

Climate Change Impact on Insurance
Affordability, Availability, and Accessibility

American Academy of Actuaries
Climate Change Joint Committee



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I. Introduction

The escalating frequency and severity of extreme weather events are fundamentally reshaping the landscape of risk, creating profound challenges for the affordability and availability of insurance. This growing volatility is placing the insurance industry's financial foundations under unprecedented strain and threatening its core function as a safety net for communities. The traditional models of risk assessment are being pushed to their limits, raising pressing questions about the future of insurance.

It must be acknowledged that the current crisis in insurance affordability is a complex, multi-variable issue. Beyond climate-driven events, the market is simultaneously grappling with broader economic inflation that has increased the costs of reconstruction, property replacement, and medical care; historical regulatory pressures that have kept rates below actuarially sound levels in certain jurisdictions; and escalating legal costs associated with litigation abuse. While these compounding factors are severely straining the insurance ecosystem, the specific purview of this paper is the systemic and accelerating impact of climate change.

This systemic challenge manifests itself through two critical and intertwined issues: a decline in insurance availability, where coverage is becoming scarce in high-risk areas, and a deepening crisis in affordability, where rising premiums are placing necessary protection beyond the financial reach of a growing number of households and businesses. These impacts extend across key insurance markets—including property, flood, health, and agricultural lines—and are best understood by considering the varied perspectives of insurers, reinsurers, state and federal regulators, and policyholders.

The insurance affordability and availability crisis has a disproportionate impact on vulnerable populations, including low-income households, communities of color, the elderly, and those in rural areas. These groups often have the least capacity to adapt to rising costs and are more likely to live in areas with higher exposure to climate risks. This dynamic creates a vicious feedback loop, where climate-driven shifts in insurance markets exacerbate existing social and economic inequities, widening the protection gap for those with the fewest resources to recover.

This raises a series of critical questions for the financial system and society as a whole: How is climate change fundamentally affecting risk exposure and insurance premiums? Who is being priced out of insurance markets, and what are the consequences? What are the implications of a widening protection gap for individual financial security, community resilience, and public systems? Answering these questions is essential to understanding one of the most urgent financial challenges of our time and charting a course toward collaborative, sustainable solutions.

II. Background: Climate Change and Risk in the United States

Climate Trends and Projections

Across the globe, and particularly in the United States, climate change is intensifying the frequency and severity of extreme weather events. Hurricanes are becoming stronger, wildfires more destructive, floods more frequent, and heatwaves and droughts more prolonged. These changing patterns are reshaping geographic risk zones: areas once considered safe are now exposed to hazards such as flooding or wildfire, while traditional high-risk regions face compounding threats. As climate conditions shift, both individuals and industries must reassess their understanding of environmental risk and long-term resilience.

Insurance Industry Basics

The property and casualty insurance industry operates on the principle of risk-based pricing, meaning that premiums are set according to the likelihood and potential cost of loss. When risks rise—whether from climate change or other factors—insurance costs follow. Insurers also rely on reinsurance, which is insurance for insurance companies, to help spread and manage large or unexpected losses. The system is governed through a combination of federal and state oversight. Under the McCarran-Ferguson Act¹, states hold primary authority over insurance regulation, with the National Association of Insurance Commissioners (NAIC) coordinating standards and best practices across states. This framework shapes how insurers assess, price, and respond to emerging climate-related risks.

¹ [McCarran-Ferguson Act](#); National Association of Insurance Commissioners (NAIC); April 1, 2026.

The NAIC has responded to the increased risk of loss posed by a volatile climate in several key ways, including:

- Establishing a dedicated [Climate & Resiliency Task Force](#)² to coordinate state insurance regulators' work on climate-related risk and resiliency. This Task Force brings together regulators from diverse jurisdictions (coastal/inland, urban/rural) to share information and develop a more unified regulatory approach.
- Adopting a formal “Insurer Climate Risk Disclosure Survey”³ to capture how insurers are assessing and responding to climate risks. Analysis of the survey data shows increasing engagement by insurers in climate risk management, though major gaps remain in the use of metrics/targets and scenario analysis.
- Adopting the “[National Climate Resilience Strategy for Insurance](#)” to guide state regulators in strengthening climate-resilient insurance markets.

Key focus areas of the strategy include closing “protection gaps” (areas where insurance is unavailable or unaffordable), developing a blueprint for flood insurance, collecting comprehensive data on climate exposures, advocating for pre-disaster mitigation (e.g., home-hardening for wildfire/flood), and incorporating climate-conditioned scenario analysis into oversight of insurers' solvency.

Regulators within states are tasked with balancing the increasing cost of insurance with the need to ensure its availability and affordability of insurance, particularly for those people whose homes represent the bulk of their financial assets.

III. Climate Change and Insurance Types: Affordability Impacts

The escalating frequency and severity of climate-driven disasters, from wildfires in California to hurricanes along the Gulf Coast, are creating an acute affordability and availability crisis in the U.S. insurance markets. As insurers face unprecedented losses, they are responding by sharply increasing premiums, restricting coverage—such as eliminating guaranteed replacement cost provisions or excluding vulnerable external structures—or withdrawing from high-risk markets altogether. This market contraction is particularly

² Established in 2020, the Climate & Resiliency Task Force was renamed to Natural Catastrophe Risk and Resilience (EX) Task Force in 2025.

³ Adopted in 2010, the survey has been amended over the years. More information about the survey is available at the NAIC's [Natural Catastrophe Risk and Resilience Resources Center](#).

pronounced in states such as California and Florida, where major national insurers have significantly restricted new policies or withdrawn entirely, citing growing catastrophe exposure and untenable reinsurance costs.

Property/casualty insurers and reinsurance companies face profound challenges in holding sufficient amount of capital to support the widening tail-risk of climate-related catastrophic losses.^{4,5} While life and health insurers currently face less immediate capital strain from physical climate events, they must increasingly account for the growing uncertainty of long-term mortality or morbidity trends, as well as asset-side volatility.⁶ As the projected magnitude of these risks may exceed current risk appetites, additional statutory capital, reinsurance capacity, and capital market transactions may help insurers to absorb climate-related losses. Capital market transactions, including catastrophe bonds and climate-related investment hedges, provide a relatively small but growing source of critical additional capacity to assume climate related risks.

For example, the lack of financial capacity to provide homeowners insurance coverage is forcing a growing number of homeowners into state-backed “insurers of last resort,” shifting and concentrating systemic risk onto these public entities. For example, California’s FAIR Plan saw its total exposure soar by 42% in just nine months to \$650 billion, while Florida’s Citizens Property Insurance Corporation swelled to hold over \$677 billion in risk at its peak.⁷ The result is the emergence of “insurance deserts,” creating a significant gap in insurance coverage, leaving communities with inadequate financial protection and threatening the sustainability of local economies.⁸ Financial instability present with the National Flood Insurance Program resulted in the Federal Emergency Management Agency’s (FEMA) implementation of [Risk Rating 2.0](#)⁹, which has sparked intense debate. While the new methodology moves toward actuarial soundness, the resulting premium hikes for millions of households have highlighted the fundamental conflict between the program’s solvency and its public policy goal of affordability. Opinions on the solution vary widely, ranging from fully turning the flood insurance program over to the private market to having the government absorb the debt and use taxpayer money to cover all catastrophic flood claims. However, a growing consensus among policy experts advocates for a pragmatic middle

4 “[sigma 01/2024: Natural catastrophes in 2023](#)”; Swiss Re; March 26, 2024.

5 “[Risk Landscape](#)”; Geneva Association; Nov. 21, 2023.

6 “[Global Insurance Market Report 2023](#)”; International Association of Insurance Supervisors; December 2023.

7 “[FAIR Plan jumps 42% as insurers retreat from California market](#)”; *Insurance Business*; July 21, 2025.

8 “[Insuring the Future of Our Communities](#)”; Accelerator for America; May 15, 2024.

9 [FEMA Fact Sheet – Understanding Risk Rating 2.0](#); Federal Emergency Management Agency/National Flood Insurance Program; July 2025.

ground: maintaining Risk Rating 2.0's actuarially sound pricing to accurately signal risk, while concurrently establishing targeted, means-tested subsidies to ensure coverage remains affordable for vulnerable households.

Simultaneously, climate change is placing new burdens on the health insurance system. More intense heatwaves are driving a surge in costly emergency room (ER) visits for heat-related illnesses, with one study estimating that these events result in nearly 235,000 ER visits and over \$1 billion in health care costs each summer in the U.S.¹⁰, while worsening air quality from events such as wildfires exacerbates chronic conditions like asthma.¹¹ The trauma of experiencing and recovering from disasters is also driving demand for mental health services, a significant and often overlooked cost.¹² These impacts disproportionately affect vulnerable populations, including the elderly in long-term care facilities. Furthermore, the disruption of health care provider networks following major disasters can interrupt essential care for those with chronic conditions, while the growing concentration of climate-related health risks raises the potential for future regional disparities in health insurance premiums.

Ultimately, climate change is exerting systemic pressure across diverse insurance sectors, exposing deep vulnerabilities in our financial safety nets. The agricultural industry, for example, faces growing uncertainty as droughts and floods threaten crop viability, straining the federally subsidized crop insurance program that underpins America's food supply. Stanford researchers estimated that climate change added \$27 billion to the cost of the federal crop insurance program between 1991 and 2017.¹³ This escalating volatility raises critical questions about the future viability of traditional agricultural insurance models under more extreme and unpredictable weather patterns, prompting a search for more adaptive solutions. Taken together, the challenges across property, flood, health, and agricultural insurance illustrate a fundamental trend: the traditional models of risk assessment and pricing are being pushed to their limits. This is creating a widening protection gap, with households often underinsured against climate risks, and underscores the urgent need for a collaborative response to maintain an accessible and sustainable insurance market.

10 "[Hotter Summers Could Be Making Us Sicker in Unexpected Ways](#)"; *The Washington Post*; July 30, 2025.

11 "[Scorching Summers: Heat Waves Trigger Surge in ER Visits](#)"; *Public Health Post*; July 12, 2024.

12 "[Extreme Heat Will Cost the U.S. \\$1 Billion in Health Care Costs — This Summer Alone](#)"; *Yale Climate Connections*; July 10, 2023.

13 "[Global Warming Increased U.S. Crop Insurance Losses by \\$27 Billion in 27 Years, Stanford Study Finds](#)"; Stanford Doerr School of Sustainability; Aug. 4, 2021.

IV. Populations Most Affected

Climate change is altering the risk profile of insurance across the globe, reflecting the increasing intensity and frequency of events such as floods, fires, and wind events. Insurance companies are refining modeling to reflect not only the increase in risk but also to assign risk to specific locations. To address this changing risk landscape, insurers may raise premiums, tighten coverage requirements, or even withdraw from markets. The results of this tightened and refined modeling will not be evenly distributed—some insureds will be more heavily impacted. The financial well-being of some populations is more susceptible to climate/weather events for several reasons.

Low-income households are among the populations most immediately identified as vulnerable to increased cost of insurance.¹⁴ Families with tight budgets may not be able to afford the increased costs of homeowners, renters, or flood insurance. For many low-income families, their home is a major asset so losing insurance protection makes them susceptible to financial ruin. These pricing pressures are not limited to property lines. Auto insurance affordability is also deteriorating. For instance, the increasing frequency of severe hailstorms has become a major source of auto claims, threatening the ability of low-income families to insure vehicles that are essential for their daily lives and economic stability.

Lower-income residents are more likely to rent or to live in manufactured housing. Renters face distinct challenges, as they rely on landlords to carry property insurance while bearing responsibility for insuring personal belongings. Rising costs for landlords may be passed on through higher rents, while renters themselves often forgo renters insurance when affordability is strained. Manufactured home residents—common in rural and lower-income communities—are at especially high risk from storms and wildfires. Because manufactured homes are more likely to be destroyed in climate-related events, premiums are disproportionately high, making coverage inaccessible for many.¹⁵

Older adults and disabled individuals, many of whom are part of the low-income population group, are often on fixed incomes that cannot absorb insurance rate increases that exceed their cost-of-living adjustments. Moreover, older adults frequently reside in aging homes where policies shift from full replacement cost to depreciated actual cash value, sharply increasing out-of-pocket repair costs following a disaster. At the same time, increasingly unaffordable insurance premiums in these areas deter prospective buyers and depress

¹⁴ “Designing Public Solutions for Disaster Insurance Market Failures”; *Journal of Insurance Regulation*; May 21, 2025.

¹⁵ “The Insurance Crisis Facing Manufactured Homeowners: Rising Premiums and Shrinking Options”; *ProgramBusiness*; Aug. 18, 2025.

property values. Consequently, these populations experience “climate lock-in.” They cannot afford costly repairs or improve the home’s climate resilience, and they are stripped of the home equity needed to relocate.^{16, 17, 18}

Coastal and rural populations are experiencing disproportionate exposure to climate activity ranging from coastal flooding to wildfires. This introduces a distinct geographic aspect to the affordability question as well. For rural populations, who generally have lower median incomes than urban households^{19, 20}, this challenge is compounded by several structural facets. First, they have severe post-climate-event housing shortages, particularly for affordable rentals. This forces individuals in these areas to face dual pressures of increased housing costs and rising insurance premiums simultaneously. Second, rural housing stock is often older and more vulnerable to climate events^{21, 22, 23}, while geographic isolation makes rescue and recovery more difficult and significantly more expensive, all of which can be reflected in insurance rates. Finally, rural areas typically have smaller tax bases, limiting their ability to fund community-based mitigation or affordability programs aimed at subsidizing or reducing insurance costs. Furthermore, these regions often have fewer insurance options available, and less competition is often associated with higher costs.^{24, 25, 26, 27}

Outmigration is a potential solution, but it requires financial resources beyond those readily available to low-income individuals. For example, renters must find a new place to live—often far away from their community—pay upfront costs such as first and last month’s rent and a security deposit, and secure transportation for their household belongings, a difficult task in the best circumstances and particularly challenging after a climate event.

Small businesses, including small farmers, are heavily reliant on insurance to manage risk. They also operate on thin margins; therefore, increased premiums, especially if they are trying to rebuild or replant, may force them out of business. These factors compound the financial loss by creating a loss of income at the same time as increased expenses, including increased insurance premiums.

16 “Consequences of Increasing Housing Cost Burdens in Older Households”; American Society on Aging; Jan. 21, 2026.

17 “Rising Repair Costs Threaten Seniors’ Housing as Local Groups Step In”; NBC 5 Dallas-Fort Worth; April 24, 2026.

18 “Rising Insurance Costs Shape Homeowner Decisions in 2026”; HousingWire; Jan. 6, 2026.

19 “Socio-economic impacts of climate change on rural United States”; Springer Science+Business Media; 2011.

20 “Rural America at a Glance, 2025 Edition”; U.S. Department of Agriculture, Economic Research Service (USDA ERS); Jan. 20, 2026.

21 Rural Development Climate Adaptation Plan; U.S. Department of Agriculture, Rural Development (USDA RD); July 2022.

22 “Extreme Heat Is Not Just an Urban Threat: The Risk to Rural Communities”; Headwaters Economics; May 13, 2025.

23 *Intersecting Vulnerabilities: Disability and Climate Disasters in Rural America*; Urban Institute, Disability Equity Policy Initiative; August 2024.

24 *The Gap: A Shortage of Affordable Homes*; National Low Income Housing Coalition; March 2023.

25 *Natural Hazards and Federally Assisted Housing*; National Low Income Housing Coalition and Public and Affordable Housing Research Corporation; November 2023.

26 “Fixing America’s Broken Disaster Recovery System”; On the Home Front—National Low Income Housing Coalition; Sept. 14, 2020.

27 *Climate Change and the Federal Rural Development Mission: A Strategic Framework for Rural America*; Harvard DASH; 2022.

Communities of color are disproportionately affected by unaffordable insurance due to a legacy of residential segregation and disinvestment. Many Black, Latino, and Indigenous communities are located in areas highly vulnerable to climate risks—such as floodplains, urban heat islands, and wildfire-prone zones. For example, analysis indicates that over \$107 billion worth of homes at high risk for flooding are located in historically segregated and underinvested neighborhoods.²⁸ Research from the Federal Reserve Bank of Richmond confirms that these neighborhoods face statistically higher exposure to extreme heat and flooding today directly because of a century of diminished environmental investment, including the lack of tree canopies and adequate drainage infrastructure.²⁹ Rising premiums in these locations exacerbate existing inequalities by lowering property values and limiting access to mortgage financing, which typically requires proof of insurance. This dynamic prevents the accumulation of intergenerational wealth and demonstrates how climate risk can magnify the financial impacts of historical inequities.

Middle income groups also face increased budget strains and are forced to make choices about discretionary spending to absorb increased premiums. They are more likely to own their homes, but they do not have the financial resources to self-insure. Since their homes represent a significant portion of their family wealth, prudent financial planning requires insurance. Not only are homeowners challenged with purchasing insurance, prospective buyers may be deterred by the cost of insurance coverage required by mortgage lenders.

V. The Policyholder Perspective on Insurance Affordability

Not surprisingly, policyholders are vocal and unhappy about increasing premiums for homeowners and other property insurance. While policyholders generally understand that rising home values and construction costs contribute to higher premiums, the magnitude of recent rate hikes—often outpacing inflation—has resulted in severe rate shock for many consumers.³⁰ Organizations that depend on a robust property market have been tracking and surveying the opinions of property owners and potential buyers. A recent survey by Realtor.com revealed that the rising cost of insurance has widespread implications for the home purchase process.³¹ The study moved beyond simple pricing questions to probe consumer pain points, specifically asking participants to identify how insurance availability altered their housing search and at what financial threshold they would consider dropping coverage entirely.

28 “A Racist Past, a Flooded Future: Formerly Redlined Areas Have \$107 Billion Worth of Homes Facing High Flood Risk—25% More Than Non-Redlined Areas”; Redfin/PR Newswire; March 15, 2021.

29 [Long-term Effects of Redlining on Climate Risk Exposure](#); Federal Reserve Bank of Richmond Working Paper No. 22-09R; Nov. 17, 2022 (revised September 2023).

30 “It’s Harder to Get Home Insurance. That’s Changing Communities Across the U.S.”; NPR; Nov. 12, 2025.

31 “Homeowners Insurance Unaffordability a Growing Concern Among Americans”; Realtor.com Economic Research; Sept. 11, 2025.

Prospective home buyers are thinking about the costs of insurance, and they are worried. Seventy-five percent of prospective buyers fear homeowner's insurance will become unaffordable.³²

People are including insurance as a part of their decision process. Thirty percent changed their search location due to insurance costs; another 30% expanded their search.³³

Existing policyholders that responded to the survey reported:

- Nearly half of the respondents (47%) have struggled to get or renew policies.
- For those who had insurance, 42% already saw premiums rise, and 88% expect them to increase further.
- And most concerning, 58% would consider forgoing insurance if costs are too high, with 76% of Gen Z respondents saying the same.
- Mortgage holders require insurance, including flood insurance in some locations, presenting substantial barriers for homeowners and prospective buyers.

Insurify reported another policyholder concern in the face of rising costs: Many consumers are unsure of what their policies cover, and many do not trust insurance companies to act in good faith, further eroding confidence in the insurance market.³⁴ Faced with these soaring costs, many homeowners are forced to make difficult trade-offs, such as voluntarily raising their deductibles to levels that may financially unsustainable just to keep monthly premiums manageable. This distrust is fueled by the growing prevalence of perceived “hidden” coverage restrictions.³⁵ Policyholders are increasingly finding that their policies have shifted from full replacement cost to depreciated value for roofs, or that coverage is being denied based on aerial imagery showing vegetation or trees near their homes. Furthermore, as national insurers withdraw, consumers are often left with no choice but to rely on smaller, regionally concentrated carriers. These insurers often face higher capital constraints and may not be able to offer the same affordability or financial stability as larger firms, leaving policyholders paying more for a potentially less secure safety net.

³² “75% of Buyers Are Concerned About Rising Homeowners Insurance Costs: Survey”; *Insurance Journal*; Sept. 12, 2025.

³³ “Homeowners Insurance Unaffordability a Growing Concern Among Americans”; Realtor.com Economic Research; Sept.11, 2025.

³⁴ Insurify; 2026.

³⁵ “Most Americans Don’t Trust Insurers Will Help Them When Something Goes Wrong, Study Finds”; Insurify; July 28, 2025.

A combination of rising costs for everything squeezing budgets, combined with the lack of trust and a generational shift in risk perception will mean that solutions to the problem of insurance affordability will need to take into account more than just premium relief.

VI. The Evolving Role of the State Insurance Regulator

State insurance regulators are at the forefront of the insurance affordability crisis driven by climate change, tasked with upholding their core duties under increasingly difficult conditions. As the primary supervisors of the insurance market, they have a fundamental duty to ensure rates are adequate for insurers' solvency, yet not excessive or unfairly discriminatory for consumers. As climate change drives up the frequency and severity of claims, reconciling these competing duties becomes nearly impossible, forcing regulators either to approve steep rate hikes, which can drive insurance premiums beyond the financial reach of many households, or to disapprove rates that insurers deem necessary to remain solvent. This regulatory dilemma becomes even more acute after an extreme climate event, when regulators must enforce consumer protections on claims and coverage continuation, placing regulators directly between financially strained insurers and distressed policyholders.

The most visible consequence of this tension is a breakdown in market stability and a widening protection gap for consumers. When private insurers withdraw from the market, state insurance regulators are left to manage the rapid and unsustainable growth of state-backed entities such as FAIR Plans and Florida's Citizens Property Insurance. This transforms the role of state insurance regulators, making them de facto managers of systemic climate risk and directly responsible for the solvency, rate-setting, and operational stability of these massive residual market plans. This shift from regulating a competitive market to directly administering these large-scale plans is a fundamentally reactive posture that consumes immense regulatory resources and underscores the urgent need for more proactive strategies to manage the underlying drivers of climate-driven risk.

To that end, the regulator's function is expanding beyond its traditional oversight of rates and market conduct to include proactive climate risk assessment, a change coordinated nationally through bodies such as the NAIC's Climate and Resiliency Task Force. The primary focus of this new role is to evaluate and manage insurer exposure to climate perils. To achieve this, regulators are increasingly requiring insurers to formally disclose their

climate-related financial risks, using standardized frameworks such as the NAIC's Climate Risk Disclosure Survey to create a clearer, system-wide view of vulnerabilities. In a critical evolution of risk oversight, regulators are also increasingly permitting the use of forward-looking catastrophe models, recognizing them as essential tools for ensuring both actuarially sound rates and adequate capitalization in a changing climate.

Ultimately, state insurance regulators are evolving into key influencers of their state's efforts to build climate resilience. They are uniquely positioned to influence affordability by approving innovative, risk-based premium discounts for homes retrofitted to resilient standards and by serving as a key source of public information on risk mitigation. This is demonstrated by a range of specific state-level actions, from California's use of temporary moratoriums on non-renewals in wildfire zones to Louisiana's grants for home-retrofitting.³⁶ Their influence is also extending to the local level, as they work with municipalities to identify best practices in building codes and permits. Further, state insurance regulators' roles now extend beyond state lines to working with FEMA on national flood insurance policy and influencing discussions on a potential federal catastrophic reinsurance program. This state-federal coordination is growing in importance, particularly as recent FEMA policy adjustments require states to bear a greater financial burden for disaster recovery, heightening the incentive for regulators to prioritize proactive, statewide resilience investments. Within their states, they must navigate these challenges while facing intense political pressure from legislators in the hardest-hit districts and grappling with contentious debates over whether the high costs associated with specific geographic regions should be spread across all policyholders.

To inform these difficult policy debates, state insurance departments can actively identify regional climate-related insurance losses and needs, and the lack of insurance coverage (GAP) at the regional and state levels. Individual insurance departments may look to the NAIC to develop model laws related to climate risk mitigation, which can then be tailored to state-specific practices. As regulators, state insurance departments are well-placed to review and encourage such risk mitigation provisions within policy language and rate filings, ensuring that the regulatory framework evolves in step with the changing risk landscape.

Beyond regulatory reviews, state insurance departments can play a vital advisory role by guiding state legislatures in securing the necessary financial backing for resilience. This includes advocating for funding and low-interest loans to cover climate-related losses

³⁶ ["California Implements One-Year Moratorium on Home Insurance Cancellations in Wildfire Zones"; C&R Magazine; Jan. 13, 2025.](#)

and reimburse residents for improvement costs, as well as raising risk capital to provide reinsurance coverage and parametric insurance coverage for state residents. A critical step in this legislative planning process is the preparation of an actuarial feasibility study, which identifies the potential benefits to residents and determines the necessary funding levels to make such state-sponsored climate programs viable.

VII. Impact of Climate Change on Reinsurance Markets

The frequency and severity of billion-dollar weather and climate disasters has surged in recent years, according to the National Oceanic and Atmospheric Administration (NOAA).³⁷ These events have driven sharp increases in property insurance premiums—homeowner’s insurance rose by an average of 24% between 2021 and 2024, with some states like Utah and Illinois seeing spikes of 50% or more.³⁸

These disasters have also reshaped the reinsurance market. A recent study, *Property Insurance and Disaster Risk: New Evidence from Mortgage Escrow Data*, found that rising property insurance premiums are largely driven by the pass-through of higher reinsurance costs.³⁹ In high-risk areas—prone to wildfires, hurricanes, or floods—reinsurers are increasingly limiting exposure or imposing stricter coverage conditions. This can lead to “insurance deserts,” where primary insurers exit markets due to unaffordable reinsurance.⁴⁰

In response, reinsurers—and direct insurers—are advancing the use of climate scenario modeling in their projections. These models incorporate the likelihood of extreme weather events, property vulnerability, societal adaptation (e.g., flood defenses, revised building codes, relocation), and long-term climate trends. Forward-looking models must account for multiple plausible climate futures, resulting in more refined—and often higher—pricing structures for reinsurance coverage.^{41, 42}

Ultimately, the influence of the reinsurance market extends beyond pricing. By enforcing stricter underwriting policies and risk mitigation requirements, reinsurers create a powerful incentive for adaptation. This pressure may prompt direct insurers—and their policyholders—to invest in property resilience and strengthen disaster preparedness and response strategies. This dynamic underscores the reinsurance market’s critical position as an active driver of risk reduction.

³⁷ [Billion-Dollar Weather and Climate Disasters](#); National Oceanic and Atmospheric Administration (NOAA), National Centers for Environmental Information (NCEI); 2025.

³⁸ [Overburdened: The Dramatic Increase in Homeowners Insurance](#); Consumer Federation of America; April 2025.

³⁹ [Property Insurance and Disaster Risk: New Evidence from Mortgage Escrow Data](#); National Bureau of Economic Research (NBER) Working Paper No. 32579; Benjamin J. Keys and Philip Mulder; June 2024 (revised November 2025).

⁴⁰ “[What are insurance deserts and what are their implications for business and people?](#)”; World Economic Forum; 2025.

⁴¹ “[The Impact of Climate Change on Reinsurance Rates and Coverage](#)”; Genesis Global RE Limited; Sept. 2, 2024.

⁴² “[From Models to Markets: Navigating Climate Risk in Reinsurance](#)”; Gallagher Re; 2024.

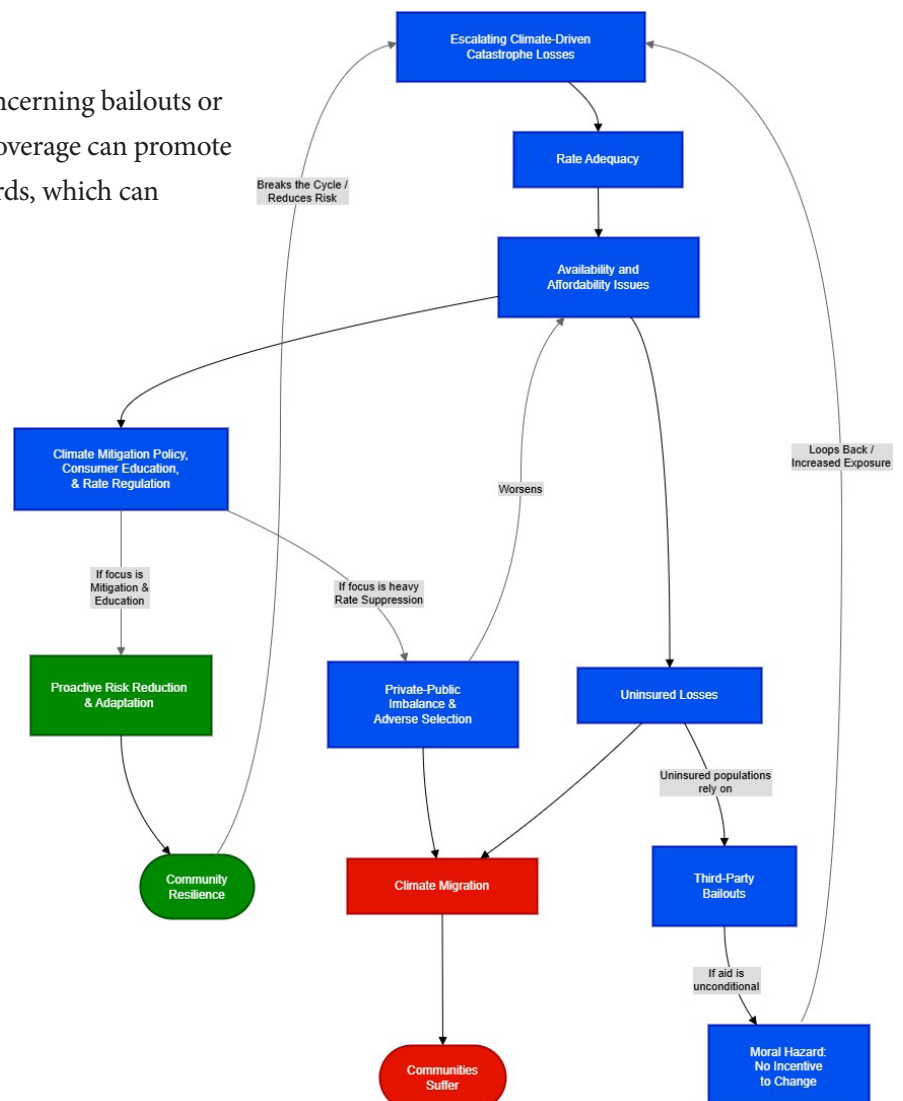
VIII. Systemic Challenges and Feedback Loops

The Climate Risk and Insurance Affordability Feedback Loop

The issue of insurance affordability creates a series of interacting feedback loops.

As insurers retreat from markets, uninsured losses rise. Communities and governments step in to help people rebuild, which creates a moral hazard—as long as the risk is born by someone else, there is no reason to change behaviors or locations in order to minimize risk. At the same time, if there are premium increases, people will forego or reduce insurance leading to uninsured losses. The state may step in to mitigate rate increases perhaps causing more retreat from the market. High costs can engender climate migration from those who have the wherewithal to move. Climate migration and high losses affect communities making them less attractive.

However, regulations concerning bailouts or conditions for offering coverage can promote prudent building standards, which can benefit the community.



IX. Current Mitigation Efforts

In response to the affordability crisis and the rapid and unsustainable growth of state-backed insurers discussed previously, a variety of mitigation efforts are underway. The primary response in high-risk states has been the expansion of “insurer of last resort” programs, such as the California FAIR Plan and Florida’s Citizens Property Insurance Corporation.⁴³ As detailed earlier, these entities have absorbed hundreds of thousands of policies from the retreating private market, but this is a high-risk strategy. These programs are not designed for this scale and often provide more limited coverage at a higher cost. Consequently, a core focus of state legislative activity is now on market reforms—from curbing litigation to modernizing rate approvals—to improve the underlying risk environment for private insurers and reverse the overreliance on state-backed plans.⁴⁴ Lawmakers are enacting these sweeping reforms aimed at managing residual market plans and luring back private insurers, with Florida’s recent efforts to “depopulate” its Citizens plan being a key national example.⁴⁵

While state actions address market structure, mitigation also involves a multi-layered approach to risk itself, ranging from reactive federal aid to proactive collaboration. After a disaster, FEMA provides crucial post-event support through its assistance programs for uninsured or underinsured losses.⁴⁶ To shift ahead of the risk, proactive efforts are key. These include federal incentives such as the National Flood Insurance Program (NFIP)’s Community Rating System (CRS) and industry-led initiatives such as the IBHS (The Insurance Institute for Business & Home Safety) FORTIFIED program, which use premium discounts to encourage homeowners and businesses to enhance the resilience of homes and commercial buildings against severe climate events. Evidence suggests these financial signals are beginning to drive consumer behaviors. In states with robust grant programs, such as Alabama, thousands of homeowners are retrofitting roofs to capture insurance discounts.⁴⁷

However, a “resilience gap” remains. While rising premiums motivate wealthier homeowners to harden their properties, lower-income households often lack the capital for these upfront investments, leaving them unable to access the very discounts that could make their insurance affordable.⁴⁸ Financially, this is underpinned by public-private partnerships that enhance stability, such as state-level reinsurance facilities like the Florida Hurricane Catastrophe Fund (FHCF) and private-sector instruments such as catastrophe bonds, which help manage catastrophic risk and maintain market capacity.⁴⁹

43 “[The Home Insurance Crisis Is a Threat to Financial Stability](#)”; Climate and Community Institute; Jordan Haedtler and Tracey Lewis; May 16, 2024.

44 [The Insurance Issue](#); First Street Foundation; Sept. 20, 2023.

45 [Depopulation](#); Citizens Property Insurance Corporation; 2026.

46 [Community Rating System](#); Federal Emergency Management Agency; 2026.

47 [Performance of IBHS FORTIFIED Home™ Construction in Hurricane Sally](#); Alabama Department of Insurance and Center for Risk and Insurance Research—University of Alabama; May 5, 2025.

48 [Insurance Institute for Business & Home Safety — Year in Review 2024](#); Insurance Institute for Business & Home Safety (IBHS); 2025.

49 [Quantifying Risk Load for Property Catastrophe Exposure: Applying Catastrophe Bond Data](#); Casualty Actuarial Society (CAS) Ratemaking and Product Management Seminar; Paul D. Anderson and Seth A. Goodchild; March 21, 2011.

X. Policy and Industry Notes: Charting a Path Toward a Sustainable and Affordable Market

Recent developments in insurance policy and climate resilience reflect a growing urgency to address affordability and access as climate change escalates risk. This was starkly illustrated by the flooding in North Carolina in spring 2025, where limited reimbursement from federal, state, or insurance sources forced many residents to rely on crowdfunding platforms to recover, highlighting critical gaps in the financial safety net.

Efforts to reform the NFIP and state FAIR plans need to focus on long-term viability, which includes comprehensive updates to flood mapping and community resilience incentives, particularly those related to construction.⁵⁰

Regarding the NFIP, reforms aim to make flood insurance more equitable and financially sustainable. The NFIP was created because private insurers withdrew from the flood insurance market, leaving homeowners dependent on federal disaster aid, and the future of flood insurance will likely be a balance between public and private roles. While private insurers are now re-entering the market thanks to better data and modeling tools, the NFIP serves broader social goals—like ensuring coverage for all floodplain residents and promoting flood mitigation through mapping and planning. Expanding private insurance could reduce federal financial exposure but may also limit access and consistency in consumer protections.

Regarding FAIR plans, California provides an illustrative example. Insurers face mounting pressure from wildfire claims, which may lead to withdrawals that hurt policyholders. To ensure these plans remain viable as insurers of last resort without pricing out vulnerable residents, reforms should pair risk-based pricing with publicly funded, means-tested subsidy programs.

If FAIR plans continue to be overstretched from private market withdrawals, a potential solution may be a federal reinsurance backstop.

⁵⁰ [Private Flood Insurance and the National Flood Insurance Program](#); Congressional Research Service (CRS) Report R45242, presented via Casualty Actuarial Society; Diane P. Horn and Baird Webel; updated Jan. 9, 2023.

The INSURE (*Incorporating National Support for Unprecedented Risks and Emergencies*) Act, with the latest version of the bill introduced on July 17, 2025, proposes a federal catastrophic reinsurance backstop to stabilize markets and reduce premiums in disaster-prone areas.⁵¹ This federal support could help insurers continue offering coverage in high-risk zones, ensuring homeowners are not left uninsured due to climate-driven market exits. Key policy aspects of the INSURE Act include:

- Creating a federal backstop within the Treasury to limit insurers' financial exposure to extreme natural disasters, with thresholds set by expert advisory input.
- Requiring participating insurers to offer coverage for all major natural hazards, including wildfires, hurricanes, floods, earthquakes, and severe storms.
- Requiring insurers to actively invest in loss prevention efforts and partner with policyholders to reduce risk through mitigation strategies.
- Strengthening insurance market monitoring by coordinating efforts between the Office of Financial Research, the Federal Insurance Office, and state regulators.

However, evaluating any federal reinsurance mechanism requires carefully weighing potential unintended consequences. Federal backstops can create moral hazard; if ultimate tail risk is absorbed by the government, it may weaken the economic signals that normally deter construction in high-risk zones, causing developers and municipalities to discount the severity of future climate impacts. Furthermore, shifting massive catastrophe losses to the federal level transfers enormous financial exposure to taxpayers and risks crowding out private reinsurance capital. Therefore, any federal intervention must be rigorously designed to balance the goals of market stabilization and affordability against the need for appropriate risk reflection and aggressive state-level mitigation to ensure that it does not merely mask the underlying climate risk.

At the industry level, insurers are being called upon to lead in climate adaptation through incentives for resilient construction and improved transparency in climate risk modeling. Insurers may consider the need to move beyond compliance toward strategic climate planning. Climate change introduces significant complexity into catastrophe modeling. Traditional models often struggle to account for shifting hazard patterns, increased

⁵¹ [NEWS: Sen. Schiff Introduces Bill to Stabilize Insurance Market, Protect Homeowners from Increased Costs of Natural Disasters](#); Office of Senator Adam Schiff; July 17, 2025.

frequency and severity of events, and long-term climate trends. Policymakers may consider continuing to call for investment in the development and validation of catastrophe and climate risk models. To build trust and regulatory confidence, this technical advancement needs to be accompanied by standardized disclosures, such as the NAIC's Climate Risk Disclosure Survey. As climate impacts grow more severe, these modeling improvements—alongside public-private partnerships and mitigation incentives—will be essential to maintaining a stable, affordable, and resilient insurance marketplace.

XI. Conclusion

The insurance affordability crisis is not merely a pricing cycle; it is a fundamental shift in the landscape of risk. As noted throughout this paper, climate change is driving a relentless increase in the frequency and severity of claims—both at the regional level and for individual properties—while catastrophic events are occurring with a regularity that defies historical precedent. This volatility has forced a severe market contraction, where increasingly restrictive coverage terms and complete carrier withdrawals are becoming commonplace. This creates a highly uncertain environment where the standard policy may no longer provide comprehensive protection, raising the critical question of whether such restricted coverage can provide meaningful financial protection for policyholders.

Without significant intervention, this erosion of coverage will deepen societal inequity and reduce community resilience. The crisis imposes severe financial constraints on a wide range of vulnerable populations, including low-income families and the elderly. One clear example of this is the challenge faced by retirees who, facing soaring premiums, may find themselves unable to sell their homes or afford to downsize, effectively locking them into high-risk financial situations. This dynamic reinforces the destabilizing feedback loops described in this paper: as insurance becomes less accessible, communities lose their primary mechanism for recovery, accelerating economic decline and widening the gap between those who can afford protection and those left exposed.

Addressing a challenge of this magnitude requires looking beyond traditional market mechanisms toward interdisciplinary, collaborative solutions involving insurers, regulators, policymakers, and communities. Potential paths forward include:

- **Federal and International Models:** The government should evaluate federal approaches to lowering premiums through catastrophic protection layers. International examples offer valuable case studies, such as **Australia's** reinsurance pool for cyclones, where government intervention helps stabilize costs and ensure availability in high-risk zones.
- **Alternative Risk Transfer:** To close the protection gap where traditional indemnity insurance fails, the industry could expand the use of **microinsurance and parametric insurance**. These products, which pay out based on predefined triggers replacing the lengthy claim reimbursement process present under traditional insurance program, offer a pathway to provide essential, immediate liquidity to underserved populations.

For the actuarial profession, this environment demands a rigorous and expanded research agenda. Potential areas of study are:

- **Refining Catastrophe Models:** Better integrating forward-looking climate science to account for non-stationarity and the compounding nature of frequent events.
- **Quantifying Mitigation:** Establishing the direct financial benefits of resilience measures to support risk-based discounts.
- **Stress-Testing Policy Solutions:** Conducting financial analyses of proposed federal backstops and subsidy programs.
- **Product Innovation:** Designing sustainable coverage models that restore the comprehensive nature of insurance while maintaining solvency.

By applying their unique expertise in risk assessment and financial modeling, actuaries can play a vital role in navigating these complexities, helping to build a future where insurance remains a viable, accessible, and comprehensive safety net for all.



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