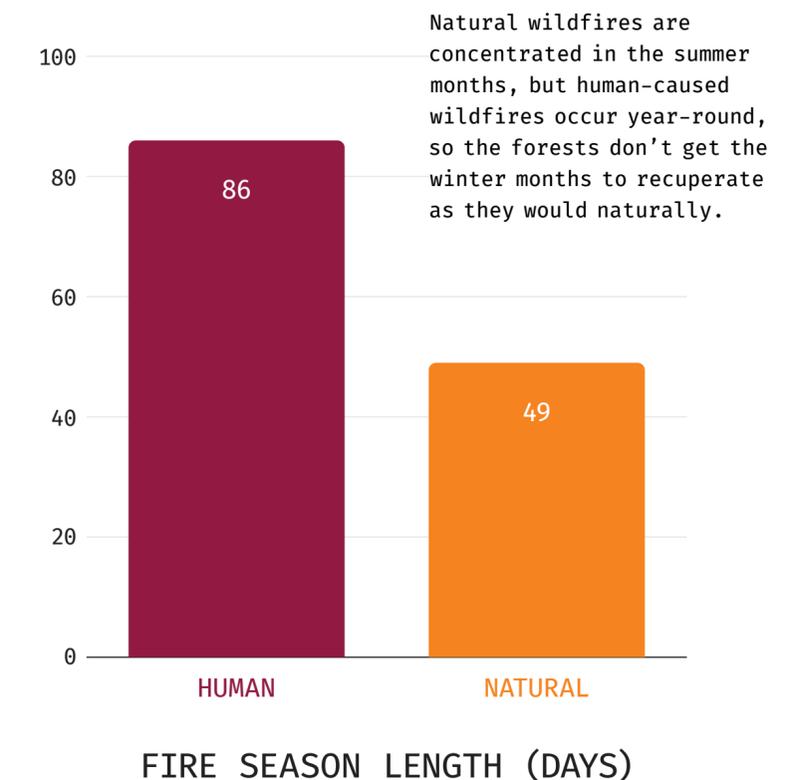
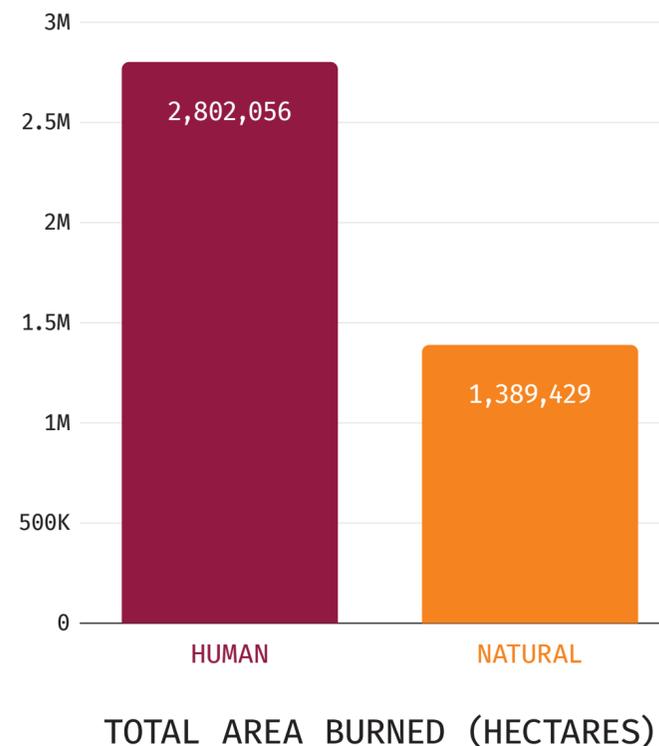
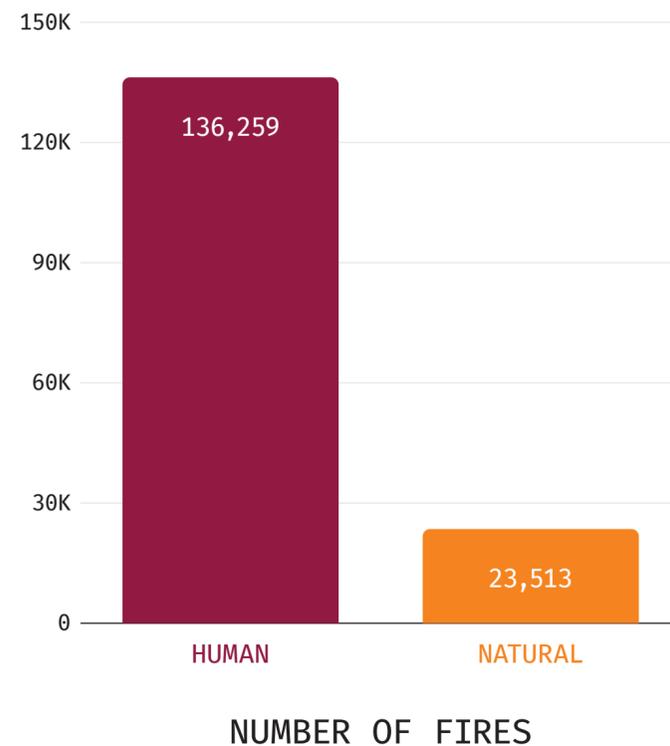
— **Jennifer Balch**

DIRECTOR OF CU BOULDER'S EARTH LAB

California wildfire ignition causes & effects

DISTRIBUTED BY NATURAL VS. HUMAN, 1992–2012

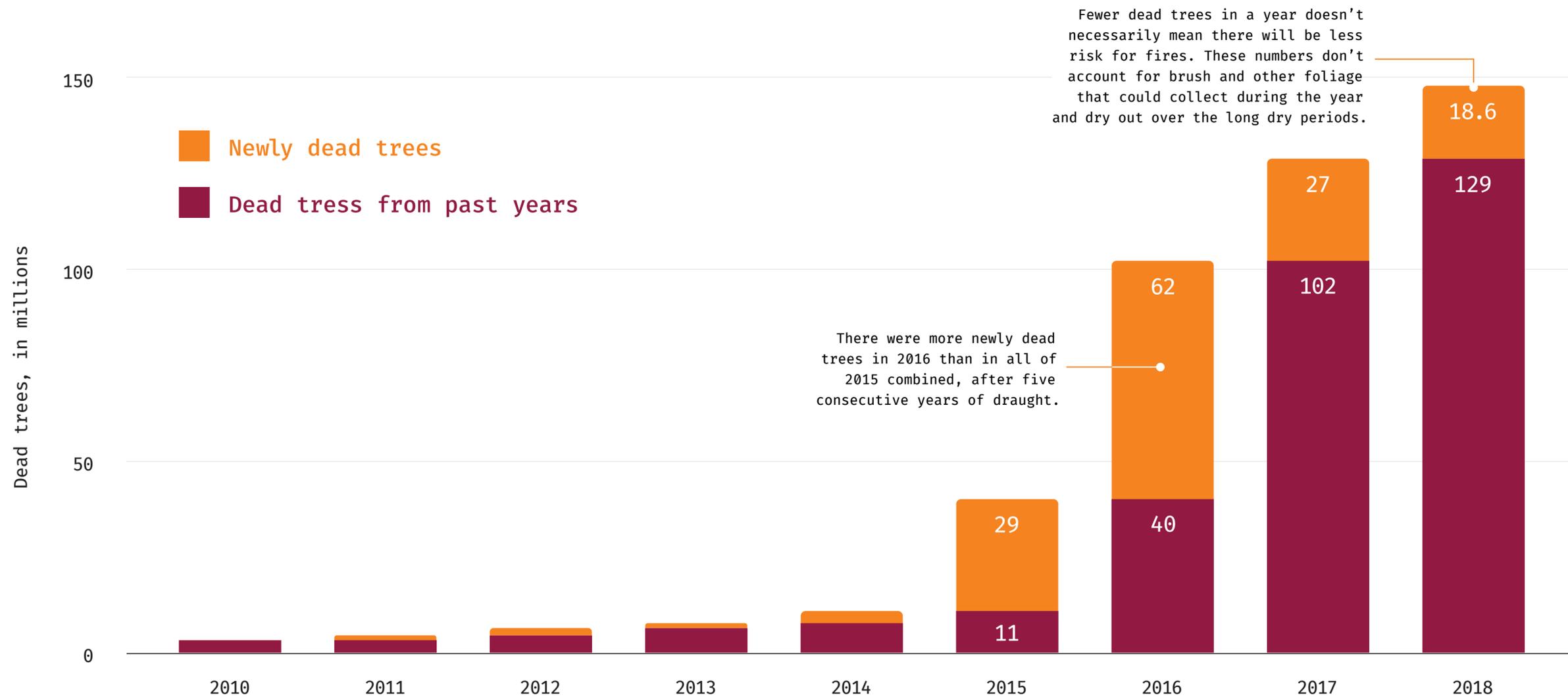
A study by the University of Colorado in Boulder analyzed 1.5 million government records of wildfires from 1992 to 2012, and found that humans were responsible for causing 84% of wildfire ignitions. Arson accounted for 21% of the fires, but many other instances were caused unintentionally by things like equipment use (29%) and campfires (5%). The human danger to forests and wildlands poses an increasing problem as more and more people move further outside of urban centers and closer to wooded areas.



California tree mortality 2010–2018

Forests cover almost one-third of California. However, droughts from 2010-2017 lead to significant tree deaths, especially in dense forests where trees were more tightly packed, and therefore even less likely to get what little water there was. The drought led to other problems—a tree's natural defense against bark beetles is to

encase them in resin, but resin production relies on water. With no water to spare, many trees were unable to fight off the bark beetles, and tree mortality increased. Additionally, the winters were warmer than usual, so the beetles were more abundant.



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Roughly half of the housing units built in California between 1990 and 2010 are in the WUI, which has expanded by roughly 1,000 square miles...As a result, 2 million homes, or one in seven in the state, are at high or extreme risk for wildfire...that's three times as many as in any other state.

25 Largest California wildfires, 2018

BY ACREAGE

Every year, California faces wildfires that threaten lives, personal property, and the local ecology. In 2018, over 1 million acres of land were burned, resulting in **93 fatalities** and **over 23,000 structures being damaged or destroyed.**

This chart analyzes the top 25 largest wildfires, based on acreage, to see how large these fires were, and when they occurred.

The **MENDOCINO COMPLEX FIRE** began as two separate fires, the Ranch Fire near Potter Valley and the River Fire near Old River Road. Both fires were reported on July 27, and they were not fully contained until September 19, becoming the largest reported wildfires in California history.

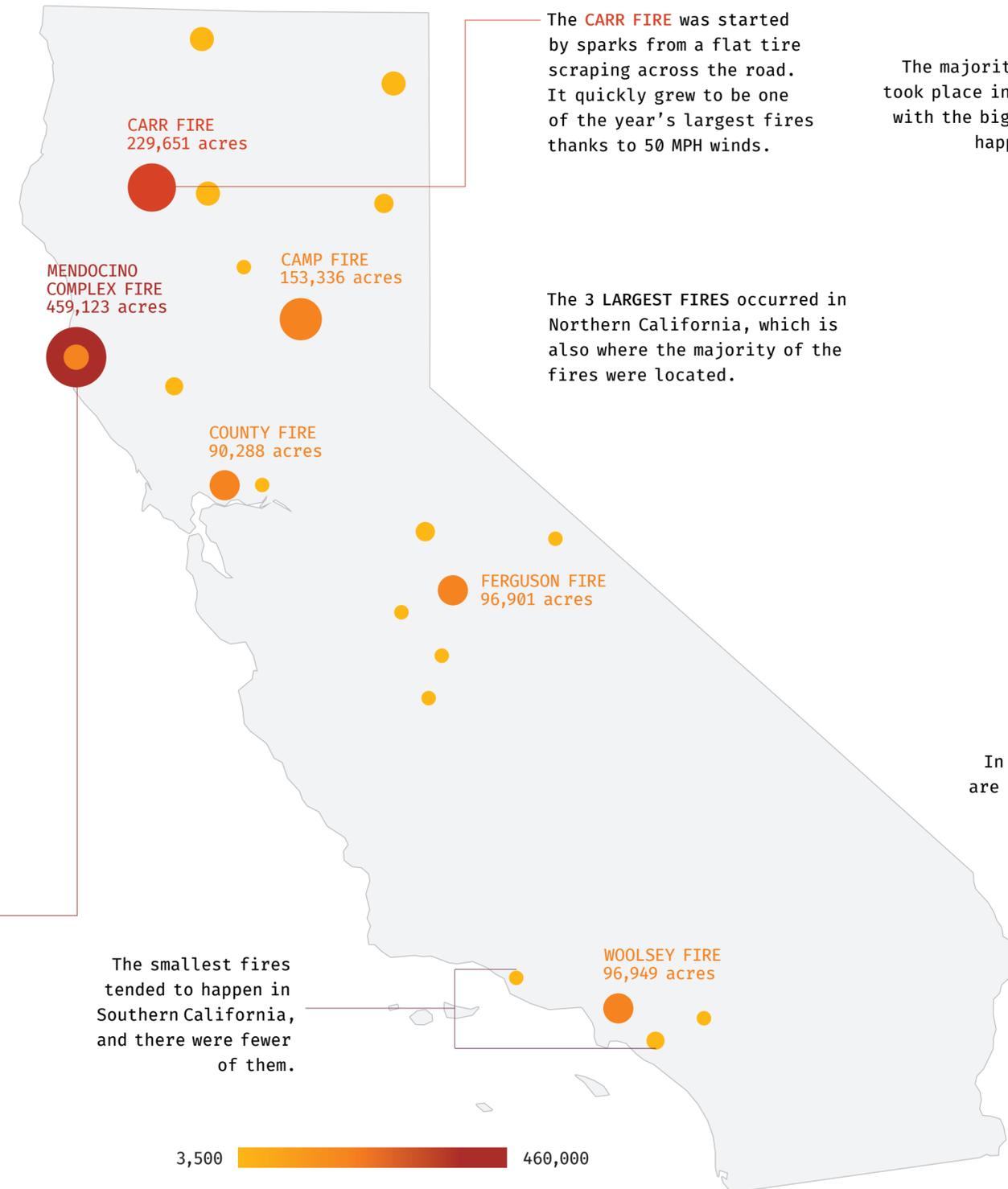
The smallest fires tended to happen in Southern California, and there were fewer of them.

The **CARR FIRE** was started by sparks from a flat tire scraping across the road. It quickly grew to be one of the year's largest fires thanks to 50 MPH winds.

The 3 **LARGEST FIRES** occurred in Northern California, which is also where the majority of the fires were located.

The majority of the fires took place in **June and July**, with the biggest fires all happening in **July**.

In autumn, the fires are fewer and smaller, but they flare up again in **November**.



DISPERSAL BY MONTH



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What has happened over time is that development has become less dense in the US...People like to move to a 5-acre ranch, and that creates this volatile mix of houses and flammable vegetation.

— **Volker Radeloff**

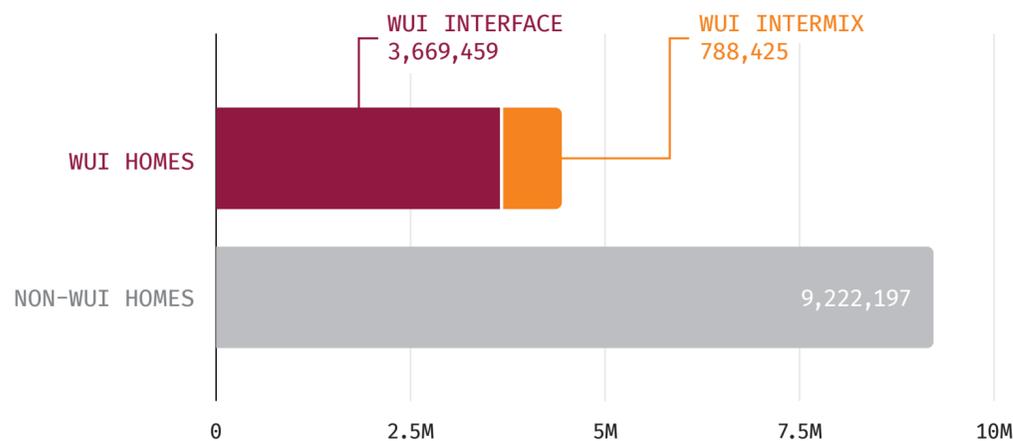
FORESTRY PROFESSOR AT THE
UNIVERSITY OF WISCONSIN

Homes at high to extreme risk

BY COUNTY

In some counties, up to 88% of homes are in areas of high to extreme risk. Alpine, Trinity, and Tuolumne represent the counties with the highest percentage of homes in areas that are considered high-risk with a combined total of 33,700 homes located in fire zones.

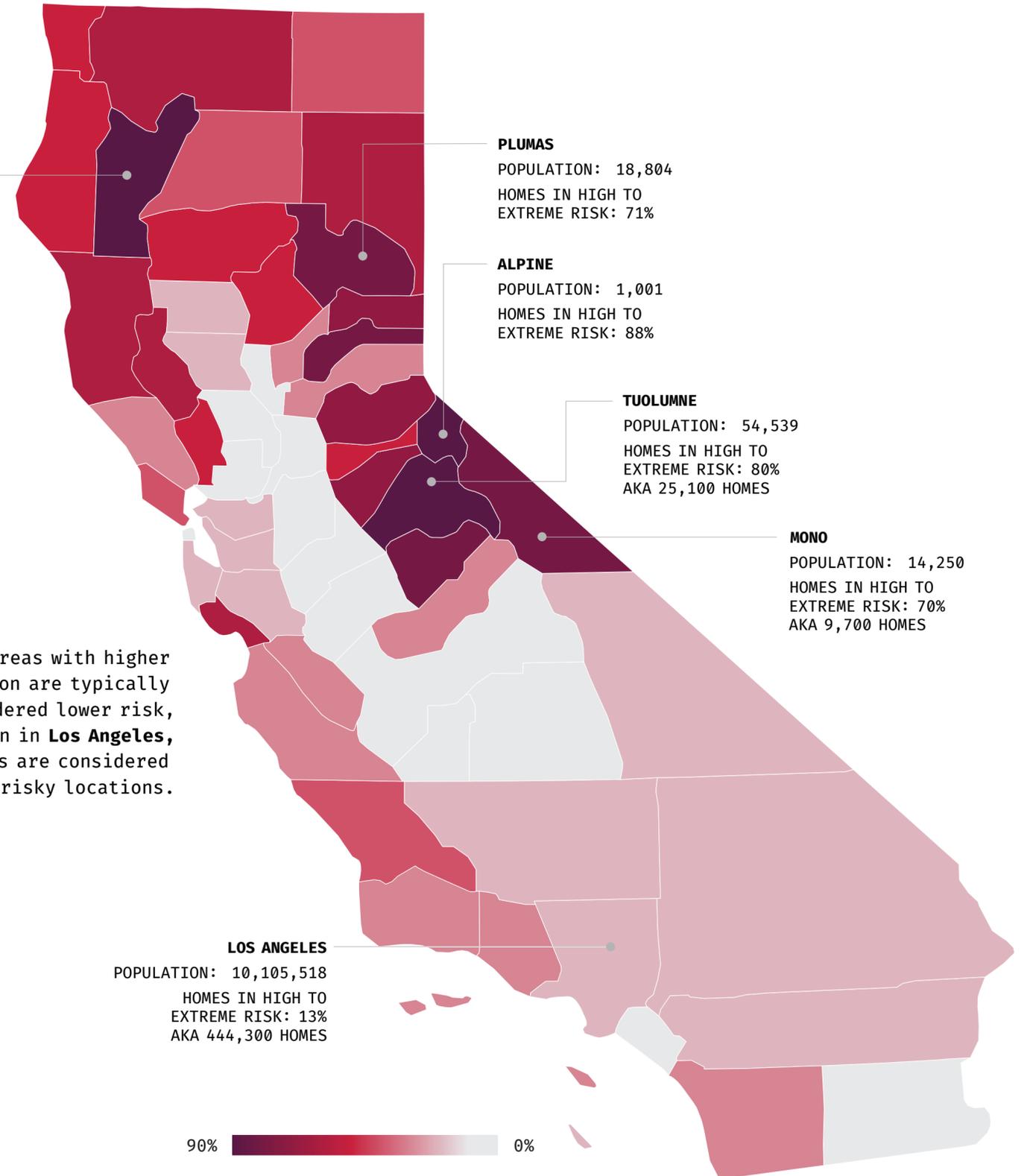
Northern California, overall, has a higher percentage of homes in vulnerable areas because most of California's forests are located in the north.



Intermix vs. interface WUI are not the only relevant indicators of whether a home is in a high-risk area because factors like drought level and tree death play a crucial role and vary from place to place. However, because humans are a substantial cause of wildfires, human proximity to wildlands is also relevant when measuring wildfire danger.

The most dangerous areas tend to be those with lower populations, located close to forests and wilderness that is dry and very flammable.

Urban areas with higher population are typically considered lower risk, although even in **Los Angeles**, 13% of homes are considered to be in risky locations.



Finch II, M. (2018, August 8). These California Counties Have the Highest Concentration of Homes Vulnerable to Wildfire. The Sacramento Bee. Retrieved from <https://www.sacbee.com/news/california/fires/article216076320.html>.

California Population. (2019, June 5). Retrieved November 21, 2019, from <http://worldpopulationreview.com/states/california-population/>.



““”

California’s housing crisis has exacerbated its wildfire crisis, and its wildfire crisis has exacerbated its housing crisis. That vicious cycle is nowhere near ending.

The background of the slide is a topographic map with contour lines in shades of orange and yellow. The map shows various elevations and features, with some contour lines labeled with numbers like 200, 450, and 500. The overall color scheme is warm, ranging from light yellow to deep orange.

But there are ways
to mitigate the dangers

^
SOME OF

Forest maintenance

We can begin to alleviate some of the risks to the forests with active forest management like setting controlled fires to eliminate underbrush and other flammable debris, and it's possible to remove and replace especially high-risk trees. Some current propositions go as far as removing 149 million "high-risk husks," to strategically protect homes.

Neighborhood planning

More could be done to limit the construction of new homes in fire-risk regions. Currently, activists and interest groups are working to make cities denser and more walkable. More affordable housing in the cities could curb California's housing crisis and improve environmental conditions like air quality, to boot, by focusing more on public transit and making cars less necessary.

Gavin Newsom, the Governor of California, signed several laws into effect in October to increase housing density. These laws could reduce the housing crisis by allowing for more homes to be built on smaller tracts of land, and would have the bonus of ensuring that fewer people have to move out into WUI areas that are in extreme risk for wildfires.

Home cleanup

Those already living in the WUI can take steps to protect their homes by removing leaves and pine needles from their rooftops and gutters, so there is less dry, flammable refuse to catch fire.

Firewise USA has a list of actions that individuals or communities can take to reduce risk in the “home ignition zone,” or the area within 200 feet of the home which is most susceptible to burning.

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