

CoreLogic

# Wildfire Risk Report 2023

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## — Introduction

The insurance industry is encountering a rising threat of wildfires. Due to a large number of properties situated in high-risk wildfire regions, certain states are struggling with insurability. Climate change and the growth of exposure in these vulnerable areas are leading to an increase in wildfire losses.

California, in particular, is facing difficulties with using modeled losses that account for the dynamic nature of wildfire risk. Insurers in this state have to rely only on past losses, which do not accurately represent present and future climate conditions. This poses a challenge in assessing the insurability of properties situated in areas prone to wildfires.



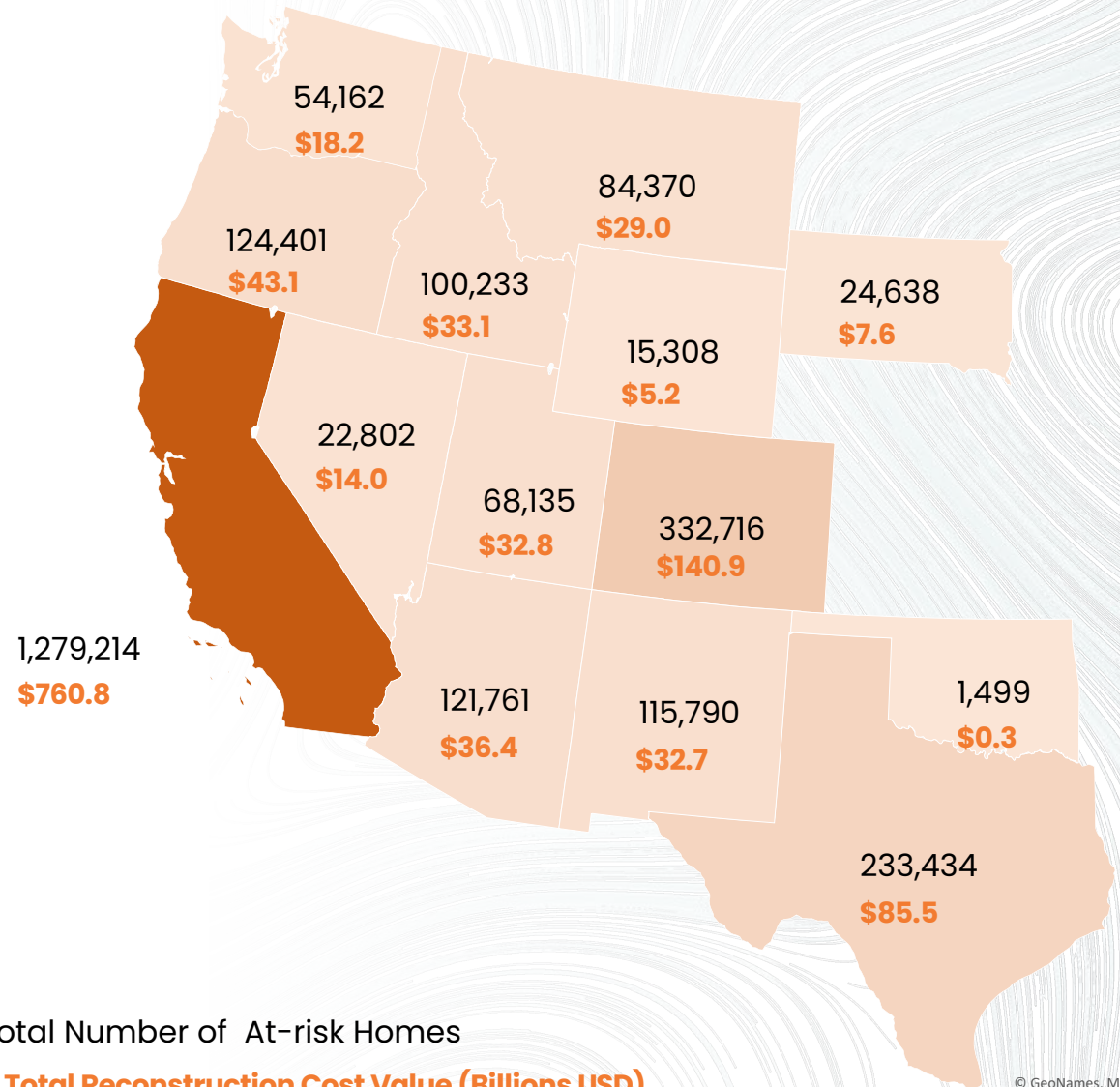
**Current Risk**

**Wildfire  
Risk Report**

## The Current Risk Landscape

Comprehending the complete risk environment is essential to evaluate and handle wildfire risks efficiently. By analyzing the number of homes and their associated Reconstruction Cost Value (RCV) based on wildfire risk scores, it is possible to gain valuable insights into the current state of risk across the country.

States such as California, Colorado and Texas have a high concentration of at-risk homes and significant reconstruction cost value. At the metropolitan level, Los Angeles has a substantial number of at-risk homes. Specifically, homes in the Wildland-Urban Interface (WUI) face an elevated risk due to their proximity to forested or undeveloped areas. This geographic placement can pose challenges for firefighting and evacuation efforts in case of a wildfire.



Total Number of At-risk Homes

\$ Total Reconstruction Cost Value (Billions USD)

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Figure 1: Total reconstruction cost value and number of single-family and multifamily residences with moderate to very high wildfire risk. Source: CoreLogic

[1] CoreLogic® Residential Component Technology. This data is for a model 2-story home with standard construction, built in 1998, with 2,400 square feet.



**Figures 1 and 2** contain data powered by the CoreLogic Wildfire Risk Score, which provides a deterministic assessment of wildfire risk. This score is represented by a numeric value ranging from 5 to 100, with higher values indicating greater risk. It is a comprehensive risk assessment informed by characteristics such as slope, aspect, fuel, surface composition, drought and wind and accounts for temporary risk reductions which result from recent wildfire activity that consumes fuels. The scores presented in this analysis represent the current risk landscape as of June 2023.

**California, Colorado and Texas** lead the nation in the number of at-risk homes and their total reconstruction cost value. At the metro level within these states, Los Angeles has the highest number of at-risk homes, totaling 242,187.

Metro Area	Total At-risk Homes	Total Reconstruction Cost Value (Billions USD)
Los Angeles, CA	242,187	182.9
Riverside, CA	212,902	111.7
San Diego, CA	153,981	95.4
Sacramento, CA	101,441	59.9
San Francisco, CA	92,824	64.9
Denver, CO	69,284	32.6
Colorado Springs, CO	51,321	22.1
Fort Collins, CO	14,352	4.6
Boulder, CO	9,754	4.2
Pueblo, CO	3,242	1.0
Austin, TX	91,961	40.0
San Antonio, TX	71,795	27.0
Killeen, TX	12,702	3.6
Dallas, TX	5,567	2.0
Waco, TX	2,636	0.7

**Figure 2:** Metro areas within California, Colorado and Texas with the highest number of single-family and multifamily residences with moderate to very high wildfire risk.

# Reconstruction Costs Have Increased Significantly

CoreLogic estimates that over an approximate five-year period (Q1 2018 to Q2 2023), **reconstruction costs increased by 33.5% in California**. A home with a reconstruction cost value of \$500,000 in 2018 now would have a reconstruction cost value of \$667,500.<sup>1</sup>

(1) CoreLogic Residential Component Technology. This data is for a model 2-story home with standard construction, built in 1998, with 2,400 square feet.

## The Current Climate Landscape

Global climate and weather patterns contribute to wildfire risk. This includes phenomena like the El Niño-Southern Oscillation (ENSO) which brings drier and warmer weather to the northern regions of the United States and Canada while bringing wetter weather to the U.S. Gulf Coast and Southeast. Wildfire risk is also influenced by weather patterns such as the series of atmospheric rivers this past winter which brought significant rain to California and could potentially lead to more severe wildfires in upcoming seasons.

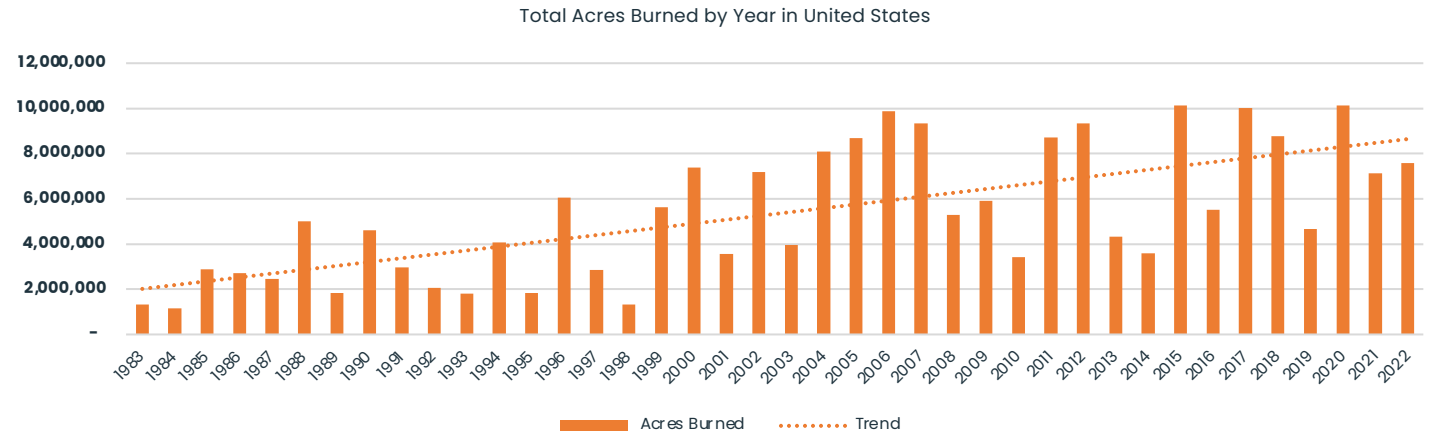



Figure 3: Number of acres burned by year in the United States. Source: National Interagency Fire Center

As of May, 510,058 acres of land had burned from 18,015 fires in the United States so far this year. Data from the NOAA National Centers for Environmental Information (NCEI) for May indicates that 2023 has so far been a below average year in terms of acres burned and number of fires, with acres burned at 48% below – and number of fires at 16% below – the 10-year-average<sup>2</sup>. However, the number of acres burned each year has been steadily increasing since 1983, with the average number of acres burned per year between 2010–2020 being 93% higher than that of the period between 1990–2000.<sup>3</sup>

(2) U.S. Wildfires | National Centers for Environmental Information (NCEI) (noaa.gov)

(3) Wildfires and Acres | National Interagency Fire Center (nifc.gov)



What The Future Might Look Like:

# The Impact of Climate Change

## Wildfire Risk Report .



In climate research, experts use Representative Concentration Pathways (RCPs) from the Intergovernmental Panel on Climate Change (IPCC) to represent different levels of greenhouse gas concentrations in the atmosphere. In turn, RCPs aid in the assessment of potential future climate changes and specific impacts of these changes. These scenarios offer insights into the potential mid-century climate conditions.

The RCP 4.5 scenario, which assumes moderate greenhouse gas emission reductions, anticipates regional variations in temperature and precipitation patterns, with some areas experiencing more pronounced changes than others. In contrast, the RCP 8.5 scenario, which represents a high-emission pathway, is associated with more extreme climate events, such as increased heatwaves, more intense rainfall and prolonged droughts in various regions.

Both aforementioned RCP scenarios contribute to an elevated risk of wildfires and an increase in the frequency and severity of wildfire outbreaks. CoreLogic Climate Risk Analytics projects a significant percent increase in Average Annual Loss (AAL) in the coming decades in both RCP scenarios.

In California, the projected impact of RCP 4.5 on Average Annual Loss (AAL) reveals a steady increase over the coming decades. In this scenario, by 2030, AAL is estimated to rise by 13%, followed by, first, a further increase of 21% by 2040 and then a significant surge of 31% by 2050.

Under the RCP 8.5 scenario, the expected increase in AAL is notably more significant. In 2030, AAL is projected to rise by 18%, followed by a 26% increase by 2040 and a substantial 41% surge by 2050. These findings underscore the escalating risk and financial impact of wildfires and the importance of taking proactive measures to mitigate wildfire risk in the years to come.

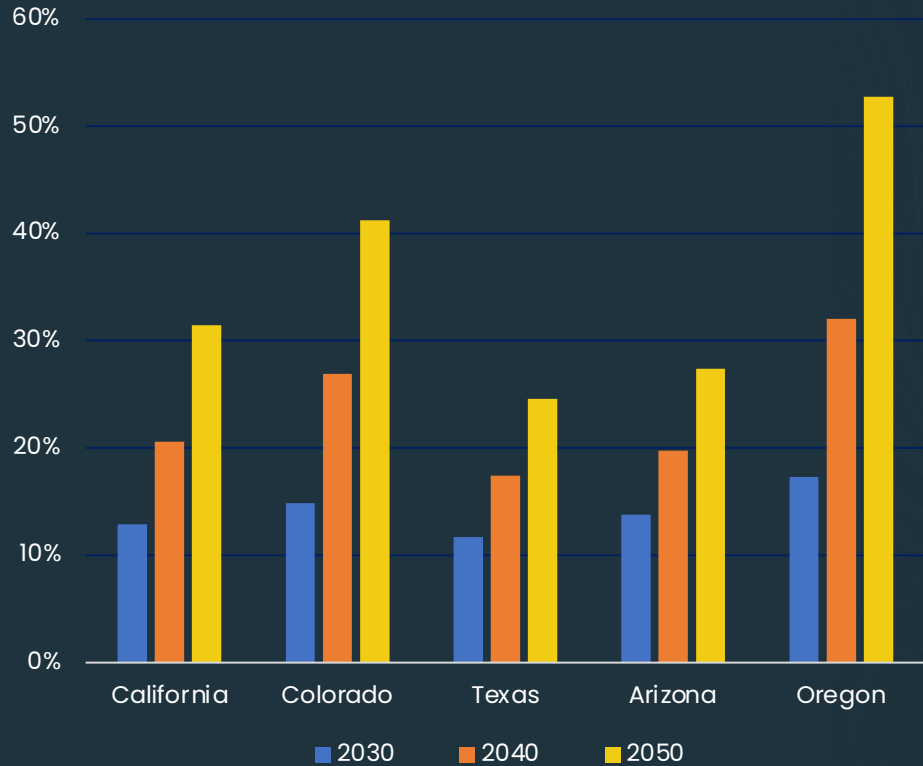
In this analysis, we kept exposure constant, focusing on the change in wildfire risk from a hazard perspective. AAL is a critical metric in the insurance industry, quantifying the anticipated annual financial loss from a specific risk. This metric enables insurers to make informed underwriting decisions and manage their overall risk exposure effectively.

#### AAL Projections for RCP Scenarios in California

Year	RCP 4.5 (Billions USD)	RCP 4.5 Change from Current Climate	RCP 8.5 (Billions USD)	RCP 8.5 Change from Current Climate
2030	\$1.37	13%	\$1.42	18%
2040	\$1.46	21%	\$1.53	26%
2050	\$1.59	31%	\$1.70	41%

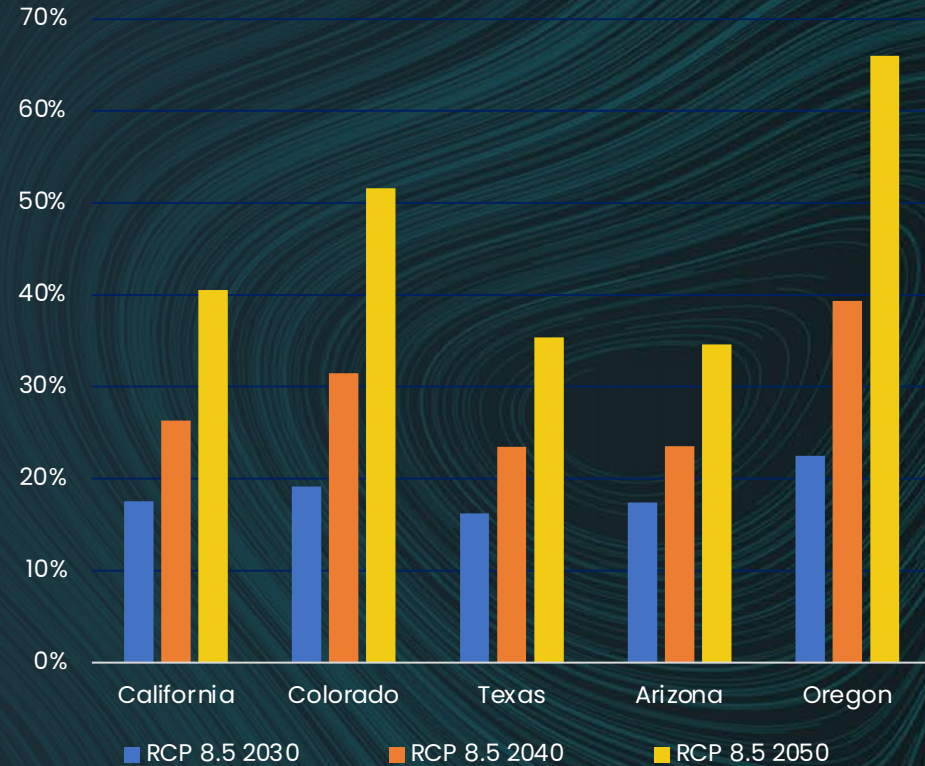
**Figure 4:** Average Annual Loss projections in California for two RCP greenhouse gas emission scenarios. The AAL for the current climate (2023) is estimated to be \$1.21B. Source: CoreLogic

### Change in AAL from Current Climate in RCP 4.5 Scenario



**Figure 5:** Change in Average Annual Loss projections for top five at-risk states for the RCP 4.5 greenhouse gas emissions scenario. Source: CoreLogic

### Change in AAL from Current Climate in RCP 8.5 Scenario



**Figure 6:** Change in Average Annual Loss projections for top five at-risk states for the RCP 8.5 greenhouse gas emissions scenario. Source: CoreLogic



Maintaining A Healthy Future:  
**Risk Mitigation**

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To ensure that homes remain insurable and well-protected from wildfire risks, it is crucial for insurers to implement accurate underwriting tools that are built on comprehensive wildfire science, consider climate conditions as well as account for property- and community-level mitigation efforts as factors in risk assessment and when establishing insurance policies.

There are a wide range of mitigation efforts to consider, including home hardening and retrofitting older buildings. Creating defensible space and implementing effective ember protection strategies can significantly reduce structural losses, make insurance coverage more affordable and promote sustainable risk management practices.

## The Current Regulatory Landscape

The California Department of Insurance (CDI) is setting a new standard in the nation with the implementation of a new regulation, Section 2644.9, focused on wildfire mitigation. Effective since April 2023, this new legislation is already reshaping the insurance industry's approach to wildfire risk in the state. Under this regulation, carriers are now required to integrate twelve mitigation factors into their rating plan, assess the impact of these mandatory variables on their rates, develop a CDI-compliant rate plan, and communicate these changes to policyholders.

### Measuring Factors Required by the CDI

 Community Level Mitigation Factors	 Property Level Mitigation Factors	 Structure Level Mitigation Factors
Firewise USA Site in Good Standing	Vegetation cleared under deck	Class A Fire Rated Roof
Fire Risk Reduction Community – CA BOF	No combustible attachments within 5 feet (Gate/Fence)	Dual Pane Windows / Functional Shutters
	Combustible structure within 30ft of primary building (Shed/OB)	Fire Resistant Vents
	Compliant with PRC 4291 or Local Defensible Space Ordinance	6" Noncombustible Vertical Clearance
	5 foot noncombustible zone (Zone 0)	Enclosed Eaves

These guidelines establish specific criteria for determining the fire safety of all properties in California. Insurance carriers now consider enclosed eaves, multi-pane windows, fire-resistant vents and other mitigating property elements as indicators of a property's fire resilience. The state aims to foster resilient communities and eventually lower insurance rates by incentivizing policyholders to adopt risk mitigation actions.

CoreLogic has introduced the **Wildfire Mitigation Score (WFMS)** to assist carriers in meeting the new CDI requirements. **This risk score** employs **Artificial Intelligence and Machine Learning** to reassess a structure's vulnerability to wildfire after a property owner and/or community has implemented mitigating changes that align with the CDI's 12 factors. At the foundation of the WFMS is the CoreLogic Wildfire Risk Score. From there, it validates the impacts of mitigation credits through CoreLogic's probabilistic wildfire model.



# Guidance for Underwriters

- **Conduct thorough risk assessments** by investing in methodologies specifically tailored to wildfire risks. These will include evaluating factors such as proper defensible space following the recommended three-zone approach and structure hardening measures to make buildings more resistant to flames and embers. The right methodology will also include identifying and assessing the fuels and topographical characteristics at the property location (proximity to wildlands and high-risk fuels).
- **Stay updated on wildfire science and mitigation efforts**, including advancements in fire behavior modeling, fire-resistant building materials, effective mitigation strategies and building codes that affect development in the Wildland-Urban Interface.
- **Collaborate with local fire departments, government agencies, and wildfire experts** to facilitate information sharing, enhance risk mitigation strategies and help insurers stay ahead of evolving wildfire risks.

## — Writing Profitable Business

Underwriting accurate policies based on risk is critical for insurance companies in their ability to offer comprehensive coverage, particularly in the complex landscape of California. However, insurers face challenges that extend beyond assessing risk. These challenges require a comprehensive approach to the insurance business's underwriting side, including incorporating reinsurance costs into adequate rates, establishing realistic expectations of future losses, executing effective risk concentration management and recognizing and promoting meaningful and well-maintained mitigation measures.

## — Know Your Risk. Accelerate Your Recovery.

There is an urgent need for a universal forward-thinking approach to managing wildfire risks, with a focus on assessing the current risk landscape, understanding the impact of climate change and implementing solutions to mitigate potential losses associated with future wildfires. Accurate risk assessment tools and technological advancements enable insurers, homeowners and stakeholders to make informed decisions and implement effective mitigation measures. At the same time, communities must address issues with the existing building stock – such as the need for retrofitting, structure hardening and the implementation of stronger building codes with enhanced code enforcement. Moreover, for future development, decision-makers in California must understand and recognize the need for better land-use planning within the Wildland-Urban Interface.

Through collaboration and proactive actions, communities, individuals and insurance carriers can make active contributions toward protecting homes, maintaining insurability and building a more resilient future in high-risk wildfire areas.



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**2023**