



Wildfire Risk: Insurance Market Pressures and Evolving Risk Strategies

How insurers are reassessing exposure, improving models, and closing coverage gaps



Today's Wildfire Events: Market Disruption and Growing Losses

The California property insurance market continues to face mounting challenges as wildfires drive insurers to reassess—and in some cases, withdraw from—the region. Wildfires have caused severe financial losses, damaging homes, businesses, and critical infrastructure. Secondary effects, including respiratory health issues and increased hospitalizations, compound the social and economic toll.

The frequency and severity of wildfires have accelerated in recent years, contributing to elevated insurance premiums and limiting market capacity. The January 2025 Los Angeles wildfires, including the Palisades and Eaton fires, have been particularly devastating, resulting in unprecedented economic and insured losses.

[AccuWeather](#) estimates total damages and economic losses from these events to be between \$250 billion and \$275 billion, among the costliest natural disasters in U.S. history. Insured losses are also substantial; [Moody's RMS](#) projects that insured losses from these wildfires will likely range between \$20 billion and \$30 billion. Additionally, the [California FAIR Plan](#), the state's insurer of last resort, faces potential exposure of nearly \$5 billion, with reinsurance coverage of \$5.78 billion.

With damages escalating, insurers and reinsurers face heightened exposure and capital strain, driving a fundamental reevaluation of underwriting strategies.

Why Wildfire Risk is Rising in the U.S.

Multiple factors contribute to the intensifying wildfire threat:

	Climate change: Prolonged droughts, rising temperatures, and shifting precipitation patterns increase flammability.
	Fuel accumulation: Fire suppression and logging have resulted in dense forests and underbrush.
	Human activity: Most wildfires are ignited by human actions, including powerline failures, campfires, and arson.
	Development in wildland-urban interfaces (WUIs): As more people live in high-risk zones, property and infrastructure exposure rises.
	Invasive species: Flammable non-native plants such as cheatgrass contribute to more frequent and severe fires.

Understanding Wildfire Risk: Gaps and Emerging Tools

Historically, wildfire risk has received less focus than other natural catastrophes like hurricanes, floods, or earthquakes. Despite advances in catastrophe modeling, wildfire science remains constrained by limited data and evolving climate patterns.

Scientists and risk modelers today apply increasingly sophisticated tools to assess wildfire threats. Predictive models integrate weather patterns, vegetation states, and historical burn data to forecast wildfire frequency and severity. Geospatial technologies, including satellite imagery and drone surveillance, enable near real-time wildfire detection and spread analysis. Agencies such as the US Geological

Survey (USGS) and the Department of the Interior (DOI) are developing standardized frameworks to unify wildfire risk assessments across jurisdictions. The USDA Forest Service has also introduced a comparative risk assessment tool to support resource allocation and decision-making during wildfire events.

While these technologies enhance risk mapping and response planning, challenges persist. Gaps in smoke modeling, climate impact projections, and socioeconomic vulnerability data limit the precision of current models. Moreover, inconsistent methodologies across regions and scales impede efforts to standardize risk evaluation.

Mitigating Wildfire Risk: Current Tactics and Recommendations

Risk mitigation today combines prevention, resilience-building, and financial mechanisms. Prescribed burns, vegetation management, and air quality monitoring form the backbone of current wildfire management programs. Policymakers and insurers are increasingly promoting incentives—such as premium discounts—for homeowners and businesses adopting wildfire-resistant measures.

Education and preparedness campaigns improve readiness at the community level, while risk assessments and wildfire action plans at the property level enhance resilience. Business continuity strategies—incorporating supply chain rerouting and remote work protocols—are critical for minimizing operational disruptions.

Investments in fire-resistant materials and the creation of defensible space remain key infrastructure tactics. Integrating wildfire risk considerations into zoning and land-use policies further discourages development in high-risk areas.

Collaboration with local governments to enforce building codes and land-use regulations is essential for long-term risk reduction. Insurers are also leveraging advanced data analytics and predictive models to refine risk-based pricing and underwriting. However, continuous model updates are necessary to address the shifting dynamics of wildfire behavior in a changing climate.

The Coverage Gap: Insufficient Protection in High-Risk Areas

Wildfire insurance coverage remains inadequate despite heightened awareness, especially in vulnerable regions like California. The combination of elevated risk, tightening underwriting guidelines, and regulatory hurdles has led to widespread underinsurance, exposing policyholders to substantial out-of-pocket losses.

Premiums in wildfire-prone regions have surged. States such as California, New Mexico, Colorado, Oregon, Montana, and Washington have seen significant increases due to mounting wildfire losses.

Several major insurers—including State Farm, AIG, and Allstate—have withdrawn from writing new homeowners' policies in high-risk areas like California. This trend reflects an industry-wide response to the growing frequency and severity of wildfires.

These dynamics present broader economic consequences. Elevated premiums and widespread policy non-renewals can depress property values, increase vacancy rates, and reduce local and state tax revenues, straining municipal budgets.

Wildfires, like floods, present insurers with highly correlated risks, both exacerbated by climate change and increased development in hazardous zones. Addressing this insurance availability crisis requires a multi-pronged approach: enhanced land management, stricter building codes, and coordinated community-level planning to reduce wildfire exposure and improve resilience.

Regulatory reforms, including adjustments to rate-setting rules and efforts to expand insurer participation, are underway but have yet to close the coverage gap. Until market conditions stabilize and risk transfer mechanisms evolve, many homes and businesses will remain under-protected.

Modeling and Pricing: Progress and Challenges

Model vendors are responding to market demand with updated wildfire risk models. Moody's RMS released Version 2.0 of its North America Wildfire HD Model in October 2024, enhancing granularity and accuracy in exposure assessments. In January 2025, Verisk's wildfire model became the first catastrophe model formally reviewed for insurance rate-making in California, reflecting regulators' push to improve property insurance availability. CoreLogic launched updated wildfire models in 2024 to help insurers navigate pricing challenges.

Wildfire modeling now encompasses not only hazard frequency and severity but also economic and public health impacts. This enables insurers to project loss outcomes more precisely and

informs policy structures. Increasingly, models incorporate mitigation efficacy—such as the impact of prescribed burns—into risk evaluations.

Parametric insurance products are gaining traction as an alternative risk transfer solution. They offer pre-defined payouts triggered by specific wildfire-related metrics. These innovative offerings help address traditional indemnity insurance gaps and provide faster liquidity post-event.

Additionally, insurers are beginning to integrate social and ecological variables into wildfire models. This holistic approach enhances risk selection, pricing adequacy, and the design of risk mitigation strategies.

Flood vs. Wildfire: A Risk Landscape Comparison

Aspect	Flood Risk	Wildfire Risk
 Frequency	One of the most common U.S. natural disasters	Less frequent but increasing in occurrence and severity
 Impact	Extensive damage to infrastructure and property	Significant damage to property, ecosystems, and air quality
 Modeling Focus	Long-standing emphasis with mature models	Increasing focus with newer models under rapid development
 Key Models	AIR Inland Flood, RMS U.S. Inland Flood HD, CoreLogic Flood, Verisk Inland Flood, Fathom Global US Flood Map	Verisk Bushfire and Wildfire, Moody's RMS Wildfire, US AIR Wildfire, CoreLogic Wildfire
 Regulatory Requirements	National Flood Insurance Program (NFIP) mandates flood models for underwriting	Wildfire models gaining regulatory recognition but less mandated
 Technological Advancements	High-resolution terrain models, advanced machine learning	Environmental modeling, human factor integration, real-time monitoring
 Historical Data Availability	Extensive	Expanding but less comprehensive
 Climate Change Impact	Rising sea levels, extreme precipitation events	Higher temperatures, prolonged droughts, extended fire seasons

Key Observations:

1. Floods remain more frequent, but wildfire activity is intensifying.
2. Flood risk models are more mature and integrated into regulatory frameworks.
3. Both risk types benefit from technological advances, though flood modeling has a longer history.
4. Climate change is a shared accelerant, driving both flood and wildfire risk escalation.

What's Next: A Data-Driven Path Forward

Communities and insurers must adopt data- and technology-led strategies to address growing wildfire risks:

- **AI-driven risk modeling:** Use artificial intelligence to integrate weather, vegetation, and historical fire data to forecast fire likelihood and intensity.
- **Advanced detection:** Implement 3D fire behavior simulations, satellite monitoring, and drone reconnaissance for rapid assessments.
- **Community Wildfire Protection Plans (CWPPs):** Partner with local governments and fire agencies to prioritize fuel reduction and land-use planning.
- **Regulatory enforcement:** Enact and enforce stronger building codes and zoning laws to reduce structural vulnerability.
- **Public engagement:** Educate homeowners and businesses on defensible space creation and wildfire preparedness through campaigns and drills.
- **Firefighting modernization:** Equip responders with modern tools and training to enhance on-the-ground effectiveness.
- **Situational awareness platforms:** Utilize tools like WIFIRE Edge to issue real-time alerts and improve community readiness.

Conclusion: The Insurance Industry at a Crossroads

The convergence of rising wildfire frequency, growing insured losses, and climate volatility presents a defining challenge for the insurance sector. Insurers must continue to invest in advanced risk modeling, adjust underwriting approaches, and develop innovative products such as parametric solutions.

Equally critical is collaboration with policymakers to support community-level mitigation and resilience initiatives. The path

forward demands a data-centric, technology-first mindset—one that balances market sustainability with the need to protect vulnerable communities.

As wildfire risk becomes an entrenched feature of the U.S. risk landscape, a coordinated effort between insurers, governments, and the public is essential to building a more resilient future.

About the Author



Monalisa Samal,

Executive Vice President – Head of Data & Analytics, Property Lines

Monalisa Samal leads global data and analytics services at Xceedance. She brings 20 years of corporate experience in analytics, consulting, and leadership, with expertise in risk management, portfolio strategies, consulting, and analytics. Before joining Xceedance, Monalisa worked at RMS in various capacities, including being a delivery manager, product consultant, and new solutions and innovations leader, serving clients in Asia, Europe, and North America.

Learn how Xceedance can help your organization navigate complex market challenges, manage rapidly-evolving policyholder expectations, boost regulatory compliance, and kickstart enterprise transformation. Ready to find your way forward? Reach out to us at contact@xceedance.com to get started.



Scan the QR code to visit our website,
or go to www.xceedance.com