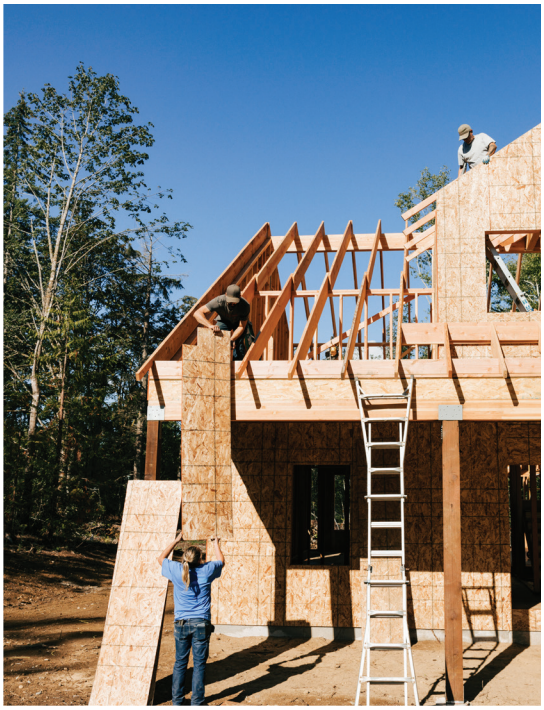

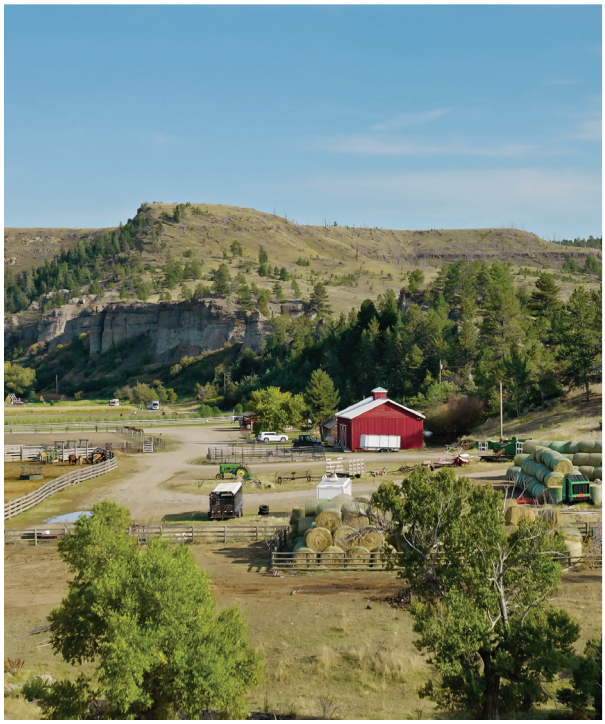

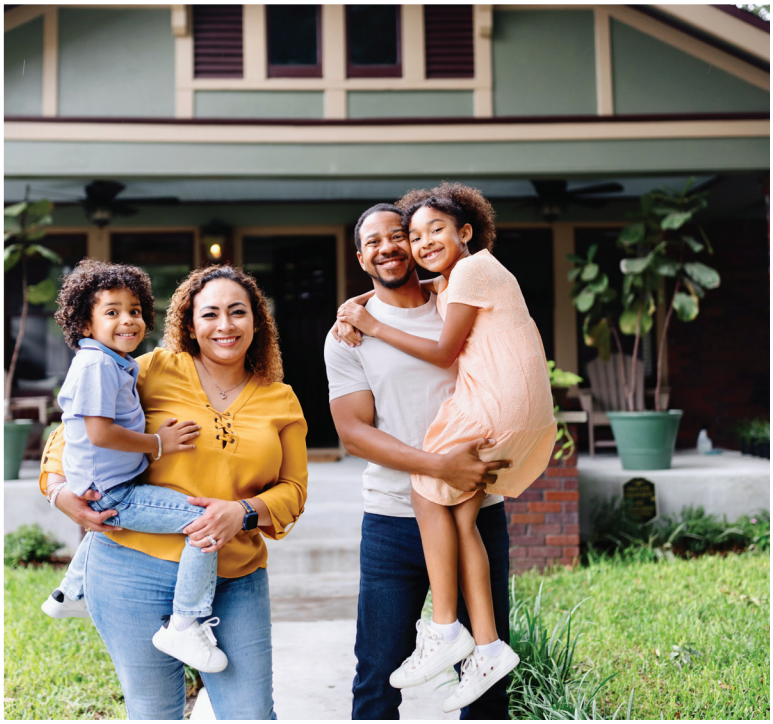

Wildfire and Insurance

Options for Homeowner Coverage

Fall 2025

HEADWATERS ECONOMICS

Wildfire and Insurance: Options for Homeowner Coverage

Published Online:
https://headwaterseconomics.org/natural-hazards/wildfire/wildfire-and-insurance-options-for-homeowner-coverage/

About Headwaters Economics
Headwaters Economics is an independent, nonprofit research group whose mission is to improve community development and land management decisions. https://headwaterseconomics.org/

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Acknowledgments
We would like to thank Justine Creteur for assistance with this research. We would like to thank all of the experts for their time and insights. This report was produced by Headwaters Economics with generous support from the USDA Forest Service and private foundations. This institution is an equal opportunity provider.

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1. Executive Summary

As increasing risks from natural hazards continue to stress and reshape the insurance market, some insurance providers have begun to adjust how, where, and under what conditions they provide homeowners coverage. Traditionally, home indemnity insurance policies are repriced annually to reflect changing hazard, exposure, and risk, but now, as impacts from climate change become increasingly wide-ranging and costly, historical patterns are less successful at predicting future risk. Insurance companies face increased possibilities of loss and may increase their rates, issue nonrenewals, or exit the market in high-risk locations.

An equitable, stable, and sustainable insurance market is beneficial for a more resilient future. No single solution addresses the challenges in the insurance sector. Creative re-imagining of how insurance might better meet the uncertainties of increasing risk yields a patchwork of diverse and innovative strategies.

In this report, we outline five approaches that offer new pathways for wildfire insurance coverage in high-risk areas: voluntary certification programs, community-based catastrophe insurance, parametric models, FAIR state plans, and state regulatory reform. For each, we explain what it is, how it works, and where it is currently being tried. Considerations of potential strengths and trade-offs for each approach are additionally provided. Table 1 summarizes our evaluation of how each approach meets four overarching, long-term goals:

- Retain insurance coverage in high-risk areas;
- Reduce insurance premiums;
- Fill coverage gaps for underinsured homeowners;
- Incentivize mitigation of wildfire risk.

Approaches	Goals			
	Retain coverage in high-risk areas	Potential to reduce premiums	Fill coverage gaps for underinsured	Incentivize mitigation of risk
Voluntary certification	X	X		X
Community-based catastrophe insurance	X		X	X
Parametric models			X	
FAIR state plans	X		X	
State regulatory reform	X	X	X	X

This analysis has two important limitations. First, our research was primarily focused on homeowners, not renters. Second, we have not analyzed the unique insurance circumstances facing Tribal members or other residents of Native American reservations. Land inside reservations may have unique ownership structures and be subject to federal oversight in ways that interfere with private sector insurance coverage, and Tribes have long contended with additional administrative barriers to public support systems.

All of these strategies are potential enhancements for traditional indemnity insurance, not replacements. Layering different approaches may ultimately provide the best protection for households facing wildfire risk.

2. Introduction

Insurance policies function by pooling risk across sectors of society. In areas where wildfire risk is the highest, home insurance offers residents a financial safety net, making it possible for a household to rebuild or relocate after suffering property loss. But insurance also functions as a risk signal and a rising premium rate can reflect growing probabilities of harm. Affordable insurance rates may achieve more equitable housing outcomes by providing support for at-risk properties, but those same low rates may also convey a false sense of safety to policyholders, creating a moral hazard. The interplay between insurance and wildfire has complex and layered implications.

As increasing risks from natural hazards continue to stress and reshape the insurance market, some providers have begun to adjust how, where, and under what conditions they provide homeowners coverage. Traditionally, home indemnity insurance policies are repriced annually to reflect changing hazard, exposure, and risk, but now, as impacts from climate change become increasingly wide-ranging and costly, historical patterns are less successful at predicting future risk. These uncertainties contribute to increased possibilities of loss for insurance companies, who may increase their rates, issue nonrenewals, or exit the market in high-risk locations.

In some places, state governments have stepped in to mandate continuation of private insurance policies, subsidize escalating premium costs, or intervene with public sector insurance programs. These policies may be effective in guaranteeing coverage for homeowners in high-risk areas, but they also serve to mute the price signal of escalating risk.

With an increasingly volatile risk transfer market, individual homeowners are finding it difficult to obtain, retain, and pay for insurance. The lack of accessible, adequate, and affordable insurance has cascading implications across all sectors of society. Not having insurance or being underinsured can make it difficult for homeowners to recover and rebuild in the wake of a wildfire disaster. As the protection gap expands between those with insured losses and those without, a community's ability to financially rebound is weakened, municipal revenue flows including property taxes may be diminished, and significant federal investment may be needed to offset recovery and rebuilding costs.

An equitable, stable, and sustainable risk transfer market is beneficial for a more resilient future. Like other climate hazards, wildfire risk is evolving and there is no single solution to addressing the challenges in the insurance sector. Creative re-imagining of how insurance might better meet the uncertainties of increasing risk yields a patchwork of diverse and innovative strategies.

To better understand these alternative insurance models, we conducted a deep literature review including scholarly articles, industry reports, economic analyses, and advocacy pieces. Our comprehensive reference list is available in Section 5. Expert interviews with insurance executives, reinsurance analysts, and innovators in the marketplace helped to refine our understanding. Technical terms are introduced and explained throughout the paper, and we have summarized them in the glossary (see Appendix A).

This analysis is incomplete, however, and we acknowledge at least two important limitations. First, our research was primarily focused on homeowners, not renters. Since owners have primary responsibility for securing and maintaining home insurance coverage, especially if a bank holds their mortgage, we have studied relative affordability and insurability for those customers. Renters may face a range of different issues, including whether they stand to benefit from their landlord's home coverage in the event of a loss. Second, we have not analyzed the unique insurance circumstances facing Tribal members or other residents of Native American reservations. Land inside reservations may have unique ownership structures and be subject to federal oversight in ways that interfere with private sector insurance coverage, and Tribes have long contended with additional administrative barriers to public support systems.

3. Wildfire Insurance Options

Here we offer an overview of five specific approaches that offer new pathways for wildfire insurance coverage in high-risk areas: voluntary certification programs, community-based catastrophe insurance, parametric policies, FAIR state plans, and state regulatory reform (Table 1). For each, we explain what it is, how it works, and where it is currently being tried; then, we describe what it might take to expand the tool to new areas, and offer a summary analysis of strengths and trade-offs.

Finally, we evaluate whether each approach meets four overarching, long-term goals:

- Retain insurance coverage in high-risk areas;
- Reduce insurance premiums;
- Fill coverage gaps for underinsured homeowners;
- Incentivize mitigation of wildfire risk.

All of these strategies are understood as potential enhancements for traditional indemnity insurance, not as replacements; layering different approaches may ultimately provide the best protection for households facing wildfire risk.

Table 1: Alternative insurance models to address increasing challenges with homeowners insurance and increasing wildfire risks.

Approaches	Goals			
	Retain coverage in high-risk areas	**Potential to reduce premiums**	**Fill coverage gaps for underinsured**	**Incentivize mitigation of risk**
 **Voluntary certification** Initiatives that assess and then certify properties or neighborhoods based on their preparedness for wildfire risks.	X	X		X
 **Community-based catastrophe insurance** A grassroots approach to risk management where a community collectively pools resources to provide financial protection or insurance against specific risks or emergencies.	X		X	X
 **Parametric models** Insurance that estimates the probability of a damaging event occurring, and then offers policyholders an automatic payout when that event occurs.			X	
 **FAIR state plans** Fair Access to Insurance Requirements (FAIR) programs are state-mandated insurance pools providing basic property coverage to homeowners and businesses unable to secure insurance in the private market due to high risk.	X		X	
 **State regulatory reform** Insurance is regulated and priced at the state level through the state insurance departments, each with its own insurance commission led by a state insurance commissioner.	X	X	X	X

Voluntary Certification Programs

Voluntary certification programs are initiatives that assess and then certify properties or neighborhoods based on their preparedness for wildfire risks. These programs aim to reduce wildfire-related losses by encouraging best practices in property mitigation and risk management. Certification programs can incentivize existing insurance policyholders to undertake fire mitigation efforts on their property in exchange for insurance retainment, and in some settings, reduced premium pricing. For homeowners who are unable to find insurance or who have had policies dropped, certification programs can render their property in a high-risk zone more insurable by demonstrating that they have taken actions to reduce risk. When neighborhood-scale fire mitigation efforts have taken place, likely through a program like Firewise USA®, certification programs can also validate those efforts for insurance companies.

How does it work?

Two types of certification programs are currently in place for wildfire. They are both voluntary. The first is intended for individual homeowners, to certify that pre-identified steps were taken on their property to reduce wildfire risk. Some states are relying on Insurance Institute for Business & Home Safety (IBHS) standards to guide these efforts (e.g., Wildfire Prepared Home). For example, homeowners may ensure vegetation is cleared around structures to slow wildfire spread, thereby creating defensible space for firefighters. They may harden the property by using fire-resistant materials on the exterior of the home. Some property owners may address the density of trees on their land, working with trained forest managers to thin the trees as a tool for modifying wildfire behavior. Certification programs will typically send one of their experts to assess and inspect these treated properties, issue documentation that summarizes the risk reduction in place, and establish a schedule for regular re-inspection. The certification itself is sent directly to the homeowner. If that property owner is already insured, they will convey it to their insurance company. Some insurance companies will accept those certifications as evidence of risk reduction and offer reduced premium rates or, at a minimum, commit to continued coverage. More importantly, if the property owner is not yet insured, the certificate functions as evidence toward insurability; some companies will reconsider policy denials in the face of demonstrated risk reduction.

A second type of certification program applies to entire neighborhoods or communities, encouraging collective action to reduce wildfire risks. This approach to certification typically involves community risk assessments to identify vulnerabilities, emergency preparedness plans with evacuation routes and communication protocols, and wildfire mitigation projects like vegetation management. Since wildfire doesn't honor property boundaries, reducing the aggregate flammability in a neighborhood can go a long way toward managing risk at scale.

Where is it happening?

Firewise USA Program. This long-standing program run by the National Fire Protection Association (NFPA) certifies communities implementing wildfire risk-reduction practices. As of early 2025, the Firewise program had worked with more than 2,790 communities to reduce wildfire risks. At least one insurance company, USAA, officially recognizes these certified communities and offers a discount for those customers; to date, this program is available in ten states only, with an estimated 5% discount. Goals for Firewise community efforts extend beyond immediate fire protection, and include strengthening of social cohesion and more robust community collaboration that can benefit those areas if a fire occurs.

Safer from Wildfires. California's insurance regulations recently (2023) began to require insurers to consider wildfire mitigation factors in their rating plans. The Safer from Wildfires program details the steps homeowners can take to benefit from three layers of mitigation: structural protections, landscape modifications, and community adjustments. Completing each one corresponds to additional discounts with insurance companies as required by California's Department of Insurance. Companies may comply by adjusting their rates, creating new risk models, or surcharging

their premiums. Even the FAIR Plan, offered to homeowners in high wildfire-risk areas who cannot obtain coverage in the traditional market, has integrated these opportunities into its existing insurance products by offering discounts for policyholders that undertake home hardening measures. It's worth noting that California also has the most robust building code regulations in the country for wildfire risk reduction, with Chapter 7A: Materials and Construction Methods for Exterior Wildfire Exposure (adopted in 2008 and soon to become California Wildland-Urban Interface Code (CWUIC) Part 7) guiding all new construction in hazard severity zones.

Boulder County Wildfire Partners. Wildfire Partners (WP) is a Colorado certification program that provides homeowners with guidance and grants to implement fire mitigation efforts. One of the largest certification programs in the country, WP responds to homeowner interest with an initial site visit, followed by remote advising and support, and ultimately an in-person inspection that leads to certification. That process takes an average of 1.2 years. Standards are developed in consultation with IBHS (see below). With support from a regional insurance association, the program has now partnered with several home insurers in the area, including Allstate, State Farm, and USAA, who accept WP certification as evidence of mitigation efforts. Some of those insurers offer discounts or other incentives to their policyholders.

Institute for Business and Home Safety (IBHS) Wildfire Prepared Home. The IBHS's Wildfire Prepared Home program certifies single-family homes in California that have met specifications for fire mitigation. Two levels of certification are offered: a base level, primarily for retrofits, and a plus level for new construction. Homeowners must apply for consideration, and an IBHS inspector visits the property to assess it. Following the initial approval, annual maintenance reviews can be done through a self-evaluation with a photo, or through a third party. For example, after Paradise's Camp Fire (2018), the town worked with IBHS to strengthen the town's resilience. As a result, Mercury Insurance announced in January 2025 that it will begin writing new homeowners insurance policies, becoming the first major insurer to return. New standards for neighborhood-scale certification, such as IBHS Wildfire Prepared Home Neighborhood, have also been released, expanding the reach for this program.

Strengthen Alabama Homes. One of the earliest state-run insurance programs to incentivize private property modification for risk reduction, the Strengthen Alabama Homes (SAH) program funds, inspects, and certifies properties for wind mitigation efforts. Homeowners apply for mitigation grants online and sign up for an in-person inspection. Any additional costs shouldered by the property owner are eligible for a tax deduction. Once certified, homes are eligible for insurance discounts as high as 45%. Preliminary evidence suggests that certified homes increase in value by 7%, offering a return on investment that could further incentivize homeowner participation. While not an example of wildfire mitigation, the SAH program offers insights into funding structures and incentive policies that can be galvanized through statewide recognition of pre-emptive risk reduction actions.

The Nature Conservancy and Willis. The Tahoe Donner Homeowners Association (TDHA) in Truckee, California, has taken the notion of fire mitigation beyond the built environment, to the adjacent forest. The TDHA has conducted extensive forest restoration work through its Forest Health Management Program for decades, creating conditions that reduce risk for adjacent communities. Partnering with the University of California Berkeley, The Nature Conservancy, and the Willis/WTW insurance company, a pilot insurance program reflects these gains. The new policy has a 39% lower premium and an 89% lower deductible than it would have absent those changes to the nearby forest. As a nature-based solution for reducing risk, the pilot does not address home hardening but offers a compelling strategy for connecting ecological work with community risk reduction, creating conditions for insurability and affordability.

What would it take?

A reliable public funding stream through a county tax has helped Wildfire Partners in Colorado become one of the largest and most comprehensive certification programs in the country, offering services to thousands of homeowners for very low cost. The organization is housed in the county government's planning department, which adds coherence to its work as a public sector entity. While these institutional dimensions aren't required for a certification program to thrive, they add significant value and stability. Some communities are well positioned to advance a similar program in their municipalities.

Still, while strong certification programs may contribute to overall risk reduction, they only impact insurance rates and coverage when insurance companies choose to engage. While some companies have adopted new rate setting strategies that take certification into account, many still do not. Strengthening ties between certification organizations and insurance companies would help to build a more reliable system of incentives to guide homeowners.

Legislative and regulatory reforms can also facilitate the growth of the industry. For example, in counties or states with robust building code requirements, like California, certification programs can be integrated into compliance mandates. But statewide building codes are controversial and not widely adopted. Colorado has taken a different approach, passing a statewide wildfire building code in 2025 that makes home hardening inspections mandatory at the point of sale, adding to a pre-existing list that includes lead inspection, radon assessment, and other long-standing health and safety requirements. The state has also passed several related provisions, including the creation of a wildfire resilience code review board charged with developing standards and building codes that could reduce catastrophic losses. These reforms could galvanize the certification industry, creating demands for a qualified home inspection workforce.

Experts note that one important way to maximize benefits associated with certification programs is psychological. Shifting residents' current expectations of external support, including home protection from firefighters, disaster relief from FEMA, and insurance as a buffer from loss will take a concentrated effort. When homeowners accept personal responsibility for reducing their own risk, they may find the costs associated with home hardening to be more acceptable. Fostering this mindset change will take significant public outreach.

Advantages

Risk reduction. Certified properties, especially when certified at the community or neighborhood scale, may be less likely to suffer losses, thereby contributing to an overall reduction in claims; this shift would benefit both insurance companies and policyholders. Since homes that have fire-resistant materials and mitigation measures in place suffer fewer losses, these private actions contribute to insurance company solvency.

Access to reinsurance for insurance companies. Certification can help insurers secure reinsurance at lower rates by demonstrating proactive risk management. For example, if an insurance company demonstrates a commitment to working with policyowners who have implemented mitigation measures, their higher solvency rates will facilitate access to reinsurance. This has been demonstrated under the Solvency II regulatory framework in the European Union, where insurers are now required to consider climate risks in their solvency assessments. With this new tool, insurers can highlight their financial stability and become more attractive to reinsurance companies.

Stronger community relationships. Programs like Firewise build social cohesion across stakeholder groups, including residents, insurance companies, forest managers, firefighters, emergency response, and local elected officials. These relationships can enhance insurers' reputations as partners in disaster resilience, normalize mitigation so that it becomes standard practice, and smooth collective action.

Lower premiums & improved insurability. In some settings, insurers offer discounts for certified properties or communities, although it's worth noting that in most instances, especially for individual households, the discounts are quite moderate (1% or less). In areas where insurance companies are withdrawing or not renewing policies due to high risk, certification helps homeowners secure and maintain coverage.

Access to resources for policy holders. Many certification programs do more than just assess mitigation efforts; they offer property risk assessments and technical support for homeowners. Some go even further, providing funding opportunities for interested property owners, including grants and loans. These benefits go beyond financial discounts

Wildfire Partners reports that during the Cold Springs Fire (2016) in Boulder, Colorado, 8 homes were destroyed but the 19 homes that were mitigated with support from Boulder County programs survived.

WILDFIRE PARTNERS

and into larger-scale capacity building for homeowners, potentially shifting expectations toward greater personal responsibility among homeowners for reducing their own risk.

Trade Offs

Voluntary. When an individual homeowner chooses to conduct mitigation efforts on their property but their neighbors don't do anything to harden their homes, the overall effect on risk remains low. Flammable materials in the neighborhood can still create conditions for a damaging wildfire to spread. Risk reduction on private property is a collective action problem in this way, and benefits are magnified when multiple, adjacent homes undertake home hardening.

Higher upfront costs benefit wealthier homeowners. For homeowners, investing in upgrades like fire-resistant roofing or landscaping can be expensive. Retaining technical assistance, applying for inspection, and other requirements of a certification program also frequently incur fees. Those high costs are not offset by relatively meager insurance discounts. Therefore, certification programs are likely to favor higher-income households.

Transaction costs and administrative burden. For insurance companies, conducting site inspections and discounting premiums may reduce short-term profits. These costs then become long term and iterative, as each property will need regular maintenance and inspection. If certification is required through state insurance regulation, as in Colorado, those costs may be allocated evenly across the insurance marketplace; however, in the absence of this state-level standardization, insurance companies that want to experiment with innovative risk reduction strategies may find these costs prohibitive.

No guarantees. Certified property owners may not find an insurer willing to reward risk reduction with lower premiums or retained policies. Beyond these financial calculations, it's worth noting that even certified properties can suffer damage in extreme wildfire events, though the risk is reduced. As these programs expand to address growing wildfire risk, public expectations may not be realistic. Most of the data on whether certified homes have a better survival rate is still anecdotal. Building an evidence base to support certification will help both insurance companies and homeowners.

Community-Based Catastrophe insurance

A community-based catastrophe insurance (CBCI) model is a grassroots approach to risk management where a community collectively pools resources to provide financial protection against specific risks or emergencies. Unlike traditional indemnity insurance, which is typically offered by large companies or governments, CBCI models are locally organized and managed, often catering to underserved populations without access to conventional insurance. They function through a designed intermediary institution that can secure coverage for the community; for this reason, these policies are sometimes called meso-insurance or aggregator models. Often, those intermediary institutions are public organizations like local governments or special municipal districts. Decision-making processes in CBCIs are often participatory, ensuring inclusivity and transparency. Some CBCIs also build a layer of formalized finance through Community Development Reinsurance Institutions (CDRI).

How does it work?

The establishment of a CBCI policy can provide local households a vehicle for spreading risk among their community in ways that reduce the collective burden of harm. An aggregator, which could be an existing public institution or one created for the new program, operates on behalf of community members to pool risk and provide policy opportunities. In some cases, the intermediary buys insurance but policies are held by individual community members. In other cases, the intermediary itself serves as the policyholder and takes on responsibility for collecting premium payments and allocating payout funds. The program can be structured in a variety of different ways, depending on local priorities, and available policies may be indemnity or parametric. Eligible coverage can include dimensions of loss not usually covered by traditional policies. For example:

- *Compensation for losses.* The fund could compensate members for losses caused by wildfires (e.g., damaged property, livestock, or lost income) based on a modified indemnity model.
- *Emergency response.* Structured as an emergency fund, the policy could release aid for displaced members and provide temporary shelter, immediate relief supplies, and assistance in evacuation logistics.
- *Livelihood protection.* The policy could be used to compensate for income loss due to wildfire impacts on agriculture, forestry, or tourism. Communities could pool funds to protect shared resources like forests or grazing lands.
- *Community-Based Reinsurance Partnerships.* Smaller-scale CBCI initiatives could partner with larger institutions to secure reinsurance. This additional layer over coverage would extend the financial capacity of the policy to cover high-cost events like severe wildfires.
- *Incentivizing Risk Reduction.* Members who actively reduce wildfire risks through home hardening, defensible space creation, or forest management could receive premium discounts or other benefits.

Where is it happening?

To date, there are limited examples of stand-alone CBCI schemes for wildfire in the United States. But pilot efforts to deploy creative insurance strategies at the community level in response to flood risk offer relevant test cases. The examples highlighted here offer glimpses of how communities can come together to build a financial buffer that benefits residents.

Isleton, CA Community-Based Flood Insurance Pilot. The small town of Isleton has long faced repeated flooding. Insurance has been made available through the federally-underwritten National Flood Insurance Program (NFIP) and administered through California's Division of Water Resources (DWR) but those policies are unaffordable for many, leaving 50% of floodplain residents uninsured. The community voted in 2023 to create a new Geological Hazard Abatement District (GHAD) to serve as the intermediary institution for CBCI. The DWR provided up-front capital

through a seed grant of $200K, and the community developed a parametric community-based insurance program. The core components of the program align with traditional parametric policies, including the establishment of agreed-upon trigger points and streamlined payouts, but instead of functioning statewide or companywide, the program operates only in the Isleton community. Payouts are intentionally small, and the policy will need to be augmented by other forms of insurance to fully compensate residents in the event of a disaster; still, the creation of a flood insurance solution by and for a community offers a roadmap for other neighborhoods facing wildfire risks.

Center for New York City Neighborhoods. Many years of coastal, storm-surge, and rainfall-related flooding in NYC has had disproportionate impacts on lower-income residents. They face weak flood insurance coverage and extended delays in payments from insurance companies. To address these concerns, in 2023 the Environmental Defense Fund, SBP social impact organization, and the NYC Mayor's office partnered to develop a community-based pilot program that would offer parametric flood insurance to low- and medium-income households. The Center for NYC Neighborhoods functioned as the intermediary institution (the "aggregator"), and after an extensive stakeholder outreach process, the pilot team developed an innovative meso-insurance model. The Center is itself the policyholder, filling a critical role that was unavailable to individual low-income households. When the flood trigger point is met, that institution will distribute the payout among participating families.

What would it take?

Creating a CBCI for any hazard is a multi-step process that can be technical, time consuming, and expensive. Program design can vary widely, depending on what type of coverage will be provided, under what conditions, and with which funding model. Any approach will also include attention to process elements like the establishment of an appropriate intermediary institution, allocation of decision-making authority, and frameworks for payout distributions. For wildfire, this kind of risk coverage is still aspirational, but perhaps lessons from floodplain communities can be instructive. Communities already in socially organized collectives to manage wildfire risk – Community Wildfire Protection Plans (CWPPs), fire districts, or Potential Operational Delineations (PODs), for example – might find the creation of a CBCI more feasible.

Many CBCIs create a formalized governing body, draft bylaws, and establish protocols for transparency. Registering the new CBCI with the state may be required, and all Western states have minimum reserve requirements that require insurers to maintain minimum capital and surplus amounts, depending on the type of insurance. Overall, most states' insurance legal minimum reserve requirements are 8 to 12% of anticipated claims.

Given this reserve requirement, and in the context of up-front capital needs described above, establishing a new CBCI is likely to be cost-prohibitive for many communities. Tapping into available state or federal cost-share opportunities could help to offset those expenses, and some communities may find alignment with mission-driven NGOs that offer grant support. Neighborhood associations or municipal agencies may also be incentivized to support this kind of effort, potentially serving as an intermediary for the community. Partnering with a CDRI is perhaps the strongest pathway toward financial viability, although this may be out of reach for smaller communities. With a focus on providing catalytic financing and risk pooling support for under-served and under-insured communities, CDRIs can bolster the foundation of a CBCI.

Advantages

Lower costs. Premium prices for homeowners are typically small and affordable, tailored to the economic capacities of the members. This is because members share risks by pooling their resources, reducing the financial burden on any single individual during a crisis.

Flexibility & inclusivity. Terms, coverage, and payout mechanisms can be customized to fit the cultural and social context of the community. This small-scale localized model also provides coverage for marginalized or low-income groups excluded from formal insurance systems.

Focus on local needs & resiliency. The model addresses some risks specific to the community, such as crop failure, health emergencies, natural disasters, or livelihood disruptions. This also strengthens the community's ability to cope with and recover from unexpected shocks and promotes solidarity and trust among community members.

Aggregation. Empowering an intermediary institution to access insurance for a defined group offers reach that individual residents likely lack. That institution can become a trusted agent for its intended beneficiaries, serving as a liaison between residents and the insurance companies.

Tradeoffs

Limited resources. Small funds may not cover large-scale risks or multiple concurrent claims. Policyholders will need to stack or layer their coverage to ensure full compensation in the event of a disaster. Long-term viability requires adequate reserves and financial literacy, which may not exist in all communities. Lower-capacity neighborhoods, including small and rural communities, may be unable to launch a new CBCI without significant external support.

Unregulated. Without oversight, mismanagement or fraud can undermine trust and efficacy. Many smaller CBCIs lack formal regulatory guidance.

Lack of awareness. Communities facing wildfire risk may not be aware of non-traditional home insurance options like CBCI. Households may not have strong relationships with their neighbors, and without a local champion and significant up-front resources, it will be difficult for most communities to start such a scheme.

Parametric Models

Parametric (or index) insurance estimates the probability of a damaging event occurring, and then offers policyholders an automatic payout when that event occurs. This differs from traditional indemnity insurance, which covers the actual loss incurred from the event after it has taken place. For parametric policies, insurance companies establish a trigger point for a known hazard, and identify a payout amount that will be disbursed to policyholders automatically when conditions meet that trigger. Those funds can then be used to cover any of the losses suffered by the policyholder, including those brought on by disruptions to business or education gaps. Index insurance policies have been most commonly used across a range of agricultural settings to manage precipitation risks like floods and drought. For wildfires, parametric wildfire insurance payouts would be triggered by a pre-identified, measurable aspect of an advancing wildfire.

How does it work?

By insuring against the probability of an event occurring, a parametric policy will pay out based on whether a pre-established trigger or threshold has been met. Unlike traditional indemnity insurance, a parametric policy will dispense an agreed-upon amount to each policyholder, obviating the need to inspect or value losses. In other words, since the payout occurs independently from any immediate value estimate, the insurance company's role is assessing the parameter and approving payouts only. This streamlined process contributes to faster processing times and reduced transaction costs, making parametric insurance widely accessible. Further, with a monetary payout that isn't explicitly tied to measurable property damage, policyholders may use their funds to compensate for a wider range of disruptions associated with the event. For example, in business settings, index insurance tied to natural disaster triggers can help companies buffer against supply chain disruptions, transportation delays, and other losses. In these ways, parametric policies can help cover economic losses and disruption to quality of life, whereas indemnity policies cover only the loss of physical assets. The strategy helps to cover non-physical losses.

Parametric insurance has been likened to the first responder in a financial emergency: policyholders still need other solutions for full recovery, but in the immediate aftermath of a disaster, it can play an essential role. Especially for underinsured households, parametric policies can add a layer of protection, potentially as an add-on to a weak indemnity policy or FAIR plan coverage, helping to offset costs.

Most parametric policies insure entire communities, collectives, or local institutions, and less commonly individuals; in part, this is because trigger points apply to an entire insured unit. For example, in the agriculture sector where precipitation variability can damage crops, a geographically defined farming community may collectively purchase parametric insurance with a parameter set to rainfall amounts as a hedge against flooding. When the trigger point is reached at the agreed-upon weather station, every farmer in the community will be paid. Some farmers may have experienced more severe damage than others, but the policy will pay the same amount to all. Since a data-driven approach to establishing that trigger will draw from localized weather information, the policy covers only the defined local group. Other policyholders in different settings will be insured for different, more locally accurate, trigger points.

Policy design rests in part on the establishment of the appropriate trigger. Since the same trigger point will release the previously agreed upon payout funds to all policyholders, much attention is paid to the development of that key parameter, including what will be measured, how frequently, where, and by whom. For example, trigger points in the agriculture sector may be defined by crop yield, rainfall, wind speeds, or other externally measured parameters. They will be determined based on historical weather data, identifying the difference between normal variability in precipitation and flood-level rainfall amounts. Identifying appropriate triggers for wildfire may be challenging given the stochastic nature of impacts, and experimentation will help. Examples of trigger points in wildfire contexts could include air quality criteria that are tied to smoke levels, the loss of power, location within a declared evacuation zone, or proximity to an active wildfire. These triggers should be verifiable by third parties via satellite imagery, weather

station data, or other public information. The clarity and reliability of the trigger point are crucial to policyholder trust and successful program implementation.

Where is it happening?

While still limited, interest in the use of parametric insurance for wildfire risk in the U.S. is growing. Novel applications of parametric insurance for managing risk associated with other climate hazards are also instructive, as they may offer insights into institutional arrangements and design possibilities. Several examples stand out:

Jumpstart offers earthquake parametric insurance in California, Washington, and Oregon. The first company to offer parametric insurance in the U.S., Jumpstart's policies are available for both individuals and businesses. Measuring peak ground velocity (PGV) within a census block, the company creates an "earthquake payment zone" using data from the USGS to determine the trigger. Policyholders in that block receive an immediate payout if a qualifying earthquake occurs. The policies are intended to fill a protection gap among underinsured residents. Initial program pricing (2024) offered a payout of up to $10K for homeowners and $20K for small businesses per event.

StormPeace is a parametric insurance policy designed to cover hurricane-related risks for individuals in Florida. Payouts are tiered to the distance of a policyholder's home from the eye of the hurricane and the severity of the storm. This structure, with tiered payouts that approximate gradations of impact, offers a creative pricing system. If trigger conditions are met, policyholders are paid even if the storm doesn't make landfall. Payments are made digitally, reducing delays.

Puerto Rico faces risk from hurricanes and earthquakes, with recent storms ranging from Hurricane Maria and Hurricane Irma in 2017 to southwestern Puerto Rico earthquakes in 2019. While 60% of properties in Puerto Rico have homeowners insurance, fewer than 4% have flood insurance. As a result, the island has had to consider innovative strategies to protect its residents. A sovereign parametric policy secured from global insurance firm Aon has now been launched in partnership with FEMA to fill these coverage gaps. Importantly, the new policy is intended to satisfy FEMA's requirement that recipients of disaster relief funds "obtain and maintain" (O&M) insurance. In this way, the new parametric approach not only provides new funding for residents who lack insurance access, it also makes it possible for those same households to receive additional post-disaster support from the federal government.

What would it take?

To realize the potential for building parametric wildfire insurance policies in wildfire-prone areas, technology advancements are essential. The parametric insurance marketplace is driven by data science as a tool to assess risk, identify appropriate trigger points, and determine payout amounts. Triggers generally build on four key components: historical weather patterns (real or modeled), the probability of a negative event occurring, an agreed-upon method for detecting when that event has occurred, and a financial system that links the occurrence of that event to payment. Likelihood has to be both measurable and plausible so that customers see the value. Some insurers rely on their own data collection approaches, while others contract with specialized wildfire modelers.

Even with access to robust tools for assessing risk, insurance companies will have to develop a clearer understanding of the primary asset to be covered by a trigger point. If home loss is the focus, then the trigger point will rest on a parameter that predicts structure loss, for example fire severity and proximity. If critical resources and watershed health are the focus, then the trigger point might stem from a parameter that predicts changes to air and water quality.

Regulatory dimensions are important here. Some states still do not recognize parametric models as an approved form of insurance; they might understand it as simply "gambling on the weather." As of early 2025, only Vermont, New York, and Puerto Rico have updated their laws to include parametric contracts. Within Western states, regulation has been slower. Colorado's Division of Insurance sought public comments in October 2023 on a parametric insurance policy concept aimed at stabilizing the homeowners insurance market, particularly in response to increased wildfire events. No new policy has yet been adopted. In California, while there isn't explicit legislation for parametric insurance, the state has explored changes in its regulatory sphere to become more flexible and adopt forward-facing models in insurance, allowing more leeway for building parametric insurance policies.

Beyond this kind of legal recognition, several other regulatory provisions can also influence the ability of insurers to offer parametric policies (see Regulatory Reform). Some states define the methods insurance companies are allowed to use in setting rates; for example, California had a long-standing restriction on the use of catastrophe models for predicting future wildfire trends. That prohibition was lifted in 2024, potentially opening a door for more robust projections that could support a new parametric approach to coverage. As science, technology, and regulation contribute to better, more timely data availability, insurance companies are more likely to find viability in adding a parametric product.

Existing insurance carriers are the most likely sources for new parametric policies, and advocates have described a potential opportunity for bundling index tools with existing indemnity policies at the household level. Relative exposure for the insurance company would be low, as parametric policies place an identifiable cap on total payouts in even a catastrophic event. Setting an appropriate trigger – one that consumers will support, that is founded on data-driven evidence, and offers the company a pathway toward profitability – will be essential for success.

Advantages

Faster payouts. Based on a pre-agreed trigger point, parametric policies can pay out very rapidly when that threshold is reached. Unlike indemnity losses, no agent needs to inspect the site; this streamlines payouts and reduces transaction costs. Most parametric claims are paid within 30 days, and when policyholders have set up digital payments and linked their bank accounts ahead of time, delivery of financial support can occur within hours.

Flexibility. Since payouts aren't tied to losses, the policyholder is free to use the funds to cover any economic loss related to the event, making these policies more flexible than a traditional indemnity policy. For example, a small business owner may suffer disruptions to sales during the fire, and could use the funds to recover many broad losses associated with extended power outages. Where indemnity policies protect assets, parametric policies protect balance sheets.

Coverage for Tourism-Dependent Economies. Regions dependent on tourism can purchase parametric insurance to offset losses when wildfires disrupt tourist activity, potentially using smoke conditions or road closures as triggers. In these ways parametric policies could provide an immediate buffer for wildfire-induced closures of parks, resorts, or hiking trails, supporting local businesses.

Reduced fraud. With pre-agreed-upon triggers and payouts, a third-party verification system can validate the flow of payouts to policyholders relatively easily. Unlike indemnity claims, parametric payouts do not include subjective assessments of property damage. This builds transparency and trust among consumers.

Calibration. Since parametric policies don't have deductibles or exclusions, the client has potentially more freedom to decide how much coverage they purchase. The trigger is the same, regardless. These stable financial dimensions create clarity for new customers and may help to foster participation in an otherwise unfamiliar program.

Accurate risk signal. The risk signal in a parametric policy is potentially clearer than in a traditional indemnity policy, since the terms of the gamble are transparent to all participants. More widespread uptake of parametric policies could contribute to increased risk awareness and potentially motivation to enact other risk reduction strategies like home hardening.

Additionality. Experts agree that parametric insurance alone is unlikely to cover wildfire damages, and instead should be seen as an add-on to a more traditional indemnity policy. In this way, for example, a household that suffered home loss would receive a payout from their parametric policy in the immediate aftermath of the wildfire. Those funds could help the policyholders secure temporary housing and satisfy other emergency needs, bridging the time gap while the larger payout from the home indemnity policy is being processed. Layers of coverage offer different amounts at different times, creating a mosaic of financial support for affected households.

Tradeoffs

Basis risk. The gap between the monetary cost of the loss and the amount of the payout is called basis risk. Since parametric insurance pays its customers in predefined units and doesn't assess losses, basis risk can be high. When a policyholder suffers extreme losses but the payout doesn't cover their costs, this is negative basis risk; when a policy holder receives a payout but didn't suffer costly losses — perhaps due to terrain, geography, or intentional efforts to reduce exposure — it is positive basis risk. High basis risk can weaken consumer trust and potentially undermine companies' profit margins.

Lack of awareness. Since parametric policies are still relatively new outside of the agriculture sector, the tool may be unfamiliar to insurance buyers and brokers who are used to selling traditional indemnity policies. Many parametric products are also under-regulated because insurance laws are designed to address indemnity insurance. Banks may also not recognize parametric policies as assets, limiting their value for rate-setting by lenders.

Insufficiency. Most useful for moderate frequency - moderate impact hazards, parametric policies are not designed to cover the entirety of extreme losses. Policyholders will have to purchase other forms of insurance to complement the parametric policy for more comprehensive coverage. Layering policies in this way is likely to increase overall costs, making the approach less accessible to low-income residents.

Lack of incentives. Without any loss inspection required, a parametric insurance policy does not create opportunities for conditionality: homeowners who have hardened their properties will be insured at the same rate and with the same payout as neighbors who have not modified their homes. As a matter of public policy, this potentially obviates an important risk reduction tool. Linking parametric policies to adaptation measures taken by the policyholder would mean modifying price structures to account for reduced risk on site.

FAIR State Plans

As private insurers scale back coverage or exit high-risk markets, state governments have stepped in to ensure continuous coverage. Initially designed as insurers of last resort, Fair Access to Insurance Requirements (FAIR) programs are state-mandated insurance pools providing basic property coverage to homeowners and businesses unable to secure insurance in the private market due to high risk. Funded through assessments on private insurers operating in the state, these programs aim to prevent insurance market failures and protect vulnerable policyholders. As wildfire losses mount and claims increase, FAIR programs face financial pressures. These policies have also been criticized for muting the risk signal to homeowners by guaranteeing affordable insurance coverage in dangerous areas.

How does it work?

FAIR plans serve as insurers of last resort, meaning they are only available to policyholders who cannot obtain coverage in the private market. To fund a FAIR plan, state governments designate and regulate insurance companies through a pooled market, in which all insurers operating in the state are assessed in proportion to their market share. That means every existing insurance company is required to contribute to funding the state's FAIR plan, building a larger risk pool and providing reliability for underwriters. Reinsurance through global markets may also be secured to support large-scale disaster events. When FAIR plan payouts are high, for example following a large-scale fire event, states may briefly increase the assessment amount to stabilize the marketplace. This places additional pressure on insurance companies in the state, many of which are likely also paying out claims to their own customers following the same fire event.

Compared to private home insurance policies, FAIR plans tend to offer less coverage at higher rates. They typically offer basic property insurance, but often do not cover all perils. Premiums may be higher than standard market rates, subject to approval by state insurance regulators. As with private insurance, claims are assessed by adjusters and paid out based on the terms of the policy, up to coverage limits. Many FAIR programs now require or incentivize policyholders to implement risk mitigation measures like home hardening.

Where is it happening?

Across the United States, 34 states and Washington, D.C., have or are building FAIR plans. The policies cover a range of hazards including wind storms and floods. Three examples of wildfire FAIR policies and one flood policy in Florida offer preliminary lessons about how well this strategy succeeds.

California FAIR Plan. The California FAIR Plan provides fire insurance coverage to residential and commercial properties in wildfire-prone areas where private insurers have declined coverage. Initially established in 1968 to cover brush fires, the Plan gained new prominence after devastating wildfires in the state, including the Camp Fire (2018) and Dixie Fire (2021), led private insurers to reduce coverage in high-risk areas. Since 2020, increased wildfire risk has led to ballooning participation in FAIR plans, where the number of policies covering dwellings has increased by 123% and commercial properties by 161%. At the same time, premium prices have dramatically increased (199% residential / 496% commercial). A pilot program (2023) has sought to incentivize policyholders to take home hardening measures in exchange for lower premium rates, but uptake remains low. Over-extended and over-exposed, the FAIR plan faced more than 4,700 claims in the first month following the Los Angeles wildfires (2025). Just under half of those claims were for total losses, threatening the viability of the program: with an estimated $377 million available, the wildfires caused $250 billion in damages. In January 2025, the state authorized a $1B assessment – the largest in the program's history – to fortify the program's ability to pay its policyholders. That assessment draws from other insurers in the state, who are authorized by regulation to pass up to half of those costs to their own policyholders. The remainder of those costs fall to the companies themselves, further weakening their position in the state and driving up rates. Indeed, within weeks of the fire, State Farm requested a 22% rate increase.

Oregon FAIR Plan. The Oregon FAIR Plan is a much smaller program, operated by a nonprofit association that provides property insurance to individuals and businesses unable to obtain coverage due to wildfire risk. Participation in the Plan has grown significantly after recent wildfires, especially the Alameda Fire (2020), leading some insurance providers to leave the state and others to raise premiums. Like California, Oregon has worked to link FAIR Plan eligibility to compliance with the state's defensible space standards, encouraging property owners to adopt fire mitigation practices. Oregon's FAIR plan has not been tested by a wildfire event that matches the scale of the 2025 LA fires.

Colorado FAIR Plan. Colorado launched its FAIR plan, called the Colorado Insurance Stability Plan (CISP), in early 2025 to provide property insurance coverage to residents who cannot secure private insurance due to wildfire risks. Homeowners must demonstrate a failed attempt to obtain private insurance to be eligible, after which CISP offers coverage of up to $750,000 for residential structures and $5 million for commercial properties, excluding personal liability and flood. To do this, the Colorado Division of Insurance has secured $300 million in reinsurance to buffer catastrophic losses, largely through private reinsurers. As one of the most recent states to adopt a FAIR plan, the success of Colorado's approach remains to be seen as it continues to experience increasing wildfire risk.

Florida FAIR Plan. This plan has operated through Citizens Property Insurance Corporation (CPIC) since 2002 as an insurer of last resort. This plan provides hurricane and windstorm coverage, not wildfire, but it offers an important case example. As of early 2025, there were over 1.3 million policies in place, more than double pre-2020 levels. This is mainly due to Hurricane Ian (2022) and Hurricane Milton (2024), both damaging storms that led to spikes in loss claims. Rapid growth in the FAIR plan was widely seen as unsustainable and CPIC is now working to transition policyholders back to traditional private insurance policies, a process known as depopulation. Over 300,000 policies were transferred in 2024. The Florida Office of Insurance Regulation (OIR) has undertaken a series of regulatory reforms to facilitate these shifts, including revised rate structures, capped coverage for high-value properties, and stricter eligibility standards. As such, homeowners qualify for the FAIR plan only if the lowest quote they get from a private insurer is more than 20% greater than the CPIC quote.

What would it take?

There is little support for investing in an expansion of FAIR programs for wildfire coverage. The challenge is not how to build or expand these opportunities, but rather how to better invest in a functioning insurance marketplace so that demands on unsustainable FAIR plans are minimized.

Reforms to existing FAIR programs reflect these ambitions. For example, Florida has actively sought to shift FAIR policyholders out of their flood insurance program by authorizing private companies to take on these new customers. Insurers in the state have confirmed that overall stabilization of the insurance market, partially a result of a functioning FAIR plan program, has made it possible for them to accept previously risky customers. New insurers have begun to enter the market in Florida as overall market risk declines, further advancing affordability goals. To date, more than 300,000 FAIR policies have been transferred to the private market. Perhaps other states will pursue transfer to private markets as a way to keep FAIR programs small, sustainable, and limited to only the highest wildfire risk properties.

Other states are pursuing different kinds of reforms to improve their FAIR plans in the face of escalating hazards. In 2024, just before the catastrophic LA fires, California had begun a process of modernization for its plan through its Sustainable Insurance Policy. The new approach, launched by the Insurance Commission, raised coverage limits for larger properties and commercial entities. With unprecedented high payouts following the LA fires, increasing those amounts may now seem like an unwise reform; still, guarantees of coverage for high-cost commercial losses were welcomed across the sector as a tool for stabilization of losses.

Advantages

Insurance Access for High-Risk Areas. FAIR plans ensure that property owners in wildfire-prone regions can obtain basic insurance coverage when private insurers deem the risk too high. FAIR plans are particularly valuable for low-income homeowners or those in underserved areas who may not be able to afford high premiums in the private market.

Market Stabilization. By acting as an insurer of last resort, FAIR plans potentially prevent insurance market failures in high-risk areas. This stabilizes property markets, supports local economies, and mitigates the risk of mass property abandonment due to lack of coverage. Knock-on effects include stabilized municipal bond ratings and continued profitability of the building and real estate markets.

Incentive for Risk Mitigation. Some states link eligibility or premium discounts to home hardening measures, encouraging homeowners and communities to invest in wildfire risk reduction strategies, such as defensible spaces and fire-resistant building materials.

Tradeoffs

Financial Instability. Several drivers threaten the financial foundation of state FAIR plans. Catastrophic wildfire losses over time have led to a significant increase in both the number of policyholders and the total amount of claims. And since FAIR plans rely on assessments of private insurers to cover deficits, when more insurers reduce their exposure or leave the state, that funding source shrinks. Already, premiums under FAIR plans are often insufficient to cover the rising costs of claims, as rates are constrained by regulatory caps designed to ensure affordability for policyholders. Many FAIR plans purchase reinsurance to spread risk, but the cost of reinsurance has been rising due to the global increase in climate-related disasters. These costs are often passed on to policyholders through higher premiums.

Limited Coverage Options. FAIR plans typically offer only basic property insurance, often excluding liabilities and other additional coverages that private insurers might provide. This leaves policyholders underinsured, with limited protection and the need for supplementary coverage. They are intended to function as a temporary solution for high-risk policyholders until they can secure private coverage, but those alternatives are increasingly scarce and many remain reliant on FAIR plans for extended periods.

Burden on Private Insurers. FAIR plans are funded in part by assessments on private insurers. As more policyholders turn to FAIR plans, these assessments increase, potentially disincentivizing private insurers from operating in the state or leading to higher premiums for private insurance policyholders.

Potential for Moral Hazard. By providing a safety net, FAIR plans may inadvertently reduce the urgency for property owners or developers to avoid building in high-risk areas. This can exacerbate the underlying risk of wildfires and increase long-term costs.

State Regulatory Reform

Reforming insurance in an era of increasing risk from wildfire can occur at the legal and regulatory level, resulting in much broader modifications to the marketplace than anything an individual company might be able to drive. The U.S. insurance industry is regulated at the state level through state insurance departments, each with its own insurance commission led by a state insurance commissioner. Many states have regulated the insurance industry to keep rates low to protect consumers but in some of those locations, escalating wildfire disasters have resulted in significant financial losses for insurance companies; when those losses become unsustainable, and raising rates isn't allowed, the company may find no other options short of leaving the market entirely. Now, some states are working to attract and retain more companies, allowing innovative approaches to rate setting that can help to build a competitive marketplace that both benefits consumers and stabilizes pricing. At the same time, novel approaches to measuring risk, supporting affordability, and providing transparency can also be addressed through regulatory reform. Advocates for reform include insurance companies, citizens, and government institutions.

How does it work?

Regulations are led by the state's insurance commissioner (IC), a role that is established in a variety of ways across states. In 37 states, the position is appointed. Usually, the governor appoints a non-partisan IC, but two states empower the multi-member insurance commission to appoint its own leader. In 11 states the position is identified according to political party and determined by election. Some states support an independent IC agency while others house the commission within their finance departments or even state fire service. Despite these wide variations, the same three broad tasks fall to most commissioners: regulating insurance, ensuring sustainability and solvency in the market, and protecting customers.

Often, regulatory changes are instigated by a new statute; when passed, the new law will trigger action by the pre-existing insurance commission. The process can be time consuming, as all states include a mandatory public comment period for any proposed changes. In the absence of a new statute, regulatory reform may be pursued following a critical event, such as a wildfire event, or through public concerns conveyed through elected representatives. In some settings, the governor of a state can prioritize regulatory reform to achieve political goals.

While regulatory reform can go in many directions, recent state efforts for wildfire insurance have focused on four common themes. First, states turn to regulations to guide *rate setting*. They may want insurance companies to keep insurance affordable or better incorporate risk in their pricing, although those two ambitions are often in conflict with one another. They may also require or prohibit certain modeling methodologies for assessing risk. Some have begun to incentivize mitigation efforts by homeowners, adopting guidelines or mandates for insurance companies to incorporate those actions into their pricing models (see Voluntary Certification Programs, above). Second, states have fostered improved *disclosure requirements* through regulatory reform. For example, they may require insurance companies to share risk ratings and methodologies with their policyholders. Third, many states have created, limited, or modified the regulatory landscape for their own *FAIR plans* to serve as insurance of last resort (see FAIR State Plans). Fourth, states have turned to regulatory frameworks to create conditions that are more or less conducive to *experimentation* in the sector, opening the door for insurance companies to offer creative solutions like parametric policies (see Parametric Models).

Perhaps not surprisingly, insurance companies agree that when it comes to regulation, less is more. They are quick to acknowledge that regulations intended to foster oversight and accountability are welcome. But when companies are trying to balance risk with pricing viability, they need maximum flexibility. These desires for creativity may conflict with states' desires to reign-in an industry that might not be contributing to risk reduction or economic viability in the sector.

Where is it happening?

Most states have not regulated wildfire insurance specifically, and instead rely on broader legal frameworks that guide the sector. As wildfire-related losses mount, more states will consider whether targeted regulatory interventions could improve outcomes. In a few places, these kinds of reforms have already had powerful effects on the insurance marketplace.

California In response to rising auto insurance rates in the 1980s, California voters approved Proposition 103, designed in part to stabilize premium costs through a set of regulations that applied well beyond the automobile sector. Those changes had unintended and deleterious effects for the industry. Requirements that insurance companies obtain insurance commission approval for any rate increases led to extensive delays. Insurance companies were forbidden from factoring in reinsurance costs in their rate setting, making it impossible for them to pass along escalating costs to customers. And companies were barred from using forward-looking climate models to establish risk-responsive pricing. The combination of these regulatory requirements contributed to widespread company departure from the state; by 2023, 7 of the 12 largest insurance companies had paused new policies or left the state entirely. Since then, California has modified these rules to recruit insurers back to the state, and to better capture real risk estimations in prices that benefit policyholders. The state has been an early adopter of regulations requiring insurers to incorporate wildfire safety standards into their rate filings and offering discounts for those mitigation efforts through the Safer from Wildfires framework (see Voluntary Certification Programs). In 2023, the state began allowing insurers to consider future climate risks when setting premiums; these adjustments have already helped to stabilize the insurance market. And California is one of only a few states that require insurance companies to include a "law and ordinance" provision, allocating an additional 10% to each payout following a home loss so that rebuilding can meet updated code requirements.

Colorado Legislation adopted in 2025 (HB1182) includes several regulatory adjustments designed to benefit consumers and stabilize the marketplace. New disclosure requirements are mandated, requiring insurers to inform homeowners about wildfire risk mitigation opportunities and provide them with a defined pathway to appeal any risk assessments affecting their premiums. Companies are required to utilize a risk model or scoring system to drive underwriting rates. Policyholders are now given an opportunity to conduct mitigation activities on their property, and companies must take those into account. Finally, the new law requires companies to also consider statewide activities that contribute to reduced risk for homeowners; for example, two helicopters were recently purchased to help suppress wildfires in the state, ostensibly reducing overall risk of loss. Next, new regulations will be crafted to support these goals. The hope is that regulatory reform will drive down premium rates, incentivize mitigation efforts for both property owners and the state, reduce wildfire risk statewide, and create conditions that relieve some of the current pressure on the state's FAIR plan by building more affordable and accessible insurance policies.

Oregon In 2023, Oregon passed SB82 which made four important regulatory changes to the wildfire insurance landscape. First, in an effort to protect customers from unexpected non-renewal notices, the new policy requires disclosure from the insurance company for any cancelled policy or rate increase of more than 10%. If the company used a risk score to determine these changes, the customer will be advised on steps they can take to remedy their score. Second, the law requires that insurance rates reflect mitigation efforts; partnering with IBHS's Wildfire Prepared program (see Voluntary Certification Programs), the state has begun to connect newly established home hardening requirements with defensible space standards. Third, the law includes some flexibility on rebuilding timelines for policyholders, again intended to improve outcomes for residents who have suffered a loss. Lastly, the new law took a strong stance on the use of politically contentious wildfire risk maps that some had feared would be used to drive rate setting. Now, use of any such maps is prohibited for insurance companies despite insurance companies using their own non-public proprietary risk models for rate setting. While the implementation of these regulatory adjustments are still in early stages, the case of Oregon's comprehensive regulatory reform is being closely watched.

What would it take?

Experts note that gaps in data quality and access continue to undermine regulatory reform efforts. For example, satellite and drone-led home inspections, conducted from above, frequently miss critical mitigation activities that have occurred on a given property, leading to inaccurate assessments and potentially incorrect rate setting. When insurance

companies are required to incorporate these bad data into their policies, the data weaknesses are amplified. With this in mind, experts point to improvements in data collection, more regulatory flexibility in which kinds of information are allowed for insurance companies to set rates, and investments in standardized risk assessment tools as strategies to smooth the foundation for more robust regulatory reform. Some insurance experts have called for the creation of a wildfire "data commons" to house data across states, creating a level playing field for the industry.

Advocates for insurance reform come from public, private, and nonprofit sectors. If organized and backed by evidence, they may find success through established institutional channels. Indeed, consumer demand, catalyzing events, insurer advocacy, political will, and regional influence can all create conditions that favor reform. If a particular state has undertaken regulatory reform with demonstrated positive results, neighboring states may find an easier on-ramp to making similar changes. Building coalitions that include insurance companies, policyholders, and local elected officials can help advance reform ideas.

Advantages

Systemic results. Regulatory reform offers a systemwide approach to insurance that can bring a wide variety of insurance companies of all sizes under the same umbrella. Such standards benefit policyholders, investors, and the public by creating reliable coverage conditions.

Opportunities for regional alignment. Beyond the individual state level, regulatory reform offers the promise of standardized approaches that could work regionally. When one state experiments with a new regulation and sees positive results, other states can adopt similar rules, creating ease of operations across multiple markets for insurance companies.

Retain flexibility. Unlike statutory reform, which can be very difficult to undo or modify, regulations are flexible. When conditions change, regulations can be modified. In that way, experimenting with regulatory reform offers opportunities to learn, improve, and adjust.

Tradeoffs

Uncertainty. Some reforms may be welcomed by the industry, but too many reforms or too frequent changes create uncertainty for insurers. Without a guarantee of future parameters for operations, insurance companies may find a dynamic regulatory environment too uncertain. Underwriters and re-insurers similarly prefer regulatory consistency across states. Uncertainty contributes to higher rates.

Data weaknesses. Some regulatory trends, including mandating the consideration of mitigation efforts in rate-setting or requiring policyholders in high-risk areas to undertake expensive modifications to their property, assume reliable data on risk and home hardening exists. In fact, that data might best be characterized as inconsistent. Codifying policy based on bad data risks solidifying inaccurate approaches to risk assessment and contributes to lack of public confidence in the industry.

Political winds. Regulatory and statutory reforms are always political, and the process of seeking reform can become ideologically driven. Seven states have insurance commissioners that are appointed by the governor, creating opportunities for politicization. Insurance reform can be prioritized or ignored under different administrations, leading to inconsistent messaging and volatility in the marketplace.

4. Conclusion

The intersection of wildfire risk and homeowners insurance presents a dynamic and increasingly urgent challenge, particularly in fire-prone regions like the American West. Insurance is both a protective tool and a market signal, reflecting not only the cost of recovery but the shifting probabilities of hazard exposure under climate change. As insurance premiums rise and access to coverage diminishes, households, communities, and local economies face greater financial vulnerability. The evolving instability of the insurance market underscores the pressing need for solutions that balance affordability, access, and accurate risk reflection.

Our review of alternative wildfire insurance models reveals a growing landscape of innovative approaches, each with distinct strengths and trade-offs. Whether through voluntary certification, community-based catastrophe insurance, parametric models, or state-led regulatory efforts, these strategies offer pathways to make coverage more inclusive and responsive to rising wildfire challenges. Yet no single approach alone can solve the wildfire and insurance crisis. A layered, adaptive, and equity-focused framework will be essential to building long-term resilience. As wildfire risk accelerates, reimagining insurance not just as a financial product but as a tool for community resilience will be vital to protecting lives, homes, and livelihoods.

5. References

Expert interviewees: JulieAnna Anastassatos, Senior Director, Verisk, Wildfire Risk Management; Frank Frievalt, Director, Cal Poly Wildland-Urban Interface FIRE Institute; Michael Newman, General Counsel, IBHS; Andrew Stolfi, Insurance Commissioner, Oregon DCBS; Carole Walker, Exec. Director, Rocky Mountain Insurance Information Association; Jim Webster, Program Manager, Wildfire Partners.

"Alternatives to California FAIR Plan and Homeowners Insurance." November 15, 2024. https://novatae.com/news/alternatives-to-the-california-fair-plan.

"A Mixed-Methodology Study of Insurers' Withdrawal from California's Home Insurance Market Amidst the Wildfire Crisis - ProQuest." https://www.proquest.com/docview/2968693218?pq-origsite=gscholar&fromopenview=true&sourcetype=Dissertations%20&%20Theses.

Anderson, Terry L. (editor), ed. "Adapt and Be Adept: Market Responses to Climate Change". With an epilogue by Bjorn Lomborg. Stanford: Hoover Institution Press. 2021. https://search.ebscohost.com/login.aspx?direct=true&db=eoh&AN=1927616&site=ehost-live&scope=site.

Ano, Andrea. 2024. "Colorado Creates FAIR Plan for Those Facing Insurance Crisis." LongmontLeader. December 14, 2024. https://www.longmontleader.com/colorado-news/colorado-creates-fair-plan-for-those-facing-insurance-crisis-9956658.

Araullo, Kenneth. "Citizens Shrinks as More Policies Move to Private Market in Florida." Insurancebusinessmag.com, Insurance Business. March 25, 2025. www.insurancebusinessmag.com/us/news/property/citizens-shrinks-as-more-policies-move-to-private-market-in-florida-529731.aspx.

Auer, Matthew Robert, et al. "Income and Insurability as Factors in Wildfire Risk" Forests 13, no. 7: 1130. 2022. https://doi.org/10.3390/f13071130.

Barrett, Kimiko. "Construction Costs for a Wildfire-Resistant Home California Edition." Headwaters Economics. 2022. https://headwaterseconomics.org/wp-content/uploads/2022_HE_IBHS_WildfireConstruction.pdf.

Barrett, Kimiko. "Full Community Costs of Wildfire." Headwaters Economics. May 21, 2018. headwaterseconomics.org/wildfire/homes-risk/full-community-costs-of-wildfire/.

Barrett, Kimiko. "Reducing Wildfire Risk in the Wildland-Urban Interface: Policy, Trends, and Solutions." Idaho Law Review 55, no. 1 (2019): 3–28.

Beam, Adam. "Wildfire-Prone California to Consider New Rules for Property Insurance Pricing." AP News. September 21, 2023. apnews.com/article/california-home-insurance-wildfire-risk-premiums-cf40911606e8e4d9c7c35ca57ca733e8.

BenefitsCheckUp. "What Is the Oregon FAIR Plan? Do You Qualify for Help?" https://benefitscheckup.org/program/insurance_or_fair_plan.

Bernhardt, Alex, et al. Community-Based Catastrophe Insurance: A Model for Closing the Disaster Protection Gap Community-Based Catastrophe Insurance. Marsh & McLennan Companies. 2021.

Bittle, Jake. "California Overhauled Its Insurance System. Then Los Angeles Caught Fire." Vox. January 9, 2025. www.vox.com/climate/394176/los-angeles-fires-palisade-insurance-climate-crisis.

Bonazzi, Alessandro. "Parametric Insurance to Build Financial Resilience." Generali Group. United Nations Development Programme. 2024. https://www.generali.com/doc/jcr:fdefa293-df4e-4919-85c5-9cb62977bca0/GCandC_UNDP_Parametric_insurance_to_build_financial_resilience.pdf/lang:en/GCandC_UNDP_Parametric_insurance_to_build_financial_resilience.pdf.

Boomhower, Judson, et al. "Wildfire Insurance, Information, and Self-Protection." AEA Papers and Proceedings 113: 310–15. 2023. DOI: 10.1257/pandp.20231104.

Bove, Mark, and Jay Rosario. "Wildfire." Munichre.com. 2025. https://www.munichre.com/us-non-life/en/solutions/reinsurance/wildfire.html.

Buchwald, Elisabeth. "Florida's Home Insurer of Last Resort Is in Serious Trouble. Will Milton Put It over the Edge? | CNN Business." CNN. October 11, 2024. https://www.cnn.com/2024/10/11/business/citizens-insurance-hurricane-milton/index.html.

"Building Codes Division : Wildfire Hazard Mitigation : Codes and Standards : State of Oregon." Oregon.gov. Wildfire hazard mitigation : Building Codes Division. 2016. https://www.oregon.gov/bcd/codes-stand/Pages/wildfire-hazard-mitigation.aspx.

California Department of Insurance. "Commissioner Lara Enforces Nation's First Wildfire Safety Regulation to Help Drive down Cost of Insurance." Ca.gov. 2022. www.insurance.ca.gov/0400-news/0100-press-releases/2022/release076-2022.cfm?.

California Department of Insurance. "FAIR Plan Improvements Are on the Way." Ca.gov. 2024. www.insurance.ca.gov/0400-news/0102-alerts/2024/FAIR-Plan-Improvements-Are-on-the-Way.cfm.

California Department of Insurance. "FAQ: Mitigation in Rating Plans and Wildfire Risk Models Regulation." 2023. https://www.insurance.ca.gov/0250-insurers/0800-rate-filings/0200-prior-approval-factors/upload/FAQ-Mitigation-in-Rating-Plans-and-Wildfire-Risk-Models-Regulation_2023-02-16.pdf.

"California FAIR Plan: Home Page." The California FAIR Plan. https://www.cfpnet.com.

"California FAIR Plan Could Get Big Boost to Commercial Fire Coverage, Offer Home 'Hardening' Discount - The North Bay Business Journal." July 26, 2024. https://www.northbaybusinessjournal.com/article/industrynews/fair-plan-20m-commercial-limit-home-hardening-discount/.

"Californians Could Be on Hook to Recoup Insurers in Major Fire | Abc10.Com." September 3, 2024. https://www.abc10.com/article/news/local/wildfire/california-fair-plan-extreme-costs/103-efece771-4022-495f-9317-9da6ef7627f6.

Cámara, Christian R. "Hold the Line: Florida's Insurance Reforms and the Path Ahead." The James Madison Institute. 2023. https://jamesmadison.org/wp-content/uploads/PolicyBrief_Insurance_Dec2023-v05-print.pdf.

Cardozo, Marlene. "The Nature Conservancy and Willis Launch First-of-Its-Kind Wildfire Resilience Insurance." The Nature Conservancy. April 2, 2025. https://www.nature.org/en-us/newsroom/ca-wildfire-resilience-insurance0/.

Chirouze, Manuel, et al. "Wildfire Risk Reduction Buffers." Guycarp.com. 2018. www.guycarp.com/insights/2021/12/wildfire-risk-reduction-buffers.html.

Citizens Property Insurance Corporation. "Citizens Property Insurance Corporation - Florida FAIR Plan." Citizens Florida. 2025. https://www.citizensfla.com.

CO FAIR Insurance. "CO FAIR Insurance." CO FAIR Insurance. 2025. https://www.coloradofairplan.com.

"Commissioner Lara Announces Sustainable Insurance Strategy to Improve State's Market Conditions for Consumers." 2023. https://www.insurance.ca.gov/0400-news/0100-press-releases/2023/release051-2023.cfm.

Community Foundation Sonoma County. "Resilience Fund." https://www.sonomacf.org/sonoma-county-resilience-fund/.

Community Protection Plan Deschutes River. "Upper Deschutes River Community Wildfire Protection Plan 2024." 2024. https://www.deschutes.org/sites/default/files/fileattachments/county_forester/page/878/udr_cwpp_2024_final_draft-compressed.pdf.

Cookson, J. Anthony, et al. "Money to Burn: Crowdfunding Wildfire Recovery." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network. November 4, 2023. https://doi.org/10.2139/ssrn.4535190.

Costero Brokers. "The Pros and Cons of Parametric Insurance." Costero Brokers. March 4, 2024. https://costerobrokers.com/the-pros-and-cons-of-parametric-insurance/.

Coto, Danica. "Report: FEMA Fumbled in Puerto Rico after Storms Irma, Maria." AP News. October 1, 2020. https://apnews.com/general-news-8bfd2865519e79a2109bab7edb625436.

"Coverage Litigation Focus: The Discoverability of an Insurer's Loss Reserves." https://www.wiley.law/newsletter-216.

Dale, Lisa. "The True Cost of Wildfire in the Western U.S." Western Forestry Leadership Coalition. April 2010. https://www.blm.gov/or/districts/roseburg/plans/collab_forestry/files/TrueCostOfWilfire.pdf.

Descartes Underwriting SAS. Fire-In-a-Circle: A Data-Driven Solution for Wildfire Risk.

DLA Piper. "ESG Insurance Regulatory Guide: Risk Management under Solvency II." DLA Piper. 2025. www.dlapiper.com/en/insights/topics/esg-insurance-regulatory-guide/risk-management-solvency-ii.

"Domestic Minimum Capital and Surplus." https://content.naic.org/industry/ucaa/chart-domestic-statutory-capital-surplus.

Donoghue, Ellen, and Victoria Sturtevant. Forest Community Connections: Implications for Research, Management, and Governance. Routledge. 2010.

Donovan, G. H., et al. "Wildfire Risk and Housing Prices: A Case Study from Colorado Springs." Land Economics 83 (2): 217–33. 2007. https://doi.org/10.3368/le.83.2.217.

Dunsavage, Jeff. 2025. "Triple-I Blog | Parametric Insurance Gains Traction across U.S." Iii.org. February 12, 2025. https://insuranceindustryblog.iii.org/parametric-insurance-gains-traction-across-u-s/.

Ecology and Environment, Incorporated. "Confederated Tribes of Warm Springs Emergency Operations Plan Confederated Tribes of Warm Springs 2112 Wasco Street Warm Springs, Oregon 97761." Confederated Tribes of Warm Springs. United States Department Homeland Security. 2015. https://warmsprings-nsn.gov/wp-content/uploads/2015/12/CTWS-EOP_FULL-PLAN_JAN-2015.pdf.

Ellfeldt, Avery. "California Insurers Begin Giving Discounts for Fire-Proofed Homes." E&E News by POLITICO. September 19, 2024. https://www.eenews.net/articles/california-insurers-begin-giving-discounts-for-fire-proofed-homes/.

FAC Net. "Community Wildfire Defense Grants: A Round Three Application Primer." Fire Networks, November 1, 2024. https://firenetworks.org/community-wildfire-defense-grants-a-round-three-application-primer/.

Farmonaut. "Colorado Homeowners Face Insurance Crisis: Costs Soar, Coverage Gaps Widen in 2024." Farmonaut®. January 17, 2025. https://farmonaut.com/usa/colorado-homeowners-face-insurance-crisis-costs-soar-coverage-gaps-widen-in-2024/.

FEMA Community Emergency Response Team. "CERT Liability Guide." CERT Program. https://www.ready.gov/sites/default/files/2021-04/CERT_Liability_Guide%20v2.pdf.

Foard, Colin. "Wildfires: Burning through State Budgets - Increased Spending on Suppression Threatens Fiscal Stability and Impedes Cost-Saving Mitigation Efforts." Pew.org. November 30, 2022. https://www.pewtrusts.org/en/research-and-analysis/reports/2022/11/wildfires-burning-through-state-budgets.

Franco, Guillermo, and Sydney Hedberg. "Insuring Against Wildfire Risks." https://www.marshmclennan.com/insights/publications/2023/april/insuring-against-wildfire-risks.html.

Frontline. "Frontline Wildfire Defense System: Protect Your Home from Wildfires." https://www.frontlinewildfire.com/.

Gabbert, Bill. "FEMA Awards Grants to Reduce Risks from Wildfires on Communities - Wildfire Today." Wildfire Today. May 2021. https://wildfiretoday.com/2021/05/01/fema-awards-grants-to-reduce-risks-from-wildfires-on-communities/.

Galbraith, Rob. "The Power of Insurance Incentives to Promote Fire Adapted Communities." International Association of Wildland Fire. June 2017. https://www.iawfonline.org/article/the-power-of-insurance-incentives-to-promote-fire-adapted-communities/.

Gately, Heather. "Ecological Forest Thinning and Prescribed Burns Lower Insurance Premiums Significantly." The Nature Conservancy. December 20, 2024. https://www.nature.org/en-us/newsroom/ca-wildfire-resilience-insurance/.

Gu, Zheng, et al. "Modelling Economic Losses from Earthquakes Using Regression Forests: Application to Parametric Insurance." Economic Modelling 125. 106350. August 1, 2023. https://doi.org/10.1016/j.econmod.2023.106350.

Habegger, Becca. "California Insurance Regulation Reforms Take Important Step Forward." Abc10.com. KXTV. August 16, 2024. https://www.abc10.com/article/news/local/california-insurance-regulation-reforms-take-step-forward/103-7c4c19e8-7e89-4637-a07c-eb519c5ff7bb.

Hazra, Devika, and Patricia Gallagher. "Role of Insurance in Wildfire Risk Mitigation." Economic Modelling 108 (March): 105768. 2022. https://doi.org/10.1016/j.econmod.2022.105768.

Hering, Garrett. "Calif. Utilities Back $21B Wildfire Insurance Fund." SNL Energy Electric Utility Report; Charlottesville. August 2019. https://www.proquest.com/docview/2268854477/citation/DD60D59E8A724C17PQ/1?sourcetype=Wire%20Feeds.

Holmes, Thomas P., et al. "Efficient and Equitable Design of Wildfire Mitigation Programs." USDA Forest Service. https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=738560fd9ee3cffd94e80f6785ea245e913e1960.

"Home - Oregon FAIR Plan Association." Oregon FAIR Plan Association. August 2, 2024. https://orfairplan.com.

Hotz, Martin. "Comprehensive Guide to Parametric Insurance." Swiss Re Corporate Solutions. 2024. https://corporatesolutions.swissre.com/dam/jcr:0cd24f12-ebfb-425a-ab42-0187c241bf4a/parametric-insurance-guide.pdf.

"Independent Insurance Agency in Brentwood & Antioch CA | Jack Stone Insurance." https://jackstoneinsurance.com/.

Industrial Economics, Incorporated. "Impacts of Extreme Heat to California's People, Infrastructure, and Economy," California Department of Insurance. June 18, 2024.

"Insurance and Climate Risks: Policy Lessons from Three Bounding Scenarios." November 18, 2024. https://doi.org/10.1073/pnas.2317875121.

Insurance News | InsuranceNewsNet. "Citizens Insurance CEO Cerio: 'Reforms Brought the Insurance Market Back from the Brink,'" December 12, 2024. https://insurancenewsnet.com/oarticle/citizens-insurance-ceo-cerio-reforms-brought-the-insurance-market-back-from-the-brink.

Issler, Paulo, Richard H. Stanton, Carles Vergara-Alert, and Nancy E. Wallace. "Mortgage Markets with Climate-Change Risk: Evidence from Wildfires in California." University of California, Berkeley. 2019. https://doi.org/10.2139/ssrn.3511843.

Jakes Pamela J., et al."Community wildfire protection planning: is the Healthy Forests Restoration Act's vagueness genius?". International Journal of Wildland Fire 20, 350-363. 2011. https://doi.org/10.1071/WF10038.

Jesse Abrams, The emergence of network governance in U.S. National Forest Administration: Causal factors and propositions for future research, Forest Policy and Economics, Volume 106, 2019, 101977, ISSN 1389-9341, https://doi.org/10.1016/j.forpol.2019.101977. (https://www.sciencedirect.com/science/article/pii/S1389934119301376)

"Jumpstart Earthquake Insurance | Simple | Affordable." Jumpstartinsurance.com. 2019. https://www.jumpstartinsurance.com.

Kalogiannidis, Stavros, et al. "Assessing the Effect of Community Preparedness on Property Damage Costs during Wildfires: A Case Study of Greece." Fire 7, no. 8: 279. August 2024. https://doi.org/10.3390/fire7080279.

Karissa Courtney, et al. Application of Participatory Process Mapping to Evaluate Environmental Decision-Making and Implementation. Society & Natural Resources 37:12, pages 1627-1634. 2024.

Katherine A. Kiel and Victor A. Matheson. "The effect of natural disasters on housing prices: An examination of the Fourmile Canyon fire", Journal of Forest Economics: Vol. 33: No. 1, pp 1-7. 2018. http://dx.doi.org/10.1016/j.jfe.2018.09.002.

Kousky, Carolyn. Understanding Disaster Insurance. Island Press. October 13, 2022.

Kousky, Carolyn, and Brett Lingle. "Residential Flood Insurance in Puerto Rico." Wharton Risk Center. 2018. https://esg.wharton.upenn.edu/wp-content/uploads/2018/03/WRCib2018_Flood-Insurance-in-Puerto-Rico.pdf.

Kousky, Carolyn, and Helen Wiley. "Community-Driven and Research-Informed: Insurance Innovation to Meet Social Needs." 2023. https://www.edf.org/sites/default/files/documents/EDF-Insurance-Innovation-to-Meet-Social-Needs.pdf.

Kousky, Carolyn, et al. "Insurance and Climate Risks: Policy Lessons from Three Bounding Scenarios." Proceedings of the National Academy of Sciences 121, no. 48: e2317875121. November 26, 2024. https://doi.org/10.1073/pnas.2317875121.

Kousky, Carolyn, et al. "Harnessing Risk Transfer to Support Immediate Post-Disaster Needs of Low-Income and Moderate-Income Households - a Meso-Insurance Pilot in New York City Implementation Lessons for Community Organizations." 2023. https://www.edf.org/sites/default/files/2023-11/Harnessing%20Risk%20Transfer%20Report%20Final.pdf?_gl=1.

Labaree, Aaron. "The U.S. Government Is Wasting Billions on Ineffective Wildfire Policy." Slate Magazine. November 30, 2021. https://slate.com/technology/2021/11/fire-industrial-complex-wildfire-policy-suppression.html.

Lawrence, Wynne, et al. "Parametric Insurance." In The Global Insurance Market and Change. Informa Law from Routledge. 2023.

Legislative Services Division. "Assistance for Volunteer Firefighters: Workers' Compensation and Pensions." Montana State Fund. October 2020. https://archive.legmt.gov/content/Bills/Primers/Fire/Firefighters'work-comp-pensions.pdf.

Lehmann, R J. "California Does Not Have a Wildfire Insurance Crisis." Insurance Journal San Diego 14 (6). 2019. https://www.proquest.com/docview/2231449915/abstract/F57F767D71C04CEEPQ/1.

Li, Hong, and Jianxi Su. "Mitigating Wildfire Losses via Insurance-Linked Securities: Modeling and Risk Management Perspectives." Journal of Risk and Insurance 91, no. 2: 383–414. 2024. https://doi.org/10.1111/jori.12449.

Martínez, Nidia, et al. Wildfire Resilience Insurance: Quantifying the Risk Reduction of Ecological Forestry with Insurance Summary of Insights. 2022.

Mendocino County Fire Chiefs' Association. "Mendocino County Community Wildfire Protection Plan." https://www.co.mendocino.ca.us/bos/meetings/28658/28666/28667/28988/29050/ProtectionPlan29050.pdf.

"Mitigation Saves: At the WUI, Complying with the 2015 IWUIC Provides $4 Benefit for Each $1 Invested." National Institute of Building Sciences. 2019. https://www.nibs.org/files/pdfs/ms_v3_exceeds_iwuic.pdf.

"Mitigation Saves: Retrofitting Buildings in the WUI Saves $2 for Each $1 Invested." National Institute of Building Sciences. 2019. https://www.nibs.org/files/pdfs/ms_v3_retrofit_wui.pdf.

Mockrin, Miranda H., et al. "Does Wildfire Open a Policy Window? Local Government and Community Adaptation After Fire in the United States." Environmental Management 62, no. 2: 210–28. August 1, 2018. https://doi.org/10.1007/s00267-018-1030-9.

Mueller, J., et al. Do Repeated Wildfires Change Homebuyers' Demand for Homes in High-Risk Areas? A Hedonic Analysis of the Short and Long-Term Effects of Repeated Wildfires on House Prices in Southern California. J Real Estate Finance Econ 38, 155–172. 2009. https://doi.org/10.1007/s11146-007-9083-1.

Murnane, Richard J. "Catastrophe Risk Models for Wildfires in the Wildland–Urban Interface: What Insurers Need." Natural Hazards Review 7, no. 4: 150–56. November 1, 2006. https://doi.org/10.1061/(ASCE)1527-6988(2006)7:4(150).

National Association of Insurance Commissioners. State Insurance Regulation. 2021.

Nekton, Fawn. "Firewise Certification - United Policyholders." United Policyholders. May 9, 2024. https://uphelp.org/ask-an-expert/question/fire-wise-certification/.

Paperless Insurance. "New California Fair Plan Discounts Explained." Business Insurance Coverage. November 3, 2023. https://www.paperless-insurance.com/california-fair-plan-discounts-explained/.

"Parametric Solution for Wildfire Risk | Insurance Thought Leadership." https://www.insurancethoughtleadership.com/resilience-sustainability/parametric-solution-wildfire-risk.

Pennick McIver, C., et al. The Fiscal Burden of Wildfires: State Expenditures and Funding Mechanisms for Wildfire Suppression in the Western U.S. and Implications for Federal Policy. State and Local Government Review, 53(4), 337-351. 2021. https://doi.org/10.1177/0160323X211061353. (Original work published 2021.)

Powell, Lawrence, et al. "Rethinking Prop 103'S Approach to Insurance Regulation." International Center for Law & Economics. November 6, 2023. laweconcenter.org/resources/rethinking-prop-103s-approach-to-insurance-regulation/.

Prentzel, Olivia, et al. "Colorado Doesn't Have a Statewide Fire-Resistant Construction Requirement. In the Marshall Fire's Wake, Critics Say It's Time." The Colorado Sun. February 16, 2022. https://coloradosun.com/2022/02/16/colorado-marshall-fire-building-code/.

Property Insurance Coverage Law Blog. "Insurance & Federal Legislation for Property Owners." https://www.propertyinsurancecoveragelaw.com/.

Puerto Rico 51st. "Hurricane Costs." Equality for Puerto Rico through Statehood. October 5, 2022. https://www.pr51st.com/hurricane-costs/.

Renner, Cheryl R., et al. Mitigating Wildfire Risk in the Wildland Urban Interface: The Role of Regulations. In: Aguirre-Bravo, C.; Pellicane, Patrick J.; Burns, Denver P.; and Draggan, Sidney, Eds. 2006. Monitoring Science and Technology Symposium: Unifying Knowledge for Sustainability in the Western Hemisphere Proceedings RMRS-P-42CD. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. p. 715-722. 2006.

"Request for Comments and Information - Parametric Homeowner Stabilization Concept - Due October 2, 2023." Colorado Department of Regulatory Agencies. 2023. https://content.govdelivery.com/accounts/CODORA/bulletins/36fe183?.

"Reserve Requirements."https://www.federalreserve.gov/monetarypolicy/reservereq.htm.

"Resilience Fund - Community Foundation Sonoma County." 2024. Community Foundation Sonoma County. December 20, 2024. https://www.sonomacf.org/sonoma-county-resilience-fund/.

Rex Frazier, "California's Ban on Climate-Informed Models for Wildlife Insurance Premiums," Ecology Law Currents 48 (2021): 24-37.

Rodriguez-Baca, Georgina, et al. "Rating a Wildfire Mitigation Strategy with an Insurance Premium: A Boreal Forest Case Study." Forests 7, no. 5: 107. May 2016. https://doi.org/10.3390/f7050107.

Ruben Vives. "California Home Insurance Program Accused of Selling Policies with Subpar Fire Coverage." Los Angeles Times. July 26, 2024. https://www.latimes.com/california/story/2024-07-26/class-action-lawsuit-accuses-fair-plan-of-selling-home-policies-with-subpar-fire-coverage.

Sabo, Katie. "Puerto Rico's Innovative Use of Parametric Insurance." Insurance for Good. February 5, 2025. https://www.insuranceforgood.org/blog/puerto-ricos-innovative-use-of-parametric-insurance?ss_source=sscampaigns&ss_campaign_id=67ec34d2a1fcd46f2bde03ce&ss_email_id=67f53f888dc83822b91e63bb&ss_campaign_name=April+2025%3A+The+Fine+Print+from+Insurance+for+Good&ss_campaign_sent_date=2025-04-08T15%3A24%3A02Z.

"Safer from Wildfires." Www.insurance.ca.gov. California Department of Insurance. https://www.insurance.ca.gov/01-consumers/200-wrr/Safer-from-Wildfires.cfm.

Sastry, Parinitha, et al, "When Insurers Exit: Climate Losses, Fragile Insurers, and Mortgage Markets". December 23, 2023. Available at SSRN: https://ssrn.com/abstract=4674279 or http://dx.doi.org/10.2139/ssrn.4674279.

Schmidt, James. "County Wildfire Risk Ratings in Northern California: FAIR Plan Insurance Policies and Simulation Models vs. Red Flag Warnings and Diablo Winds." MPRA Paper. February 15, 2024. https://mpra.ub.uni-muenchen.de/120195/.

Schoennagel, Tania, et al. "Wildfire Experts' Paper Informs Effective Policy." Headwaters Economics. April 17, 2017, headwaterseconomics.org/wildfire/insights/.

Sczesny, Matt. "More Citizens Insurance Policy Holders Being Moved to New Providers, Face More Price Hikes." WPTV News Channel 5 West Palm. September 6, 2023. https://www.wptv.com/money/real-estate-news/more-citizens-insurance-policies-being-moved-to-new-providers-facing-more-price-hikes.

Semuels, Alana. "Home Losses from the LA Fires Hasten "an Uninsurable Future."" TIME. January 9, 2025. time.com/7205849/los-angeles-fires-insurance/.

Statewide Forest Resource Team. "New Mexico Forest Action Plan." USDA Forest Service. 2020. https://nmfap.org/wp-content/uploads/2020/04/NMFAP_Draft-for-Review-4.22.2020.pdf.

Steelman, Toddi A., and Ginger F. Kunkel. "Effective Community Responses to Wildfire Threats: Lessons From New Mexico." Society & Natural Resources 17, no. 8: 679–99. September 1, 2004. https://doi.org/10.1080/08941920490480697.

Stephenson, Regina. "All about State Insurance Commissioners" AgentSync. 3 May 2023. agentsync.io/blog/insurance-101/all-about-state-insurance-commissioners.

Stephenson, Regina. "Risk-Based Capital & Required Reserves For Insurance Carriers". September 20, 2021. https://agentsync.io/blog/insurance-101/solvency-series-the-role-of-risk-based-capital-and-required-reserves-for-insurance-carriers.

"StormPeace - McLain, Pierce and Associates, Inc." McLain, Pierce and Associates, Inc. October 7, 2020. https://insurefl.com/stormpeace/.

"Strengthen Alabama Homes." Www.strengthenalabamahomes.com. https://www.strengthenalabamahomes.com.

Sullivan, James. "Insuring for Climate Change: The Role of Parametric Insurance." Community. Lexis Nexis. 2025. https://www.lexisnexis.com/community/insights/legal/practical-guidance-journal/b/pa/posts/insuring-for-climate-change-the-role-of-parametric-insurance?srsltid=AfmBOooNBzA_SQNRZOqRjHD3QFrvX17vVfmOvQfdrKmQ18S4MGpetTeE.

Talberth, John, et al. "Averting and Insurance Decisions in the Wildland-Urban Interface: Implications of Survey and Experimental Data for Wildlife Risk Reduction Policy." Contemporary Economic Policy 24 (2): 203–23. 2006. https://doi.org/10.1093/cep/byj021.

Todoroff, Natalie. "California FAIR Plan Insurance: What It Is and How It Works." Bankrate. October 21, 2024. https://www.bankrate.com/insurance/homeowners-insurance/california-fair-plan/.

Trân Nguyen. “Homeowner’s Insurance: How the LA Wildfires Could Affect the Market.” AP News. January 10, 2025. apnews.com/article/california-wildfires-los-angeles-insurance-6fbb51bd3060743da0638baf4cf2845d.

USAA. “Insurance Discounts for USAA Members in 10 States.” Nfpa.org. 2023. https://www.nfpa.org/en/education-and-research/wildfire/firewise-usa/Become-a-Firewise-USA-site/Program-benefits/Insurance-discounts-for-USAA-members-in-seven-states.

V.C. Radeloff, et al. “Rapid growth of the US wildland-urban interface raises wildfire risk”. Proc. Natl. Acad. Sci. U.S.A. 115 (13) 3314-3319. 2018. https://doi.org/10.1073/pnas.1718850115.

Wang, Jiali. “Actuarial Study and Statistical Analysis of Extreme Wildfire Insurance Claims.” August 8, 2024. http://hdl.handle.net/1993/38373.

Webster, Jim. “Allstate Becomes First Insurance Company to Accept Wildfire Partners Certificate - Gold Hill, Colorado.” Gold Hill, Colorado. September 5, 2014. https://goldhilltown.com/allstate-becomes-first-insurance-company-to-accept-wildfire-partners-certificate/.

Weiss, Suzanne. “Parametric Insurance Can Offer Prompt Payout When Disaster Strikes.” National Conference of State Legislatures. January 15, 2025. www.ncsl.org/state-legislatures-news/details/parametric-insurance-can-offer-prompt-payout-when-disaster-strikes.

“What Is Parametric Insurance?”. Swiss Re. July 7, 2023. http://corporatesolutions.swissre.com/insights/knowledge/what_is_parametric_insurance.html.

Wildfire Partners. “Wildfire Partners Rebate Program.” Wildfire Partners.org. 2022. https://wildfirepartners.org/rebate/.

“Wildfire Partners Rebate Program – Wildfire Partners.” Wildfirepartners.org. 2022. https://wildfirepartners.org/rebate/.

“Wildfire Prepared Home - Homepage.” Wildfire Prepared Home - a Program of IBHS. October 15, 2024. https://wildfireprepared.org.

Willard, Jack. “Mercury Returns to Paradise California as Rebuilding Efforts Gain Momentum - Reinsurance News.” ReinsuranceNe.ws. January 9, 2025. https://www.reinsurancene.ws/mercury-returns-to-paradise-california-as-rebuilding-efforts-gain-momentum/.

Young, Michael. “Calculating the Insured Loss after Maria.” Moodys.com. 2017. https://www.moodys.com/web/en/us/insights/insurance/calculating-the-insured-loss-after-maria.html.

Appendix A: Glossary of Terms

Aggregation	The process of bundling risks or coverage needs across multiple individuals, households, or communities into a larger pool. This helps increase financial efficiency and improve access to reinsurance or meso-insurance products.
Building codes	Regulations setting construction standards for safety and resilience; in wildfire-prone areas, building codes often include wildfire-specific requirements.
Certification program	A formalized process in which properties or communities are assessed to meet wildfire risk reduction standards, often leading to official recognition that can support insurance access and discounts.
Community Development Reinsurance Institution	Financial institution that provides reinsurance to community-based catastrophe insurance, helping to offset costs in the event of catastrophic events.
Defensible space	An area around a structure where vegetation and other flammable materials have been removed to slow the spread of wildfire.
Depopulation	Process by which policyholders transition from a state-backed insurance plan, like a FAIR plan, to a private insurance model. This is usually due to insurance market conditions stabilizing.
Emergency fund	Fund within a community-based catastrophe insurance that prioritizes immediate relief actions, e.g., evacuation logistics and food supplies.
Home hardening	Modifications made to a home to make it more resistant to wildfire damage, e.g., fire-resistant roofing. Improvements to the structure should be complemented with property and landscaping management including a noncombustible zone (0-5' around the home) and defensible space.
Indemnity insurance	A traditional insurance model in which payouts are made based on the actual value of loss incurred. This requires post-event loss assessment and often site inspections. This model contrasts with parametric insurance.
Index insurance	Another term for parametric insurance. Provides payouts based on a predefined index or parameter. Payouts are triggered automatically when conditions exceed the agreed-upon threshold, regardless of actual losses.
Insurance pool	Funding model for all insurers in a state to contribute to the FAIR plan, spreading financial responsibility.
Insurer of last resort	Government-backed insurance provider that offers coverage when no private insurers are willing to take on the risk.
Meso-insurance	An insurance solution that targets groups—such as cooperatives, local governments, FAIR plans, or community-based catastrophe insurance schemes (community-based catastrophe insurance)—rather than individuals. It provides coverage for risks affecting entire communities.
Minimum reserve requirement	Regulatory threshold that all insurance companies operating in a state are required to maintain. It is usually calculated as a % of anticipated claims.
Moral hazard	A situation in which providing insurance encourages risky behavior because the financial consequences are lessened, e.g., building in wildfire-prone areas.
Pooling of funds	Collecting contributions from community members into a shared fund used for insurance payments and emergency response.
Premium discount	Incentive offered to policyholders who have taken risk reduction actions, e.g., home hardening, resulting in lower contribution requirements.
Public comment period	Mandated phase during regulatory reform processes where stakeholders are invited to provide feedback on proposed regulation before implementation.
Rate setting	Process by which insurance companies determine the premiums charged to policyholders. This is often subject to regulatory approval depending on the state and can include risk models.
Reinsurance	Insurance purchased by insurance companies to mitigate their own risk exposure.

Risk modeling	Quantitative tools used by insurers to assess potential losses from events like wildfires. Models may include historical data, geographic variables, and (in some states, like California) forward-looking climate projections.
Structural protections	Upgrades to a structure's physical components to make it less vulnerable to wildfire.
Trigger point	A specific, measurable threshold defined in the policy that activates the insurance payout (see Index insurance).
Wildland-urban interface (WUI)	Zone where natural areas and human development meet, often associated with higher wildfire risks due to the proximity of flammable vegetation and residential structures.

HEADWATERS ECONOMICS

Headwaters Economics is an independent, nonprofit research group whose mission is to improve community development and land management decisions.

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