

Wildfires: State of the Risk

Record-breaking wildfires across the Northern Hemisphere have been [making headlines](#) in 2023 and prior years – so it may be surprising to learn that U.S. wildfire frequency and severity for 2023 are on track to be the lowest in the past two decades.

Despite catastrophic losses in [Washington State](#), [Hawaii](#), [Louisiana](#), and elsewhere, California – a state often considered synonymous with wildfire – is in the midst of its third mild fire season in a row. This may be due to drought-breaking rains and snows, but Texas is experiencing [fewer wildfires](#) than in 2022, despite worsening drought conditions. About 37 percent of the continental U.S. remains under some form of drought, according to the [U.S. Drought Monitor](#).

The chart below shows the number of fires (frequency) and acres burned (severity) nationwide for the first nine months of the year from 2000-2023. While recent years have seen events that smashed historical records, the 24-year national trend has been downward.

Another long-term trend has been the doubling of the share of natural catastrophe insured losses from wildfires over the past 30 years, [according to Swiss Re](#). This reflects the impact of a growing number of people living in the wildland-urban interface (WUI) – the zone of transition between unoccupied and developed land, where structures and human activity intermingle with wildland and vegetative fuels.

The 12 months from Nov. 1, 2022, to Oct. 31, 2023, were Earth's hottest on record, and the [U.S. Fire Administration says](#) nearly 99 million people – one third of the U.S. population – now live in the WUI, putting more than 46 million homes with an estimated value of \$1.3 trillion at risk.

Mitigation key to declines

The improvements in frequency and severity are likely due to investments in mitigation. State and local authorities have worked hard and invested a lot of money to mitigate the human causes of wildfire. The Insurance Institute for Business and Home Safety (IBHS), which provides science-based wildfire research, in 2022 launched the [Wildfire Prepared Home](#) designation program to help homeowners protect their property from wildfire.

In addition, the federal Infrastructure and Jobs Act of 2021, signed into law by President Biden, includes:

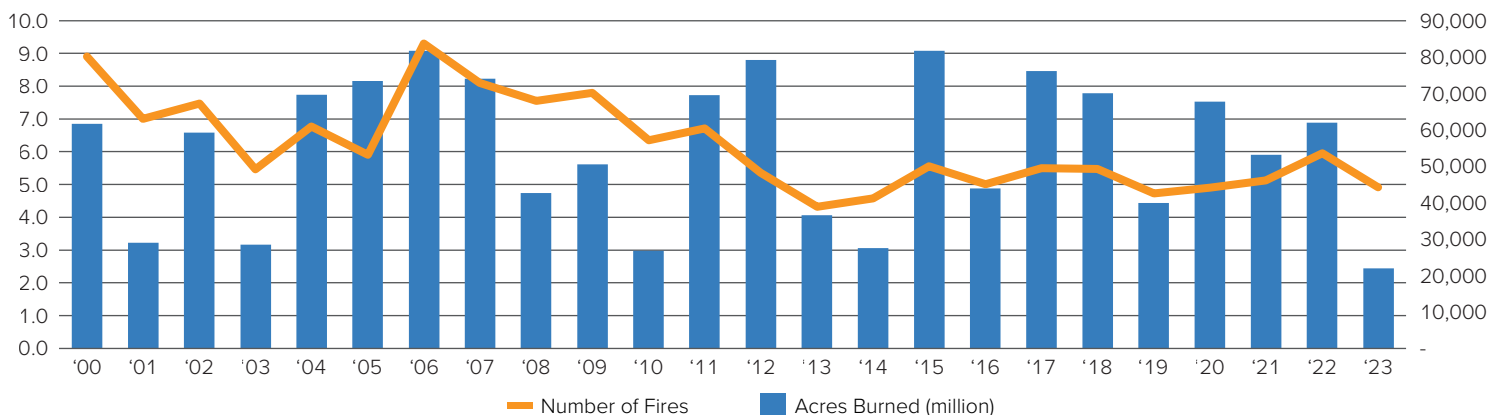
- \$600 million to convert seasonal federal wildland firefighters to permanent year-round positions and increase pay for federal firefighters by up to \$20,000 per year;
- \$3.3 billion for critical wildfire risk-reduction efforts;
- \$5 billion for utilities and grid operators to bury power lines and install fire-resistant technologies to prevent wildfires, as well as expand use of micro-grids to reduce the impact of power shutoffs; and
- \$3.5 billion for the weatherization assistance program to help homeowners make energy-efficiency and fire-resistance improvements to their homes.

More recently, the administration announced \$185 million for wildfire mitigation and resilience as part of the [Investing in America Agenda](#), which should help continue the declines in frequency and severity.

Lightning fires cause more damage

According to the [2022 Annual Report of Wildfires](#) produced by the National Interagency Fire Center (NIFC), 68,988 wildfires were

U.S. Wildfires - January through September (2000 - 2023)



Source: National Center for Environmental Information (NCEI), U.S. Wildfires, January-September

reported and 7.5 million acres burned in 2022. Of these fires, 89 percent were caused by human activity and burned 55 acres per fire. By contrast, the 11 percent of fires caused by lightning resulted in an average of 563 acres burned, 10 times more than human-caused fires.

This difference may shed light on why the number of fires has been decreasing more dramatically than acres burned. Further, population shifts into the WUI are increasing the proximity of property to places prone to fire, helping to explain the rise in wildfire's increased percentage of insured losses.

A [2022 study](#) in the journal *Frontiers in Human Dynamics* found that people are moving to areas that are increasingly vulnerable to catastrophic wildfires.

"They're attracted by maybe a beautiful, forested mountain landscape and lower housing costs somewhere in the wildland-urban interface," said University of Vermont environmental scientist Mahalia Clark, the paper's lead author. "But they're just totally unaware that wildfire is something they should even think about."

California: A case study

Much has been written about California wildfire risk. The NIFC tracks fires based on locations of its geographic coordination centers. This includes centers in northern and southern California.

California historically has accounted for about 10.5 percent of U.S. acres burned. That amount has grown to approach 40 percent in recent fire seasons, but in 2022 California represented 4.5 percent of acres burned – an all-time low.

These numbers don't tell the whole story. The chart below illustrates a divergence of wildfire experience between northern and southern California. Since 2012, about 224 acres burned per fire in northern California which has increased to 353 acres per fire since 2017. Damage from southern California wildfires, by contrast, has remained relatively flat over the 10 years, at an average of 83 acres per year through 2017 and showed only a slight increase to 98.

This divergence may reflect the fact that northern California has more WUI development than the southern part of the state. Remember that WUI fires tend to ignite naturally and burn longer and more extensively. The more densely populated southern area likely experiences fewer fires of this type and more that are human caused. These don't tend to burn as long or as far and are becoming fewer in number.

Insurance takeaways

Some important insights can be drawn from this data:

1. Mitigation investment works when it comes to reducing the frequency and severity of human-caused wildfires.
2. Insured losses are influenced by the extent of development in the WUI. Developers, homebuyers, lenders, and other stakeholders need to understand and respond appropriately to this relationship of WUI proximity and peril.
3. Wildfire risk is strongly conditioned by geographic considerations that vary widely by state and even within states.
 - This underscores the importance of granular data gathering and scrupulous analysis when underwriting and pricing.
 - It also highlights the fact that, even within states that are heavily exposed to wildfire risk, pockets of potentially profitable business exist. They just have to be identified.
4. Use of sophisticated modeling tools is critical. As [Triple-I has written](#) elsewhere, California's difficulties are not just due to the types of perils the state faces. [Proposition 103](#), a three-decades-old legal measure, constrains insurers' ability to accurately underwrite and price these risks. Insurers must be able to set premium rates prospectively, and Proposition 103 bars them from doing so. Instead, it requires them to price coverage based on historical data alone. It also prohibits them from including reinsurance costs into their pricing and allows consumer advocacy groups to intervene in rate-setting proceedings, which drives up legal and administrative costs. The California Department of Insurance recently introduced a program to address these issues.

California Acres Burned Per Fire

