

Shared Fates

A Housing Resilience Policy Vision
for the Home Insurance Crisis



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Climate and Community Institute

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Glossary

Admitted carrier: An insurance company licensed and regulated by a state's insurance regulator.

Assessment: 1) A charge applied by financial regulators to regulated entities. For example, the assessment many states require of insurance companies that fund insurer-of-last-resort programs, or 2) A charge applied to insurance policyholders on top of regular policy premiums in the case of catastrophic events in order to ensure sufficient funds to pay policyholder claims.

Catastrophe bonds ("CAT bonds"): Debt instruments issued by insurance companies to raise money in the event of a catastrophic event. Institutional shareholders who purchase CAT bonds earn a financial return as long as the specific catastrophic event doesn't occur. If it does, the purchasers must make a predetermined payout to the issuer.

Catastrophe models ("CAT models"): Computer programs that estimate possible losses due to a catastrophic event like a hurricane. The practice of using these models is called catastrophe modeling. CAT models are used to predict losses from future risks but are not foolproof, in part because scientists are still learning the extent to which climate change is impacting the occurrence and frequency of disasters.

Disorderly transition: A term used by financial analysts to describe scenarios in which the transition to a low-carbon economy is chaotic and unpredictable.

Fair Access to Insurance Requirements (FAIR) Plans: State-level programs that provide property insurance to people who cannot obtain coverage through the private market. Also referred to as "insurers of last resort" or "residual markets." For more details, see Appendix 1.

Insurance-linked securities (ILS): Financial assets linked to insurance risks that are pooled and repackaged into interest-bearing

securities, which can then be bought and sold on financial markets. CAT bonds are one, but not the only, type of ILS. For more, see Appendix 1.

Home hardening: Surface-level measures that modify a building to reduce its vulnerability to hazards such as wildfires, hurricanes, or earthquakes (i.e., fire-resistant roof installation, reinforcing windows and doors, etc.). While retrofitting is often used interchangeably, it generally entails more structural improvements, such as strengthening a foundation or bracing walls.

Premium burden: The percent of a households' pre-tax income spent on insurance premiums, calculated as (average premium rate of a zip code)/(median household income of a zip code).

Price signaling: See "risk-based pricing," below.

Reinsurance: Insurance for insurers (including, but not limited to, ILS).

Risk-based pricing: A model for addressing risk based on the assumption that high prices adequately signal how an individual should respond to risk, e.g., by avoiding the risk or taking steps to mitigate it. Also referred to as "price-signaling." For more, see the conclusion of this report.

Surplus lines: Specialized insurance policies designed to cover high or unique risks that standard, admitted insurers may avoid. Surplus lines are not subject to the same regulatory oversight as regular insurance policies.

Underwriting Loss: The difference between premium income an insurer collects and the claims payouts they make. Often referred to in press and industry publications as a proxy for overall profit or loss, though insurance industry finances are more complicated than that (for more, see Appendix 1).

Executive Summary

Every year, more people across the United States brace for climate disasters — all while home insurance protections shrink and become increasingly unaffordable, or even totally unavailable, for households. These protection gaps can cause personal tragedies for homeowners and may also lead to wider financial crises if mortgage defaults grow and spread. Meanwhile, renters and other households confront future uncertainties with even more limited protections, and public coffers face strains as growing insurance gaps increase expectations for post-facto disaster response programs.

The crisis in insurance markets has rightly garnered increasing attention from the media and policymakers, but that attention has failed to produce analysis and solutions that address the core issue: how to ensure safe, accessible, and affordable housing in a time of growing climate change–driven disasters. **This report aims to fill this analysis and solutions gap with new research into the national and state-level contours of the insurance crisis, in-depth analysis of prevailing industry narratives, and a comprehensive policy proposal that aims to provide protections for homeowners and renters, meet the moment of a rapidly changing climate, and contribute to climate solutions rather than to the climate crisis.**

While households across the country increasingly face growing insurance gaps that strain their budgets, our analysis finds that not all households bear the same burden. We find that:

1. This is a collective problem: Many parts of the country, like the Southeast and upper Plains, face risk of significant loss from multiple hazards, climate-related and beyond. This finding is contrary to common narratives of most places just facing a single risk, such as Florida primarily facing risks from hurricanes or California being at risk mostly from wildfires.

2. We are in this together, but not equally: Some populations are disproportionately exposed to multiple high-risk categories; for example, 10 percent of all American Indian and Alaskan Native households live in neighborhoods facing four or more unique, substantial climate risks. And an oft-overlooked group in insurance conversations are renters, who also face increased housing cost burdens as rising insurance rates for multifamily housing are passed on to renters.

3. This insurance crisis did not appear out of nowhere: Today's insurance crisis is a manifestation of the broader and continually evolving housing crisis, which has unequal impacts on different groups along the lines of race and class, citizenship status, and more.

4. Insurance price increases hinder other policy goals: Rising insurance costs are stymying efforts to build more and greener affordable housing, further exacerbating housing affordability and availability issues.

This report then takes a deep dive into how the insurance crisis is playing out in three states: Florida, California, and Minnesota. **While the exact nature of climate risks, housing affordability and availability, and regulatory environment differs in each state, our analysis reveals several important lessons on the nature of climate risk, housing affordability and availability, risk reduction measures, and insurance regulation:**

1. Existing state policies to “save” private insurance are not addressing the root causes and on-the-ground experiences of household exposure to disaster risk.
2. Underlying housing inequities are holding back important physical risk reduction solutions.
3. States’ physical risk reduction measures are not being deployed at the scale and pace required to reduce growing risks.
4. There is little evidence that insurer

discounts for retrofits, even when mandated, meaningfully changing community-level risk profiles or reducing insurance cost burdens at scale.

Our final piece of analysis examines prevailing narratives from the insurance industry (and some policymakers) about how insurance is working and/or should work. **We find that the overarching narratives and beliefs undergirding the current home insurance system in the US lack effectiveness and equity. Our analysis demonstrates:**

- 1. Insurers prioritize profit over protection:** Instead of prioritizing protection of people's homes, private insurers engage in speculative maneuvers to secure profit, often facilitated by regulators. That profit seeking has extended even to public pension fund investments: we found that over two dozen public pension funds have invested nearly \$1.3B in risky insurance-linked financial instruments.
- 2. Risk-based pricing is not the answer:** The idea that setting premium prices based on risk level can resolve insurance crises does not stand up to scrutiny — this repricing does not effectively reduce risk and causes unacceptable inequities.
- 3. Risk transfer does not reduce risk:** The current approach to home insurance prioritizes risk transfer over risk reduction, doing nothing to solve the underlying problem of growing climate-related risk.
- 4. Public insurance could work if well designed:** Though there are many valid reasons to critique existing public insurance programs, these programs do not work well because of poor design, not because the notion of public insurance is flawed.

Our findings show that the home insurance system in the US is fatally flawed. Currently, the vast majority of disaster risk reduction and response for households is left up to insurance markets. As the evidence in this report makes clear, private insurers are not doing — and perhaps cannot do — an adequate job. The cost of the

damage from uninsured losses is then either borne by households, which can lead to individual financial ruin and contribute to financial system risk, or is socialized onto public disaster response programs that are reactive and therefore not rationally budgeted.

Instead, we must recognize our shared fate — especially as climate change makes disasters more frequent and severe — and ensure the existence of disaster insurance that fairly spreads the risk of non-preventable disasters and provides access to equitable post-disaster recovery that increases resilience. In order for this to be possible, we need comprehensive risk reduction programs that prevent and/or lessen damage before those disasters strike — the more we reduce risk, the less we need to rely on the safety net of insurance.

To overcome these mounting challenges, we propose a new policy vision for home insurance in the US: state Housing Resilience Agencies.

State Housing Resilience Agencies (HRAs) would have two primary functions:

- 1. To provide public disaster insurance that offers fair and equitable protection; and**
- 2. To coordinate and oversee comprehensive disaster risk reduction activities in the state.**

Establishing state-level public disaster insurance coupled with a comprehensive risk reduction program under the banner of an HRA would create a more direct relationship between risk reduction and insurance provision. It would also address the multiple market failures highlighted in this report, such as the lack of coverage options for multifamily housing providers, which exacerbates current housing supply issues and hinders new housing development. And it would more adequately pool and spread risks in recognition of the fact that we are all implicated in disaster risk — especially when it comes to climate-related risk. State HRAs could also collaborate with one another to deepen their effectiveness and/or provide

some insurance protection outside the state.

As part of its activities, an HRA would:

- Host a public catastrophe risk commission and a climate risk advisory council to inform the agency's work in a transparent, democratic manner;
- Be overseen by a democratic governing board with members from policy, civil society, and scientific communities; and
- Receive financing from diverse sources, determined by an evaluation of the entities most responsible for the current crisis and those that would most benefit from stability in home insurance.

At the national level, the federal government could support state HRAs with financial assistance, or even adopt a national-level HRA.

In order to confront this growing housing safety and affordability crisis, we need to understand our fates as shared. We must reimagine our disaster risk finance system as one that reduces risk and provides protection equitably and fairly, for all households.

Introduction:

Home Insurance Markets in Crisis

Home insurance markets in the United States are experiencing a mounting crisis. Worsening climate disasters like more intense hurricanes, wildfires, and hailstorms are making multi-billion-dollar payouts an annual occurrence across a broad range of US states.¹ Insurance protections are shrinking and becoming increasingly unaffordable, while private insurers are raising rates or pulling out of some markets entirely. Homeowners left behind face dilemmas, such as whether to go uninsured or underinsured, as well as potential mortgage defaults, which are personal tragedies that could spiral into broader property market collapses, with implications for the entire financial system.² Meanwhile, renters and other households confront future uncertainties with even more limited protections. And public coffers become strained when yawning insurance gaps mean state and federal disaster response programs are expected to foot the bill after the fact.

The crisis in insurance markets has rightly garnered increasing attention from the media and policymakers,³ but that attention has failed to produce analysis and solutions that address the core issue: ensuring safe, accessible, and affordable housing in a time of growing climate change-driven disasters. Instead, policy solutions tend to focus on how to rescue insurance companies from near collapse, often by allowing premium hikes by private insurers. While this may reduce financial risk for insurers, it increases household financial risk and does not address the underlying disaster risk. (See Appendix 1 for an in-depth review of the fundamentals of how insurance as a model works, how private insurance markets are financed, and how insurance is regulated in the US.)

Prevailing narratives also miss important dimensions of how insurance cost burdens and disaster types can compound for US households — how little control individual households have over disaster risk exposure, and how incentive structures for insurers lead to the prioritization of risk transfer over risk reduction.

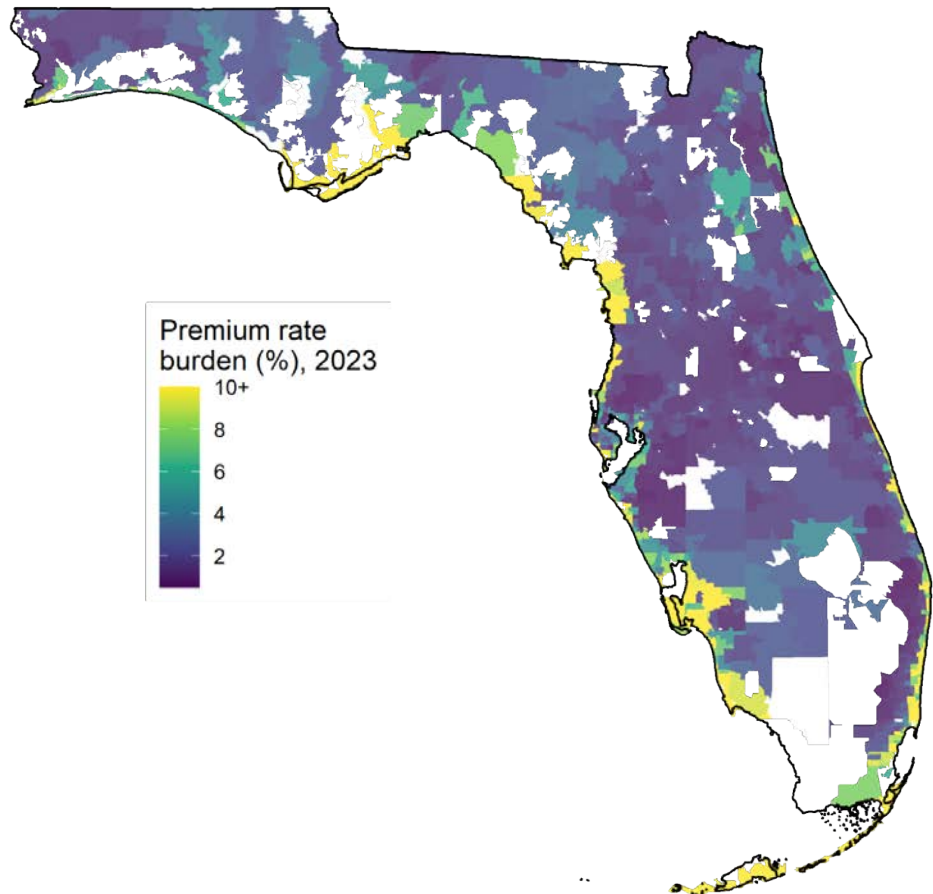
Astronomical insurance costs — or even the total unavailability of insurance — exacerbate vulnerabilities for households, especially for lower-income individuals and families around the country living in areas of high disaster risk. As Figure 1 demonstrates, in some parts of the country (Florida, in this case), home-owning households may be paying over 10 percent of their pre-tax income just on the types of home insurance that cover major disasters like flooding and hurricanes — and this doesn't even include standard homeowner policy coverage for things like theft and kitchen fires. And since insurance costs are also going up for landlords, we can assume renters are also experiencing increased housing cost burdens as landlords pass on costs via rental payment markups.

¹ Council of Economic Advisors, "The Rising Costs of Extreme Weather Events," The White House (blog), September 1, 2022, <https://www.whitehouse.gov/cea/written-materials/2022/09/01/the-rising-costs-of-extreme-weather-events/>.

² Amine Ouazad and Matthew E. Kahn, "Mortgage Finance and Climate Change: Securitization Dynamics in the Aftermath of Natural Disasters," *The Review of Financial Studies* 35, no. 8 (August 1, 2022): 3617-65, <https://doi.org/10.1093/rfs/hhab124>.

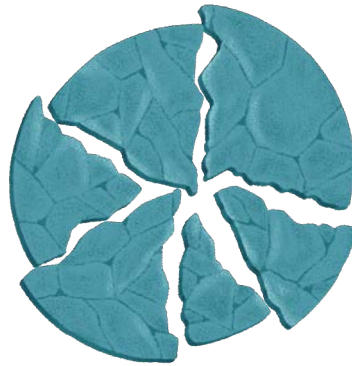
³ This report focuses on the so-called "natural disasters" most directly relevant to contemporary insurance debates. However, we acknowledge that a more comprehensive accounting of household disaster risks would also include other human-made hazards like industrial disasters, or the chronic exacerbated risk exposures experienced by households in environmental justice communities.

Figure 1. Annual insurer-of-last-resort wind and flood insurance premium rates as a share of median annual household income. *Note: This map shows the aggregate annual premium for Citizens, Florida’s residual market insurance provider (wind) and risk-adjusted National Flood Insurance (flood)⁴ divided by the median annual household income by county. For more information on residual/last resort insurance and the NFIP, see Appendix 1. Together, a wind insurance policy from Florida’s public insurer and a flood insurance policy from the National Flood Insurance Program (NFIP) costs the average household over 10 percent of its annual income across much of the Florida coast.*



Similarly, prominent narratives can overemphasize high-profile hazards currently covered by private insurance. For example, Florida communities are portrayed as exclusively negotiating intensified hurricane risks while California communities are seen as only needing protection against worsened wildfire risk. **In reality, households across the US are exposed to a diverse array of hazard types and potentially compounding risks.** Some of these hazards, such as floods, are worsening because of climate change; others, like earthquakes, are not tied to climate change but significantly shape households’ overall vulnerability to disaster risks.

⁴ Based on FEMA’s Risk Rating 2.0 system, which FEMA says was fully implemented across all policies as of April 1, 2023.



Of course, while we are all impacted by disasters, the responsibility for these risks is not equally distributed — particularly those related to the increased frequency and severity of many disasters due to climate change; those producing, selling, and investing in fossil fuels bear a significantly greater share of the blame for these kinds of risks.⁵

While current understandings of home insurance tend to see it as a contract between an individual and the insurance company offering coverage, insurance is in fact collective: It brings together many people across many different risks and geographies with the intention of reducing the burden of a particular risk for everyone. The fundamental principles of insurance are the pooling and spreading of risks across a broader population so that financial harm from disaster is more easily absorbed by a greater number of people sharing the risk. **The pooling and spreading functions of insurance create “communities of fate,” which recognize that we are all implicated in disaster risk and especially climate-related risk.**⁶

Private insurers, however, are increasingly limiting, or even eliminating, coverage of the hazards that cause major disasters. **So while the community of fate in the US experiences increasing risk exposure due to climate change, insurance companies increasingly seek ways to safeguard their profits and shift responsibility away from themselves when disasters strike our communities.** And many regulators facilitate this pursuit of risk transfer for profit by insurers.

The industry and its supporters justify their strategies using the idea of “risk-based pricing,” which they say effectively drives individual risk reduction behavior. That argument has many flaws, not the least of which is that the ability of individual households to reduce disaster risk exposure is also not equally distributed — wealthier households have greater ability than poorer ones to pay for building upgrades or to relocate, while non-white households contend with legacies of racial discrimination in housing and insurance that historically restricted their choices, the inherited impacts of which still constrain their housing options today.

The primary pitfall of a reliance on the risk-based pricing narrative, though, is that it leads us to cede disaster risk management to the for-profit insurance industry instead of developing policy solutions that prioritize disaster risk reduction for everyone. **Insurance is one part of a risk management puzzle, but relying on it as the only part will deepen the current crisis, which is both a housing crisis and a climate crisis.**

⁵ IPCC Working Group III, Climate Change 2022: Mitigation of Climate Change (Intergovernmental Panel on Climate Change, April 4, 2022), <https://www.ipcc.ch/report/ar6/wg3/>.

⁶ Rebecca Elliott, “What Is Insurance?” Climate and Community Institute (blog), April 25, 2024, <https://www.climateandcommunity.org/what-is-insurance>.

In the search for policy solutions that will move us out of, rather than deepen, the crisis, this report begins with an analysis of national home insurance trends and how those interact with different types of disaster risk and the country's long-standing housing crisis. We then zoom in on three states for a more in-depth view of the interplay between disaster risk, housing affordability and access, insurance regulation, and risk mitigation policies. We conclude our analysis with a thorough examination of the prevailing narratives and policy approaches to home insurance to identify how the current approach to disaster insurance is fatally flawed. Building on that analysis, **we envision a set of policies that could — in contrast to what we have today — provide equitable protections for homeowners and renters, meet the moment of a rapidly changing climate, and contribute to climate solutions rather than to the climate crisis.**

01 National Contours of the Home Insurance Crisis

In this section we examine national-level trends in the US home insurance crisis.

We find that:

- Today's insurance crisis is a manifestation of the broader and continually evolving housing crisis and the deepening financialization of housing, which has unequal impacts on different groups along the lines of race and class, citizenship status, and more;
- Rising insurance rates for multifamily housing are passed on to renters and stymie efforts to build more affordable housing;
- Evidence does not adequately support the industry narrative that premium prices correlate with disaster risk;
- Many parts of the country are at risk of significant loss from multiple hazards, climate-related and beyond, contrary to common narratives of most places facing a single type of risk; and
- Though most of the US faces some type of high disaster risk, certain populations face many at once — though we're all in this together, we are not in it equally.

The insurance crisis is a housing crisis is a racial justice crisis is a looming financial crisis

There was a housing crisis long before there was an insurance crisis.

The way in which people access housing in the US is shaped by expansive financial systems — powered by private lenders, investors, and insurers — working to preserve and expand profit opportunities by transferring financial risk away from themselves and toward users of the system (that is, people who need to purchase access to live in housing). Further, from the conventional redlining practices of the 1930s to the 2008 subprime lending crisis, these systems of risk transfer — including the process itself of estimating “risk” and “value” in housing markets⁷ — have always been thoroughly racialized, often explicitly designed to produce and protect white property value above all else.⁸ Patterns of housing investment and disinvestment “filter” different groups to the front lines of these punitive systems — largely along the lines of race and class, but also other categorical identifications such as citizenship status, gender identity, and more.

⁷ Desiree Fields and Elora Lee Raymond, “Racialized Geographies of Housing Financialization,” *Progress in Human Geography* 45, no. 6 (December 1, 2021): 1625-45, <https://doi.org/10.1177/030913252111009299>.

⁸ Nick Graetz and Mike Esposito, “Lessons from the Study of Redlining and Health for Green Housing Investment,” *Climate and Community Institute*, May 2, 2023, <https://www.climateandcommunity.org/redlining-and-environmental-risk>.

In other words, the US housing system is typically more expensive to access and results in lower quality shelter if you belong to one or more of these historically marginalized groups. As a result, more than a third of American housing is now rented — over 45 million units in 2022⁹ — as ladders to homeownership and the forms of livelihood security it brings are blocked for many Americans.

The profit-seeking nature of housing markets across the country is exacerbating this housing affordability crisis. For example, for-profit institutional landlords have capitalized on the US's growing population of renters since the subprime crisis by grabbing up more and more of US housing stock — in the process further pricing out many households. Across the country, private equity firms like Blackstone and publicly traded real estate investment trusts (R-REITs) backed by institutional capital such as pension funds now own nearly 1 million homes, ranging from multifamily apartments and single-family homes to student accommodation and mobile homes. These acquisitions often result in the loss of affordable units, which are particularly vulnerable to being redeveloped and converted into higher-rent properties.

Private disaster insurance can drive new racialized housing risks.

In the case of insurance, the management of pervasive and deepening disaster risk — including climate-related risk — to housing markets, and mortgaged property in particular, now largely falls to private insurance markets (typically with public backstops), which could reproduce these familiar racialized logics.¹⁰ Researchers have demonstrated how property insurers take race into account when underwriting risks, with these practices continuing throughout the second half of the 20th century.¹¹ Scholars argue that these racial profiling practices directly and indirectly lowered the affordability and quality of insurance protections available to minority communities in the US.

“Heirs property” provides an example of how these dynamics play out. This type of fractured ownership, in which property is inherited (sometimes over several generations) among several heirs without a formal probate process, makes obtaining property insurance nearly impossible — even if heirs could afford it. Black and Indigenous households are most impacted, since racist policies like Jim Crow laws and the General Allotment Act of 1887 tied land ownership to political agency and codified the fracturing of collectively held property.¹² Though tracking heirs property is difficult, some studies have estimated that over half of real property owned by Black households in the US is heirs property, largely in the Southeast.¹³

More broadly, **the insurance crisis is playing out through well-worn mechanisms of determining which communities are worth investment and protection and which are disposable.** For example, the difficulties faced by affordable housing providers

⁹ “DP04: Selected Housing Characteristics,” US Census Bureau, accessed August 22, 2024, <https://data.census.gov/table/ACS DP1Y2022.DP04?hidePreview=true>.

¹⁰ Sarah Knuth et al., “Interrupted Rhythms and Uncertain Futures: Mortgage Finance and the (Spatio-) Temporalities of Climate Breakdown,” *Journal of Urban Affairs*, (2023): 1–18, <https://doi.org/10.1080/7352166.2023.2229462>.

¹¹ Gregory D. Squires, “Racial Profiling, Insurance Style: Insurance Redlining and the Uneven Development of Metropolitan Areas,” *Journal of Urban Affairs* 25, no. 4 (November 1, 2003): 391–410, <https://doi.org/10.1111/1467-9906.t01-1-00168>.

¹² The Housing Assistance Council, *A Methodological Approach to Estimate Residential Heirs' Property in the United States* (Fannie Mae, December 2023), https://www.fanniemae.com/sites/g/files/koqyhd191/files/2023-12/heirs-property-research-report_0.pdf.

¹³ Nketiah “Ink” Berko and Sarah Bolling Mancini, *Keeping It in the Family: Legal Strategies to Address the Challenge of Heirs Property and Prevent Home Loss* (Boston, MA: National Consumer Law Center, 2024), https://www.nclc.org/wp-content/uploads/2024/01/202401_Report_Heirs-Property-Keeping-it-in-the-Family.pdf.

in accessing insurance in some neighborhoods in New York City have led to the discovery that insurers use outdated and biased risk assessments to unfairly penalize housing providers with a high presence of Section 8 voucher holders, based on unfounded assumptions that these populations disproportionately engage in criminal activity. Fortunately, this discovery led to state policy changes seeking to prevent the use of these discriminatory practices in rate setting.¹⁴

Disaster insurance is systemically entwined with our housing finance system.

Disaster insurance is not government mandated in the US. However, lenders typically require it as a condition of approving and maintaining a mortgage. These multi-decade home loans are secured by the properties themselves, and lenders want to be able to foreclose in case of nonpayment. Therefore, lenders require homeowners to take out home insurance policies, not for the benefit of the homeowner, but to financially protect the lending institution in case of major damage to a property. Households might seek to insure their homes against both everyday risks and certain acute disasters anyway if insurance is available and affordable, or even if they rent, since either could result in major personal losses.

The home insurance mortgage requirement, however, ties our broader housing-finance system and community stability to this for-profit insurance industry. In our era of climate crisis and increased unpredictability, this connection is exposing US households to greater financial vulnerability. This is because the US disaster insurance industry is caught between acting as a mechanism of collective protection and performing as a viable private market, and between protecting either residents or the housing finance institutions that make mass homeownership possible. If insurance becomes too expensive to maintain for either side, this fragile bargain could unravel (and is already beginning to do so). Real estate markets could crumble, and homeowners may have to walk away from their mortgage despite years of financial and more-than-financial investment in a home and community.

This is how home insurance collapses also threaten to spiral into financial crises and other macro-structural risks, as well as threaten the fabric of US communities. If housing values and associated mortgage markets deflate too much or too quickly due to unavailable or unaffordable insurance, they risk spiraling into broader economic crises — a worrying echo of the subprime bubble.¹⁵ For example, if investors and homeowners exit housing markets in droves, the respective state and local governments — which have no such ability to abandon their jurisdictions — may be stuck with decimated property tax bases.¹⁶ This problem could be compounded by downgraded municipal bond ratings that raise the cost of borrowing money for investments in schools, transportation, and other infrastructure projects for those areas,¹⁷

¹⁴ Franklin Schneider, "Are Insurance Problems on the Horizon for Community Development Groups?" Shelterforce, April 25, 2024, <https://shelterforce.org/2024/04/25/are-insurance-problems-on-the-horizon-for-community-development-groups/>; The Real Deal Staff, "Hochul Tries to Address Insurance Discrimination against Low-Income Tenants," The Real Deal, January 21, 2024, <https://therealdeal.com/new-york/2024/01/21/hochul-tries-to-address-insurance-discrimination-against-low-income-tenants/>.

¹⁵ Jesse D. Gourevitch et al., "Unpriced Climate Risk and the Potential Consequences of Overvaluation in US Housing Markets," *Nature Climate Change* 13, (2023): 250–57, <https://doi.org/10.1038/s41558-023-01594-8>.

¹⁶ Linda Shi and Andrew M. Varuzzo, "Surging Seas, Rising Fiscal Stress: Exploring Municipal Fiscal Vulnerability to Climate Change," *Cities* 100, (May 2020): 1–17, <https://doi.org/10.1016/j.cities.2020.102658>.

¹⁷ Savannah Cox, "Bonding out the Future: Tracing the Politics of Urban Climate Finance in Miami, Florida," *Journal of Urban Affairs*, (2023): 1–17, <https://doi.org/10.1080/07352166.2023.2192941>; Savannah Cox, "Inscriptions of Resilience: Bond Ratings and the Government of Climate Risk in Greater Miami, Florida," *Environment and Planning A: Economy and Space* 54, no. 2 (2022): 295–310, <https://doi.org/10.1177/0308518X211054162>.

just at a time when funds are desperately needed to support weatherization and other climate-related initiatives.

The insurance crisis also matters for rental housing.

While narratives of insurance markets and the housing crisis often focus on the plight of homeowners, renters have always been the population most exploited by financial systems looking to offload risk.¹⁸ More than 18 million occupied rental units (41 percent) are located in areas with substantial expected losses.¹⁹ Evictions and rents increase following climate-related disasters, and recovery assistance for renters is much lower and more difficult to access than aid provided for homeowners.²⁰ As insurance costs for multifamily housing increase, landlords have the power to pass these costs directly on to tenants through rent increases. If insurance costs go up and state or local rent controls are limited or nonexistent, then rents will go up.

Indeed, insurance costs for rental housing are rising. **Insurance costs for multifamily rental properties across the country are increasing roughly three times faster than total operating costs, with especially fast increases in the Southeast** (see Figure 2). Between January 2023 and January 2024, insurance expenses for multifamily rental properties increased by 27.7 percent nationwide.²¹ Though there was significant variation across regions of the country, insurance expenses increased most rapidly in the Southeast — by 35.7 percent. Insurance expenses have also increased dramatically in regions often omitted from national narratives of insurance and climate change; for example, expenses increased 24.4 percent in the Midwest. Though we found no data that directly tracks how rents are impacted by building owner insurance premiums, we do note that the number of cost-burdened renters hit a record-high 22.4 million households at last measure in 2022.²² Since the rentership rates for households of color is much higher (nearly twice as high²³) than for white households, BIPOC households are disproportionately impacted by these strains on rental housing availability and affordability.

¹⁸ Julia Wagner et al., “Grappling with Real Property Supremacy in US Urban Climate Finance,” *City: Analysis of Urban Trends, Culture, Theory, Policy, Action*, (2024): 1 – 22, <https://doi.org/10.1080/13604813.2024.2367922>.

¹⁹ Joint Center for Housing Studies at Harvard University, *America’s Rental Housing 2024* (Cambridge, MA: Joint Center for Housing Studies at Harvard University, 2024), https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard_JCHS_Americas_Rental_Housing_2024.pdf.

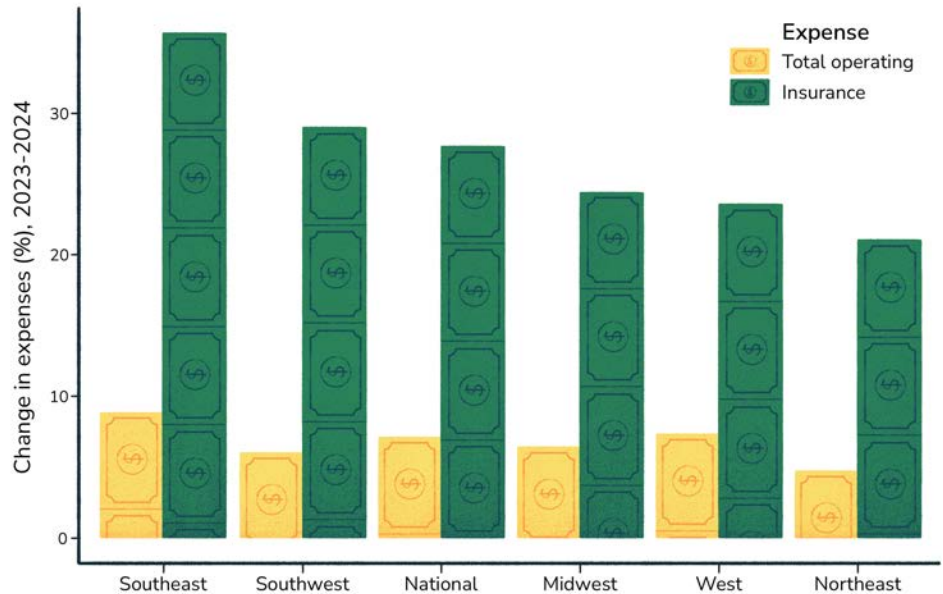
²⁰ Joint Center for Housing Studies, *America’s Rental Housing 2024*.

²¹ Yardi Matrix, “Multifamily Expenses-March 2024: Multifamily Expenses Rising, Led By Insurance,” *Matrix Research Bulletin*, April 3, 2024, <https://www.yardimatrix.com/publications/download/file/5352-MatrixResearchBulletin-MultifamilyExpenses-March2024>.

²² Joint Center for Housing Studies, *America’s Rental Housing 2024*.

²³ Joint Center for Housing Studies, *America’s Rental Housing 2024*.

Figure 2. Increases in insurance costs compared to operating costs for multifamily rental properties in the US. Note: This figure illustrates the change (%) between 2023 and 2024 in average total operating costs and average total insurance costs for multifamily rental properties using data from the Yardi Matrix 2024 Research Bulletin.²⁴



²⁴ Yardi Matrix, "Multifamily Expenses-March 2024."

²⁵ Moira Birss, Brendan Mitchell, and Seana O'Shaughnessy, "How the Insurance Crisis Threatens Affordable Housing Development," Climate and Community Institute (blog), April 29, 2024, <https://www.climateandcommunity.org/insurance-affordable-housing>.

²⁶ Connor Sheets, "Flood Damage Raises Alarms about California's next 'Disaster Insurance Gap,'" Los Angeles Times, February 13, 2024, <https://www.latimes.com/california/story/2024-02-13/west-hills-family-flooded-home-california-disaster-insurance-gap>.

²⁷ Joint Center for Housing Studies, America's Rental Housing 2024.

²⁸ Birss, Mitchell, and O'Shaughnessy, "How the Insurance Crisis Threatens Affordable Housing Development."

²⁹ David Brand, "Insurance Companies Routinely Deny NYC Buildings with Subsidized Tenants," Gothamist, July 25, 2023, <https://gothamist.com/news/insurance-companies-routinely-deny-nyc-buildings-with-subsidized-tenants>.

In addition to these rising costs leading to higher rents, groups focused on affordable housing preservation note that higher insurance bills also mean less funds available to retrofit existing housing and reduce risk.²⁵ In other words, **the high cost of insurance reduces resources available to invest in lowering disaster risk.** For multifamily housing, this means insurance costs are ultimately transferred to renters through rising rents and increased exposure to hazards via deferred maintenance/retrofits, while only half of renters hold general renters insurance policies due in part to insurers exiting the market.²⁶

Second, **insurers are increasingly declining coverage for multifamily rental housing altogether in areas they deem to be high risk, which threatens the solvency of existing properties and makes the financing of new construction much more difficult.**²⁷ While lenders and investors increasingly pressure affordable housing providers to have the highest possible levels of insurance coverage to protect investments from disasters, these providers report increasing difficulty meeting these demands as insurance options shrink.²⁸ While some affordable housing providers are seeking creative solutions like insurance collectives, such solutions can concentrate risk rather than spread it²⁹ (see Appendix 1 for more on risk spreading).

Another household type that is severely strained by the insurance crisis yet rarely mentioned is mobile and manufactured homes,

which are a critical source of affordable housing and tend to face higher flood risk than other types of housing.³⁰ These homes lie in a limited-protection gray area of insurance, since they're typically considered personal property, not real property (in the sense of "real estate"), and the homes themselves are often sited on land that the homeowner rents rather than owns.³¹

Today's insurance crisis is refracted through the power structure of the existing housing crisis, particularly in how risk is transferred and unequally distributed amongst users of the for-profit housing system. This especially affects households and renters who are Black, Indigenous, and people of color (BIPOC), who have the least power. **Without significant change in how housing and insurance markets operate, existing racial and economic stratification in the private housing markets will further deepen and solidify, exacerbating housing affordability and stability crises.**³²

While this overall pattern is playing out across the country, specific dynamics occur differently in different places. We next investigate the specifics of the home insurance crisis in three different states to understand how local context plays a role in shaping broader narratives of the crisis, as well as possible solutions.

Overlapping disaster risks

Climate change has accelerated the frequency and intensity of climate-related disasters.³³ And while there has been broad acceptance of this expanding threat, popular discourse generally understates the level of hazard faced by communities across the nation. **"Single risk" narratives that focus on particularly prominent hazards like major hurricanes and wildfires provide a dangerously limited account of US disaster risks. In reality, many locales are at risk of significant loss from multiple hazards, climate-related and beyond.**

³⁰ Kris Smith, "Mobile Home Residents Face Higher Flood Risk," *Headwaters Economics*, February 10, 2022, <https://headwaterseconomics.org/natural-hazards/mobile-home-flood-risk/>.

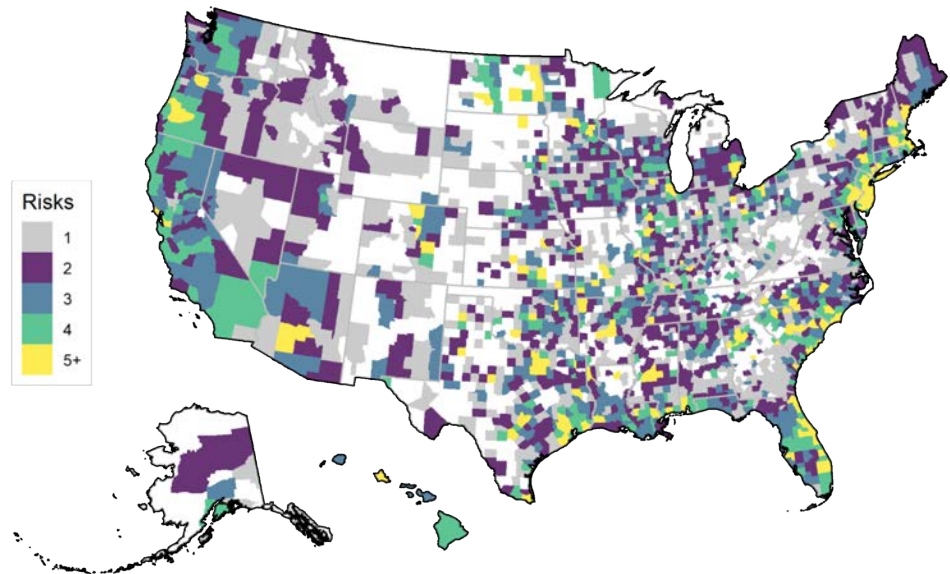
³¹ Mark Kear, Dugan Meyer, and Margaret O. Wilder, "Real Property Supremacy: Manufactured Housing and the Limits of Inclusion through Finance," *Annals of the American Association of Geographers* 113, no. 8 (2023): 1900-1917, <https://doi.org/10.1080/24694452.2023.2200507>.

³² Zac Taylor and Sarah Knuth, "The Insurance Crisis Is a Housing Crisis," *Climate and Community Institute* (blog), April 18, 2024, <https://www.climateandcommunity.org/insurance-crisis>.

³³ IPCC Working Group III, *Climate Change 2022*.

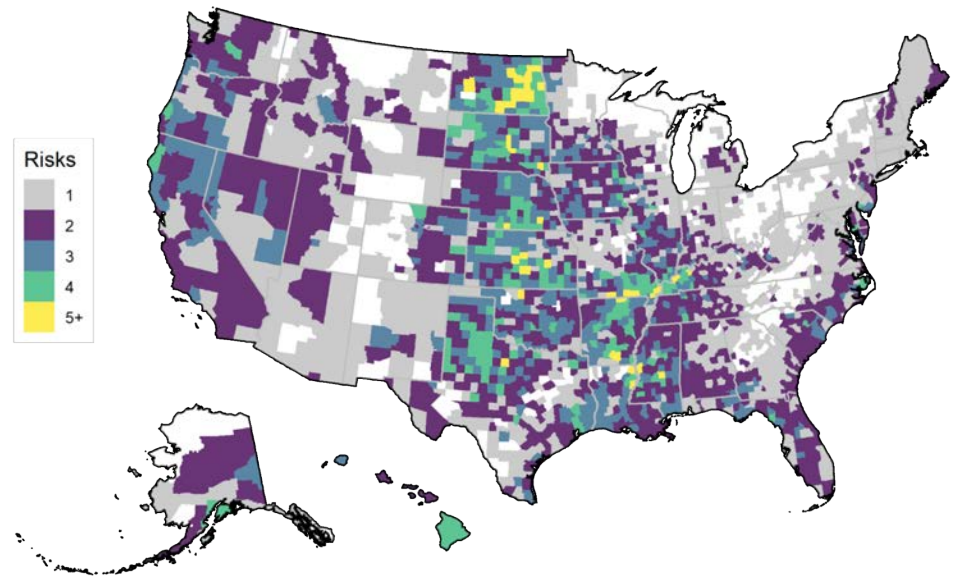
Figure 3 provides one way to understand the spread and concentration of disaster risk impacts across the country. This view — similar to one an insurance company might use — demonstrates the distribution of significant property loss that may result from major disasters. A number of areas, indicated in yellow, are at risk of experiencing significant losses from at least five distinct types of hazards. From an insurance industry perspective, there are many counties in which total annual losses are expected to be very high across multiple unique risk categories (e.g., wildfire, tornado, avalanche, landslide, earthquake, etc.), which is a complicated challenge for a private insurance system to tackle on its own when coverage is often fragmented by risk categories and when risk reduction initiatives vary widely across communities and hazards.

Figure 3. Insurance industry perspective: counties with high absolute expected losses, across multiple unique risk categories. Note: This figure shows the number of unique risks with “high” annual expected loss totals by county (i.e., the expected total loss of property value each year), where “high” is any expected loss total greater than the 90th percentile across all county-level risks nationally.



However, relying solely on metrics of expected absolute property value loss, as Figure 3 does, obscures the prevalence and diversity of climate risks that are shouldered by smaller communities across the country. Figure 4, below, displays a more community-centered perspective in that it demonstrates expected property losses in relationship to local property values. It shows that there are many counties in which total annual loss rates are expected to be very high across multiple unique risk categories, and in which recovering from these disasters will require proportionately more resources in relation to the calculated value of property there. **A key insight from this map is that many more inland counties have the same (or higher) proportional annual losses as coastal counties, where absolute losses tend to be concentrated.**

Figure 4. Community perspective: counties with high expected losses relative to local property values, across multiple unique risk categories *Note: This figure illustrates counties with high annual expected loss rates (i.e., the expected total loss of property value each year divided by total county-level value) across multiple risk categories, where “high” is any expected loss rate greater than the 90th percentile across all county-level risks nationally.*



Across both maps, we observe very few counties that face no significant expected losses, as well as several pockets of the country — including the Upper Plains and coastal Southeast states — that face considerable damage from multiple climate hazards.³⁴

³⁴ The 90th percentile is often used to signify the upper extremes of data distributions, without being skewed by outliers. That said, there is no academic or industry standard for a “high risk” threshold. The Methodology section of this report includes additional figures that show the expected loss totals/rates aggregated over all hazards.

³⁵ Benjamin J. Keys and Philip Mulder, “Property Insurance and Disaster Risk: New Evidence From Mortgage Escrow Data,” Working Paper 32579, NBER Working Paper Series (Cambridge, MA: National Bureau of Economic Research, June 2024), https://www.nber.org/system/files/working_papers/w32579/w32579.pdf; Christopher Flavell and Mira Rojanasakul, “Home Insurance Rates in America Are Wildly Distorted. Here’s Why,” *New York Times*, July 8, 2024, sec. Climate, <https://www.nytimes.com/interactive/2024/07/08/climate/home-insurance-climate-change.html>.

Insurers argue that flexible and reactive risk-based pricing (or abandoning certain markets entirely) is a positive feature of private insurance, a key method for the market to discipline what is commonly termed “moral hazard.” The logic is that price is used to signal risk and can therefore reduce the total risk pool by steering consumers away from living in riskier places. But there are multiple problems with this idea. One is that, as we’ve just seen, there exist few parts of the country at low risk of climate-driven disasters and their financial impacts. We discuss further failures in the overall logic of price signaling later in this report, so for now we note an important empirical finding: **Evidence does not seem to support the idea that premium prices correlate with disaster risk.** A recent study found that today, the average home-owning household in the US pays roughly 0.5 percent of its home value each year in home insurance premiums, yet across many parts of California at high risk of wildfires, this was as low as 0.05 percent, while it was as high as 2 percent in Alabama, Oklahoma, Louisiana, and Texas.³⁵ We provide further data,

below, underscoring the paucity of evidence for risk-price narratives in specific US states.

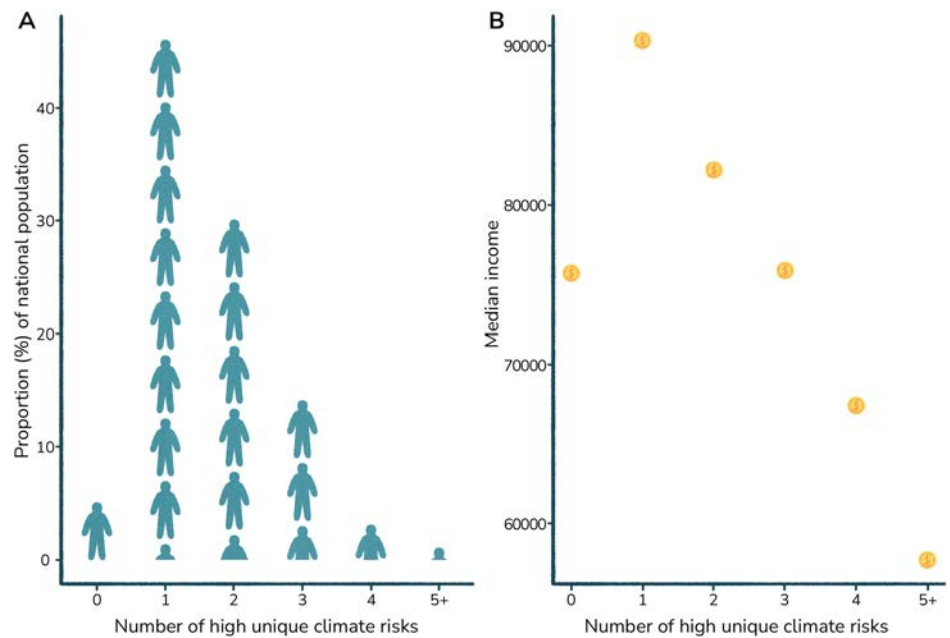
We're all in the climate crisis together, but not equally

While risks exist across the country, certain groups are unevenly burdened.³⁶ **Troublingly, yet consistent with similar findings for environmental justice communities across the country, as the number of unique and severe risks that a community faces increases, the amount of economic resources that households have available to address these hazards tends to decrease.**

As Figure 5 demonstrates, roughly half the country lives in an area in which total annual loss rates are expected to be very high across multiple unique risk categories. And as the number of risks increases, the population exposed has lower incomes to deal with those risks. Approximately 40 percent of people in the US live in a census tract with a climate risk that's expected to damage or destroy 10 percent of all property value in the area over a given year, while 30 percent of people live in neighborhoods facing two of these severe risks. The median household income of neighborhoods facing one severe risk is nearly \$90,000 a year, while the median household income of communities facing five or more unique, considerable climate risks is a third of that — closer to \$60,000 a year.

³⁶ Challenges with federal disaster relief are also disproportionately felt across rural, Indigenous, and low-income populations. For example, rural and Indigenous communities struggled to receive financial assistance after the 2022 wildfires. This was also the case after Hurricane Maria in Puerto Rico.

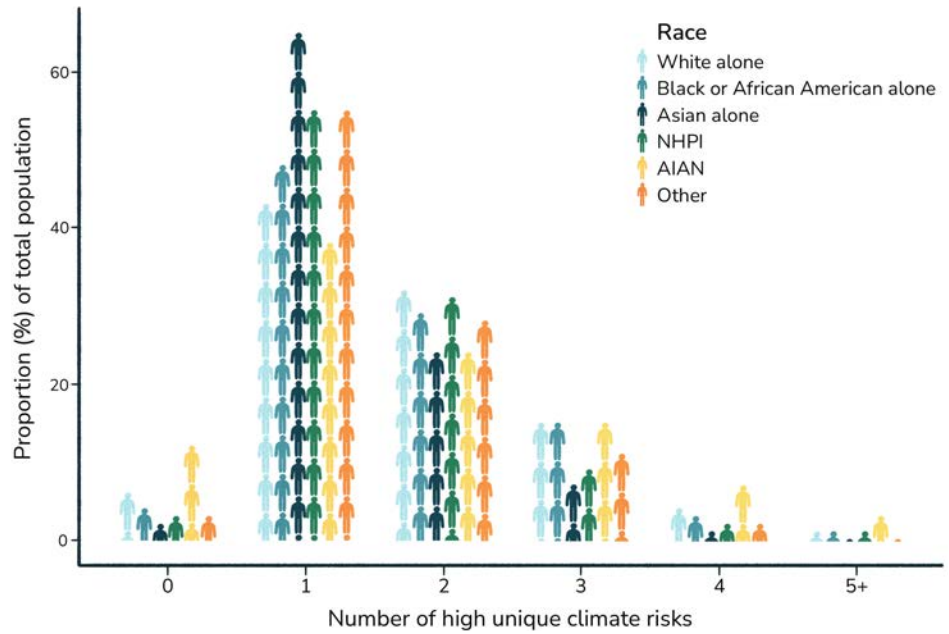
Figure 5. Distribution of annual loss rates (A) and income levels (B) across multiple unique risk categories. *Note: This figure categorizes the population by census tracts with high annual expected loss rates (i.e., the expected total loss of property value each year divided by total value) across multiple risk categories, where “high” is any expected loss total greater than the 90th percentile nationally. “Median income” is the average tract-level median income for all tracts in that overlapping risk category. Census tracts are standard geographic units organized by the US Census Bureau and often used by social scientists to proxy neighborhoods.*



The distribution of climate risk is also racialized: Some populations are disproportionately exposed to multiple high-risk categories, especially American Indians and Alaska Natives, and few households from any group live in areas facing zero high-loss risks. As Figure 6 demonstrates, 10 percent of all American Indian and Alaskan Native households live in neighborhoods facing four or more unique, substantial climate risks, as do 5 percent of white households, 4 percent of Black households, and 1 percent of all Asian households (see Figure 6). In all, nearly half of all Black, white, and American Indian/Alaskan Native households — 48 percent, 52 percent, and 49 percent, respectively — experience at least two substantial risks. And nearly 60 percent of Asian households live in tracts with one high risk. Clustered risks in the Upper Plains and coastal Southeast correspond with these racialized patterns.

Figure 6. Exposure to multiple high-risk categories by race.

Note: This figure categorizes the population by Census tracts with high annual expected loss rates (i.e., the expected total loss of property value each year divided by total value) across multiple risk categories, where “high” is any expected loss total greater than the 90th percentile nationally. Census tracts are standard geographic units organized by the US Census Bureau and often used by social scientists to proxy neighborhoods. “Other” indicates the population identifying as “Some other race alone” or “Two or more races” in the American Community Survey.



02 State-Level Contours of the Home Insurance Crisis: Florida, California, and Minnesota

In this section, we take a deeper look at the home insurance and housing markets in Florida, California, and Minnesota. We examine how rising regional climate risks are intersecting with preexisting housing breakdowns and problematic insurance market practices to produce mounting affordability crises for households in these places. Florida and California have received significant national attention due to high-profile climate disasters and announced and/or threatened exits by major insurers. Minnesota, on the other hand, has sometimes been framed as a “climate haven” state, yet is now experiencing its own mounting climate-related risks, spiking insurance costs, and insurer exits from the market.³⁷

The three states provide several important lessons:

- US states and households will experience increased climate risks in place-specific but structurally related ways. No state can be truly said to be risk-free in a climate-changed future.
- Existing state policies to “save” private insurance are not addressing the root causes and on-the-ground experiences of household exposure to disaster risk, and underlying housing inequities are holding back important physical risk reduction solutions.
- While the federal government has encouraged risk reduction, the implementation largely falls on states, where political, economic, and social factors can create significant barriers.
- States recognize the need for physical risk reduction through policy measures, but these measures are not being deployed at the scale and pace required to reduce growing risks.
- States may mandate that insurers provide discounts for risk reduction retrofits, but there’s little evidence of this meaningfully changing community-level risk profiles or reducing insurance cost burdens at scale.



Florida

Florida is at the forefront of the national insurance crisis, primarily due to its significant exposure to catastrophic hurricanes, which are becoming increasingly severe with climate change. This heightened risk is compounded by an ongoing housing affordability crisis, partly rooted in the state’s legacy foreclosure crisis and partly in

³⁷ Matthew Sellers, “Tens of Thousands Hit as yet Another Insurer Looks to Leave State,” *Insurance Business*, February 29, 2024, <https://www.insurancebusinessmag.com/us/news/property/tens-of-thousands-hit-as-yet-another-insurer-looks-to-leave-state-479343.aspx>.

historic in-migration, coupled with the insufficient affordable housing production and protection. The result is a precarious real estate market characterized by unsustainable prices, increased homelessness, and tenancy instability. All of this is further strained and threatened by the unaffordability of insurance, a regulatory regime that prioritizes profit-making for private insurers, and increasing but still limited uptake of home-hardening efforts.

In this section, we explore these dynamics and present new analysis of Citizens³⁸ insurance data from Florida (for more information on Citizens, see Appendix 1). We tried to obtain private insurer data from the Florida Office of Insurance Regulation but were told that it does not have zip code–level data; what’s more, the data that the Office does make publicly available is cumbersome and does not include disaggregated premium rates.

Florida’s housing crisis

With year-round warm temperatures and the longest coastline in the contiguous US, Florida is a perennial housing hotspot and popular relocation destination, with a history of real estate booms and busts to match. The state also has one of the highest diversity indexes in the country,³⁹ and its residents were correspondingly among the hardest hit by the racialized subprime foreclosure crisis. As a result, its housing sector was also one of the slowest to recover, with waves of delinquencies and evictions spanning throughout 2006 to 2010, and prices returning to levels seen in the year 2000 only by 2012.⁴⁰ This also means that homeowners with underwater mortgages from the subprime crisis era who were able to avoid foreclosure only entered positive equity on their home purchases relatively recently.

Since 2018, the state has had more than 1 million new residents relocate to its cities.⁴¹ It was the fastest growing state in 2022,⁴² and is once again experiencing a housing sector crunch, as available houses for sale on the market fall to unprecedented low levels and prices have risen with the increased competition for a much smaller pool of housing than needed to support the massive surge in population growth. As increasing numbers of households are pushed out of the cutthroat housing market, the rental market has also become strained, and a corresponding spike in the population of unhoused people has also occurred as rents increase beyond what low- and fixed-income residents can pay. (Florida is one of the many states with a statewide ban on rent control and stabilization policies.) In 2023, Florida’s unsheltered population increased by about 18 percent from 2022 and had one of the highest annual increases (21 percent) of families with children experiencing homelessness. Increased housing costs and lasting impacts from Hurricane Ian were cited by impacted communities as two of the most relevant reasons for this disturbing uptick.⁴³

³⁸ Citizens is Florida’s insurer of last resort for people who are unable to obtain property insurance from private insurers.

³⁹ Marcus Lu, “Mapped: Racial Diversity by U.S. State,” Visual Capitalist, January 19, 2024, <https://www.visualcapitalist.com/the-most-diverse-states-in-the-us-by-race/>.

⁴⁰ William Zhao and Arjun Bakshi, “Mortgage Market in Florida During 2000-2009,” Duke Financial Economics Center, March 2022, <https://predatorylending.duke.edu/2022/03/mortgage-market-in-florida-during-2000-2009/>.

⁴¹ Sheridan Meek, “Breaking Down Migration In and Out of Florida,” Florida Chamber of Commerce, January 31, 2024, <https://www.flchamber.com/breaking-down-migration-in-and-out-of-florida/>.

⁴² Marc Perry, Luke Rogers, and Kristie Wilder, “New Florida Estimates Show Nation’s Third-Largest State Reaching Historic Milestone,” US Census Bureau, December 22, 2022, <https://www.census.gov/library/stories/2022/12/florida-fastest-growing-state.html>.

⁴³ Tanya de Sousa et al., The 2023 Annual Homelessness Assessment Report (AHAR) to Congress (Washington, DC: US Department of Housing and Urban Development, December 2023), <https://www.huduser.gov/portal/sites/default/files/pdf/2023-AHAR-Part-1.pdf>.

As Florida grapples with this massive new influx of households, other factors have further contributed to a dangerous mix of housing market conditions, including COVID-era inflation and related cost increases in construction materials. These factors are all exacerbated by the ongoing home insurance crisis.

Insurance unaffordability and unavailability in Florida

Florida's household insurance costs are already higher than the US average and have spiked in recent years amidst the near collapse of the state's home insurance market following a series of high-profile hurricanes. In recent years, more than a dozen insurance companies have exited the Florida market, citing increased costs of doing business, and since 2022 an additional six or more have become insolvent, forcing homeowners to scramble to find new providers, typically at drastically increased prices.

One estimate suggests that yearly premiums for disaster insurance in the state increased by an average of 35 percent statewide between 2022 and 2023.⁴⁴ Overall insurance costs have been projected to climb to \$11,800 for Florida as a whole, to over \$15,500 in Miami, and to \$16,700 in Fort Lauderdale an hour north⁴⁵ — and these estimates may not include the additional cost of flood insurance, which is purchased separately (see Appendix 1 for details). However, these state and citywide averages conceal the differential burden these costs place on South Florida's wealthiest and poorest households.⁴⁶

Our research demonstrates that premium burdens have increased across all income ranks over the last five years, meaning that people are paying more for insurance relative to their income. These trends show that the insurance crisis is exacerbating the home affordability crisis: People are paying more for home insurance across *all* perils but getting less coverage. As Figure 9 shows, Citizens' multi-peril policies cost households across Florida a measurable portion of their annual incomes.⁴⁷

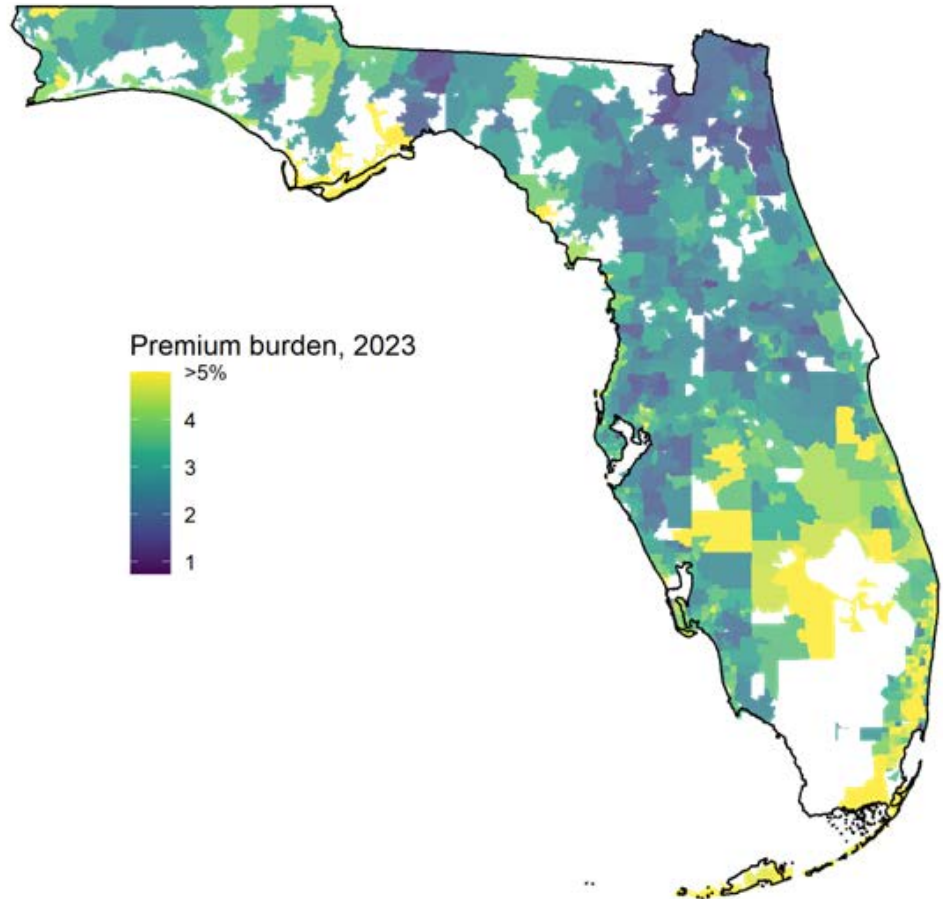
⁴⁴ Michael Kolomatsky, "As Natural Disasters Get Worse, So Do Home Insurance Premiums," *New York Times*, October 12, 2023, sec. Real Estate, <https://www.nytimes.com/2023/10/12/realestate/as-natural-disasters-get-worse-so-do-home-insurance-premiums.html>.

⁴⁵ Sellers, "Tens of Thousands Hit."

⁴⁶ In addition to the surge in insurance premium costs for homeowners, which we focus on here, another noteworthy trend is for those providers remaining in the state to become more selective in coverage, by either by providing less coverage for increased premiums, or requiring very costly updates (such as replacement of roofs 10 years or older, regardless of condition) before issuing policies.

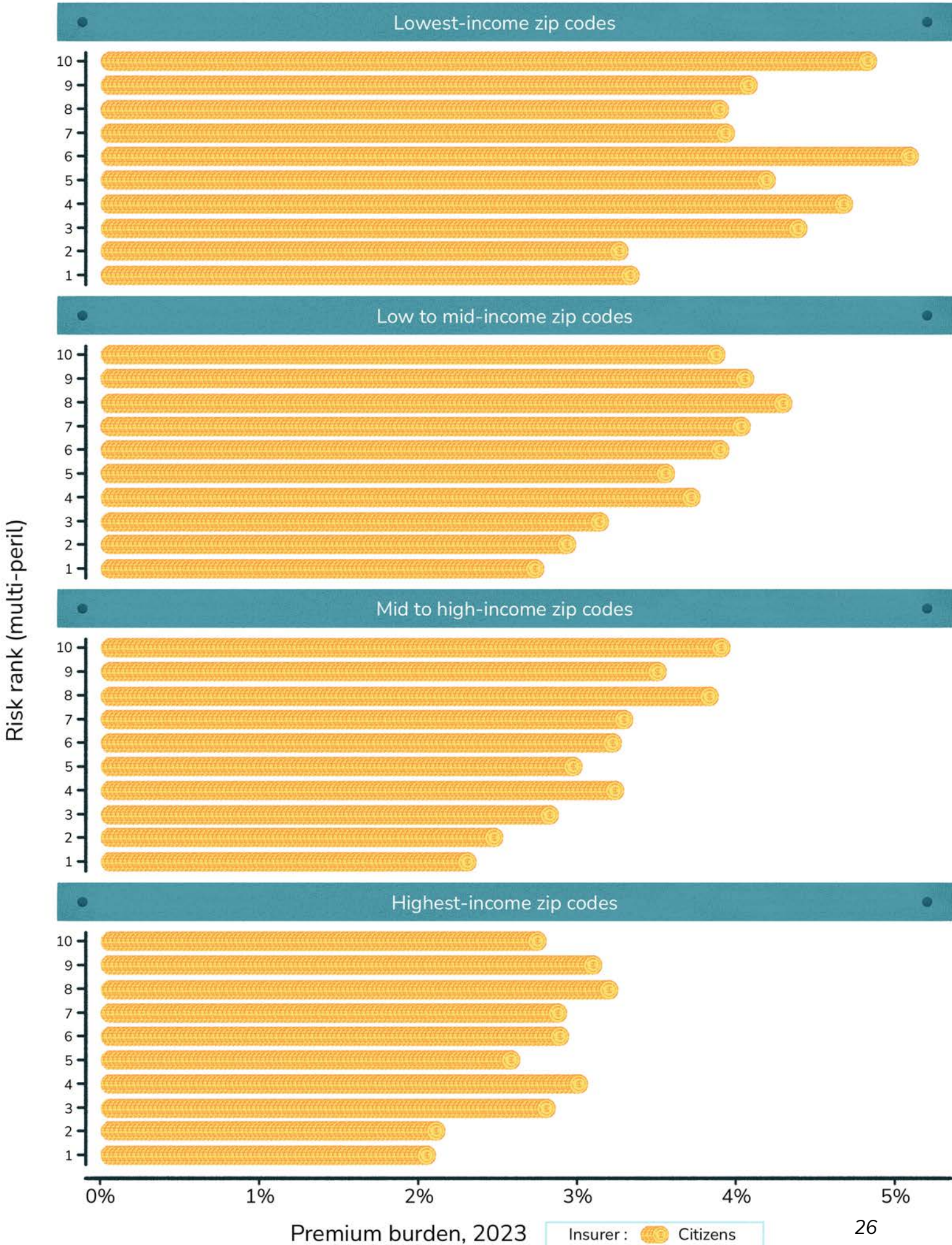
⁴⁷ As of 2022, every Citizens policyholder must, by law, purchase separate flood insurance. The premium rates reported here do not include those additional costs.

Figure 7. Distribution of Citizens premium burdens across zip codes. Note: This figure demonstrates how premium burden — i.e., (average premium rate of a zip code)/(median household income of a zip code) — varies across the landscape of Florida. Calculated only for zip codes with 30 or more policies.



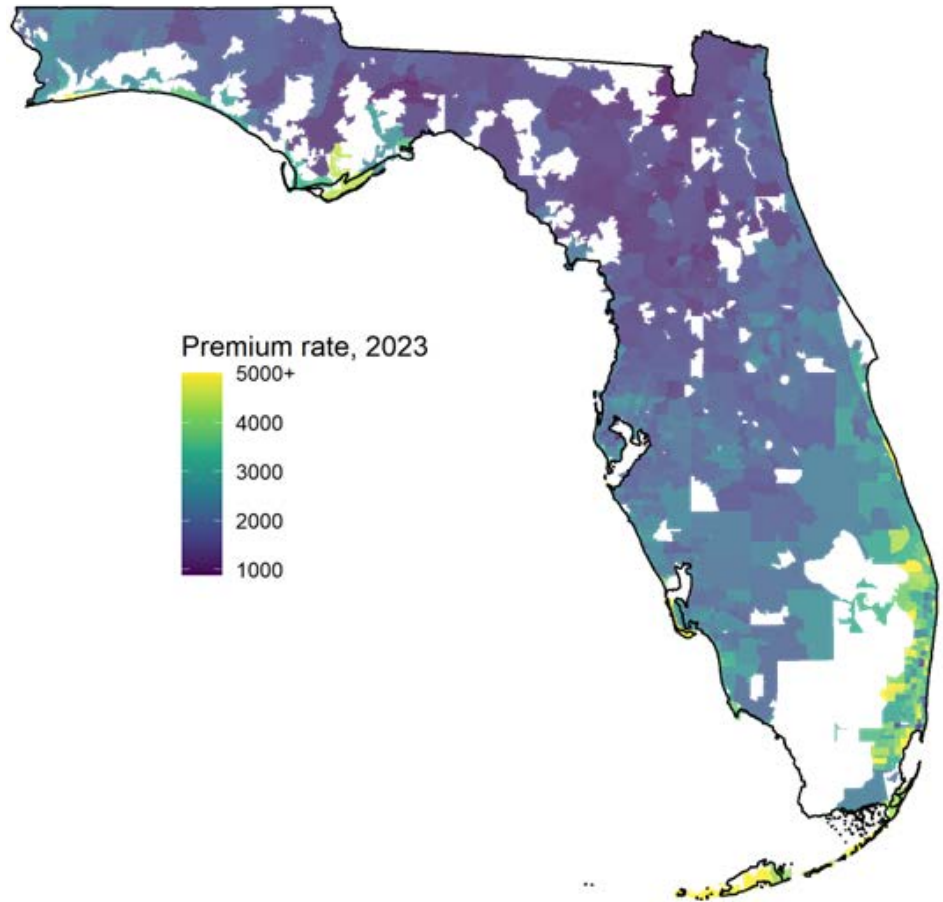
While Citizens multi-peril policies are relatively costly across communities, Figure 8 demonstrates that lower-income zip codes and communities located in high climate risk areas pay a larger share of their annual incomes toward coverage.

Figure 8. Variation of premium burden across Florida zip codes by climate risk and household income level. Note: “premium burden” is defined as (the average premium rate of a zip code)/(the median household income of a zip code). “Risk rank” summarizes the magnitude of climate risk faced by Florida communities, in terms of deciles of annual expected losses. E.g., a risk rank of “1” describes Florida zip codes facing the lowest 10 percent of expected losses from climate disasters across the state, while a rank of “10” describes Florida zip codes facing the highest 10 percent of climate-related damages across the state. Panels indicate quartiles of median household incomes. For instance, the panel labeled “lowest-income zip codes” shows how premium burden changes according to climate risk among zip codes whose residents earn, on average, the lowest 25 percent of incomes across Florida.



Nonetheless, the total cost of Citizens multi-peril policies varies considerably from zip code to zip code across Florida — with residents of some areas paying upwards of \$5,000 per year on coverage, as Figure 9 shows.

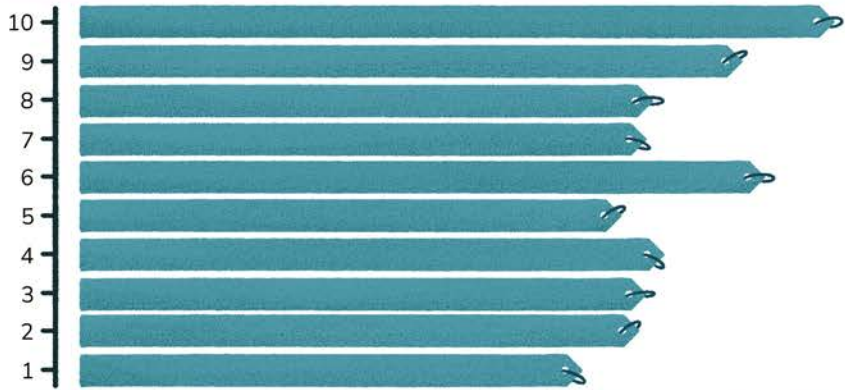
Figure 9. Distribution of premium rates across Florida zip codes. *Note: This figure shows how premium rate — i.e., the total premium revenue collected within a zip code divided by the total policies sold within a zip code — varies across communities in Florida. Calculated only for zip codes with 30 or more policies.*



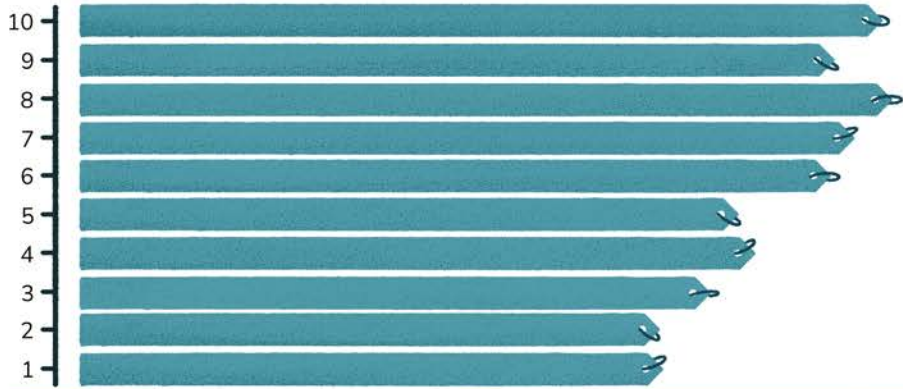
Though Citizens premiums are high across Florida, Figure 10 indicates that total yearly costs appear most pronounced in areas with high property valuation and high estimated climate risks.

Figure 10. Premium rate distribution by property value and climate risk across Florida zip codes. *Note: "Premium rate" is defined as the total premium revenue collected within a zip code divided by the total policies sold in a zip code. "Risk rank" describes the magnitude of climate risk faced by Florida communities, in terms of deciles of annual expected losses. E.g., a risk rank of "1" describes Florida zip codes facing the lowest 10 percent of expected losses from climate disasters, while a rank of "10" describes Florida zip codes facing the highest 10 percent of climate-related damages across the state. Panels indicate quartiles of median property value. E.g., the panel labeled "highest property value zip codes" describes how premium rate changes alongside climate risk among zip codes whose property is, on average, among the highest 25 percent of property valuation across the state.*

Lowest-property value zip codes



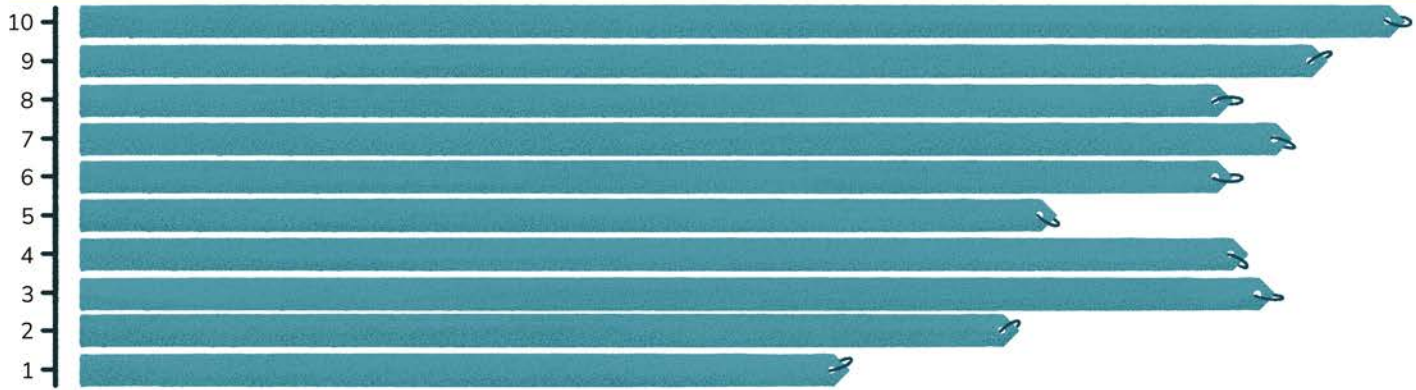
Low to mid-property value zip codes



Mid to high-property value zip codes



Highest-property value zip codes



Risk rank (multi-peril)

\$0 \$1,000 \$2,000 \$3,000 \$4,000

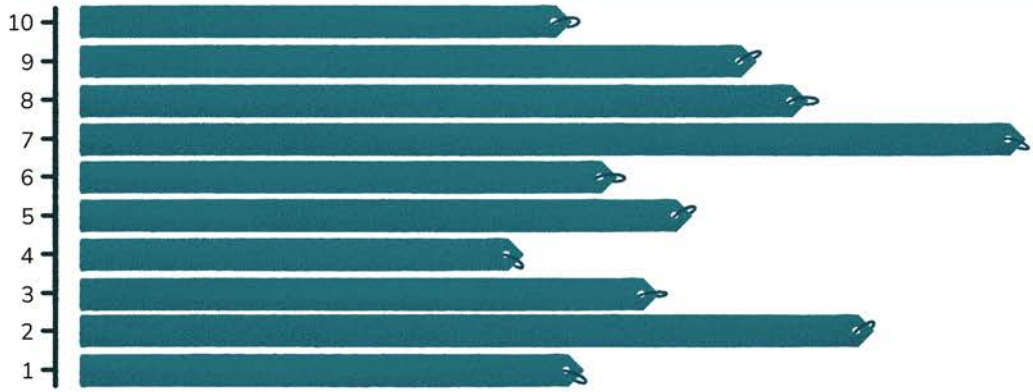
Premium Rate, 2023

Insurer : Citizens

Nonetheless, the rate at which Florida residents utilize Citizens' multi-peril insurance option appears only loosely related to the climate risk they face, as Figure 13 demonstrates. This calls into question the risk-based pricing narrative.

Figure 11. Distribution of Citizens coverage ratio across property value and climate risk across Florida zip codes. Note: "Coverage ratio" is defined as $100 * [(total\ policies\ in\ a\ zip\ code) / (total\ homeowner\ households\ in\ a\ zip\ code)]$ — in other words, the number of policies present per every 100 households. "Risk rank" describes the magnitude of climate risk faced by Florida communities, in terms of deciles of annual expected losses. E.g., a risk rank of "1" describes Florida zip codes facing the lowest 10 percent of expected losses from climate disasters, while a rank of "10" describes Florida zip codes facing the highest 10 percent of climate-related damages across the state. Panels describe quartiles of median property value. E.g., the panel labeled "highest property value zip codes" describes how coverage ratios change alongside climate risk among zip codes whose property is, on average, among the highest 25 percent of property valuation across the state.

Lowest-property value zip codes



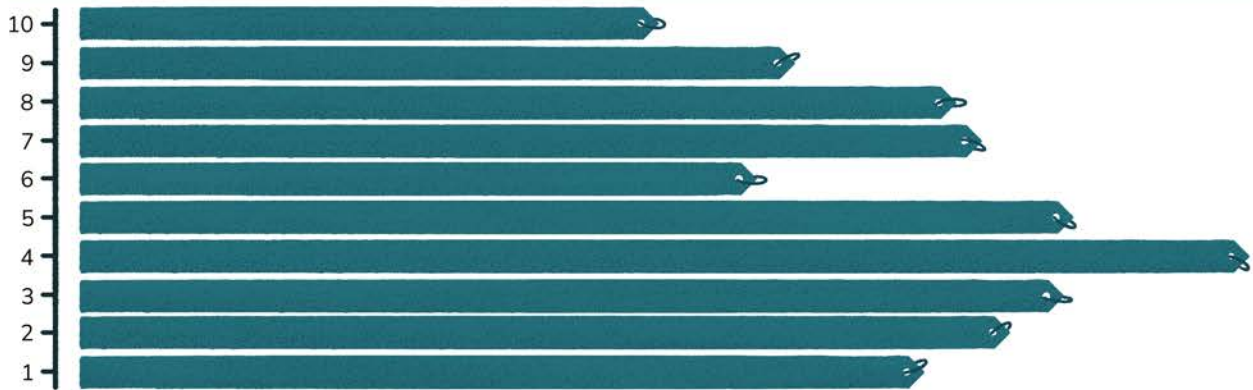
Low to mid-property value zip codes



Mid to high-property value zip codes



Highest-property value zip codes



Risk rank (multi-peril)

\$0

10

20

30

Coverage ratio [policies per 100 households], 2023

Insurer : Citizens

Finally, as Floridians face increasing insurance costs relative to their incomes, they are more susceptible to surcharges from Citizens deficit assessments.⁴⁸ In the event that Citizens faces losses beyond its own capital and reinsurance coverage, it can levy emergency assessments on nearly all statewide property insurance policies (including but not limited to residential property) for as long as required to repay debt. A serious loss for Citizens and other Florida insurers could result in multiple assessments, leaving residents potentially facing additional financial burdens in the event of significant deficits. What's more, a larger disaster or series of losses could leave Florida policyholders on the hook for additional, costly assessments.⁴⁹ That's because the financing power of the Florida Hurricane Catastrophe Fund (a state-run provider of reinsurance for admitted insurers) and the Florida Insurance Guaranty Association (a state-run fund which pays policyholder claims in the event of an admitted insurer insolvency) are both ultimately backed up by emergency assessments on policyholders (for more information, see the guaranty fund discussion in Appendix 1). Although each of these state insurance institutions takes financing measures to avoid policyholder assessments, a devastating hurricane season could put a scenario into motion in which policyholders face multiple stacking assessments, which would pose an additional major potential affordability strain for households at the very moment the state would be recovering from disaster.

The insurance regulatory context in Florida

Florida is home to many insurance companies called “specialists” — they almost entirely focus their business in Florida, and sometimes even specialize in what the insurance industry terms the “peakest” of “peak peril” risks, such as one company that primarily sells wind-only policies in South Florida. Many of the larger primary insurers write policies across multiple states and perils, which limits their exposure to a single peril or regional loss event, like a damaging Gulf Coast hurricane. However, Florida has had trouble retaining large, national, and diversified private primary insurers (though sometimes larger companies stay in risky markets like Florida by creating subsidies — called “pups” — to legally and financially manage their exposure). Without this ability to spread risks across big national portfolios, these specialist insurers are much more dependent on risk transfer to spread their risks,⁵⁰ making them very sensitive to global reinsurance market conditions — and these costs get passed on to consumers. **This is, in many ways, the crux of the insurance market’s problem, and a main point of intervention for the State of Florida: the difficulty of balancing insurance affordability and availability against the constraints of profit-seeking underwriters.** Rising property prices — and more concretely, the increasing value of properties that are insured — only worsen this problem. This is because the higher the value of insured properties, the greater the potential financial loss, which strains the global re/insurance sector’s capacity to absorb Florida’s risk at prices that consumers can bear.

⁴⁸ “Assessments,” Citizens Property Insurance Corporation, accessed August 22, 2024, <https://www.citizensfla.com/assessments>.

⁴⁹ Caroline Kousky and Lori Medders, *The Evolution of Florida’s Public-Private Approach to Property Insurance* (St. Petersburg, FL: Florida Policy Project, April 2024), https://floridapolicyproject.com/wp-content/uploads/2024/05/FINAL_Florida-Insurance-Market-Report.pdf.

⁵⁰ Kane Wells, “Florida Market Improving Though Reinsurance Dependency Remains: AM Best,” *Reinsurance News*, May 30, 2024, <https://www.reinsurancene.ws/florida-market-improving-though-reinsurance-dependency-remains-am-best/>.

In the wake of a market crash triggered by Hurricane Andrew in 1992, the state has continuously tried to seduce private capital to certain markets with deregulation and financial incentives, in the hopes that this will “fix” market problems.⁵¹ Florida also hosts several public institutions designed to prop up the private insurance market, including Citizens, a public reinsurance fund (the Florida Hurricane Catastrophe Fund, financed in part by policyholder assessments), and a guaranty fund, which, as explained in greater detail in Appendix 1, pays policyholder claims in the case an admitted carrier goes bankrupt.

Central here is also access to reinsurance capital, which Florida’s insurers rely on to pay claims and comply with regulations. Florida’s market is especially dependent on access to insurance-linked securities (ILS) markets, an “alternative” form of reinsurance capital that helps to finance insurers’ low probability, high-impact potential losses, like a series of hurricanes or a major hurricane landfall in South Florida. Access to these markets remains fragile: Global capital market conditions and other insured losses around the world determine if, and at what price, reinsurance is available. When reinsurance capital is more costly, as it currently is, these costs are passed on to consumers. In some cases, insurers also forgo reinsurance purchases, or buy less coverage, potentially leaving consumers and the public purse on the line for major losses.

The state has also experimented with other ad-hoc measures to financially stabilize the market, including the roll-out of an additional \$2 billion fund by the DeSantis administration in 2022. Other recent state interventions have focused on reducing private insurer losses by curbing opportunities for policyholder litigation, which the industry has characterized as excessively fraudulent. Reform proponents suggest this will help to offset part of the market’s challenge in attracting and retaining private capital, but consumer rights advocates have raised major concerns about the incursion on consumer rights it represents, including homeowners’ ability to take action against predatory practices.

Citizens operates with a “depopulation” mandate that pushes the company to offload policies to willing private insurers. Depopulation removed a high volume of risk off the books of Citizens over several consecutive years in the 2010s, but in recent years has failed to stop the return of risk to this state insurer of last resort — Citizens is now the largest insurance company in the state, with more than 1 million policies and greater than half a trillion dollars of exposure under its management.⁵² Policymakers in the state have responded with measures to raise rates and further encourage depopulation. Legislation approved in 2021 increased the annual cap on rate increases for Citizens by 1 percent per year until it reaches 15 percent in 2026 (up from a cap of 10 percent annual increase per year allowable), and explicitly prevented Citizens from competing with private insurers.⁵³ For 2024, the state confirmed rules preventing policy renewals with

⁵¹ Kousky and Medders, “The Evolution of Florida’s Public-Private Approach to Property Insurance.”

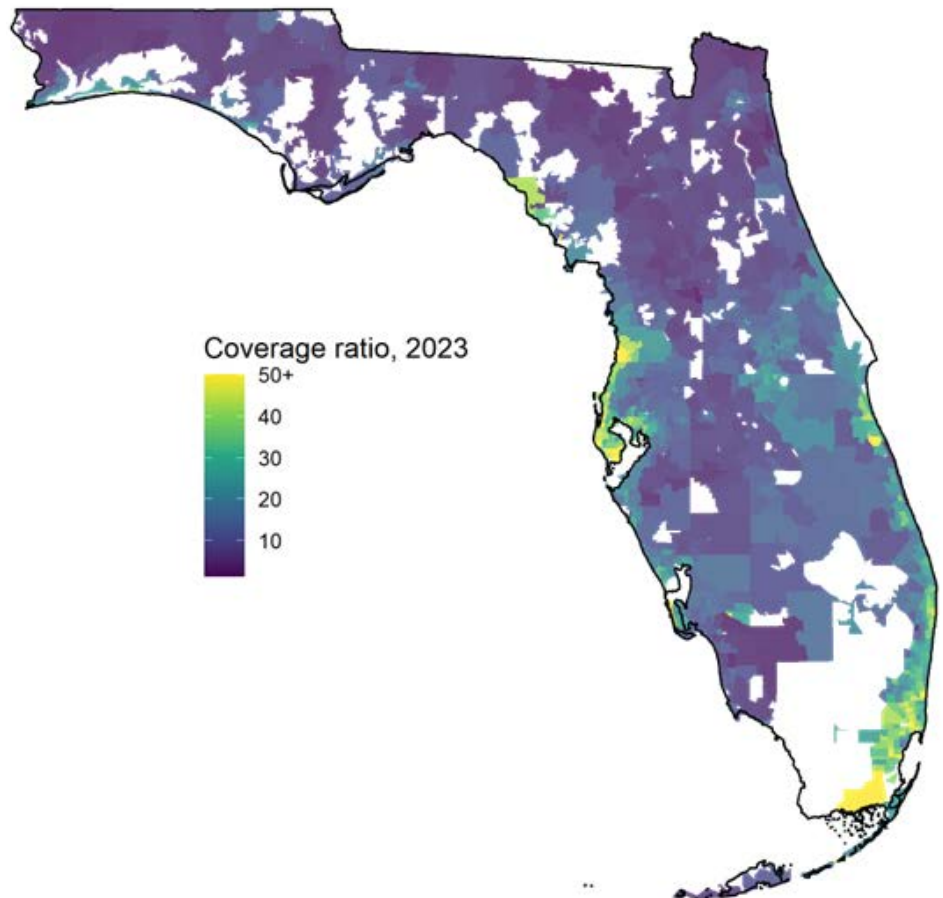
⁵² “Policies in Force,” Citizens Property Insurance Corporation, accessed August 22, 2024, <https://www.citizensfla.com/policies-in-force>.

⁵³ “Bill Summary: SB 76 — Property Insurance” (2021), <https://www.flsenate.gov/Committees/BillSummaries/2021/html/2528>.

Citizens if a private insurer offered equivalent coverage within 20 percent of the Citizens premium cost.⁵⁴ These two measures mean not only that Citizens rates are going up in several parts of the state — one analysis found that Citizens will have to raise rates in Miami-Dade County 80 percent in order to avoid competing with private insurers — but also that private insurers now know the price levels needed to obtain tens of thousands of new customers at no marketing or entry cost (this being whatever figure is realized at the 20 percent increase threshold from the current Citizens rate).⁵⁵

Despite efforts to depopulate, in many Florida zip codes, more than 10 of every 100 households are relying on Citizens' multi-peril coverage option, as Figure 12 demonstrates.

Figure 12. Distribution of Citizens policyholders as a proportion of total homeowner households across Florida zip codes. *Note: this figure demonstrates how coverage ratios are distributed across Florida zip codes. Coverage ratio = 100*[(total policies in a zip code)/(total homeowner households in a zip code)] — or in other words, the number of policies present per every 100 households. Calculated only for zip codes with 30 or more households.*



⁵⁴ Citizens Property Insurance Corporation, "A Year of Change: Rates, Legislative Changes, Private Options," Policyholder Newsletter, December 4, 2023, <https://www.citizensfla.com/-/a-year-of-change-rates-legislative-changes-private-options>.

⁵⁵ Jason Garcia, "Florida Republicans Protected Insurance Companies from Competition. Florida Homeowners Are Now Paying Higher Prices," Seeking Rents (blog), July 2, 2024, <https://jasongarcia.substack.com/p/florida-republicans-protected-insurance>.

⁵⁶ Insurance Journal, “Spike in Recent Ratings Downgrades Shows Challenges for US Insurers,” Insurance Journal, March 4, 2024, <https://www.insurancejournal.com/news/national/2024/03/04/763160.htm>.

⁵⁷ Jon Schuppe, “Florida Lawmakers Scramble to Fix a Property Insurance Crisis before Hurricane Season,” NBC News, May 21, 2022, <https://www.nbcnews.com/news/us-news/roofing-scams-florida-property-insurance-hurricane-rcna29649>.

⁵⁸ AM Best, “Best’s Market Segment Report: AM Best Assigns Negative Outlook to US General Liability Insurance Market,” press release, December 15, 2020, <https://news.ambest.com/PR/PressContent.aspx?refnum=30201&altsrc=9>; Michael Carroll, “Researchers Report Orchestrated High-Tech Campaign to Assault Florida Insurance Firms with Lawsuits,” Florida Record, December 27, 2023, <https://flarecord.com/stories/653378228-researchers-report-orchestrated-high-tech-campaign-to-assault-florida-insurance-firms-with-lawsuits>.

⁵⁹ “Impediments in the Insurance Marketplace for Affordable Housing” (Fairview Housing Partners, February 16, 2024), <https://fairviewhousingpartners.org/recent-publications/>.

⁶⁰ Benjamin D. Tievsky, “Policyholders Are Not to Blame for ‘Social Inflation,’” Pillsbury Law, November 18, 2022, <https://www.pillsburylaw.com/en/news-and-insights/policyholders-not-to-blame-for-social-inflation.html>; Brianna Sacks, “Insurers Slashed Hurricane Ian Payouts Far below Damage Estimates, Documents and Insiders Reveal,” Washington Post, March 11, 2023, <https://www.washingtonpost.com/climate-environment/2023/03/11/florida-insurance-claims-hurricane-ian/>.

⁶¹ Martin D. Weiss, “Large Property Insurers in Florida Fail to Pay Nearly Half of Homeowner Claims,” Weiss Ratings, June 25, 2024, <https://weissratings.com/en/weiss-news/weiss-ratings-reveals-large-property-insurers-in-florida-fail-to-pay-nearly-half-of-closed-homeowner-claims>.

⁶² Website of Ron DeSantis, “Governor DeSantis Signs Legislation to Continue Insurance Reform in Florida,” news release, June 11, 2021, <https://www.flgov.com/2021/06/11/governor-desantis-signs-legislation-to-continue-insurance->

The current crisis at Citizens is not new: In many ways, Citizens is designed to absorb risk in challenging markets, and the insurer has grown and shrunk in line with market crises and state interventions in the past. **This enduring story underscores how the current state approach — which bails out and protects the profit margins of private insurers — has yet to deal with the root challenges in Florida.**

How the insurance crisis is being talked about in Florida

Similar to other states, many insurers in Florida have received downgraded credit ratings, which likely increased their cost of reinsurance.⁵⁶ Yet the major industry narrative used to justify instability in Florida’s private insurance market is the claim of corruption in the roofing industry,⁵⁷ which then leads to the abuse of third-party litigation practices in the state.

This “false litigation narrative” contends that insurance costs are artificially inflated primarily because of excessive homeowners’ insurance litigation, spurred largely by roofing companies, and other false claims filed against insurers throughout the state. This disproportionate rate of litigation has been cited by insurers and rating agencies like Demotech and AM Best as a key factor contributing to the state’s rising insurance premiums and insurers’ operating costs.⁵⁸ While there have been reports of certain hedge funds and venture capital firms bankrolling some commercial litigation,⁵⁹ this consequential narrative overlooks the possibility that many of the claims filed against Florida insurers are, in fact, legitimate.⁶⁰ After all, a recent study found that **Floridians who filed homeowners insurance claims in 2022 had the lowest chance in all 50 states of receiving a payout.** That rate was even higher for two of the state’s largest insurers (subsidiaries of State Farm and Allstate), which failed to pay nearly half of claims.⁶¹ Nonetheless, Florida implemented several legislative reforms between 2019 and 2023 aimed at curbing litigation, such as reduced claims windows and the elimination of one-way attorney fee shifting, where only the insurance company pays legal fees if the policyholder wins a case.⁶² These reforms were enacted with the expectation that they would lead to rate decreases by mid-2024. Instead, rates continue to rise.⁶³ Despite the lack of evidence that “false litigation” drives premium increases,⁶⁴ this narrative is becoming a broadly adopted discursive justification used by insurers to shield against losses, and worse, further dampen consumer protections, as it becomes exported to other states.

The nature and temporality of climate-related risk in Florida

A major area of climate-related risk for Florida comes from tropical storms/hurricanes — of high concern for communities because of these hazards’ capacity to inflict major property damage. Florida has experienced 32 separate billion-dollar tropical storm/hurricane disasters since 1980.⁶⁵ The Federal Emergency Management Agency’s (FEMA) National Risk Index designates coastal areas across the Gulf Coast and Southeast as

⁶² reform-in-florida/; Website of Ron DeSantis, “Governor Ron DeSantis Signs Two Bills to Support Disaster Relief and Help Stabilize Florida’s Property Insurance Market,” news release, December 16, 2022, <https://www.flgov.com/2022/12/16/governor-ron-desantis-signs-two-bills-to-support-disaster-relief-and-help-stabilize-floridas-property-insurance-market/>.

⁶³ Lawrence Mower, “Florida Insurance Premiums Might Not Go Down, Industry Says,” Tampa Bay Times, October 11, 2023, <https://www.tampabay.com/news/florida-politics/2023/10/10/insurance-crisis-desantis-legislature-premiums-falling/>.

⁶⁴ Lawrence Mower, “Florida Leaders Blame Insurance Crisis on Lawsuits, but Evidence Is Thin,” Tampa Bay Times, October 19, 2023, <https://www.tampabay.com/news/florida-politics/2023/10/19/florida-leaders-blame-insurance-crisis-lawsuits-evidence-is-thin/>.

⁶⁵ “U.S. Billion-Dollar Weather and Climate Disasters, 1980–Present: Florida Summary,” NOAA National Centers for Environmental Information (NCEI), updated September 3, 2024, <https://doi.org/10.25921/STKW-7W73>.

⁶⁶ “Hurricane,” FEMA National Risk Index, accessed August 22, 2024, <https://hazards.fema.gov/nri/hurricane>.

⁶⁷ Veronica Penney, “5 Things We Know About Climate Change and Hurricanes,” New York Times, November 10, 2020, <https://www.nytimes.com/2020/11/10/climate/climate-change-hurricanes.html>.

⁶⁸ Jeff Berardelli, “How Climate Change Is Making Hurricanes More Dangerous,” Yale Climate Connections, July 8, 2019, <https://yaleclimateconnections.org/2019/07/how-climate-change-is-making-hurricanes-more-dangerous/>; James B. Elsner and Thomas H. Jagger, “On the Increasing Intensity of the Strongest Atlantic Hurricanes,” in *Hurricanes and Climate Change: Volume 2*, ed. James B. Elsner et al. (Dordrecht: Springer Netherlands, 2010), 175–90, https://doi.org/10.1007/978-90-481-9510-7_10.

⁶⁹ Ben Strauss et al., *Florida and the Surging Sea: A Vulnerability Assessment With Projections for Sea Level Rise and Coastal Flood Risk* (Princeton, NJ: Climate Central, April 2014), <https://sealevel.climatecentral.org/uploads/ssrf/FL-Report.pdf>.

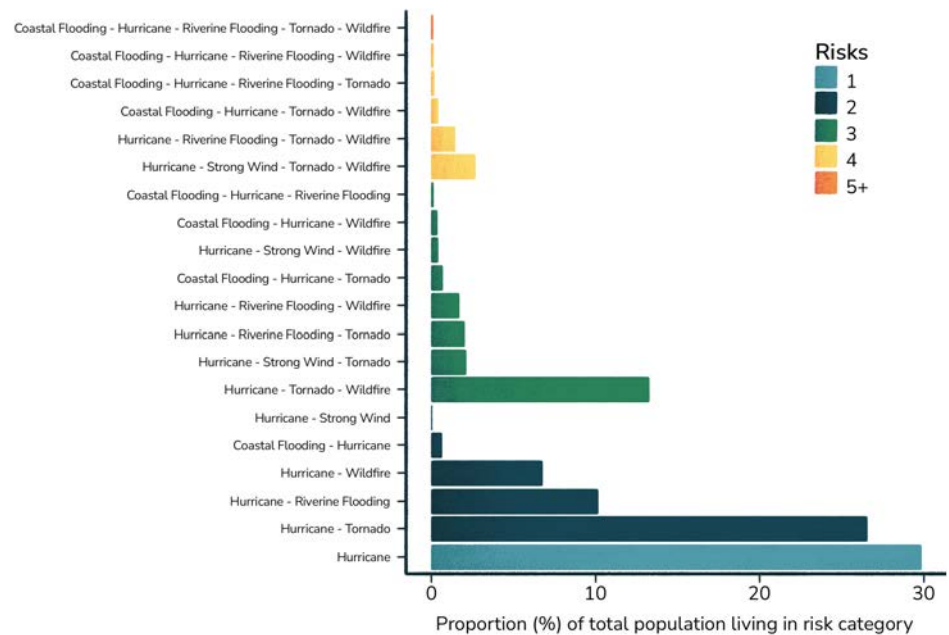
high hurricane risk areas, including most of the state of Florida, though risks are highest at the state’s coasts — particularly, though not exclusively, in major coastal metropolitan areas like Miami and Tampa.⁶⁶ Leading hurricane-associated risks for homeowners include high winds, flooding, and storm surge. The NFIP covers flood risks but leaves hurricane wind risk to private insurers and Citizens, the state’s insurer of last resort (see Appendix 1 for details).

The link between human-caused climate change and rising hurricane risk is now well established.⁶⁷ Climate change is increasing sea surface temperatures and injecting more warm, moist air into the atmosphere, generating more energy to fuel storms and extending the areas where hurricanes can form. Uncertainties still remain about whether climate change will cause more hurricanes in total or longer and more active hurricane seasons. However, scientists agree that hurricanes that do form are becoming more intense.⁶⁸ This means more powerful winds, wetter rainfalls, and higher storm surges. Storm surge-induced floods may also be worsened by longer-term sea level rise — a significant challenge in Florida, given that more than 1.4 million homes are at elevations at or below six feet above sea level.⁶⁹ Though mechanisms are not yet fully understood, hurricanes are also moving more slowly, which means that they batter coasts for longer when they arrive. They are also intensifying more rapidly (e.g., escalating from the lower to higher categories of strength, based on wind speed), making hurricane forecasting more challenging.

While hurricane risk can dominate discussions of climate-related risk in Florida, it is important to recognize that many communities in the state are exposed to multiple, frequently compounding climate hazards. For example, Florida also has a long history of wildfires, and projected increases in periods of drought and higher average temperatures in the state are expected to result in increased wildfire risks in the state — one recent estimate suggests that the number of properties exposed to wildfire risk in Florida could double by 2052.⁷⁰ These risks are widely dispersed through the state. Severe convective storms (SCSs), discussed in more detail below, are also a concern in Florida. Along with hurricanes, they are another locus of high wind risk that can spin off tornadoes. Meanwhile, these various storm events can also generate coastal and riverine flooding. While the former is often the focus of media coverage on hurricanes, and is a major driver of damage, the latter is often under-recognized and especially underinsured, hitting lower-income Florida communities hard — as seen in reports on inland flooding caused by Hurricane Ian, which devastated areas with very low flood insurance take-up.⁷¹ Presumably recognizing this point, the NFIP recently issued flood insurance maps requiring coverage in larger parts of the state.⁷² As Figure 13 shows, many Florida communities are exposed to very high expected losses from multiple risk categories, and roughly 13 percent of Floridians live in an area exposed to very

high expected losses from hurricanes, tornados, and wildfires. In other words, intersecting hazards can produce sometimes-unexpected geographies of compounding risk in the state — for example, the overlapping risks faced by communities in the Florida Panhandle.

Figure 13. Proportion of Florida’s population with very high expected losses from multiple risk categories. *Note: This figure illustrates the proportion of the total state population living in a census tract with a high expected loss rate for multiple risk categories, where “high” is any expected loss rate greater than the 90th percentile nationally.*



⁷⁰ Alex Harris, “Climate Change Is Heating up Florida. That Could Bring More Wildfires, New Report Warns,” WUSF, May 16, 2022, <https://www.wusf.org/environment/2022-05-16/climate-change-heating-florida-more-wildfires-report-warns>.

⁷¹ Casey Tolan and Curt Devine, “Lack of Flood Insurance in Hard-Hit Central Florida Leaves Families Struggling after Hurricane Ian,” CNN, October 9, 2022, <https://edition.cnn.com/2022/10/09/us/hurricane-ian-central-florida-flood-insurance-invs/index.html>.

⁷² William Rabb, “Coverage Needed: Hundreds of Thousands in SE Now in Flood Zones With New Maps,” Insurance Journal, June 24, 2024, <https://www.insurancejournal.com/news/southeast/2024/06/24/780732.htm>.

⁷³ USGlass Magazine, “30 Years Later: Hurricane Andrew Redesigned Modern Building Codes,” USGlass Magazine, August 25, 2022, <https://www.usglassmag.com/30-years-later-hurricane-andrew-redesigned-modern-building-codes/>.

⁷⁴ Christopher Flavelle, “As Storms Get Stronger, Building Codes Are Getting Weaker,” Bloomberg News, March 19, 2018, <https://www.bloomberg.com/politics/articles/2018-03-19/storm-prone-states-ease-off-building-codes-as-climate-risk-grows>; “Rating the States 2024: Atlantic and Gulf Coast States” (Insurance Institute for Business & Home Safety, April 2, 2024), <https://ibhs.org/public-policy/rating-the-states/>.

Existing risk reduction initiatives in Florida

Though Florida households are exposed to multiple perils, the State of Florida has primarily focused its risk reduction efforts on mitigating hurricane risk. Before Hurricane Andrew struck the state in 1992, Florida was similar to many other US states in not having a uniform building code. At that point, the state had more than 400 local codes, most loosely enforced at best — in part due to shortcuts taken during the state’s building booms in the 1970s and 1980s.⁷³ Hurricane Andrew’s high damages prompted state policymakers to finally act. The state officially adopted the Florida Building Code (FBC) in 2002 and significantly updated it in 2015; it is currently scheduled for reassessment every three years as the International Code Council (ICC) continues to update model building codes for the US. However, amid lobbying from homebuilders and growing resistance to regulation in the state, there are serious concerns that Florida politicians may now be weakening the FBC and its enforcement.⁷⁴

The FBC’s key improvement was to mandate hurricane wind risk–

⁷⁵ USGlass Magazine, “New Hurricane Lab to Simulate 200 Mph Winds to Study Effects on Structures,” USGlass Magazine, July 29, 2022, <https://www.usglassmag.com/new-hurricane-lab-to-simulate-200-mph-winds-to-study-effects-on-structures/>.

⁷⁶ James M. Done, Kevin M. Simmons, and Jeffrey Czajkowski, “Relationship between Residential Losses and Hurricane Winds: Role of the Florida Building Code,” ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering 4, no. 1 (March 2018): 0 4 0 1 8 0 0 1 , <https://doi.org/10.1061/AJRUAE.0000947>.

⁷⁷ Zachary Oliphant, Thomas Culhane, and Pradeep Haldar, Public Impacts of Florida’s Property Assessed Clean Energy (PACE) Program (Tampa, FL: Patel College of Global Sustainability, University of South Florida, 2020), <https://www.usf.edu/pcgs/documents/pace.pdf>.

⁷⁸ Michael Young et al., Study of Florida’s Windstorm Mitigation Credits: Assessing the Impact on the Florida Insurance Market (Risk Management Solutions, March 2 0 1 0) , https://forms2.rms.com/rs/729-DJX-565/images/tc_2010_rms_study_florida_windstorm_mitigation_credits.pdf.

⁷⁹ William Rabb, “Are Billions in Wind Mitigation the Answer for Florida’s Insurance Problems?” Insurance Journal, December 18, 2 0 2 3 , <https://www.insurancejournal.com/news/southeast/2023/12/18/752358.htm>.

⁸⁰ Steven Carlyle Cronig, “What S. Fla. Condo Boards Need to Know About the Amendments to the Florida Condominium Statute,” Daily Business Review, June 27, 2 0 2 3 , <https://www.law.com/dailybusinessreview/2023/06/27/what-s-fla-condo-boards-need-to-know-about-the-amendments-to-the-florida-condominium-statute/?sreturn=20240723120337>.

⁸¹ “CS/HB 293: Hurricane Protections for Homeowners’ Associations,” Pub. L. No. CS/HB 293 (2024), <https://www.flsenate.gov/Session/Bill/2024/293>.

⁸² Dona Stewart, “A Year After the Surfside Collapse, Florida’s Condo Safety Act Impacts Housing Affordability,” New America (blog), March 16, 2023, <http://newamerica.org/future-land-housing/blog/a-year-after-the-surfside-collapse/>.

reduction features for all new construction in Florida — for example, roofs capable of withstanding hurricane-force winds and impact-resistant glass. The FBC also defines Broward and Miami-Dade counties as “high-velocity hurricane zones” warranting more stringent code requirements. New research is testing structures against climate-intensified hurricane winds and is also making strides to incorporate more of the state’s compounding hazards, in trialing more protections against flood risks.⁷⁵ The FBC has been shown to significantly reduce risks to new-build homes in Florida.⁷⁶ However, many other homes were built before the FBC and have not been retrofitted. The State of Florida has a decades-old policy requiring insurance rate discounts in the form of mitigation credits for homeowners who undertake relevant home-hardening retrofits against hurricane wind risk,⁷⁷ but this initiative has historically seen patchy uptake⁷⁸ and is way underfunded relative to need.⁷⁹

However, existing pushes for code improvement and retrofits to reduce risks could affect housing affordability, as discussed in the wake of code changes implemented after the 2022 Surfside condominiums collapse.⁸⁰ The state also passed new codes in May 2024, which will require further hurricane protection efforts for homeowners associations.⁸¹ While these updates are critical and important safety measures, they could also pose challenges for housing affordability given the historically severe underfunding of many condo association reserves.⁸² In fact, according to some estimates, “Florida has the highest percentage of buildings with underfunded reserves,” with about “50% more associations that are considered weaker than any other state.”⁸³ Further, Association Reserves, a provider of condo and community association reserve studies, estimated that one-fifth of Florida associations have 0–10 percent of the necessary funds saved to pay for any major repair and maintenance costs.⁸⁴ Without supportive grant programs tailored to low- and middle-income populations, there is risk that these necessary upgrades could inadvertently displace residents, especially elderly and other residents on fixed incomes.

Other retrofit initiatives throughout Florida have illustrated the challenges of individually oriented approaches and loan-based financing to building improvements. For example, Florida’s authorization for local governments to set up Property Assessed Clean Energy (PACE) financing programs for home hardening have had mixed results in making climate-proofing retrofits more accessible for cost-burdened homeowners who are blocked in affordably accessing mainstream home improvement finance via mainstream credit scoring,⁸⁵ notoriously racially biased in the US.⁸⁶

The original intention of PACE finance was that retrofits could be made to “pay for themselves” via savings on household energy bills via energy efficiency retrofits and rooftop solar, and that local government-brokered financing to repay upfront costs would

⁸³ Demetri Psarianos, "Cause and Effect of Florida's New Condo Law," Kelley A. Bergstrom Real Estate Center, Warrington College of Business (blog), March 5, 2024, <https://warrington.ufl.edu/due-diligence-of-floridas-new-condo-law/>.

⁸⁴ Psarianos, "Cause and Effect of Florida's New Condo Law."

⁸⁵ Zac J. Taylor and Sarah E. Knuth, "Financing 'Climate-Proof' Housing? The Premises and Pitfalls of PACE Finance in Florida," *Journal of Urban Affairs*, (2023): 1–17, <https://doi.org/10.1080/07352166.2023.2247503>.

⁸⁶ National Consumer Law Center, "Past Imperfect: How Credit Scores 'Bake In' and Perpetuate Past Discrimination," *Racial Justice and Equal Economic Opportunity*, February 2024, https://www.nclc.org/wp-content/uploads/2016/05/20240227_Issue-Brief_Past-Imperfect.pdf.

⁸⁷ Taylor and Knuth, "Financing 'Climate-Proof' Housing?"

⁸⁸ Laina Bauer, "PACE: A Practical Solution for Homeowners Facing Florida's Insurance Crisis," *Florida PACE Funding Agency* (blog), January 18, 2024, <https://floridapace.gov/blog/how-pace-empowers-florida-homeowners-amidst-insurance-crisis/>.

⁸⁹ Jeremy Coryne and Haru Kohler, "State-Supported 'Clean Energy' Loans Are Putting Borrowers at Risk of Losing Their Homes," *ProPublica*, April 23, 2021, <https://www.propublica.org/article/missouri-pace-loans>.

⁹⁰ Siobhan McAlister and Ryan Sandler, *Property Assessed Clean Energy (PACE) Financing and Consumer Financial Outcomes* (Washington, DC: Consumer Financial Protection Bureau, May 2023), https://files.consumerfinance.gov/f/documents/cfpb_pace-rulemaking-report_2023-04.pdf.

⁹¹ Patrick Bigger and Sarah Knuth, "Pennsylvania's Housing Justice Campaign's Promising Win," *Nonprofit Quarterly*, April 25, 2023, <https://nonprofitquarterly.org/pennsylvanias-housing-justice-campaigns-promising-win/>.

⁹² California's FAIR plan is a state-run program that offers insurance to people unable to secure coverage through private insurers. Additional information can be found in Appendix 1.

⁹³ Rachel Cleetus, "Climate Change Is Driving an Insurance Crisis: Policymakers and Regulators Must Act," *Union of Concerned Scientists: The Equation* (blog), June 19, 2024, <https://blog.ucsusa.org/rachel-cleetus/climate-change-is-driving-an>

therefore be no net burden on strained household budgets — a common hope in financing retrofits that becomes particularly urgent for households with little financial cushion to afford immediate improvements that may save money long term.⁸⁷ PACE advocates have argued that hurricane wind hardening could similarly repay itself via reduced insurance premiums.⁸⁸ In practice, these envisioned savings do not always materialize, and consumer recourse procedures have been underdeveloped. (Though, paradoxically, in other parts of the country, wealthier homeowners have benefited from the model.⁸⁹) Consumer protection watchdogs have argued that predatory contractors have exploited these programs to saddle poor and minority households with ineffective repairs and damaging repayment burdens.⁹⁰ While reform efforts continue and a handful of other states use PACE finance for homes, other visions argue that grants are a more appropriate way for governments to support the most financially burdened homeowners.⁹¹



California

California is highly exposed to catastrophic wildfires, which are becoming increasingly severe due to climate change. Heightened wildfire risk, coupled with other perils throughout the state, has paved the way for private insurers to raise premiums or drop policies altogether in some zip codes. As a result, California's already

precarious housing market has grown more precarious due to unsustainable premium burdens and increased costs for low- and middle-income homeowners, renters, and residents. The state Fair Access to Insurance Requirements (FAIR) Plan⁹² has absorbed policies for homes most at risk of wildfires, resulting in raised prices to account for this uptake. As of March 2024, the FAIR Plan has a total exposure of \$340 billion, which is a 20 percent increase from last year. Compounding the issue is the limited adoption of home hardening and defensible space measures throughout the state.⁹³ The state insurance commissioner proposes increased concessions for private insurers as a solution, but without clarity on how this addresses root causes of the crisis, or how enduring such policy interventions will be.⁹⁴

In this section, we explore these dynamics and present new analysis of insurance data. Because the California Department of Insurance readily provided disaggregated zip code-level data for private wildfire insurance, multi-peril insurance, and the FAIR Plan, our California data analysis is more comprehensive than for Florida and Minnesota.

California's housing crisis

California has long been the poster child for related housing

an-insurance-crisis-policy-makers-and-regulators-must-act/.

⁹⁴ Megan Fan Munce, "Exclusive: California's Insurance Commissioner Isn't Sure When the Insurance Crisis Will End, but He Has Hope," San Francisco Chronicle, July 25, 2024, <https://www.sfchronicle.com/california/article/california-insurance-crisis-commissioner-19592297.php>.

⁹⁵ "E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2024," State of California Department of Finance, May 2024, <https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2024/>.

⁹⁶ Alex Bentz, "California Housing Affordability Tracker (2nd Quarter 2024)," California Legislative Analyst's Office, August 6, 2024, <https://lao.ca.gov/LAOEconTax/Article/Detail/793>.

⁹⁷ According to California's Legislative Analyst's Office, the mortgage payment for a two-bedroom house as of March 1, 2024 was \$4,836, as compared to \$2,748 for a two-bedroom rental in California.

⁹⁸ California Housing Partnership, "California Affordable Housing Needs Report 2023: Key Findings," California Housing Partnership, March 2023, https://chpc.net/wp-content/uploads/2023/03/HNR_CA_CHPC-Master2023-FINAL.pdf.

⁹⁹ "2024 Greater Los Angeles Homelessness Count," Los Angeles Homeless Services Authority, June 28, 2024, <https://www.lahsa.org/documents?id=8164-2024-greater-los-angeles-homeless-count-results-long-version-.pdf>.

¹⁰⁰ David Wagner, "Why Even Strong Progress Sheltering the Unhoused in LA Can't Keep up with Our Affordable Housing Crisis," LAist, July 1, 2024, <https://laist.com/news/housing-homelessness/los-angeles-homeless-count-2024-inflow-eviction-housing-rents-lahsa-prevention>.

¹⁰¹ Wagner, "Why Even Strong Progress Sheltering the Unhoused in LA Can't Keep up with Our Affordable Housing Crisis."

¹⁰² Los Angeles Homeless Services Authority, "2024 Greater Los Angeles Homelessness Count."

¹⁰³ Manuela Tobias, Matt Levin, and Ben Christopher, "Californians: Here's Why Your Housing Costs Are so High," CalMatters, August 21, 2017, <https://calmatters.org/explainers/housing-costs-high-california/>.

¹⁰⁴ Los Angeles Homeless

affordability and homelessness crises in the US. However, over the past few years, these twin issues have intensified exponentially in the state despite recent declines in overall population.⁹⁵ In early 2024, the median price for a house in California surpassed \$900,000, with recent research showing that the state's "mid-tier" homes (those with values in the 35th to 65th percentile range) are more than twice as expensive as equivalent homes in the rest of the country.⁹⁶ Purchasing a two-bedroom house has become much more expensive than renting one.⁹⁷ Yet because wages have also drastically lagged rent increases, around half of renters in California are nevertheless officially "rent burdened" (paying 30 percent or more of their incomes for housing), while a third use more than half of their income on rent. That figure rises to 79 percent of extremely low-income renter households in California paying more than half their income for housing.⁹⁸

This affordability crisis has resulted in huge growth of unhoused populations in the state, as precarious households fall out of secure housing tenure because they can no longer afford the price. For example, while Los Angeles County (the largest US county by population) has aggressively pursued bond funding for permanent rehousing schemes to address its homelessness crisis, with a record-setting 27,300 permanent housing placements last year alone, its unhoused population stayed virtually the same.⁹⁹ That's because "people are falling in [to homelessness] faster than we're able to house them," according to the CEO of the Los Angeles Homelessness Services Authority.¹⁰⁰ Further, the 2024 Greater Los Angeles Homelessness Count found that more than 68 percent of people who were accounted for as living without shelter in LA County were doing so for the first time; a majority of those surveyed reported economic hardship as the cause.¹⁰¹ Relatedly, eviction filings rose by 38 percent in the same time period for Angelenos, higher than any time in the past decade.¹⁰²

As with every other state in the US, California's housing crisis is racialized. Though not as marked as in Minnesota, there is nevertheless a wide racial gap in homeownership rates — 36 percent of Black Californians own their homes compared to 63 percent of white Californians.¹⁰³ Racialized patterns are also present for unhoused populations. For example, LA County's unhoused population is a majority Latinx (43 percent), and has a higher percentage of Black people (31 percent) than the general population of LA (about 10 percent). And across the state, Black renters also make up more than their fair share of rent-burdened tenants.¹⁰⁴

Also like other states, California's majority-minority communities were socially and financially devastated by the foreclosure crisis of the late 2000s and early 2010s. Unfortunately, in response to budgetary shortfalls during the period of marked austerity that followed the foreclosure crisis, California legislators decided to eliminate the state's 400+ Redevelopment Agencies (RDAs).¹⁰⁵

Services Authority, "2024 Greater Los Angeles Homelessness Count."

¹⁰⁵ RDAs were originally created by the California legislature in 1945, primarily as a mechanism aimed at eliminating urban "blight." But after subsequent legislation was passed in the 1950s and again in the 1970s, they evolved to additionally become a major node in the state's affordable housing finance landscape. By 2012, however, RDAs had a long established and distasteful legacy of urban displacement, questionable development projects, and opaque financial transactions, which led legislators to identify them for budgetary elimination.

¹⁰⁶ Gabriella Chiarenza, California Post-RDA Affordable Housing Developer Survey: Analysis of Results (Federal Reserve Bank of San Francisco, December 7, 2015), <https://www.frbsf.org/wp-content/uploads/sites/3/California-Post-RDA-Affordable-Housing-Developer-Survey.pdf>.

¹⁰⁷ Jennifer Dockery, "RDAs' Closure Shuts Door on Affordable Housing Development," Novogradac Historic Tax Credit Resource Center, April 1, 2012, <https://www.novoco.com/periodicals/articles/rdas-closure-shuts-door-affordable-housing-development>.

¹⁰⁸ "A Home for Every Californian: 2022 Statewide Housing Plan," California Department of Housing and Community Development, March 2022, <https://storymaps.arcgis.com/stories/94729ab1648d43b1811c1698a748c136>.

¹⁰⁹ Verisk, "Underwriting Losses Soar, Net Income Shrinks for P&C Insurers in 2022," Verisk Newsroom, March 29, 2023, <https://www.verisk.com/company/newsroom/underwriting-losses-soar-net-income-shrinks-for-pc-insurers-in-2022/>.

¹¹⁰ S&P Global Market Intelligence, "State Farm Receives \$1.2B+ from PG&E Wildfire Subrogation Trust," <https://www.spglobal.com/marketingintelligence/en/news-insights/latest-news-headlines/state-farm-receives-1-2b-from-pg-e-wildfire-subrogation-trust-60037841>; KQED, "PG&E, Insurance Companies Strike \$11 Billion Deal to Settle Wildfire Claims," <https://www.kqed.org/news/11774069/pge-insurance-companies-strike-11-billion-deal-to-settle-wildfire-claims>; The Insurer, "PG&E Agrees \$11bn Settlement with Subrogation Insurance Group," <https://www.theinsurer.com/news/pge-agrees-11bn-settlement-wildfire-subrogation-insurance-group/>.

Since then, localities all over the state have been asked to identify RDA "successor agencies" in order to manage their affordable housing portfolios. This has led to an uneven patchwork of affordable housing responses city by city and county by county; some are interested in supporting sustained affordable housing efforts, while others eschew them. While different attitudes toward affordable housing admittedly existed between the different RDAs prior to their dissolution, affordable housing developers report working in an intensified "feast or famine" financing context with no overall continuity¹⁰⁶ (which is paramount for securing investors and other project partnerships), and some measurements have cited aggregate losses of more than \$1 billion per year since 2012 for California's affordable housing pipeline due to the loss of RDAs.¹⁰⁷

All this is despite the fact that the state's housing plan clearly names a goal of safe, affordable, and stable housing for all Californians.¹⁰⁸

Insurance unaffordability and unavailability in California

California's insurance crisis is often positioned relative to increased wildfire risk. Indeed, wildfire-related insurance payouts have increased, and insurers have passed many of these costs on to policyholders. However, this hasn't necessarily translated to significant overall profit losses for companies. While it is true that insurers reported substantial underwriting losses during the 2017-2018 fire season,¹⁰⁹ it is important to remember that underwriting losses do not tell the full story of insurers' financial health. Case in point: insurers received \$12 billion in subrogation payments from PG&E and SoCal Edison for their liability in the 2017 and 2018 fires.¹¹⁰ Even without accounting for these payments, the 20-year average return on net worth (RoNW) for the California homeowner's insurance market between 1999 and 2018 was 7.1 percent, which was better than the national average of 5.6 percent over the same period.¹¹¹ By the end of 2018, insurance companies in California were still making a small profit on their core business, even when excluding investment returns.¹¹² By 2021, these profits were once again higher than the national average.¹¹³

Nonetheless, many major insurers have pulled out of the state: In 2023, California made national headlines when State Farm and Allstate, which represent more than 20 percent of the market share in California, decided not to write any new business in the state, leaving consumers in many regions with little to no options for coverage. These withdrawals, however, may be temporary, strategic moves to extract regulatory concessions. For example, Allstate has suggested that it might reenter the market if regulations become more favorable.¹¹⁴

In the wake of these withdrawals, the FAIR Plan has taken on more policies as private insurers have decreased their coverage and raised rates in recent years. Figures 14 and 15 show the FAIR

Plan coverage rate in California in 2022 compared to private insurers, both of which appear to be servicing different areas. While private insurers generally have low coverage ratios across the state in 2022, the FAIR Plan has higher coverage ratios, with clusters of zip codes in mid and northeast California having higher proportions of residents purchasing FAIR Plan options. Furthermore, Figure 15 shows that coverage rates appear to vary markedly across zip codes with different characteristics — with, for instance, higher property valued areas generally experiencing less fire coverage per household and FAIR Plan policies being written at much higher rates in low property value, high wildfire risk zip codes.

Figure 14. Distribution of FAIR Plan and private wildfire policyholders (as a proportion of total homeowner households) across California zip codes. Note: (Left) Coverage ratio (policies per 100 households) for California FAIR Plan fire insurance by zip code, 2022. (Right) Coverage ratio (policies per 100 households) for private insurer fire policies, 2022. Metrics are only calculated for zip codes with 30 or more households.

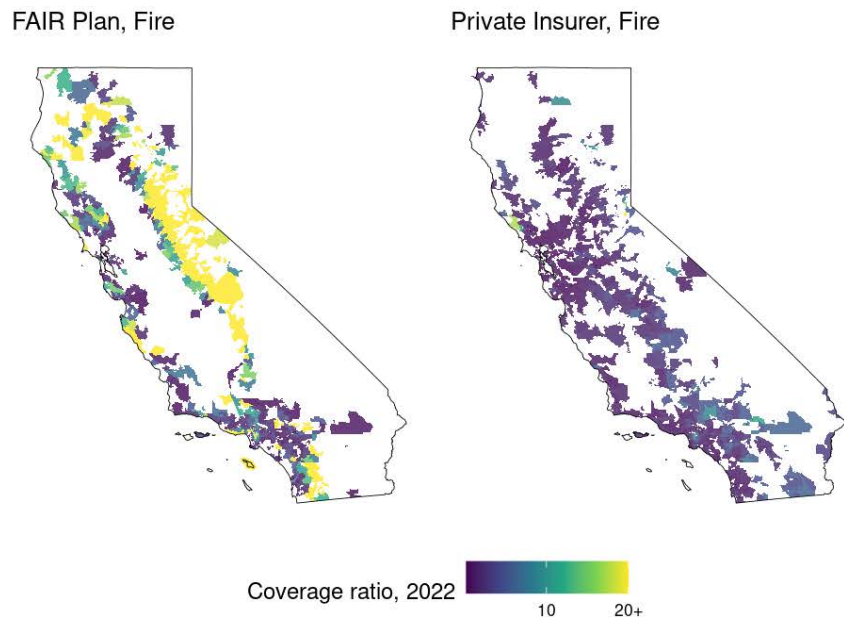


Figure 15. Fire insurance coverage rates by property value, wildfire risk, and insurer across California zip codes. Note: “Coverage ratio” is defined as $100 \times \frac{\text{total policies in a zip code}}{\text{total homeowner households in a zip code}}$ — or, in other words, the number of policies present per every 100 households. “Risk rank” describes the magnitude of wildfire risk faced by California communities, in terms of deciles of annual expected losses. E.g., a risk rank of “1” describes zip codes facing the lowest 10 percent of expected losses from wildfires, while a rank of “10” describes zip codes facing the highest 10 percent of climate-related damages across the state. Panels show quartiles

¹¹¹ This data was gathered and analyzed using the NAIC Reports on Profitability by Line by State for 2022, 2015, and 2005. The second half of each book contains data broken out by line and by state.

¹¹² National Association of Insurance Commissioners, Report on Profitability By Line By State in 2021 (Washington, DC: NAIC, March 2024), <https://content.naic.org/sites/default/files/publication-pbl-pb-profitability-line-state.pdf>.

¹¹³ National Association of Insurance Commissioners, Report on Profitability By Line By State in 2021.

¹¹⁴ Matthew Sellers, “Allstate Says It Is Considering Return to California Homeowners’ Insurance Market,” Insurance Business, April 26, 2024, <https://www.insurancebusinessmag.com/us/news/catastrophe/allstate-says-it-is-considering-return-to-california-homeowners-insurance-market-486896.aspx>; Megan Fan Munce, “Major California Home Insurer Could Resume Writing New Policies. Here’s What It Would Take,” San Francisco Chronicle, April 24, 2024, <https://www.sfchronicle.com/california/article/allstate-home-insurance-19419045.php>.

of median property value. E.g., the panel labeled “highest property value zip codes” describes how coverage ratios change alongside wildfire risk among zip codes whose property is, on average, among the highest 25 percent of property valuation across the state.

Lowest-property value zip codes



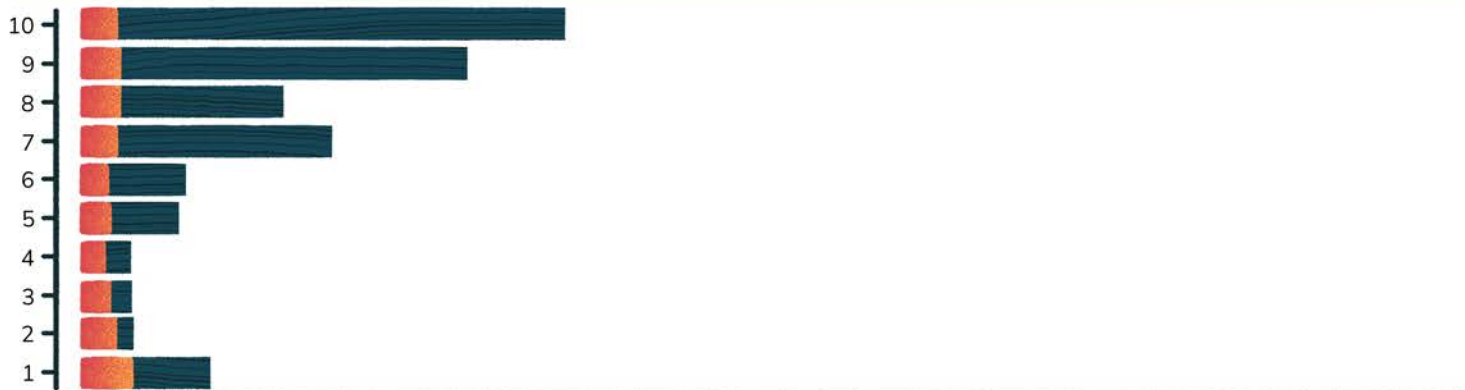
Low to mid-property value zip codes



Mid to high-property value zip codes



Highest-property value zip codes



Risk rank (fire)

\$0 10 20 30

Fire coverage ratio [policies per 100 households], 2022

Insurer: California FAIR Plan Private Insurer

To accommodate for the rapid uptick in the number of policies written, including in high-risk areas, the FAIR Plan has increased premium rates, shown in Figures 16 and 17. California FAIR Plan premiums are quite high relative to policy costs among private insurers, with many zip codes displaying premium rates nearing \$3,000 a year (Figure 16). In addition to being higher overall, premium rates for policies written via the California FAIR Plan appear to be much more dependent on projected wildfire risk than fire policies written by private insurers (Figure 17). While private insurer premium rates hovered around \$1,000 to \$2,000 in 2022, this may soon change to a much higher annual average premium given California Insurance Commissioner Ricardo Lara’s recent policy changes that make it easier and faster for his office to approve premium rate increase requests from insurance companies.¹¹⁵

Figure 16. Distribution of wildfire premium rates, by insurance provider, across California zip codes. Note: (Left) Premium rate for California FAIR Plan fire insurance by zip code, 2022. (Right) Premium rate for private insurer fire policies, 2022. Metrics are only calculated for zip codes with 30 or more policies.

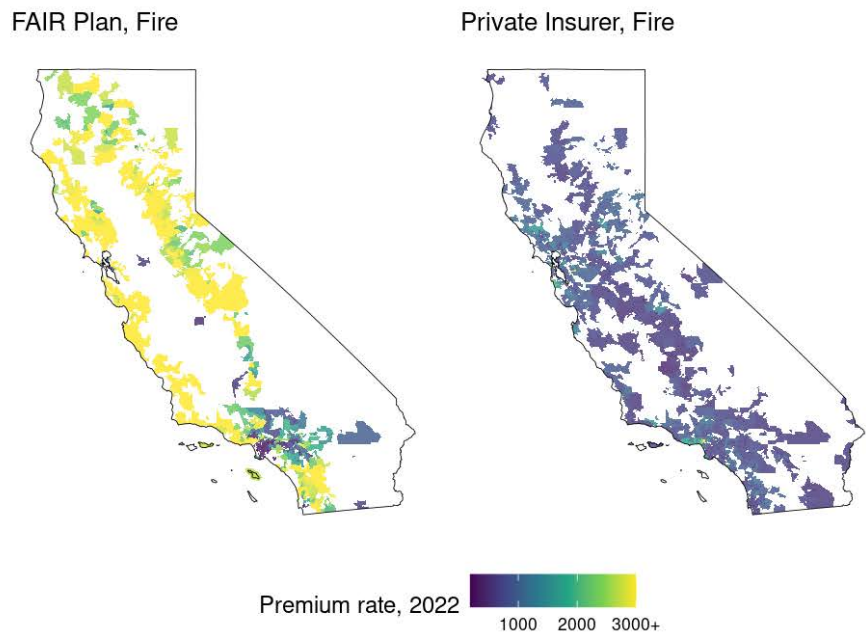


Figure 17. Premium rates by property value, wildfire risk, and insurance provider across California zip codes. Note: “Premium rate” is defined as the total premium revenue collected within a zip code divided by the total policies sold in a zip code. “Risk rank” describes the magnitude of wildfire risk faced by California communities, in terms of deciles of annual expected losses. E.g., a risk rank of “1” describes California zip codes facing the lowest 10 percent of expected losses from wildfires, while a rank of “10” describes California zip codes facing the highest 10 percent of wildfire damages across the state. Panels show quartiles of

¹¹⁵ California Department of Insurance, "Commissioner Lara Unveils Next Steps in His Strategy to Expand Coverage Options for Californians in Areas of High Wildfire Risk," press release, June 12, 2024, <https://www.insurance.ca.gov/0400-news/0100-press-releases/2024/release023-2024.cfm>.

median property value. E.g., the panel labeled “highest property value zip codes” shows how premium rates change alongside wildfire risk among zip codes whose property is, on average, among the highest 25 percent of property valuation across the state.

Lowest-property value zip codes

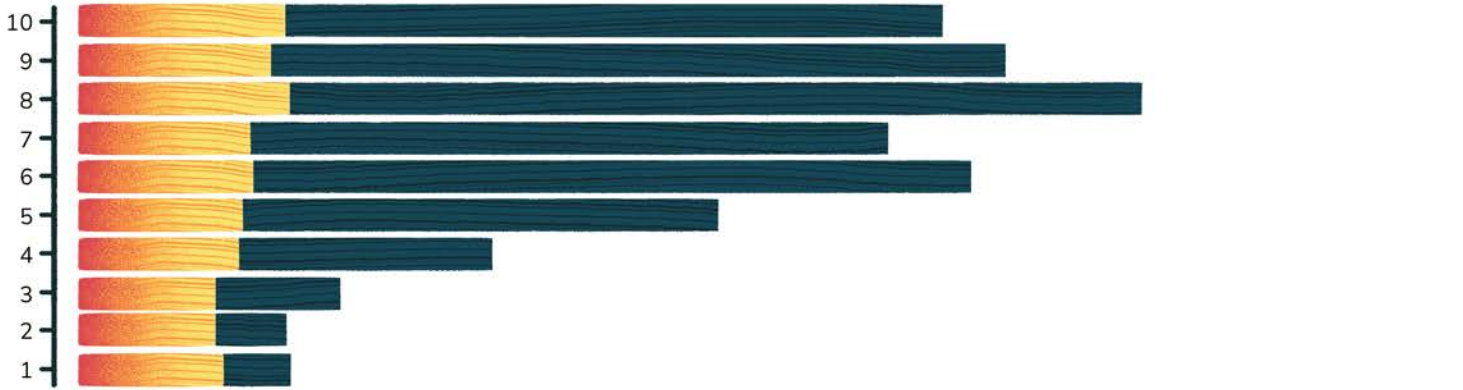


Low to mid-property value zip codes

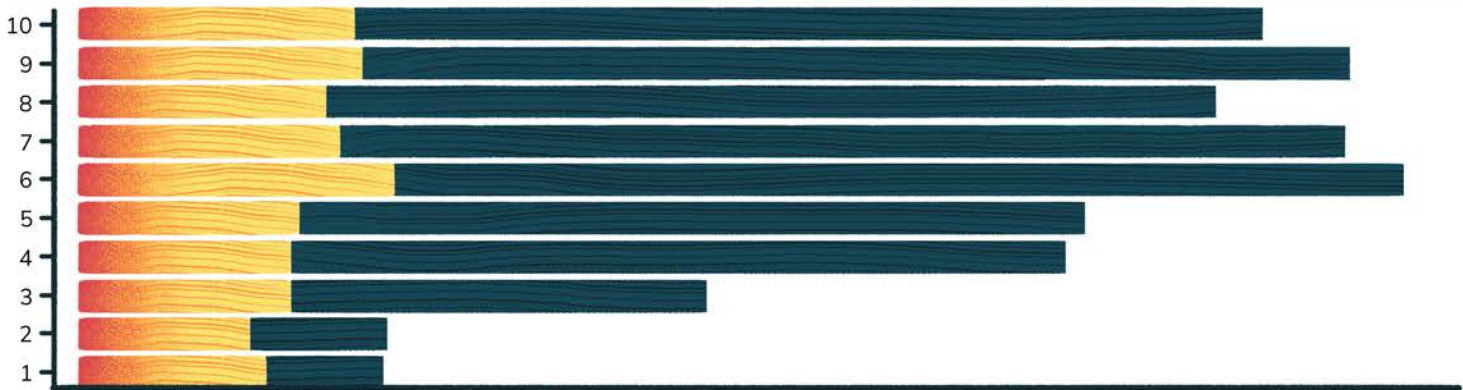


Mid to high-property value zip codes

Risk rank (fire)



Highest-property value zip codes



\$0 \$2,000 \$4,000

Premium rate, 2022

Insurer: California FAIR Plan Private Insurer

Increases in premiums have significant implications for lower-income households throughout the state. This is especially the case for California FAIR Plan policies, which appear to be a considerable cost for homeowners in 2022. According to Figure 18, FAIR policy rates cost the average household nearly 3 percent of their yearly income across most zip codes in the state. Figure 19 shows that the ratio of typical insurance costs to typical household income within a zip code rises alongside climate risk, but only for the California FAIR Plan. Cost burdens for policies written by private insurers are relatively similar across areas facing different levels of climate risk.

Figure 18. Distribution of premium burdens due to fire policy costs across California zip codes. Note: “Premium burden” is defined as the average premium rate of a zip code divided by the median household income of a zip code. (Left) Premium burden for California FAIR Plan fire insurance by zip code, 2022. (Right) Premium burden for private insurer fire policies, 2022. Metrics are only calculated for zip codes with 30 or more policies.

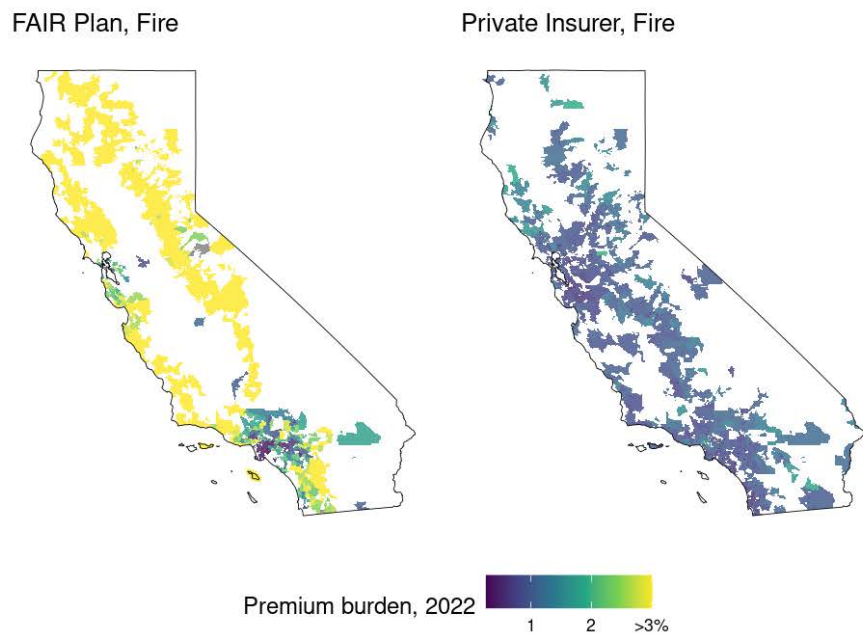
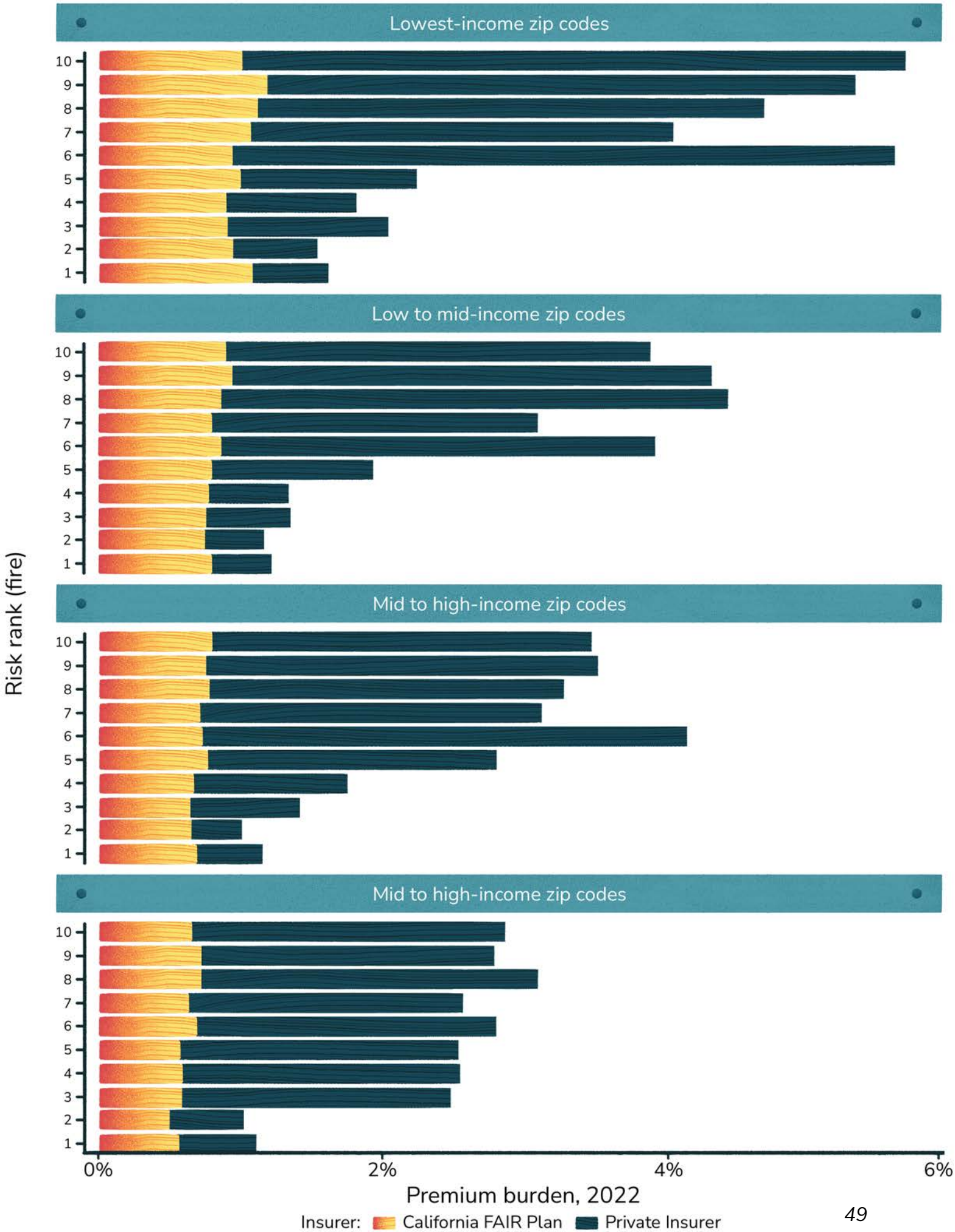


Figure 19. Level of premium burden across California zip codes by wildfire risk, household income, and insurance provider. Note: “Risk rank” summarizes the magnitude of wildfire risk faced by California communities, in terms of deciles of annual expected losses. E.g., a risk rank of “1” describes zip codes facing the lowest 10 percent of expected losses from wildfires across the state, while a rank of “10” describes California zip codes facing the highest 10 percent of wildfire-related damages across the state. Panels show quartiles of median household incomes. For instance, the panel labeled “lowest-income zip codes” shows how premium burden changes according to climate risk among zip codes whose residents earn, on average, the lowest 25 percent of incomes across California.



The figures above demonstrate a few key points. First, the state FAIR Plan is adopting the riskiest properties throughout the state as private insurers decrease their coverage ratios. In other words, **people are paying more for less coverage, and this phenomenon is being disproportionately felt in the lowest-income zip codes.**

Wildfires are not the only hazard in California, however. The following figures show that private insurers are thinking about premiums and profits in relation to many hazards at once. As Figures 20 and 21 show, multi-peril insurance premium rates are quite variable across California, with some zip codes paying \$1,000 annually and others upwards of \$3,000 for coverage. While the highest value, highest risk zip codes have the highest premium rates, ranging over \$3,000 in some cases, zip codes with lower property values and risk ranks still face significant premium rates.¹¹⁶ Figure 21 demonstrates the point that multi-peril premium rates written by private insurers are only somewhat associated with climate risk across California zip codes.

Figure 20. Distribution of private multi-peril premium rates across California zip codes. *Note: This figure shows how multi-peril insurance premiums from private insurers vary from zip code to zip code across California. Premium rate is calculated as total premiums divided by total policies in a zip code. Calculated only for zip codes with 30 or more policies.*

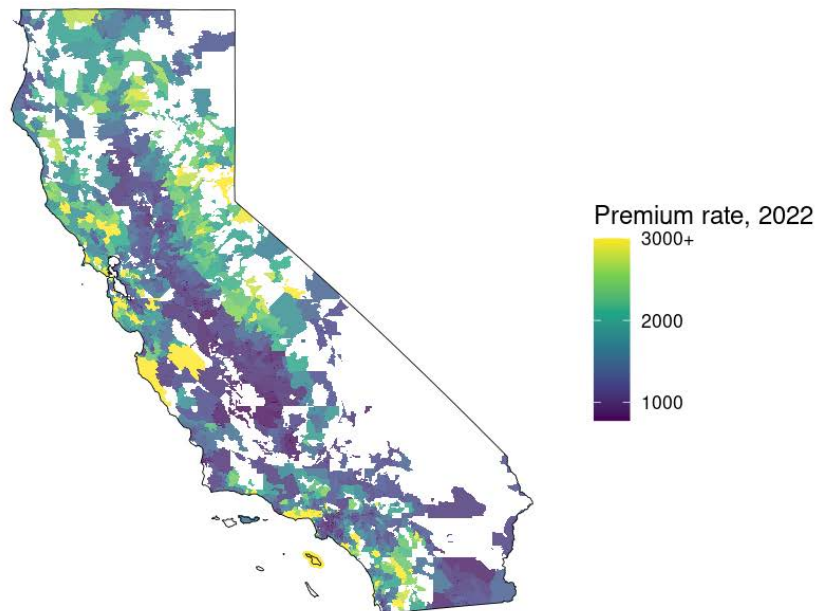
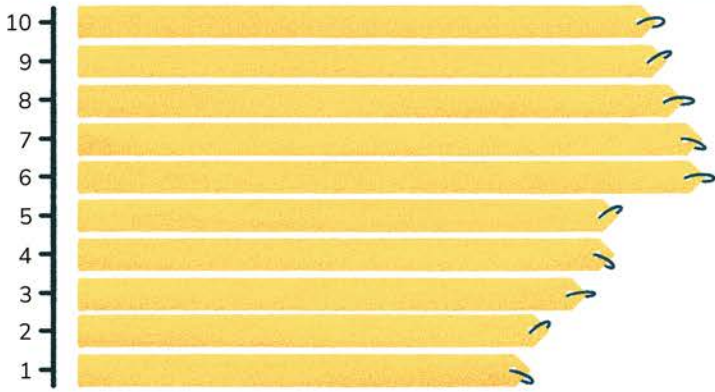


Figure 21. Private multi-peril premium rates by property value and climate risk across California zip codes. *Note: "Premium rate" is defined as the total premium revenue collected within a zip code divided by the total policies sold in a zip code. "Risk rank" describes the magnitude of climate risk faced by*

¹¹⁶ Standard multi-peril home insurance in California excludes wildfires, earthquakes, flooding, and landslides/mudslides.

California communities, in terms of deciles of annual expected losses. E.g., a risk rank of “1” describes California zip codes facing the lowest 10 percent of expected losses from climate disasters, while a rank of “10” describes zip codes facing the highest 10 percent of climate-related damages. Panels describe quartiles of median property value. E.g., the panel labeled “highest property value zip codes” describes how premium rate changes alongside climate risk among zip codes whose property is, on average, among the highest 25 percent of property valuation across the state.

Lowest-property value zip codes



Low to mid-property value zip codes



Mid to high-property value zip codes



Highest-property value zip codes



Risk rank (multi-peril)


\$0

\$1,000

\$2,000

\$3,000

Premium rate, 2022

Insurer:  Private Insurer

¹¹⁷ David W. Chen, “Not Sustainable: High Insurance Costs Threaten Affordable Housing,” *New York Times*, June 7, 2024, sec. U S , <https://www.nytimes.com/2024/06/07/us/home-insurance-homeless-affordable.html>.

¹¹⁸ Harvey Rosenfield, “Insurance Companies Seek Massive Bailout & Deregulation Scheme In Sacramento,” *Consumer Watchdog*, August 28, 2023, <https://consumerwatchdog.org/insurance/insurance-companies-see-k-massive-bailout-deregulation-scheme-in-sacramento/>; Keys and Mulder, “Property Insurance and Disaster Risk.”

¹¹⁹ “Proposition 103 Resource Page,” *Consumer Watchdog*, February 7, 2008, <https://consumerwatchdog.org/uncategorized/proposition-103-resource-page/>.

¹²⁰ If there is no challenge, then there is no mandatory hearing. In the vast majority of filings, including those above 7 percent, there are no challenges.

¹²¹ Rate increases under Prop 103 tend to be capped below 7 percent to avoid triggering public hearings, which are required for more significant increases. Since 2021, however, California insurers have received 95 percent of the rate increases they have requested, according to Consumer Federation of America.

¹²² Lloyd Dixon, Flavia Tsang, and Gary Fitts, “California Wildfires: Can Insurance Markets Handle the Risk?” *RAND Corporation*, September 14, 2020, https://www.rand.org/pubs/research_briefs/RBA635-1.html.

¹²³ Daniel Murphy, “How Wildfire Risk and Extreme Heat Is Changing the Insurance Industry,” *World Economic Forum*, July 7, 2023, <https://www.weforum.org/agenda/2023/07/wildfire-risk-extreme-heat-changing-insurance-industry/>.

¹²⁴ *Insurance Journal*, “California Insurance Commissioner: Allow Cat Modeling in Rates for Wildfires,” *Insurance Journal*, March 14, 2024, <https://www.insurancejournal.com/news/west/2024/03/14/764927.htm>.

¹²⁵ Carmen Balber, “Commissioner Lara Proposes Minimal Oversight, Secrecy of Black-Box Wildfire Insurance Models,” *Consumer Watchdog*, April 23, 2024, <https://consumerwatchdog.org/insurance/insurance-commissioner-ricardo-lara-proposes-minimal-oversight-continued-secrecy-of-black-box-wildfire-catastrophe-models-proposed-regulation-will-raise-rates-but-not-stabilize-home->

While increases in premium rates across perils may temporarily stabilize the market, such increases are happening at the expense of the lowest-income populations. This is the case for both fire and multi-peril insurance (see additional figures in Appendix 2). For example, affordable housing providers in the state have seen their insurance costs soar in recent years, with one California developer explaining that its premiums per rental unit have inflated from \$450 to \$2000 over the past two years.¹¹⁷ This risk transfer demonstrates how the US’s interconnected insurance market can shift and obfuscate the distribution of climate-related risks and costs. In California’s case, it is a particular concern because of the way these insurance industry strategies are raising premiums for lower-income places and households, worsening the state’s existing housing affordability crisis.

Insurance regulation context in California

The California Department of Insurance (DOI) has more regulations on insurance premiums and policies than many other states. The DOI tightly monitors annual premium increases, and prevents California insurers from passing on the cost of the global reinsurance market to consumers.¹¹⁸ Furthermore, since the 1988 passage of Proposition 103, which requires insurance companies to obtain prior approval from the insurance commissioner for rate increases,¹¹⁹ any increase above 7 percent triggers a public hearing if a consumer or consumer’s representative makes a timely request for that hearing.¹²⁰ Prop 103 was designed to protect consumers from excessive rates and has been credited with keeping California’s insurance market more affordable compared to other states like Florida.¹²¹

This constrained regulatory landscape likely explains why private insurers have moved to transfer costs — i.e., spreading risk into lower-risk areas to make up for the fact that they cannot charge as much as would be “risk-reflective” elsewhere in the state. Insurers have been vocally frustrated with how California regulation restricts their ability to raise rates,¹²² while submitting to regulators a variety of justifications for increasing rates anyway (or withdrawing from the state).¹²³ Besides rising payouts and increased reinsurance costs, these also include increased construction costs for repairing or rebuilding damaged homes.

The DOI may also soon allow the use of forward-looking catastrophe models within insurance rate-setting instead of only allowing models based on historical trends.¹²⁴ While insurers have not been using forward-looking models in California, they have been using models for property-level geographic segmentation for decades. Consumer protection organizations have expressed concern that any of these models have not been subject to public scrutiny, and that insurers could adjust the models to serve their interests at the expense of the model’s intended output.¹²⁵

insurance-ma/; Carmen Balber, "California Should Build A Public Model to Predict Wildfire Risk, Protect Homeowners from Insurance Price-Gouging, Consumer Watchdog Tells Insurance Commissioner," *Consumer Watchdog*, July 13, 2023, <https://consumerwatchdog.org/insurance/california-should-build-public-model-to-predict-wildfire-risk-protect-homeowners-from-insurance-price-gouging-consumer-watchdog-tells-insurance-commissioner/>; Kenneth Arullo, "Consumer Watchdog Calls for Transparency in California," *Insurance Business*, March 15, 2024, <https://www.insurancebusinessmag.com/us/news/catastrophe/consumer-watchdog-calls-for-transparency-in-california-481414.aspx>.

¹²⁶ AM Best, "AM Best Downgrades Credit Ratings of California Insurance Company and Its Affiliates; Revises Under Review Status," news release, January 10, 2023, <https://news.ambest.com/newscontent.aspx?refnum=247211>.

¹²⁷ Risk Information, "Property Insurance Report," internal report, July 29, 2024.

¹²⁸ Munce, "Major California Home Insurer Could Resume Writing New Policies. Here's What It Would Take"; Murphy, "How Wildfire Risk and Extreme Heat Is Changing the Insurance Industry."

¹²⁹ California Department of Insurance, "Commissioner Lara Continues Bold Insurance Reform Agenda with Landmark FAIR Plan Modernization," press release, July 26, 2024, <https://www.insurance.ca.gov/0400-news/0100-press-releases/2024/release031-2024.cfm>.

¹³⁰ Megan Fan Munce, "State Farm Asks for Huge California Home Insurance Rate Increase, Signaling Financial Distress," *San Francisco Chronicle*, June 28, 2024, <https://www.sfchronicle.com/california/article/state-farm-insurance-rates-19544180.php>.

¹³¹ North Bay Business Journal, "Allstate Rate Increase," <https://www.northbaybusinessjournal.com/article/industrynews/allstate-rate-increase/>; Los Angeles Times, "Allstate Seeking 34% Rate Increase for California Homeowners Insurance," <https://www.latimes.com/business/story/2024-07-11/allstate-seeking-34-rate-increase-for-california-homeowners-insurance>.

¹³² Lawrence Powell, R.J. Lehmann, and Ian Adams, "Rethinking Prop 103's Approach to Insurance Regulation," *International Center for Law & Economics*, November 6, 2023, <https://laweconcenter.org/>

How increases in insurance premiums are being characterized in California

The insurance narrative in California has largely focused on wildfire losses, insurer coverage cuts and pullouts, and the state's regulatory context, which the industry says is heavy handed. Often missing from these narratives are the fact that many insurers in California have received downgraded credit ratings,¹²⁶ which likely increased their cost of reinsurance. Additionally, these narratives also miss the fact that California has some of the lowest homeowner's claims payments relative to premiums collected since 2019, based on loss ratios reported by S&P Global Market Intelligence.¹²⁷ That means California homeowners are subsidizing the national market, not the other way around.

In response to the insurer pullbacks, the California DOI is currently modifying some of its previous policies to be more accommodating to private insurers.¹²⁸ This shift aims to strengthen the private market, which the insurance commissioner argues is a critical solution to the ongoing crisis.¹²⁹ This includes allowing the use of catastrophe models and implementing mechanisms for easier rate adjustments. Already, the intention to loosen these regulations has provided a basis for insurers to file requests for premium increases, as seen in State Farm's recent rate increase request of ³⁰ percent for homeowners, ⁵⁶ percent for renters, and ³⁶ percent for condominium owners in California. This would be State Farm's largest homeowner's insurance rate increase in the state to date.¹³⁰ The California DOI approved a similar rate request for Allstate in August 2024, which is set to raise average rates by 34.1 percent across its policyholders in California.¹³¹

These changes come amidst ongoing debates about Proposition 103.¹³² However, the insurance industry often criticizes Prop 103, particularly for prohibiting the use of forward-looking models to set rates — a restriction not explicitly mandated by the proposition, but rather a statutory interpretation.¹³³ Recent regulatory reforms by Insurance Commissioner Lara aim to loosen these restrictions by allowing the use of forward-looking modeling methods and reducing timelines for rate change requests.¹³⁴

To some extent, the DOI's new accommodations for private insurers are counterbalanced by its new Safer from Wildfires program. ¹³⁵ Safer from Wildfires, proposed in 2022 by the California Department of Insurance, identifies risk reduction measures including the creation of fire-specific forms of home hardening, "defensible space" against wildfires, and participation in a Firewise or Fire Risk Reduction Community, which are communities recognized for their efforts to implement proactive wildfire safety measures and reduce fire risk. This regulation mandates that insurers reward homes, commercial structures, and communities who voluntarily undertake physical risk reduction with reduced premiums.¹³⁶

resources/rethinking-prop-103s-approach-to-insurance-regulation/.

¹³³ Jerry Theodorou, “Jerry Theodorou Senate Banking Committee Testimony, Hearing on ‘Perspectives on Challenges in the Property Insurance Market and the Impact on Consumers,’” R Street Institute, September 7, 2023, <https://www.rstreet.org/outreach/submitted-statement-before-the-united-states-senate-hearing-on-perspectives-on-challenges-in-the-property-insurance-market-and-the-impact-on-consumers/>.

¹³⁴ Since restrictions on forward-looking models are not prescribed in Prop 103 itself, Prop 103 does not need to be overturned to reform the modeling restriction.

¹³⁵ Allen Fricks and Allison Ott, “What Insurance Carriers Need to Know about California’s Safer from Wildfire Program,” Davies North America (blog), March 2, 2023, <https://davies-group.com/northamerica/knowledge/what-insurance-carriers-need-to-know-about-californias-safer-from-wildfire-program/>.

¹³⁶ California Department of Insurance, “Commissioner Lara Enforces Nation’s First Wildfire Safety Regulation to Help Drive down Cost of Insurance,” press release, October 17, 2022, <https://www.insurance.ca.gov/0400-news/0100-press-releases/2022/release076-2022.cfm>.

¹³⁷ Philip E. Dennison et al., “Large Wildfire Trends in the Western United States, 1984–2011,” *Geophysical Research Letters* 41, no. 8 (2014): 2928–33, <https://doi.org/10.1002/2014GL059576>.

¹³⁸ A. L. Westerling et al., “Warming and Earlier Spring Increase Western U.S. Forest Wildfire Activity,” *Science* 313, no. 5789 (August 18, 2006): 940–43, <https://doi.org/10.1126/science.1128834>.

¹³⁹ Stephen J. Pyne, *Fire in America: A Cultural History of Wildland and Rural Fire* (University of Washington Press, 1998), https://www.jstor.org/stable/j.ctv_cwnkj3.

¹⁴⁰ Gregory L. Simon, “How the West Was Spun: The De-Politicization of Fire in the American West,” in *The Palgrave Handbook of Critical Physical Geography*, ed. Rebecca Lave, Christine Biermann, and Stuart N. Lane (Cham: Springer International Publishing, 2018), 153–78, https://doi.org/10.1007/978-3-319-71461-5_8.

¹⁴¹ Alexandra D. Syphard, Teresa

We used to think a big wildfire was 10-40,000 acres . . . and there were some big fire seasons in 2003 and 2007. We had lots of fires associated with Santa Ana winds before. But really it seemed to me in 2015, we saw a significant increase in every fire really growing . . . and a marked increase in the number of destroyed structures.

Some of California’s growing wildfire risk can be linked to climate change, as earlier snowmelt and prolonged dry periods have extended wildfire seasons.¹³⁸ A century of fire suppression has worsened this risk, creating dense forests with high fuel loads.¹³⁹ But there is more to the story than climate and fuels. The notion of the “flammable West” ignores the symptoms — histories of development, regional growth policies, and industry-government entanglements — that produce wildfire risk, differential outcomes, and uneven settlement across these landscapes.¹⁴⁰ Fire science often misses the ways in which the wildland-urban interface (WUI) is characterized by suburban growth and development that produces both risk and profit, leading to perverse growth incentives.

These housing landscapes help shape California’s uneven distribution of wildfire frequency and size. Southern California’s dry, chaparral climate has become especially prone to large, high-intensity wildfires.¹⁴¹ Such risks follow patterns of human WUI development, including the loss of native vegetation as it becomes fragmented and replaced with nonnative species, while soils are disturbed.¹⁴²

While wildfires are often the focus of the home insurance conversation in California, many communities are exposed to very high expected losses from multiple risk categories. As Figure 22 demonstrates, close to 80 percent of Californians live in an area exposed to very high expected losses from earthquakes. Roughly 13 percent live in an area that is additionally exposed to very high expected losses from wildfire, and roughly 5 percent live in an area exposed to very high expected losses from earthquakes, wildfires, and floods. San Diego experienced multiple risks in 2024 with massive flooding¹⁴³ (though just 8,128 households out of 1.15 million have flood insurance¹⁴⁴), during the 6.4 magnitude 2022 Ferndale earthquake,¹⁴⁵ and during the Big Sur landslides of winter and spring 2024.¹⁴⁶

Figure 22. Proportion of California communities exposed to very high expected losses from multiple risk categories. *Note: This figure illustrates the proportion of the total state population living in a census tract with a high expected loss rate for multiple risk categories, where “high” is any expected loss rate greater than the 90th percentile nationally.*

J. Brennan, and Jon E. Keeley, "Extent and Drivers of Vegetation Type Conversion in Southern California Chaparral," *Ecosphere* 10, no. 7 (July 2019), <https://doi.org/10.1002/ecs2.2796>.

¹⁴² Volker C. Radeloff et al., "Rapid Growth of the US Wildland-Urban Interface Raises Wildfire Risk," *Proceedings of the National Academy of Sciences* 115, no. 13 (March 12, 2018): 3 3 1 4 - 1 9 , <https://doi.org/10.1073/pnas.1718850115>; John T. Abatzoglou and A. Park Williams, "Impact of Anthropogenic Climate Change on Wildfire across Western US Forests," *Proceedings of the National Academy of Sciences* 113, no. 42 (October 10, 2016): 1 1 7 7 0 - 7 5 , <https://doi.org/10.1073/pnas.1607171113>.

¹⁴³ Eric S. Page and Kasey Trombley, "More Than 1,200 San Diegans Still Homeless after the Great Flood of 2024," NBC7 San Diego, February 8, 2024, <https://www.nbcsandiego.com/news/local/more-than-1200-plus-san-diegans-still-homeless-after-the-great-flood-of-2024/3429816/>.

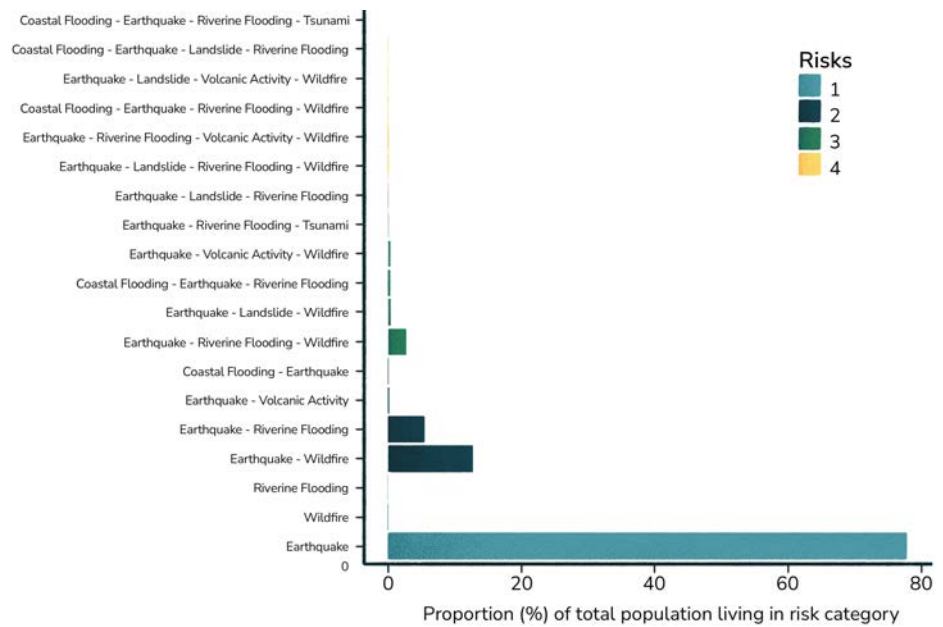
¹⁴⁴ Vik Jolly, Corina Knoll, and Tim Arango, "'Out of an Apocalyptic Movie': San Diego Residents Describe Flood Escape," *New York Times*, January 23, 2024, <https://www.nytimes.com/2024/01/23/us/san-diego-flood-damage.html>.

¹⁴⁵ US Geological Survey (USGS), "Magnitude 6.4 Earthquake near Ferndale, California," USGS, December 20, 2022, <https://www.usgs.gov/news/feature-story/magnitude-64-earthquake-near-ferndale-california>.

¹⁴⁶ Coastal and Marine Hazards and Resources Program, "USGS Remote Sensing Data Tracks Big Sur Landslides of 2024," US Geological Survey, March 19, 2 0 2 4 , <https://www.usgs.gov/programs/cmhrp/news/usgs-remote-sensing-data-tracks-big-sur-landslides-2024>.

¹⁴⁷ State of California, "Governor Newsom and Fire Officials Highlight California's Wildfire Readiness and Response," Governor of California, news release, July 10, 2024, <https://www.gov.ca.gov/2024/07/10/governor-newsom-and-fire-officials-highlight-californias-wildfire-readiness-and-response/>.

¹⁴⁸ "What Is the CA Earthquake Brace + Bolt Program?" California Residential Mitigation Program, accessed August 23, 2024, <https://www.californiaresidentialmitigationprogram.com/resources/blog/earthquake-brace-and-bolt-program-ebb>.



Existing risk reduction initiatives in California

The state of California has committed \$2.6 billion through 2028 for wildfire risk reduction.¹⁴⁷ This commitment includes funding for a diverse array of initiatives, including community wildfire prevention projects, fuel reduction initiatives, expanding the state's firefighting capacity, and building resilience throughout state forests. While wildfire is top of mind right now for many Californians, the state has more risk reduction initiatives that address other important hazards, such as earthquakes. For example, the Earthquake Brace and Bolt (EBB) program offers supplemental grants for income-eligible homeowners and has provided grants for 14,000 households since its establishment in 2013.¹⁴⁸

Much could be written about California's existing risk reduction initiatives, but this section focuses most on existing home retrofit regulations for wildfire. Many current initiatives and media narratives focus on the importance of wildfire risk reduction at the property scale. While important, we seek to highlight how property-level wildfire mitigation is ultimately not enough for landscapes, renters, and populations facing multiple hazards.

California's property-level wildfire codes and standards flow downstream from CalFire's Fire Hazard Severity Zone map (see map here). Within any Zone located within a WUI or State Responsibility Area, Chapter 7A of California's Title 24 building code mandates home hardening and defensible space measures for new construction, alteration, and repairs.¹⁴⁹ In terms of residential structures, key provisions of this code are focused on fire-resistant materials for exterior walls, roofs, eaves, vents, and decks. Defensible space measures address the proximity of structures to each other and to large areas of vegetation. New draft regulation in California attempts to further enforce such standards within five feet of homes throughout high-risk areas.¹⁵⁰

¹⁴⁹ CAL FIRE maps wildfire hazard based on who responds to fire and how severe the hazard is in these areas (moderate, high, or very high). The maps were most recently updated in April 2024. State Responsibility Areas refer to areas where CAL FIRE is the main emergency response agency, as opposed to local or federal fire response agencies.

¹⁵⁰ Julie Johnson, "California Plans to Ban Plants and Bushes within 5 Feet of Homes at Risk for Wildfires," *San Francisco Chronicle*, July 16, 2024, <https://www.sfchronicle.com/california-wildfires/article/zone-zero-lake-tahoe-19532303.php>.

¹⁵¹ Laura Newberry, "How Do You Build a Safer City after California's Worst Wildfire? Santa Rosa Officials Say the Answer May Have to Wait," *Los Angeles Times*, October 18, 2018, <https://www.latimes.com/local/lanow/la-me-ln-santa-rosa-fire-planning-20181018-story.html>.

¹⁵² "Funding for Seismic Retrofits," City of Berkeley, accessed August 23, 2024, <https://berkeleyca.gov/construction-development/seismic-safety/funding-seismic-retrofits>; "Earthquake Retrofit Grants," California Earthquake Authority, accessed August 23, 2024, <https://www.earthquakeauthority.com/prepare-your-house-earthquake-risk/brace-and-bolt-grants>; Sarah Atkinson, "Multifamily Seismic Retrofit Program Secures \$15 Million from State, But More Investment Is Needed," SPUR, August 7, 2023, <https://www.spur.org/news/2023-08-07/multifamily-seismic-retrofit-program-secures-15-million-state-more-investment>.

¹⁵³ "California Wildfire Mitigation Program," California Governor's Office of Emergency Services, accessed August 23, 2024, <https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/california-wildfire-mitigation-program/cwmp-about-page/>.

¹⁵⁴ CAL FIRE's Tribal Wildfire Resilience Grants provide an example of landscape-level mitigation measures.

¹⁵⁵ For example, one way to reimagine how we distribute funds and prioritize safer building and management throughout California's fireescapes would be through the use of an affluence-vulnerability interface (AVI), as opposed to a measure that looks at the proximity of structures to vegetation (Gregory L. Simon, "How the West Was Spun: The De-Politicization of Fire in the American West," in *The Palgrave Handbook of Critical Physical Geography*, eds. Rebecca Lave, Christine Biermann, and

Chapter 7A standards are enforced by local building departments during the permitting and inspection process. Local jurisdictions can adopt and enforce more stringent regulations, but they cannot adopt less stringent standards than those mandated in Chapter 7A. However, the building code can be weakened by loopholes and workarounds that exacerbate wildfire risk. For example, after the 2017 Tubbs Fire hit Santa Rosa, the mandatory installation of fire sprinkler systems permitted reduced setbacks from property lines, thereby decreasing defensible space, according to a wildfire codes and standards professional interviewed for this project. This example demonstrates the tension between building housing quickly in a state burdened by an affordable housing crisis and important fire safety measures that support home hardening and defensible space at the community scale.¹⁵¹

As is the case in Florida, another key challenge is organizing and resourcing retrofitting of existing California homes and communities to address disaster risks, including to meet improved building codes. For example, an array of state-backed grant funding and financing mechanisms have targeted the challenge of retrofitting California homes against earthquake risk.¹⁵² To target wildfire risk, the State of California implemented a program in January 2021 run through the Office of Emergency Services (OES) that provides financial assistance to support wildfire hardening for qualifying homeowners.¹⁵³ However, evidence indicates that retrofitting is not proceeding at the scale needed — not at the individual home or community level, nor in a coordinated way. Reducing wildfire risk effectively requires addressing community factors and cannot be achieved through isolated, voluntary improvements to individual homes. Rather, it requires collective action at government and community scales. This starts with thinking beyond the scale of individual homes and toward necessary community- and landscape-level mitigation measures such as home hardening across a neighborhood, fuel breaks, prescribed burning, and transmission infrastructure.¹⁵⁴ Effective risk reduction also requires extending thinking and resourcing codes and retrofits beyond the WUI, as other California communities may still be at significant wildfire risk.¹⁵⁵

While hazard disclosures are required in California for homeowners in areas designated "very high" hazard, or in wildland areas designated as state responsibility areas, renters are not afforded the same precautions.¹⁵⁶ A 2024 study reveals that 66 percent of renters in California and Oregon have not been contacted by their landlords or property owners about wildfire mitigation, and even more renters (76 percent) live on properties with no risk reduction measures.¹⁵⁷ This study highlights the increased risk faced by households in multifamily homes, those living in manufactured homes, and renters, who face both rising insurance costs and broader housing affordability issues. Another consideration for renter mitigation is the pass through of costs for retrofitting and decarbonization, which are not covered in some parts of the state by limitations against rent increases and so can mean higher rent burdens for tenants.¹⁵⁸

Stuart N. Lane (Cham: Palgrave Macmillan, 2018), 153–178, <https://doi.org/10.1007/978-3-319-71461-5>).

¹⁵⁶ “Natural Hazard Disclosure (NHD) Statement,” California Association of REALTORS, May 20, 2022, <https://www.car.org/-/media/CAR/Documents/Transaction-Center/PDF/QUICK-GUIDES/Quick-Guide--Natural-Hazard-Disclosure-NHD-Statement-REVISED-52022.pdf>.

¹⁵⁷ Neva Gakavian et al., Stakeholder Perceptions of Wildfire Mitigation for Homes: Multi-Audience Survey Research (Fire Protection Research Foundation, April 30, 2024), <https://www.nfpa.org/education-and-research/research/fire-protection-research-foundation/projects-and-reports/stakeholder-perceptions-of-wildfire-mitigations-for-homes-multi-audience-survey-research>.

¹⁵⁸ Chelsea Kirk, Los Angeles Building Decarbonization: Tenant Impact and Recommendations (Los Angeles, CA: Strategic Actions for a Just Economy, December 2, 2021), <https://www.saje.net/building-decarbonization/>.

¹⁵⁹ Yonah Freemark et al., “In the Twin Cities, Affordable Homeownership Is Increasingly Inaccessible for Black Families,” Urban Institute, June 16, 2021, <https://www.urban.org/urban-wire/twin-cities-affordable-homeownership-increasingly-inaccessible-black-families>.

¹⁶⁰ Ben Horowitz et al., “Systemic Racism Haunts Homeownership Rates in Minnesota,” Federal Reserve Bank of Minneapolis, February 25, 2021, <https://www.minneapolisfed.org/article/2021/systemic-racism-haunts-homeownership-rates-in-minnesota>.

¹⁶¹ “Forecasting State and National Trends in Household Formation and Homeownership: Minnesota,” Urban Institute, accessed August 23, 2024, <https://www.urban.org/policy-centers/housing-finance-policy-center/projects/forecasting-state-and-national-trends-household-formation-and-homeownership/minnesota>.

¹⁶² Racial covenants are provisions written into the deed of residential properties stipulating that Black and other specified people of color are banned from purchasing or residing on the property, as it was a commonly held belief on the part of white property owners that non-white home ownership in a neighborhood would decrease property values there. These covenants have been rendered



Minnesota

Minnesota occupies insurance crisis news headlines less than Florida and California, but still faces a less widely covered set of smaller, more frequent weather events (i.e., hailstorms, droughts, etc.), which the insurance industry often refers to as “secondary perils,” that are growing in intensity and severity with climate change. As a result,

Minnesota is similarly seeing rising insurance premiums and less overall coverage, which exacerbates its already stark racial homeownership gap. While Minnesota is in the process of rolling out a new grant program for retrofitting, this program focuses primarily on single-family homes, which risks neglecting multifamily homes and commercial buildings.

In this section, we explore these dynamics and present new analysis of insurance data. Unfortunately, our data analysis on Minnesota is much more limited given the fact that we were told by Minnesota Department of Commerce officials (where Minnesota’s insurance regulator sits), that the state does not collect zip code-level data on insurance coverage. Minnesota’s lack of insurance data allows only a very limited understanding of how these risks are transforming financial burdens among residents. As observed in Florida and California, we hypothesize that there are unequal expressions of insurance outcomes across communities in Minnesota and that these have nuanced overlaps with climate risks — however, lacking basic data, a full understanding of these dynamics remains largely out of reach.

Minnesota’s housing crisis

Minnesota’s housing affordability issues are significantly more serious than national narratives tend to portray. Many outside of Minnesota may be surprised that the Twin Cities metro area of Minneapolis and St. Paul has the worst racial homeownership gap in the country. The entire state of Minnesota is not far behind either, estimated to have the fourth worst racial homeownership gap in the US, with white homeownership rates of 77 percent and Black homeownership rates of 21 percent¹⁶⁰ (compared to the national rates of 73 percent and 42 percent, respectively¹⁶¹). This gap speaks to long histories of racialized housing policy in the state, with research pointing to the cumulative impacts of late 19th- and early 20th-century racial covenants¹⁶² not only on long-lasting homeownership patterns but also on contemporary housing values.¹⁶³ For example, racially covenanted houses in the city of Minneapolis are currently assessed to have between 4 and 15 percent more value than non-covenanted housing, along with having fewer Black homeowners in covenanted neighborhoods today.¹⁶⁴

Like nearly everywhere else in the country, Minnesota is in the

unenforceable for decades, but still exist in many deeds and were especially prevalent in places that did not fall under the de jure segregation of Jim Crow laws, but whose real estate interests desired to achieve similar de facto segregationist effects.

¹⁶³ "Mapping Prejudice," University of Minnesota, accessed August 23, 2024, <https://mappingprejudice.umn.edu/>.

¹⁶⁴ Aradhya Sood, William Speagle, and Kevin Ehrman-Solberg, "Long Shadow of Racial Discrimination: Evidence from Housing Covenants of Minneapolis," SSRN Scholarly Paper, September 30, 2019, <https://doi.org/10.2139/ssrn.3468520>.

¹⁶⁵ Jeff Crump et al., "Cities Destroyed (Again) For Cash: Forum on the U.S. Foreclosure Crisis," *Urban Geography* 29, no. 8 (November 2008): 745–84, <https://doi.org/10.2747/0272-3638.29.8.745>.

¹⁶⁶ Jeff Crump, "The Housing Boom and Bust in the Twin Cities," *Housing Policy Debate* 23, no. 1 (2013): 144–58, <https://doi.org/10.1080/10511482.2012.756821>.

¹⁶⁷ Kate Derickson et al., "Private Equity Firms: The New Landlord," *Market Failure* (Substack newsletter), June 12, 2021, <https://marketfailure.substack.com/p/private-equity-firms-the-new-landlord>.

¹⁶⁸ Paul Huttner, "Twin Cities August Hail Storm Was 1 of a Record 23 U.S. Billion-Dollar Disasters," *MPR News*, September 11, 2023, https://www.mprnews.org/story/2023/09/11/twin-cities-august-hailstorm-was-1-of-a-record-23-u-s-billiondollar-disasters?gad_source=1&gclid=Cj0KCQjw-uK0BhC0ARIsANQtgGOXteoyQ5HF17cE2mPg1jUEz-iE2I8-XNTkj7D0kCR_L-axdWEABcYaAvkMEALw_wCB.

¹⁶⁹ Jason Woleben, "US Homeowners Insurance Rates Jump by Double Digits in 2023," *S&P Global*, January 25, 2024, <https://www.spglobal.com/marketing/en/news-insights/latest-news-headlines/us-homeowners-insurance-rates-jump-by-double-digits-in-2023-80057804>.

¹⁷⁰ Clay Masters, "Minnesota Lawmakers Try to Drive Home Climate Effects on House Insurance Costs," *MPR News*, February 15, 2024, <https://www.mprnews.org/story/2024/02/15/minnesota-lawmakers-try-to-drive-home-climate-effects-on-house-insurance-costs>.

midst of a housing affordability crisis with multiple origins, not least of which is related to the state's history of racialized housing policies and persistent racialized housing outcomes in the aftermath of systemic problems like the foreclosure crisis. And Minnesota's BIPOC residents are increasingly locked out of pathways to homeownership more than almost anywhere else in the country.

Racial covenants were used for decades to prevent Black people and other people of color from accessing the equity benefits of homeownership to the same degree as white people, as demonstrated by the racial homeownership gap in the Twin Cities, and in Minnesota more broadly. These inequities were later exacerbated by the racialized effects of the subprime foreclosure crisis on Minnesota's majority-minority communities.¹⁶⁵ As foreclosures swept through predominantly Black and multiracial neighborhoods such as those in North Minneapolis and Saint Paul's East Side, home values plummeted and the racial homeownership gap widened.¹⁶⁶ In the wake of the foreclosure crisis, single family homes in those areas were very quickly purchased en masse by private equity and other corporate interests and turned into rental units. With this massive entry of private equity into the "single family rental home" space, rents and evictions have correspondingly risen in predominantly Black and multiracial neighborhoods. For example, the dominant private equity firm operating in Minneapolis' lower-income neighborhoods had an eviction rate four times the state average in 2019.¹⁶⁷

Insurance unaffordability and unavailability in Minnesota

While Minnesota hasn't received as many home insurance headlines as California and Florida, it is starting to face a lesser-noticed series of premium increases and withdrawals. Consideration of secondary perils is also expanding insurers' assumed geographies of climate risk to include inland states like Minnesota. This is an important shift for states that have been outside the traditionally understood epicenters of US climate risk. Insurance industry drives to better understand their climate-related risks in states like Minnesota are intended to justify increasing consumer rates and otherwise inform risk exposure limitation choices like withdrawals.

Local coverage is starting to pick up on the trend of premium increases and insurer losses, especially after the August 11, 2023 hailstorm in the Twin Cities.¹⁶⁸ While the scale of insurance premium hikes and non-renewals has been difficult to measure given Minnesota's lack of zip code data, anecdotal evidence suggests significant premium increases. One recent estimate suggests that Minnesota homeowners' average insurance premium climbed by 15.3 percent in 2023,¹⁶⁹ which is a faster rate increase than in most parts of California. More generally, Minnesota has seen rates going up with more double-digit increases over the last several years,¹⁷⁰ and three companies

¹⁷¹ Glenn Dyer, "QBE Plans Strategic Exit from North America's Middle Insurance Market," *Finance News Network*, June 19, 2024, https://www.finnewsnetwork.com.au/archives/finance_news_network469916.html; Tyler Jett, "As Storms Become More Frequent and Intense, West Des Moines Insurer IMT Exits Minnesota," *Des Moines Register*, August 1, 2024, <https://archive.is/WbAy4>; Chad Hemenway and Don Jergler, "American National Exiting Homeowners Insurance Market," *Insurance Journal*, May 31, 2024, <https://www.insurancejournal.com/news/national/2024/05/31/777200.htm>.

¹⁷² Julia Nerbonne and Minnesota Interfaith Power and Light, "Letter to Chair Re. Zack Stephenson and Members of the Commerce Committee," February 14, 2024.

¹⁷³ Farm mutuals tend to provide insurance specifically for farm properties, such as dwellings, machinery, livestock, and personal property. Mutuals do not typically cover crops, which is usually handled separately through federally supported programs such as Multi-Peril Crop Insurance.

¹⁷⁴ Varada Bhat, "Scores of Small Midwest Insurers Are Dying. That's a Dire Warning for the Industry," *P&C Specialist*, August 5, 2024, https://www.pandcspecialist.com/c/4584654/606124?referring_content_id=4584654&referring_issue_id=606124.

¹⁷⁵ Caroline Cummings, "Floods Are Raging in Minnesota. But Few Have Flood Insurance, State Commerce Agency Says," *CBS Minnesota*, June 27, 2024, <https://www.cbsnews.com/minnesota/news/many-minnesotans-impacted-by-flooding-are-uninsured/>.

¹⁷⁶ Debra Kamin, "Out-of-Towners Head to 'Climate-Proof Duluth,'" *New York Times*, March 10, 2023, sec. Real Estate, <https://www.nytimes.com/2023/03/10/realestate/duluth-minnesota-climate-change.html>.

¹⁷⁷ Gordon Severson, "Homeowners Insurance Costs Are Going up in Minnesota and Agents Say Severe Weather Is to Blame," *KARE11 NBC*, April 19, 2024, <https://www.kare11.com/article/money/consumer/homeowners-insurance-costs-going-up-in-minnesota-and-agents-say-severe-weather-is-to-blame/89-f3e27fd0-2bcf-4b66-918a-7c5b6e7d1db1>.

¹⁷⁸ *Insurance Journal*, "Minnesota Homeowners Report Surge in Insurance Complaints," *Insurance*

recently exited the Minnesota market.¹⁷¹ According to a letter sent in 2024 to the Minnesota House Commerce Committee by advocacy organization Minnesota Interfaith Power and Light, the August hail event led to rates that would be "dramatically higher" for zip codes designated as high-risk.¹⁷² While the media tends to focus on coastal states in relation to the insurance crisis, Minnesota provides clear evidence that inland states still face a similar scale of crisis.

The insurance regulatory context in Minnesota

Minnesota home insurance regulations are overseen by the Minnesota Department of Commerce. The Department of Commerce occupies a unique position compared to other state insurance offices because it is situated within the state's energy department. Rate increases are capped at 25 percent before they trigger a consumer hearing. While more insurers have submitted annual increases above 25 percent recently, insurers are moving to adjust the extent of their coverage more so than their rates. Carriers are increasing policy deductibles or limiting how much they will pay out for a new roof, for example.

Like other states in the Midwest, Minnesota has many farm mutuals, which are smaller insurance companies that combine risk from a single community or series of farms.¹⁷³ Reinsurance has been difficult to obtain for farm mutuals in the past few years,¹⁷⁴ presumably at least in part because these small insurers cannot spread risk across a broader population. As a result, the Department of Commerce has passed laws to make it easier for farm mutuals to merge. While these laws may enhance the financial stability of farm mutuals, consolidation can limit competition and potentially increase costs for consumers.

Notably, Minnesota is ranked as the last state in NFIP uptake — less than 1 percent of the state's homes having flood insurance, and the state has seen a 35 percent decrease in NFIP policies taken out over the last three years, with less than 1 percent of homes having coverage.¹⁷⁵

To date, the Minnesota Department of Commerce's largest intervention in this slow-moving crisis has been the Strengthen Minnesota Grants Program, discussed further in the section titled "Existing risk reduction."

How the insurance crisis is being narrated in Minnesota

Despite narratives that portray northern states like Minnesota as climate-proof havens,¹⁷⁶ costs are rising in many of these states. Insurers largely attribute this to the increased variability and severity of convective storms,¹⁷⁷ along with higher inflation.¹⁷⁸ A recent *New York Times* investigation calculates that insurers' underwriting losses in Minnesota have outweighed their profits for six out of the last seven years.¹⁷⁹ This story has repeated across many other northern states such as South Dakota, Nebraska, Illinois, and Iowa. Overall, insurers paid out more money

in claims than they took in via premiums in 18 US states — none of which included states most typically framed as disaster risk hotspots such Florida, California, Louisiana, or Texas.

However, as in the cases above, it is also important to scrutinize how the insurance industry's own strategic moves may be contributing to these spiking premiums — for example, that big insurers may be raising rates in lower-regulation states to claw back profits lost in states with more stringent insurance regulations.¹⁸⁰ As costs from both storms themselves and generalized increases in consumer premiums have mounted in Minnesota, consumer complaints about climbing home insurance premiums have also risen,¹⁸¹ increasing 108 percent from 2020 to 2023.¹⁸²

Journal, March 22, 2024, <https://www.insurancejournal.com/news/midwest/2024/03/22/766186.htm>.

¹⁷⁹ Christopher Flavelle and Mira Rojanasakul, "As Insurers Around the U.S. Bleed Cash From Climate Shocks, Homeowners Lose," *New York Times*, May 14, 2024, sec. Climate, <https://www.nytimes.com/interactive/2024/05/13/climate/insurance-homes-climate-change-weather.html>.

¹⁸⁰ Sangmin Oh, Ishita Sen, and Ana-Maria Tenekedjieva, "Pricing of Climate Risk Insurance: Regulation and Cross-Subsidies," SSRN Scholarly Paper, December 22, 2022, <https://doi.org/10.2139/ssrn.3762235>; Flavelle and Rojanasakul, "Home Insurance Rates in America Are Wildly Distorted. Here's Why."

¹⁸¹ *Insurance Journal*, "Minnesota Homeowners Report Surge in Insurance Complaints," <https://www.insurancejournal.com/news/midwest/2024/03/22/766186.htm>.

¹⁸² Insurance industry narratives blaming this litigation itself for rising premiums, the tactic we saw in the Florida case, have not yet emerged in Minnesota — but this may only be a matter of time.

¹⁸³ Moody's "Reinsurers Defend against Rising Tide of Natural Catastrophe Losses, for Now," Moody's, January 10, 2023, <https://www.moody.com/web/en/us/about/insights/data-stories/reinsurers-mitigate-lower-profits.html>.

¹⁸⁴ Vittorio (Victor) A. Gensini, "Chapter 4 - Severe Convective Storms in a Changing Climate," in *Climate Change and Extreme Events*, ed. Ali Fares (Elsevier, 2021), 39–56, <https://doi.org/10.1016/B978-0-12-822700-8.00007-X>.

¹⁸⁵ Alex M. Haberlie et al., "Thunderstorm Activity Under Intermediate and Extreme Climate Change Scenarios," *Geophysical Research Letters* 49, no. 14 (July 2022), <https://doi.org/10.1029/2022GL098779>.

The nature and temporality of climate-related risk in Minnesota

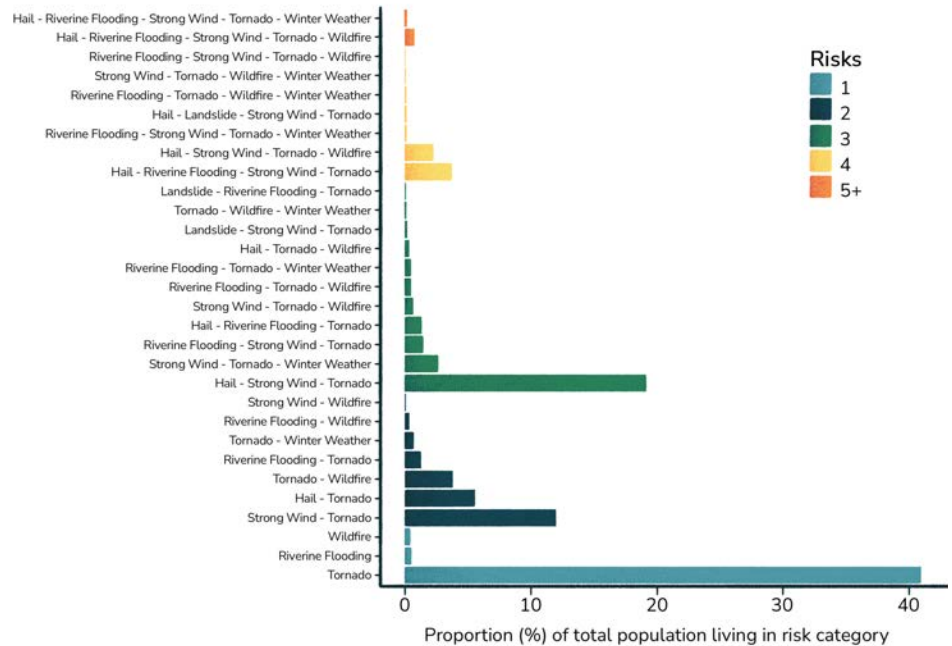
Insurance industry discussions have historically framed severe convective storms (SCSs) alongside wildfires and flooding as "secondary perils," distinguishing them from catastrophic events like major hurricanes that individually can cause more damage. However, these secondary perils often still lead to multibillion dollar insured losses, and they typically hit with greater frequency. Cumulative damage and insurance claims from them have climbed sharply in recent years. In 2023, Moody's estimated that secondary perils accounted for 60 percent of insured losses globally in the last three years.¹⁸³ These spiking payouts have made secondary perils a major target for the ramped-up catastrophe modeling efforts of insurers and reinsurers. Consideration of secondary perils is also expanding insurers' assumed geographies of climate risk to include inland states like Minnesota. This is an important shift for states that have been outside the traditionally understood epicenters of US climate risk.

Clear attribution to climate change is trickier in explaining increasing losses due to SCSs than for better-studied or clearer-cut events like hurricanes, heat waves, or droughts. Research on how climate change may influence regional thunderstorm activity is still limited,¹⁸⁴ and further investigations are needed of these complex systems. However, higher average temperatures are catalysts for more atmospheric moisture and instability, known drivers of SCS formation.¹⁸⁵

An important quality of SCSs as a broad category of peril is that they can generate distinctive and overlapping hazards. Indeed, many Minnesota communities are exposed to very high expected losses from multiple risk categories. As Figure 24 shows, close to 20 percent of Minnesotans live in areas exposed to very high expected losses from hail, strong wind, and tornados. Riverine flooding is also a significant concern here.

Figure 24. The proportion of Minnesota communities exposed to very high expected losses from multiple risk categories.

Note: This figure illustrates the proportion of the total state population living in a census tract with a high expected loss rate for multiple risk categories, where “high” is any expected loss rate greater than the 90th percentile nationally.



Existing risk reduction initiatives in Minnesota

A number of risk reduction measures at the scale of individual homes have been recommended by the insurance industry to reduce SCS risks in Minnesota, primarily focused on improvements to roofs and windows.¹⁸⁶ According to FEMA, many of the same building strengthening measures that the FBC instituted to protect Florida homes against hurricane wind risk apply to the most common SCS hazards of strong winds, hail, and tornadoes, like strengthened and/or tied roofs, storm shutters or windows with impact-resistant glass, and reinforced doors and garage doors. In collaboration with the Insurance Institute for Business & Home Safety (IBHS), FEMA is promoting ongoing building testing and field studies to improve and go beyond building codes, promoting structural improvements that can resist all SCS threats (even up to strong tornadoes with wind speeds as high as 111 to 165 mph).¹⁸⁷

Once again, the difficulty in Minnesota has been in actually disseminating proven risk reduction measures, in both new construction and existing state housing stocks. Recent reporting underlines important ways in which Minnesota and many other inland states are significantly behind states like Florida.¹⁸⁸ Many inland states not only have older housing stocks, some deteriorated by legacy disinvestment, they also frequently do not have risk-relevant building codes even for new construction.

¹⁸⁶ Tehya Duckworth and Michael Quigley, “Severe Convective Storms (SCS),” Munich Re, n.d., https://www.munichre.com/content/dam/munichre/mram/content-pieces/pdfs/Severe_Convective_Storms_Infographic.pdf/_jcr_content/renditions/original/Severe_Convective_Storms_Infographic.pdf.

¹⁸⁷ “Mitigation for Homeowners,” FEMA, last updated September 15, 2023, <https://www.fema.gov/fact-sheet/mitigation-homeowners>.

¹⁸⁸ Jake Bittle, “‘Kitty Cat’ Storms Hitting US Heartland Are Growing Threat to Home Insurance,” *The Guardian*, May 24, 2024, sec. Environment, <https://www.theguardian.com/environment/article/2024/may/24/hail-storm-tornadoes-midwest-home-insurance>.

Some relevant retrofitting support options from the State of Minnesota come from various Minnesota Housing programs.¹⁸⁹ One option is loans for retrofits via the Fix Up Home Improvement Loan Program. Another option is the Rehabilitation Loan Program and Emergency & Accessibility Loan Program, which provides forgivable retrofit loans for low-income homeowners under certain conditions. According to recent reporting, “the agency has generally seen an increase in homeowners receiving the loans over the last six years, especially in 2023.”¹⁹⁰

There are some structural inequalities to note here, however: These state supports are for households that own their homes, and, according to Minnesota Housing for the Rehabilitation Loan Program, “[m]aximum loan term is 15 years for properties taxed as real property and 10 years for mobile/manufactured homes taxed as personal property located in a mobile home park.”¹⁹¹ Recent scholarship has argued that this unequal access to public resources, not only for tenants but those living in mobile and manufactured housing, is a recurrent pattern in retrofitting supports and financing options, often both classed and racialized.¹⁹²

A key incoming support that seeks to more directly tackle the state’s growing insurability crisis is the Strengthen Minnesota Homes (SMH) Grant Program, established by the State of Minnesota in the 2023 legislative session and modeled after the Strengthen Alabama Homes program.¹⁹³ According to Minnesota’s Commerce Department, this pre-disaster physical risk mitigation program will provide financial assistance for home hardening against high wind and hail, and will also include a premium discount on home insurance following completion.¹⁹⁴ However, it only serves single family homeowners, leaving out multifamily housing.

Speaking more broadly, home retrofits have attracted growing interest in Minnesota as a cross-cutting climate solution — while home hardening reduces disaster risks, energy efficiency and electrification (i.e., heat pump installation) retrofits both reduce vulnerability and energy costs associated with more extreme winter cold and summer heat and generate important decarbonization benefits. In all of this, however, it is crucial to scrutinize intersections between housing improvements, real estate values, and affordability pressures, particularly where retrofitting schemes are broadened to target rental housing. This is an important warning sounded by campaigns for “decarbonization without displacement,” which call for attention to the potential for green retrofits to result in tenant displacement unless rent caps are required¹⁹⁵ — a caution that we extend to the home-hardening initiatives discussed in all of these state cases.

¹⁸⁹ “Home Improvement Programs,” Minnesota Housing, accessed August 23, 2024, <https://www.mnhousing.gov/homeownership/improve-your-home.html>.

¹⁹⁰ Kelly Smith, “Why Do So Many Minnesota Homeowners Get Free Roofs after a Hailstorm?” *Star Tribune*, April 19, 2024, <https://www.startribune.com/roof-replacement-insurance-minnesota-hail-storms/600360134/>.

¹⁹¹ Minnesota Housing, “Home Improvement Programs,” <https://www.mnhousing.gov/homeownership/improve-your-home.html>.

¹⁹² Julia Wagner et al., “Grappling with Real Property Supremacy in US Urban Climate Finance,” *City: Analysis of Urban Trends, Culture, Theory, Policy, Action*, (June 2024): 1–22, <https://doi.org/10.1080/13604813.2024.2367922>.

¹⁹³ Julia Wagner et al., “Grappling with Real Property Supremacy in US Urban Climate Finance,” *City: Analysis of Urban Trends, Culture, Theory, Policy, Action*, (June 2024): 1–22, <https://doi.org/10.1080/13604813.2024.2367922>.

¹⁹⁴ “Strengthen Minnesota Homes Grant Program,” Minnesota Department of Commerce, last updated August 21, 2024, <https://mn.gov/commerce/energy/consumer/energy-programs/strengthen-mn-homes.jsp>.

¹⁹⁵ Ruthy Gourevitch, *Decarbonization without Displacement: Tenant Advocacy in the Context of Inflation Reduction Act Implementation* (Climate and Community Institute, January 2024), <https://www.climateandcommunity.org/decarbonization-without-displacement>.

03 Analysis of Prevailing Narratives around Home Insurance

The overarching narratives underlying the current home insurance system in the US would have us believe the profit motive of private insurers is a benefit to households, that risk-based pricing effectively handles disaster risk mitigation, and that public insurance programs will never work well. Our analysis, however, finds that all these narratives are lacking when it comes to both effectiveness and equity. Specifically, we find that:

1. Private insurers engage in speculative maneuvers to secure profit, often facilitated by regulators;
2. Risk-based pricing does not effectively reduce risk and causes unacceptable inequities;
3. The current approach to home insurance prioritizes risk transfer over risk reduction, doing nothing to solve the underlying problem; and
4. Existing public insurance programs do not work well because of poor design, not because the notion of public insurance is flawed.

Short-term profit-seeking, with public support

The basic model for risk financing in the property insurance industry starts when a consumer purchases a policy from an insurance company, which then generally does three things with our premiums: it holds on to part of it, it invests some of it, and it purchases its own insurance. How an insurance company divides premiums between these three uses is shaped by global market conditions, by regulator behavior, and by the interplay between these things, but always with the aim of deriving profit (for more detail, see Appendix 1).

For nearly three decades, state regulators and policymakers in Florida have worked hard to lure private capital to the beleaguered Florida market, using public money as a safety net for private insurers. Florida has become a ground-zero for new forms of public-private financial engineering, as in the case of ILS markets; these financing approaches now prop up disaster insurance markets in several US states. Though we use Florida as an example here, it is mostly because Florida has had a head start with these policies; many states are now borrowing similar tools.

Florida provides an illustration of the lengths insurers and friendly regulators will go to secure profit, despite climate and housing affordability crises. A 2015 analysis of the financial records of Florida specialists revealed, among other things, just how connected these insurers are with global reinsurance capital, including ILS markets, and how speculative business practices prop up this struggling market.¹⁹⁶ These strategies created

¹⁹⁶ Zac J. Taylor, "The Real Estate Risk Fix: Residential Insurance-Linked Securitization in the Florida Metropolis," *Environment and Planning A: Economy and Space* 52, no. 6 (September 2020): 1131–49, <https://doi.org/10.1177/0308518X19896579>.

opportunities for insurers and their foreign partners to make a profit by underwriting risks in Florida that, previously, only Citizens would underwrite. In one case, an insurer specializing in the highest of risk policies¹⁹⁷ was “spending” every policyholder dollar earned on reinsurance — in other words, passing on the risk entirely. In another case, a primary insurer served as a fronting agent¹⁹⁸ for a Bermuda-based fund manager, giving investors direct access to Florida risks to feed ILS for investment markets. Many of these financial and organizational structure gymnastics seem to primarily serve the purpose of turning Florida risk into an asset class, a phenomenon that insurance scholar Leigh Johnson calls “underwriting to securitize.”¹⁹⁹ Similar maneuvers can also be used by companies to move money around and thus avoid rules on excess profit by insurance companies, as at least one Florida insurer appears to have done in 2022.²⁰⁰

Of course, these examples reflect peculiarities of that moment, and some of how re/insurance markets work has changed since that 2015 analysis. Inflation in recent years has also played a role, raising asset prices on the insured homes and buildings as well as increasing rebuilding costs. Yet traditional insurers continue to exit the state and be replaced by new insurers of questionable quality, many of which become insolvent after a few years.²⁰¹

In Florida, we see many speculative maneuvers to secure profit over comprehensive approaches to deliver affordable and reliable insurance alongside safe and accessible housing. The recent insolvencies of multiple insurers in Florida do not contradict this conclusion; if anything, they support it. After all, a specialist set up to underwrite policies for the purpose of attracting and profiting from investment capital doesn’t need to stay open beyond a handful of years in order to achieve its aims. The state supports these short-termist profit vehicles in many ways, including through a dedicated guaranty fund, along with an additional \$2 billion hurricane reinsurance program the DeSantis administration supported in 2022.²⁰² Though these funds are promoted as necessary to stabilize insurance markets — and indeed they may have helped with this, at least in the short term — this use of public resources does little to materially reduce risk facing Floridians. On the contrary, it facilitates sustained near-term private profit-making at the expense of the public resources and sustainability for the longer term.²⁰³ **Profit-minding risk transfer may make life safer for insurance companies, but it does not make housing safer for households.**

Price signals do not work

Conventional wisdom on home insurance says high premium prices adequately signal how to stay away from high-risk housing and/or to reduce the risk of their current housing. Price signaling is part of the “efficient markets hypothesis,” which suggests that prices convey accurate and sufficient information for market actors in the optimal way. In this case, the prevailing assumption is that price is the only factor, or at least the most important factor, in

¹⁹⁷ These highest-risk policies refer to wind only, as South Florida Citizens policyholders are required to obtain separate flood insurance under Senate Bill 2A.

¹⁹⁸ A company that specializes in putting third-party capital into insurance products like catastrophe bonds.

¹⁹⁹ Leigh Johnson, “Geographies of Securitized Catastrophe Risk and the Implications of Climate Change,” *Economic Geography* 90, no. 2 (January 2014): 155–85, <https://doi.org/10.1111/ecge.12048>.

²⁰⁰ Jason Garcia, “How Home Insurance Companies in Florida Sidestep Rules Meant to Prevent Excess Profits,” *Seeking Rents* (blog), July 14, 2024, <https://jasongarcia.substack.com/p/how-home-insurance-companies-in-florida>.

²⁰¹ Parinitha Sastry, Ishita Sen, and Ana-Maria Tenekedjieva, “When Insurers Exit: Climate Losses, Fragile Insurers, and Mortgage Markets,” SSRN Scholarly Paper, December 23, 2023, <https://doi.org/10.2139/ssrn.4674279>.

²⁰² Ron DeSantis: 46th Governor of Florida, “Governor Ron DeSantis Meets with Reinsurance Companies in London,” press release, April 28, 2023, <https://www.flgov.com/2023/04/28/governor-ron-desantis-meets-with-reinsurance-companies-in-london/>.

²⁰³ Zac J. Taylor, “The Re-Risking State: The Limits of Property Insurance in Florida,” LPE Project (blog), May 29, 2024, <https://lpeproject.org/blog/the-re-risking-state-the-limits-of-property-insurance-in-florida/>.

in people's decision-making about where they live and their ability to change their exposure to climate risk. This thinking also tells us that keeping insurance premium prices low creates a “moral hazard” whereby people are incentivized not to reduce their risk exposure.

Many factors influence how and why insurers set premium rates, from the cost of reinsurance to regulation (see Appendix 1 for further details). To the extent that premium prices do reflect an insurer's view on disaster risk, it is just that: one insurance company's view on disaster risk at a particular moment in time. **But one private company's view on the risk of specific homes with a specific type of insurance coverage is not an effective, let alone equitable, way to set policy on where people should live.**

Even if it were, these supposed signals are mixed at best. Because insurance policies are year-to-year, an insurer can drop a policyholder after years of renewal. Those years of renewal seemed to send a signal that all was well, as long as the premium was paid. Then suddenly a policy isn't renewed — how does one interpret that sudden change as a resident?

The assumption that insurance premium price is an effective way to shape an individual's behavior about relocation or mitigation does not hold up when we consider how people actually make decisions about housing, the constraints on their choices, and the fact that major disasters — and how we mitigate the risk of their harm — are not within individual control.²⁰⁴ For one, people may have made decisions about where to live many years ago, before climate change impacts were locked in and when the built environment looked very different. Now, even the “ideal” insurance customer who's well-informed and sufficiently resourced to act is likely confronted by levels of intensifying disaster risk well outside their control.

Additionally, not everyone has full choice when it comes to where to live. The US has a long history of racist housing practices that constrained the choices of people of color, especially Black Americans, directing them into “less desirable” areas,²⁰⁵ many of which are now uninsured or underinsured.²⁰⁶ Some of those practices continue to this day,²⁰⁷ and many of those areas that were redlined as desirable for investment have significant overlap with areas now at high risk for climate-related disasters.²⁰⁸

And finally, the things that might best reduce risk in certain areas, like sewer upgrades in a flood zone, are not a measure individuals can enact on their own. Price signals rely on the illusion of individual choice in where to live and the illusion of agency in changing broad risk factors.²⁰⁹

Furthermore, individuals with more power and resources can often override price signals. The rich can pay extremely high

²⁰⁴ Elliott, “What Is Insurance?”; Paula Jarzabkowski, “Are Premium Price Increases Really a Way to Reduce Climate Risk Exposure?” Climate and Community Institute (blog), May 2, 2024, <https://www.climateandcommunity.org/premium-price-increases>.

²⁰⁵ Keeanga-Yamahtta Taylor, *Race for Profit* (Chapel Hill, NC: University of North Carolina Press, 2019), <https://uncpress.org/book/9781469663883/race-for-profit/>.

²⁰⁶ Sharon Cornelissen, Douglas Heller, and Michael DeLong, *EXPOSED: A Report on 1.6 Trillion Dollars of Uninsured American Homes* (Washington, DC: The Consumer Federation of America, March 12, 2024), <https://consumerfed.org/wp-content/uploads/2024/03/Exposed-UninsuredHomes-1.pdf>.

²⁰⁷ Elizabeth Korver-Glenn, *Race Brokers: Housing Markets and Segregation in 21st Century Urban America* (Oxford, New York: Oxford University Press, 2021).

²⁰⁸ Scott Wilson, “Gentrification by Fire,” *Washington Post*, February 16, 2023, <https://www.washingtonpost.com/nation/interactive/2023/california-fires-home-prices/>; Zac J. Taylor and Manuel B. Aalbers, “Climate Gentrification: Risk, Rent, and Restructuring in Greater Miami,” *Annals of the American Association of Geographers* 112, no. 6 (August 18, 2022): 1685–1701, <https://doi.org/10.1080/24694452.2021.2000358>.

²⁰⁹ Jarzabkowski, “Are Premium Price Increases Really a Way to Reduce Climate Risk Exposure?”

insurance costs, or even self-insure. Or consider private housing developers: They do not have to worry about insurance beyond the construction phase, so they may have few qualms about building in flood-prone areas or other hazard zones. Those buying or renting those properties may reasonably assume that the housing is safe since it was recently built in that area, especially since many states do not require seller disclosures of flood damage and other past disaster losses,²¹⁰ or have inadequate planning and building controls when considering future climate risks. This leaves those who “chose” to live in a place responsible for that choice. And people — both those with lots of resources and even those without — often make choices based on attachment to place. Real world behavior doesn't just complicate price signal ideology — it also leaves future stakeholders on the hook.

²¹⁰ NRDC, “How States Stack Up on Flood Disclosure,” NRDC, August 19, 2024, <https://www.nrdc.org/resources/how-states-stack-flood-disclosure>.

²¹¹ Consumer Federation of America, “Millions of Consumers Lack Vital Homeowners Insurance, Resulting in \$1.6 Trillion in Unprotected Market Value,” press release, May 23, 2023, https://consumerfed.org/press_release/millions-of-consumers-lack-vital-homeowners-insurance-resulting-in-1-6-trillion-in-unprotected-market-value/.

²¹² Carlos Martín et al., “Disasters and the Rental Housing Market,” Brookings Institution, October 2023, https://www.brookings.edu/wp-content/uploads/2023/09/Disasters-and-the-Rental-Housing_final.pdf.

²¹³ Christopher Flavelle, “Why Does Disaster Aid Often Favor White People?” New York Times, June 7, 2021, <https://www.nytimes.com/2021/06/07/climate/FEMA-race-climate.html>.

²¹⁴ Jake Bittle, *The Great Displacement: Climate Change and the Next American Migration* (New York: Simon & Schuster, 2023), <https://pendlehill.org/product/the-great-displacement-climate-change-and-the-next-american-migration/>; Oliver Laughland, “‘Ida Is Not the End’: Indigenous Residents Face the Future on Louisiana’s Coast – Photo Essay,” *The Guardian*, September 12, 2021, sec. US news, <https://www.theguardian.com/us-news/2021/sep/12/hurricane-ida-louisiana-pointe-aux-chenes-isle-de-jean-charles>; Rolando J. Acosta et al., “Quantifying the Dynamics of Migration after Hurricane Maria in Puerto Rico,” *Proceedings of the National Academy of Sciences* 117, no. 51 (December 8, 2020), <https://doi.org/10.1073/pnas.2001671117>.

For those who cannot afford choice, the price signal theory, carried to its logical conclusion, will lead to financial ruin for many. As rates continue to skyrocket, people are, or will likely be, forgoing insurance entirely.²¹¹ Or, if they are required by their lender to hold a policy, they are drastically reducing their coverage to the bare, affordable minimum. When disaster hits, they may indeed move, but only after suffering the financial ruin that an under or uninsured disaster will inevitably lead to for those with low and middle incomes. No longer able to maintain financial stability, homeowners in this situation will turn to the already-in-crisis rental housing markets, which tend to contract even more after disasters.²¹² Renters, for their part, may be unable to afford housing altogether. And federal disaster aid replicates patterns of racial discrimination, often leaving households of color with less support than their white counterparts.²¹³ Insights on prior disasters and housing markets suggests this will lead to permanent and unjust displacement, fundamentally changing the fabric of communities.²¹⁴



Without a system that maintains financial security for the many and helps them reduce climate risk, such as through proactive housing, land use, and disaster mitigation policies, only the wealthy and whiter few are likely to remain financially solvent as climate-driven disasters increase.

And even if braving an environmental disaster without adequate insurance doesn't financially ruin everyone, when a major disaster hits, more and more people will look to state and federal disaster relief programs for reactive, unplanned-for support. **The cost of disasters is still socialized, but because it is done through reactive disaster response programs, it is not rationally budgeted.**

And yet, much of the regulatory imagination revolves around

seducing private capital to “fix” market problems. Empirically, the Florida case as described above, indicates that this strategy isn’t working well. The underlying assumptions of this view also deserve scrutiny: One assumption is that it is a good idea to place growing shares of our collective wealth (e.g., public pensions) in things like speculative disaster finance. But is this a good way to collectively finance risks (and financially de-risk pension investment)? When does this approach become too risky or lead to increasingly harmful societal outcomes, given the increasingly unequal protections provided by insurance? Another assumption is that there are boundless pools of capital to be transformed into extra support for insurers. The rising costs of reinsurance that the insurance industry has pointed to as a reason for premium price hikes demonstrates that there are real impediments to finding endless sources of capital at an affordable price. It is hard to imagine this getting easier in a world of rising climate risks and damages, and yet today’s insurance model asks us to rely too heavily on free-flowing capital markets.

BOX: Public pension investments in insurance-linked securities

Public pension funds ensure that public-sector employees and their families have a decent retirement. These funds are major institutional shareholders, holding trillions of dollars of working people’s financial assets and allocating them to a wide range of financial and nonfinancial instruments for the purposes of increasing the value of the fund. In some cases, public pension fund assets are used for real investments that increase in financial value and also benefit public-sector workers and their broader communities. However, in many cases, public pension funds are holding assets that may increase in financial value but have harmful social and economic consequences for the very communities that are the beneficiaries of the funds.

Public pension funds increasingly allocate their portfolios to financial instruments that are outside of the regulated stock markets,²¹⁵ like insurance-linked securities. ILS market proponents argue that these are good investments because weather risks are not correlated with the stock market, making them a good source of diversification. Others have argued that ILS should be seen as an environmental, social, and governance (ESG)–friendly asset class, amid international pushes for more sustainable finance.

Public pension funds are including these assets as part of their portfolios for the financial return, and in this way are contributing to how states are pursuing disorderly transitions with public money. Because ILS are often held in asset manager funds that do not have to disclose details about their operations, or that are incorporated outside of the US, the details of how public pension funds hold catastrophe risk-related assets can be hard to track. Although it is challenging to trace specific deals, we found that 26 public pension funds held ILS as part of their portfolios (see Table 1).

²¹⁵ Lenore Palladino and Harrison Karlewicz, “The Growth of Private Financial Markets,” Political Economy Research Institute, May 9, 2024, https://peri.umass.edu/?option=com_content&view=article&id=1807.

We were also able to identify certain examples that bring to light the relationships. For example, the Florida State Board of Administration held assets through the Aeolus Property Catastrophe Keystone PF Fund, which is a Bermuda-domiciled reinsurance hedge fund managed by Aeolus Capital Management. The Florida State retirement fund initially invested \$273 million in the fund. Given what we have described about Florida's insurance system, this raises questions about the financial risks to which pension fund managers are subjecting public money,²¹⁶ as well as to more philosophical questions about whether public money should be used to support a system that's failing so many in the state — and if our collective wealth can be directed to more comprehensive, equitable ways of addressing disaster risk in our communities.

Table 1: State public pension fund investments in insurance-linked securities. *Note: These totals were derived by matching public pension fund holdings with private funds that hold ILS, including catastrophe bonds.*

²¹⁶ Susan Crawford, "What the Heck Is Happening with Cat Bonds?" Moving Day (blog), January 30, 2024, <https://susanpcrawford.substack.com/p/what-the-heck-is-happening-with-cat>.

Pension Fund Administrator Name	State	Number of ILS Funds Held	Total Assets Under Management USD (MN)
Alaska Retirement Management Board	AK	0	41,519
Arizona Public Safety Personnel Retirement System	AZ	0	19,808
Los Angeles Water & Power Employees' Retirement Plan	CA	0	16,981
Municipal Employees' Retirement System of Michigan	MI	0	13,831
Philadelphia Board of Pensions & Retirement	PA	0	7,735
Arkansas Teacher Retirement System	AR	3	21,764
Temple Firemen's Relief and Retirement Fund	AZ	1	58
Los Angeles County Employees' Retirement Association	CA	2	78,031
Regents of the University of California	CA	1	164,000
Florida State Board of Administration	FL	3	190,430
Employees' Retirement System of the State of Hawaii	HI	2	22,203
Hawaii Employer-Union Health Benefits Trust Fund	HI	1	7,761
Illinois State Board of Investment	IL	2	25,841
Indiana Public Retirement System	IN	3	48,044
Plymouth County Retirement Association	MA	1	1,396
Maryland State Retirement and Pension System	MD	5	63,269
Michigan Department of Treasury	MI	2	96,813
NJ Division of Investment	NJ	2	98,200
New Mexico Educational Retirement Board	NM	1	14,926
School Employees' Retirement System of Ohio	OH	1	18,231
Oregon State Treasury	OR	1	92,934
Allegheny County Retirement Board	PA	4	946
Pennsylvania Public School Employees' Retirement System	PA	5	69,817
Westmoreland County Retirement System	PA	2	613
McAllen Firemen's Relief and Retirement Fund	TX	1	58
State of Wisconsin Investment Board	WI	2	175,418
		TOTAL	1,290,627

Current policy choices shift risks rather than reducing them

Federally funded research suggests that physical risk reduction measures may save as much as \$13 for every \$1 invested, depending on the risk type.²¹⁷ FEMA, building science and code bodies like the International Codes Council (ICC), and insurance industry-funded research entities like the Insurance Institute for Business & Home Safety (IBHS), have long promoted improved residential building codes, voluntary “codes-plus” standards, and home hardening retrofits as highly effective ways of reducing underlying risks against a range of climate-related risks, including many facing the states discussed here.²¹⁸ **The business case for up-front resilience investment is clear.**

²¹⁷ National Institute of Building Sciences (NIBS), “Mitigation Saves: Mitigation Saves up to \$13 per \$1 Invested,” NIBS, December 1, 2019, https://www.nibs.org/files/pdfs/m_s_v4_overview.pdf.

²¹⁸ “Construction Standards,” Insurance Institute for Business & Home Safety, February 1, 2018, <https://ibhs.org/guidance/fortified-construction-standards/>; FEMA, “Building Codes Save: A Nationwide Study of Loss Prevention” (FEMA, November 2020), <https://www.fema.gov/emergency-managers/risk-management/building-science/building-codes-save-study>; “Codes Save,” International Code Council, accessed August 23, 2024, <https://www.iccsafe.org/codessave/>; “Multi-Hazard Mitigation Council,” accessed August 23, 2024, <https://www.nibs.org/index.php/mmc>.

²¹⁹ Christopher Flavelle, “As Storms Get Stronger, Building Codes Are Getting Weaker,” Bloomberg News, March 19, 2018, <https://www.bloomberg.com/politics/articles/2018-03-19/storm-prone-states-ease-off-building-codes-as-climate-risk-grows?embedded-checkout=true>; The White House Office of the Press Secretary, “FACT SHEET: Obama Administration Announces Public and Private Sector Efforts to Increase Community Resilience through Building Codes and Standards,” press release, May 10, 2016, <https://obamawhitehouse.archives.gov/the-press-office/2016/05/10/fact-sheet-obama-administration-announces-public-and-private-sector>.

²²⁰ Johanna Bozuwa et al., “MEMO: Just Disaster Response - Considering a Green New Deal approach to disaster in the wake of Hurricanes Ian and Fiona in 2022,” Climate and Community Institute, October 2022, <https://www.climateandcommunity.org/just-disaster-response>.

Yet while our research demonstrates an increase in the number of risk reduction initiatives across the country, with some good options to build on, these remain wholly inadequate in terms of investment, coordination, and ambition. An Obama-era attempt to link FEMA federal disaster aid to states’ risk reduction efforts was dropped amid state resistance.²¹⁹ **Disaster insurance costs will only go down when we directly reduce risk by making homes and communities safer.** And if we want to reduce disaster risk across the board, we must stop climate change from getting worse than it already is by ending the fossil fuel economy. As the Climate and Community Institute has previously noted, every degree of warming stopped will lower the frequency and severity of future disasters. The best defense is a good offense, and a good offense necessitates shifting energy systems toward renewable energy and decarbonizing homes, buildings, and transportation. It also means explicitly winding down polluting fossil fuel infrastructure.²²⁰

The current insurance system ignores the “community of fate” we are in. These existing programs are based upon the presumption that people will not, or should not, underwrite a risk they do not share. In California, the argument might go, “I don’t live on the wildland-urban interface, so why should I subsidize those people who do.” But in a country as big as the US, and as climate change impacts rapidly increase, it is folly to think our fates are not intertwined, as the analysis in this report has demonstrated. **We are all at risk from some kind of disaster, and climate change is only making that truer. These risks are not individual ones, and the ability to sufficiently mitigate them is also not individual.** No single household can upgrade the municipal sewer system, for example.

As the research presented in this report demonstrates, the practices of the for-profit private home insurance industry throughout the US are more and more at odds with the necessity for safety, risk reduction, and affordability for homeowners and renters. The industry has increasingly shifted its focus away from sharing responsibility for home safety, and toward reducing its own financial exposure to large payouts, with support from regulators. To maintain sustained profits and minimize their own

financial losses, private insurers have raised premiums across their risk portfolios and devised complex reinsurance instruments in an effort to transfer risk away from themselves. The actions have exacerbated vulnerability for high-risk, lower-income individuals and families throughout the country. When insurance reaches astronomical costs, it can become out of reach for these individuals and families, reinforcing precarity for the most marginalized. While insurance can at once be a tool for risk mitigation and mutual aid, it can also exacerbate inequity through “splintering protectionism,” which results when insurance is available to those who can pay increasingly costly premiums in high-risk landscapes.²²¹ Furthermore, home insurance today typically requires homeowners to rebuild “in place” without the option to relocate, which does not always align with concerns for long-term household safety or community resilience.

If we want safer and smarter land use, then we need better land-use policy. If we want smaller, more planned for, more manageable payouts when disaster does strike, we need risk reduction programs that prevent damage before those disasters strike. The more we reduce risk, the less we need to rely on the safety net of insurance and unbudgeted post-disaster aid.

Existing public insurance programs are designed to fail

State insurers of last resort are increasingly responsible for disaster insurance coverage, as this report has demonstrated. Meanwhile, updates to national flood risk maps may require more people to purchase flood insurance through the NFIP. Despite the importance of more accurate flood mapping through Risk Rating 2.0,²²² participation in the NFIP has declined over the last decade.²²³ This decline suggests that the “price signals” associated with Risk Rating 2.0 have discouraged rather than encouraged participation, highlighting a critical issue: Without aligning insurance pricing and community hazard mitigation efforts, the intended effect of these reforms is not fully realized. As these programs continue to struggle with instability and affordability, some commentators argue that public insurance cannot solve today’s home insurance crisis. However, this perspective overlooks the original design flaws in these programs that lead to their current issues — flaws that we can address and avoid.²²⁴ Thus, the argument sets up a false equivalency that stifles innovative solutions for an urgent and growing public policy crisis affecting millions across the US.

It is no surprise that the NFIP, which underwrites most flood risk across the country, and state insurer-of-last-resort plans (typically known as FAIR Plans), which underwrite fire and wind, are floundering. The design of these programs contradicts important fundamentals of good insurance design, which dictates the pooling of different levels and kinds of risk. These programs, however, pool only higher risks, and only of certain types. This is akin to a health insurance pool that only enrolls the sickest cancer

²²¹ Leigh Johnson, “Catastrophic Fixes: Cyclical Devaluation and Accumulation through Climate Change Impacts,” *Environment and Planning A: Economy and Space* 47, no. 12 (December 2015): 2503–21, <https://doi.org/10.1177/0308518X15594800>.

²²² Risk Rating 2.0 is FEMA’s updated methodology for calculating flood insurance premiums. It provides a more granular, property-level scale of analysis for assessing the frequency and severity of flooding events.

²²³ Diane P. Horn, “National Flood Insurance Program Risk Rating 2.0: Frequently Asked Questions,” (Congressional Research Service, May 28, 2024), <https://crsreports.congress.gov/product/pdf/IN/IN11777>.

²²⁴ Moira Birss and Rebecca Elliott, “How Do We Fix Public Insurance Programs?” *Climate and Community Institute* (blog), August 21, 2024, <https://www.climateandcommunity.org/fix-insurance-programs>.

patients. These selective, higher risks then come with expensive policies that people drop if they become too burdensome, or in certain circumstances, these policies force people out, leaving even fewer policyholders to cover the liabilities of the pool and worsening its overall financial solvency. Contrast this with New Zealand's natural hazard insurance program, which provides the first layer of residential land and building insurance cover for a range of natural hazards. All home insurance policyholders get coverage for natural hazards, and they pay a levy based on the coverage amount, regardless of individual risk level.²²⁵

Furthermore, though the NFIP was meant to impel risk mitigation at the community level, the program is designed such that incentives for local governments to do so largely translate to financial penalties on individuals in a given community rather than clear and strong incentives to those local governments.²²⁶ It also leaves enforcement of the NFIP's risk reduction measures up to those local governments, which often have plenty of incentives to maintain the status quo.²²⁷

The financing structures for these programs are also unnecessarily limited. One of the main critiques of the NFIP is that it is in the red; it survives primarily by raising premiums and turning to Treasury debt, the latter of which then requires dedicating budget to debt repayments and interest rather than flood risk reduction work. State FAIR programs cannot rely on the US Treasury, of course, so their main solvency fix is to raise premiums, which is coupled with fees assessed on private insurers operating in the state, proportional to their market shares — though with private insurers scaling back or even leaving certain states entirely, those latter funds are diminishing. This heavy reliance on premium income and emergency assessments for solvency, however, is an unnecessary constriction on these programs. Premiums are not the only way a public insurance program can generate income to fund the program: government programs can use forward-looking taxes, fees, and other income to fund programs like this. We could imagine, for example, a fee on mortgage lenders to support a robust public insurance program, given that they stand to lose enormously if the nation's housing stock remains in ruins after strings of major disasters.

Third, these programs are assumed to be able to address multiple very complex policy areas at once. The California FAIR Plan, for example, gets criticized because it hasn't prevented people from living in the wildland-urban interface, where forest fires can quickly jump to housing. But of course, the California FAIR Plan and similar programs do not work as land-use programs — they're not land-use programs. If we want rational decision-making about disaster mitigation, then we should design policies that directly provide for robust, comprehensive, and holistic reduction of the harms caused by disasters. If we had this kind of rational policymaking about land-use decisions, then we would not need to worry about whether insurance programs were sending sufficient signals into the void.

²²⁵ "Our Role," Natural Hazards Commission Toka Tū Ake," accessed August 23, 2024, <https://www.naturalhazards.govt.nz/about-nhc/our-role/>; "Natural Hazards Insurance (NHI) and Fire and Emergency New Zealand (FENZ) Levies," AA Insurance, accessed August 23, 2024, <https://www.aainsurance.co.nz/levies>.

²²⁶ Diane P. Horn and Baird Webel, "Introduction to the National Flood Insurance Program (NFIP)," (Congressional Research Service, December 20, 2023), <https://crsreports.congress.gov/product/pdf/R/R44593>.

²²⁷ Jake Bittle, "FEMA Is Making an Example of This Florida Boomtown. Locals Call It 'Revenge Politics,'" *Grist*, April 16, 2024, <https://grist.org/housing/lee-county-florida-fema-hurricane-ian-flood-insurance/>.

Conclusion:

The Current Home Insurance System Is Fatally Flawed

Our research and analysis show that the current home insurance system in the US is fatally flawed. In order to confront the growing housing safety and affordability crisis, we need to understand our fates as shared: the impacts of these crises and the increased risks we face due to climate change are shared by everyone, though the burden of those risks is rarely shared equitably. We must reimagine our disaster risk finance system to be one that prioritizes resilience, ensures equitable protection, and provides equitable outcomes for the most vulnerable communities.

Currently, the vast majority of disaster risk reduction and response for households is left up to insurance markets. As the evidence in this report makes clear, the market failures in private insurance mean these markets do not — and perhaps cannot do — an adequate job of offering protection from disaster, particularly when it comes to the most marginalized households. The industry's profit seeking only exacerbates this: The insurance system is designed to transfer rather than reduce risk. This may make things safer for insurance companies, but not for households. **The cost of the damage from uninsured losses is then borne individually by households, which can lead to their financial ruin and contribute to financial system risk or is socialized onto public disaster response programs that are reactive and therefore not rationally budgeted.**

Climate change, which is making many disasters more frequent and/or more severe, presents a massive and increasing risk to everyone. But it is neither just nor possible for individuals to take full responsibility for that risk. As such, part of the solution to this crisis is decarbonization, so that climate change does not keep getting worse. Another part of the solution is ensuring that the institutions that caused the crisis — both the climate crisis (e.g. the fossil fuel industry) as well as the home insurance crisis (the insurance industry itself) — also assume some responsibility. And given that many of the impacts of climate change are already inevitable, we must ensure investment in climate adaptation and disaster protection matches the scale of the challenges facing our communities. There are many existing examples of climate mitigation and decarbonization — like the Greenhouse Gas Reduction Fund — that can help us to imagine the institutional form this financing capacity takes. **Coverage and protection from climate impacts, as well as for major disasters more broadly, should embody the principles of solidarity, such that everyone, regardless of socioeconomic status, race, or geography, is safeguarded.**

²²⁸ Daniela Gabor, "The Wall Street Consensus," *Development and Change* 52, no. 3 (2021): 429–59, <https://doi.org/10.1111/dech.12645>.

²²⁹ Jean Eaglesham, "Insurers Rake In Profits as Customers Pay Soaring Premiums," *Wall Street Journal*, January 25, 2024, <https://www.wsj.com/finance/insurance-companies-profits-stock-ebae7fd1>.

Instead of prioritizing insurance company well-being over housing safety and affordability, policymakers should reprioritize their focus on how to reduce risk for households,²²⁸ rather than for insurance companies and their shareholders.²²⁹ **Rather than trying to save insurance companies, policy solutions should seek to answer the question of what role private insurance**

markets should play in a broad suite of policies to keep people safely and affordably housed as disasters increase in frequency and scale.

State Housing Resilience Agencies: our policy vision for the home insurance crisis

We propose that states²³⁰ establish Housing Resilience Agencies. A Housing Resilience Agency would have two primary functions: to coordinate and oversee comprehensive disaster risk reduction activities in the state, and to provide public disaster insurance that offers fair and equitable protection.

As part of these activities, the HRA would host public catastrophe risk models and a climate risk advisory council to inform the agency's work. The HRA would be governed by a democratic governing board, and diverse sources would finance its work. These financing entities would be determined by an evaluation of those most responsible for the current crisis and those that would greatly benefit from stability in home insurance (see the "Financing" section, below, for additional detail).

State HRAs could collaborate with one another to deepen their effectiveness and/or provide support outside the specific state. The federal government could support state HRAs with financial assistance, or even adopt a national-level HRA.

This HRA vision is intended to lay out broad-strokes approaches and principles, not to define every single detail of how states would design and implement Housing Resilience Agencies, since the best policy approach will vary according to geography. It is our hope that local organizers and policymakers will be inspired by this vision and use it as a jumping off point for their own visions and policymaking.

Why a state-based approach

While federal-level programs like the NFIP can rely on the full fiscal power of the US federal government, the aforementioned struggles of that program, as well as federal disaster relief programs,²³¹ to respond to increased climate-related disasters suggests an urgent need for state governments to get smart about overhauling their approach to risk reduction and disaster recovery. As such, and since insurance and so much of risk reduction and recovery are regulated and managed at the state level, our policy proposal focuses on state-level implementation.

Furthermore, current responsibility for resilient infrastructure investments largely rests with individual urban governments already experiencing growing fiscal strains due to the climate crisis. Larger entities with greater ability to bear costs and risks, like states, should take more responsibility for these investments.²³² This does not mean that all planning should be held at the state level, however. Instead, resilience priorities can

²³⁰ We assume that Puerto Rico could also establish an HRA. For conciseness in the text, we use "states" but understand it to also include Puerto Rico.

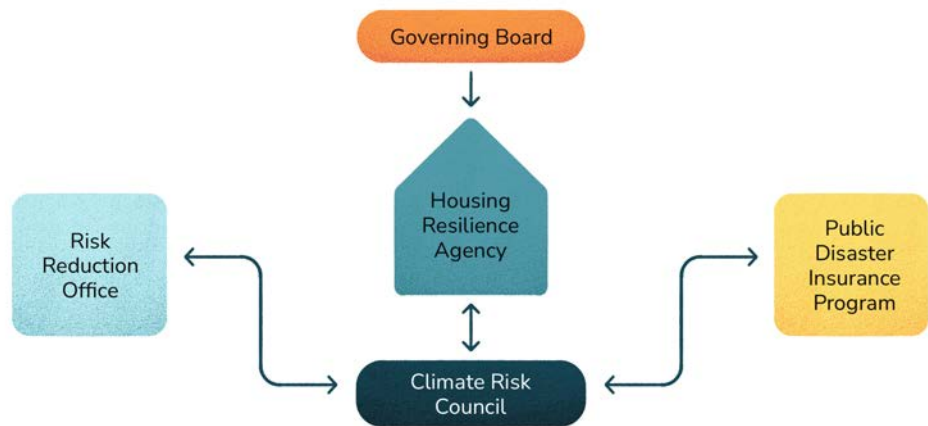
²³¹ Shruti Date Singh and Bloomberg, "FEMA Is Denying Requests for Aid Money as Disaster Relief Fund Starts to Run out Again," *Fortune*, July 12, 2024, <https://fortune.com/2024/07/12/fema-aid-requests-denied-disaster-relief-fund-natural-disasters-hurricane-beryl/>.

²³² CS Ponder, "Spatializing the Municipal Bond Market: Urban Resilience under Racial Capitalism," *Annals of the American Association of Geographers* 111, no. 7 (November 2021): 2112–29, <https://doi.org/10.1080/24694452.2020.1866487>.

be devolved for community identification and control where appropriate, while funding is aggregated at higher levels where it can be accumulated most effectively, then distributed to meet community needs.²³³

This is not to say that federal-level policy measures are not important and necessary. In fact, the broad strokes of what we propose here could constitute a robust and effective federal response to the home insurance crisis. While our focus is primarily on state-level responses, we also include notes at the end of this proposal on how the federal government could provide national-level support and coordination for state HRAs, or even be adapted for federal implementation. It is important to stress, however, that partial application of these proposals will not be enough — **comprehensive risk reduction coupled with an insurance system that truly protects against the financial impacts of disasters is the only thing that will really address today’s crisis.**

Figure 25. HRA structure



Pillar A: Disaster insurance that actually insures

The best way to equitably spread the risk of non-preventable disasters and ensure access to equitable post-disaster recovery that increases resilience — all without prioritizing rent-seeking — is through a state-run disaster insurance program (coupled with the massive planning and investment in risk reduction outlined in the second pillar of this proposal).

A state-run public insurance program would establish and provide comprehensive disaster insurance at the state level. Private insurers would still serve the basic home insurance market for standard coverage of theft, burst pipes, etc. (In insurance industry parlance, these are called HO3 policies, though today many such policies also cover some types of disasters, like severe storms, in some places.²³⁴)

Because this public disaster insurance program would pool and spread risks across the entire state market, and the HRA’s risk

²³³ Johanna Bozuwa et al., “MEMO: Just Disaster Response.”

²³⁴ We could also imagine a state HRA providing a public disaster insurance option, rather than assuming all disaster risk insurance. We propose the latter, however, because we think the former would lead to private insurance providers “cream skimming” — that is, taking all the lower-risk policies.

reduction pillar would greatly lessen the damage caused by disasters, we assume a more targeted purpose for private reinsurance instruments. Under this approach, state-level dependence on private reinsurance markets would be reduced, while instruments like CAT bonds and traditional reinsurance could continue to play a targeted role in financing high-loss, low-probability disasters, such as a major California earthquake or strong Florida hurricane. This financing capacity could also potentially be consolidated at a federal level, as an overarching facility to support CAT bond financing at scale and with an aim of streamlining costs. We also propose, below, how the federal government can provide public reinsurance support to HRAs.

In the states that have FAIR Plans (or residual markets with quasi-public insurers like California's earthquake program), those plans could be reshaped into a full public disaster insurance program. In states without existing programs, a new insurance entity could be created from scratch or built upon an existing entity like a green bank or a different existing state agency, like a housing finance agency.

Establishing state disaster insurance coupled with a comprehensive risk reduction program (see below) would create a more direct and comprehensive relationship between risk reduction and insurance provision. It would address the multiple market failures highlighted in this report, such as the lack of coverage options for multifamily housing providers. This lack of coverage exacerbates current housing supply issues and hinders new housing development amid ongoing housing affordability crisis.

Key features for a state disaster insurance program

Cover a full range of disasters

Given the increasing overlap of multiple perils across geographies, and the need to spread and pool risks, the program would need to cover the full range of disaster perils possible in the state. For example, California should cover, at minimum, fires, floods, earthquakes, landslides, and volcanic activity. The list of covered perils could be determined using FEMA's risk rating maps and the state's public catastrophe risk commission (more on this below). New Zealand's aforementioned Natural Hazards Cover program provides an example for a multi-peril insurance program.

Because this proposal contemplates state disaster insurance programs taking on coverage for all relevant disasters in a state, that will result in an overlap with NFIP coverage. To solve this in the short term, we propose that states carve out flood coverage from HRA policies for policyholders currently required to hold NFIP policies. In the medium term, FEMA could create carve outs from the NFIP for states that implement HRAs, or the federal government could implement a federal HRA that would supersede the NFIP (for more information, see the discussion on federal policy, below).

Provide policies for all

Everyone, not just homeowners, needs access to equitable, fair disaster insurance. As such, while the program would offer homeowner policies, it should also provide coverage for oft-ignored categories such as:

Mobile homes

Recognizing that current mobile home policies are often very restrictive, we suggest the provisions to further protect these households, like coverage for replacement cost, the ability to transfer claims to other mobile home parks (since after a big disaster, the park where a mobile homeowner has lived may not reopen), foundation & HVAC coverage, and coverage for all homes, including those built before the 1976 Department of Housing and Urban Development (HUD) code.²³⁵

Multifamily housing

Given that over a third of US housing is rental units,²³⁶ ensuring adequate insurance for multifamily housing is essential. Policies should be available for both existing buildings and for construction of new ones, and should be adapted for all types of multifamily housing, including assisted living facilities, shelters, nonprofit affordable housing, and more.

To further protect these households, building owners must implement comprehensive renter protections to access coverage. Policies are needed that address both potential sources of rent burdens — such as rebuilding costs or pass-throughs for repairs — and eviction threats, including using repairs as a pretext for evicting tenants. Measures should also be in place to ensure tenants can remain in their communities, with provisions such as no rent increases for a defined period after disaster, just cause eviction protections that are permanent rather than temporary, and anti-rent gouging protections to prevent unfair cost burdens on tenants. Additionally, there should be a right of return for displaced tenants to their homes once repairs are completed, and policies in place to prevent predatory actors from seizing properties in the wake of disasters.

Renters

The HRA disaster insurance should also provide coverage for renters, for unit contents and temporary relocation if units become uninhabitable after a disaster.

Standardized, stable, and affordable premium prices

The current logic of insurance premium pricing is based on the idea that individual risk level should determine price. Since we have disproved this logic, we must also reconsider how premiums are set. As such, we propose a standardized pricing mechanism that ensures stable, affordable costs for people.

²³⁵ The 1976 HUD Code established a set of national construction standards for manufactured homes (i.e., structural design, fire safety, electrical and plumbing systems, heating and cooling, and insulation). Manufactured homes that meet this code receive a certification that signifies federal compliance. A Green New Deal for Home Insurance must include all manufactured homes, including those built before the establishment of the HUD code.

²³⁶ “DP04: Selected Housing Characteristics,” US Census Bureau, accessed August 22, 2024, <https://data.census.gov/table/ACS DP1Y2022.DP04?hidePreview=true>.

We propose two bases for the pricing of homeowner and rental policies:

1. Income level, such that those with higher incomes pay a higher rate, and those with lower incomes pay less. Rate could be adjusted each year for inflation and changes in income.
2. Coverage amount, such that higher coverage amounts require a higher rate, up to a ceiling. This is similar to New Zealand's public earthquake insurance program, in which everyone is charged the same amount and gets the same amount of first layer of insurance from the government pool. This gives everyone a minimum amount to rebuild after an earthquake and the affordability comes from risk spreading across the country, while also allowing individuals to purchase additional private insurance on demand.

For multifamily building coverage, the cost paid by the building owner should be calculated based on a standard rate related to the coverage amount, as in the aforementioned New Zealand program.

This pricing mechanism turns traditional “price signaling” on its head by incentivizing the HRA to reduce the total costs of the program through population-level risk reduction — the second pillar of the HRA. Furthermore, this approach eliminates the possibility of rate-setting that discriminates on marital status, credit score, or other problematic factors.

Neighborhoods, or even whole municipalities, that complete the risk reduction and decarbonization program could be awarded a resilience certification, which would result in a discount on rates from the state insurance program. The certifications would require periodic updating, since we cannot assume community risk profiles will stay constant as the climate changes.

Coverage amounts based on rebuilding cost plus resilience

As is typical for private insurance coverage, coverage amounts for state disaster insurance policies should be based on rebuilding cost, adjusted yearly for inflation and with a coverage limit for high-value properties. This will require the HRA to develop a rebuilding cost calculator, which should be publicly available. The Association of British Insurers' public rebuild cost calculator could be a model for this.²³⁷

Claims payouts for major rebuilds should include extra funds for increasing the resilience of the structure. Alternatively, policyholders should have the option to convert rebuilding payout to a buyout if their home is located in a very high-risk area (as determined by the HRA's climate risk council, described more below).

Claims payment process standardized, equitable, and timely
Claims payout processes must address the prohibitively high

²³⁷ “BCIS Rebuilding Cost Guidance,” Association of British Insurers, accessed August 23, 2024, <https://abi.bcis.co.uk/>.

upfront costs of repairs for low- and moderate-income homeowners and affordable housing providers so that adequate repairs can be made in a timely manner.

An HRA-run rebuild cost calculator (see above) would help standardize price-setting for rebuilding work. States should further implement anti-price gouging rules for post-disaster periods, as Florida has done.²³⁸

The HRA can further address cost barriers by setting up a system to directly pay approved contractors to provide repair and rebuilding services to low-income policyholders.

Requirements for vetted firms should include:

- Training for best materials, construction techniques, and design for climate resilience in that area;
- Family-sustaining wages (or prevailing wages, but in some states that is not necessarily higher than minimum wage) and benefits;
- Labor-peace neutrality agreements;
- Accessible opportunities for career advancement; and
- Minority, Women, and Disadvantaged Business Enterprise (MWDBE) and local hire procurement/contracting standards.

The state should also consider building public disaster repair entities, which could ensure proper worker protections, adequate rebuilding standards, and all insurance program funds going to repairs rather than to shareholders. This could take the form of the Civilian Climate Corps taking on building retrofitting projects,²³⁹ or other green jobs programs.

Regulations on private insurers

Though we propose that states take on provision of disaster insurance, regulatory protections for consumers and public coffers will still be crucial in private insurance markets providing “standard” (HO³) coverage.

Those regulations should include:

- A one-year moratorium on policy cancellations or nonrenewals following a state-declared emergency;
- Minimum of one year for policyholders to submit notices of claims to insurers;
- Minimum of two years for policyholders to complete repairs;
- Prohibition on the cancellation or nonrenewal of policies and/or the failure to timely remit payouts while disaster declarations are in effect;
- Simplified, standard policy contracts;
- The offering of multiyear contracts;
- Climate risk disclosures as outlined by the US Treasury’s Federal Insurance Office;²⁴⁰
- Multifamily building policies that include the renter protections outlined in the state disaster insurance program;
- That insurers must not use racially discriminatory factors, such

²³⁸ “Price Gouging,” Office of Attorney General Ashley Moody, accessed August 23, 2024, <https://www.myfloridalegal.com/consumer-protection/price-gouging>.

²³⁹ Johanna Bozuwa et al., “MEMO: Just Disaster Response.”

²⁴⁰ Federal Insurance Office, Insurance Supervision and Regulation of Climate-Related Risks (Washington, DC: US Department of the Treasury, June 2023), <https://home.treasury.gov/system/files/136/FIO-June-2023-Insurance-Supervision-and-Regulation-of-Climate-Related-Risks.pdf>.

as the source of income to pay rent, when setting rates, along with other practices that have been found to have a disparate impact on protected classes recognized under state and national civil rights laws;

- Payouts that include extra coverage for bringing buildings up to current code; and
- An end to investments in, and of underwriting for, fossil fuels — the leading driver of climate change.

Pillar B: Holistic disaster risk reduction

The Housing Resilience Agency would coordinate across state and local agencies to study, make determinations, and provide funds for risk reduction; implement building restrictions; organize relocation, ensure effective home and community-level resilience and decarbonization measures; and provide for building code-setting and regularly scheduled updates and resources for code endorsement. It would also serve as a clearinghouse for helping local governments and individuals access various pots of money/programs for resilience from federal agencies like FEMA/HUD, host public catastrophe risk models, and ensure that communities are involved in resilience planning.

Though price signaling is often held up by industry and policymakers as a key way to ensure disaster mitigation and risk reduction, this report has demonstrated the flaws in that narrative. National level insurance price and risk data show us that current prices aren't reflective of risk, and our analysis and that of others makes clear that individual choice is severely constrained, if not impossible, when it comes to risk reduction from disasters, especially as climate change worsens. Instead, we must prevent disasters and mitigate their impacts, ideally before weather-related catastrophe strikes — the more we reduce risk, the less we need to rely on the safety net of insurance. And the only way to adequately and holistically reduce disaster risk, as we discussed above, is through collective approaches.

Key features of holistic disaster risk reduction

Public catastrophe risk models

While we propose a break from risk-based pricing of insurance, catastrophe risk modeling will be essential for the HRA's risk assessment and risk reduction activities. Instead of relying on proprietary, black-box catastrophe risk models that private insurers use,²⁴¹ however, we propose that state HRAs set up public catastrophe risk models to bring together the best of climate and catastrophe modeling research in a transparent and democratically run platform for risk assessment.

Existing building risk reduction & resilience

The HRA should design and implement a statewide program for holistic, community-oriented risk reduction and decarbonization for housing that would combine structural fortifying measures with energy efficiency and decarbonization updates. As this report has shown, risk reduction for large-scale disasters is most effective at collective, not individual levels.

²⁴¹ Madison Condon, "Climate Services: The Business of Physical Risk," *Arizona State Law Journal* 55, no. 147 (Spring 2023): 147–209, <https://doi.org/10.2139/ssrn.4396826>.

Factors for prioritization decisions about where to begin risk reduction work should be based on risk level for covered disasters (informed by the public risk models) and the proportion of low-income and rental households. HRA risk reduction work should coordinate with and improve upon existing state and local hazard risk mitigation plans.

The planning should involve community-driven housing resilience planning processes that incorporate the community into visioning and planning the necessary interventions. The use of a community-driven planning framework not only helps ensure more equitable outcomes, it also provides for greater community participation and acceptance. The Community-Driven Climate Resilience Planning Framework gives a model for this.²⁴²

To ensure that lower-income households and communities are properly served by this program, grants for risk reduction should be provided to nonprofit affordable housing providers, as well as to low-income homeowners — including those typically shut out of existing rebate systems, like mobile home dwellers — with planning and coordination to ensure retrofits are happening across communities and incorporating neighborhood and community-wide measures like brush removal on non-private land and/or sewer system upgrades. Low-interest loans should be made available to higher-income households (up to a certain threshold, say ¹⁵⁰ percent AMI) and for-profit multifamily housing providers to implement retrofits. As with any public money given to private actors, support for multifamily housing providers should be conditioned on a strong set of tenant protections and antidiscrimination laws. In order to ensure widespread adoption, the HRA should conduct robust outreach and provide support to those filling out applications.

Some existing programs can serve as (partial) models, like Pennsylvania’s Whole Home Retrofits program, which provides an example of how renter protections can be woven into retrofit programs for small landlords.²⁴³ The HRA should look to partner with Tribal entities where appropriate, though it shouldn’t have to be restricted to Tribal lands, as with California’s current Tribal Wildfire Resilience Grants program,²⁴⁴ as well as with worker-led resilience initiatives.²⁴⁵

Housing resilience clearinghouse

The HRA can provide leadership for efficient and equitable allocation of housing resilience and rebuilding funds from federal agencies like FEMA and HUD. A clearinghouse would provide support for municipal governments, multifamily housing providers, and communities to ensure that the allocation of these resources aligns with the prevention standards of the HRA. The clearinghouse could also provide targeting support for renters on accessing disaster resilience and recovery funding.

²⁴² Rosa Gonzalez, Community-Driven Climate Resilience Planning: A Framework (National Association of Climate Resilience Planners, November 2017), <https://movementstrategy.org/resources/community-driven-climate-resilience-planning-a-framework/>.

²⁴³ Patrick Bigger and Sarah Knuth, “Pennsylvania’s Housing Justice Campaign’s Promising Win,” *Nonprofit Quarterly*, April 25, 2023, <https://nonprofitquarterly.org/pennsylvanias-housing-justice-campaigns-promising-win/>.

²⁴⁴ “Tribal Wildfire Resilience Grants,” CAL FIRE, accessed August 23, 2024, <https://www.fire.ca.gov/what-we-do/grants/tribal-wildfire-resilience>.

²⁴⁵ Brooke Anderson, “From Farmworkers to Land Healers,” *YES! Magazine*, April 25, 2023, <https://www.yesmagazine.org/environment/2023/04/25/california-farmworkers-immigrant-indigenous>.

Building codes and land-use permitting

An important part of risk reduction is ensuring that when rebuilding happens, the resulting building is safer. Similarly, new housing should not be sited in the riskiest areas. To ensure this, the HRA should develop, implement, and enforce statewide building codes for preventing construction of new housing and other infrastructure in high-risk areas, like easements or setbacks along coastal and other flood-prone areas.

The HRA should also develop and implement statewide resilience codes for new housing in areas deemed safe enough for new construction, as well as expand existing building codes to include all forms of residential housing, including manufactured homes and multifamily buildings.

Preventative relocation

Even before this current period of intensifying climate change, risks such as sea level rise and riverine flooding have forced the relocation of individuals and entire communities across the US. As climate change impacts intensify, more and more of this relocation will be necessary. The conventional insurance wisdom says that insurance pricing will be enough to keep people from living in harm's way, but this report debunks that notion. Furthermore, democratic processes, such as those outlined below, should decide where people get to live or not live, not private companies.

Policymakers need to institute comprehensive, science-based, equitable, and democratic mechanisms to proactively protect people at the greatest risk of disaster by supporting them to relocate into safer, affordable housing. While it is outside the scope of this report to design a program for this, the following non-exhaustive list of principles can guide the HRA in designing and overseeing these processes.²⁴⁶

²⁴⁶ We note the existence of legal roadblocks to processes like these, and refer readers to AR Siders' *Managed Coastal Retreat: A Legal Handbook on Shifting Development Away from Vulnerable Areas* for solutions.

²⁴⁷ Idowu Ajibade et al., "Are Managed Retreat Programs Successful and Just? A Global Mapping of Success Typologies, Justice Dimensions, and Trade-Offs," *Global Environmental Change* 76, (September 2022): 102576, <https://doi.org/10.1016/j.gloenvch.2022.102576>; Coastal Flood Resilience Project (CFRP), "Proposed National Policies to Support Relocation of Communities as Sea Level Rises," CFRP, March 16, 2022, https://www.cfrp.info/_files/ugd/2450cf_1076f4e32d6d48d4ace774a20f403876.pdf.

²⁴⁸ "Wildfire Risk Reduction," Wildland Buffer Project, Paradise Recreation & Park District, accessed August 23, 2024, <https://www.paradisepd.com/wildfire-risk-reduction>.

Focus on anticipatory relocation

Relocation programs are most successful when they are "anticipatory" — that is, when they are preventative.²⁴⁷

Relocate infrastructure, too

For certain perils, the relocation of infrastructure can be as effective a risk reduction measure as housing relocation. With wildfires, for example, reconfiguring power lines could greatly reduce risk such that housing relocation is unnecessary. Adapting landscapes to serve as buffers against fire risk is another version of this, as officials in Paradise, California are exploring.²⁴⁸

Ensure participatory decision-making and consent

Severing attachment to their home is no small matter for many people. As such, HRA-organized relocation programs must center community needs and community leadership, and will be most effective when they do so.

Staten Island Relocation

There is no one way to conduct anticipatory relocation, but a program in Staten Island, New York provides one example. After Hurricane Sandy, Staten Islanders pushed the New York State governor to implement a buyout program that would purchase and tear down their homes, so long as no new developments were allowed to replace these homes.²⁴⁹ While this case presents an example of one community negotiating the terms of their departure, it is also important to note that this was a predominantly white, upper middle-class community, with more political negotiating power than historically marginalized frontline communities.

That could include the use of community needs assessments when planning the relocation and community advisory boards as key inputs to the decision-making process. The aforementioned community-driven resilience planning frameworks provide a useful model here, and would help ensure that these efforts do not re-entrench systemic racism or create new forms of uprooting and displacing BIPOC communities.

It is essential to note that, under international legal standards like the United Nations Declaration on the Rights of Indigenous Peoples, Indigenous and Tribal peoples should not be forcibly removed without their free, prior, and informed consent, and should maintain the option to return.²⁵⁰

Financial support for low- and moderate-income households

Well-off households will have a much easier time relocating than low- and moderate-income households. The HRA should provide grants to people with low and moderate incomes who need to relocate due to high-risk zoning, with additional subsidies for the lowest-income households, seniors, and disabled individuals.

FEMA's NFIP-linked buyout program provides a cautionary tale: While it is designed to help homeowners in high-risk areas, its methodology of compensating people based on the current value of their declining real estate has limited efficacy. This approach can result in inadequate compensation, discouraging participation and leading to situations in which people rebuild in unsafe areas. This not only puts residents at continued risk but also exacerbates the dysfunction of the NFIP.

Areas from which relocation happens become public, with no new private structures

One way to ensure equitable outcomes for communities, protect more people, and prevent the land being turned back into risky housing would be to transform evacuated areas into public seashores where homes can no longer be developed. This

²⁴⁹ Rebecca Elliott, *Underwater: Loss, Flood Insurance, and the Moral Economy of Climate Change in the United States, Society and the Environment* (New York: Columbia University Press, 2021).

²⁵⁰ United Nations General Assembly, "United Nations Declaration on the Rights of Indigenous Peoples," 2007, https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UN_DRIP_E_web.pdf

approach, supported by Rosetta Elkin’s National Seashore Concept, advocates for the creation of public lands stretching from Maine to Florida.²⁵¹ It would ensure that properties acquired through buyouts remain public spaces. There is already significant precedent for this: Oregon, California, Hawaii, Michigan, and other states have laws protecting coasts as public property and/or for public access.

Address the socioeconomic and mental health outcomes of relocation

Relocation from one’s home can be a traumatic experience and can also greatly disrupt support networks and employment opportunities. As such, the HRA should implement programs to support those who relocate, like community resilience hubs that offer free legal advice, financial planning, mental health support, and job training and reskilling for communities that relocate.²⁵²

Reactive Relocation

It won’t be possible for all relocation to be preventative, of course, and the above principles should also apply to reactive relocation processes.

Ensure the construction of Green Social Housing

Without the existence of affordable, dignified, and safe housing, initiating relocation programs and limiting where new housing can be rebuilt will further exacerbate the country’s housing crisis. As such, the HRA should work with relevant state and federal entities to increase green, affordable housing development in lower-risk areas. The Climate and Community Institute’s Green Social Housing Development Authority proposal provides a model for this; while it is a federal-level proposal, it could also be adapted to the state level.²⁵³

Climate risk council

A climate risk council would advise the HRA on the creation and maintenance of public risk models and inform evaluations of where risk is increasing or decisions around where mitigation is needed, building code standard upgrades, land management priorities, etc. Because a challenge here will be connecting the fine details of models with big picture societal questions, the council could establish working groups to focus on specific tasks.

Suggested membership roles for this council include:

- An insurance industry representative;
- A climate risk modeling industry representative;
- An academic researcher with expertise in climate modeling;
- A consumer protection advocacy representative;
- An environmental justice representative;
- A building industry representative;
- A housing rights organization representative;
- A state environmental agency head (e.g., the Coastal Commission in CA); and/or
- A Tribal government representative.

²⁵¹ Shayla Love, “This Is What America Could Look Like When Our Coasts Are Under Water,” Vice, July 23, 2019, <https://www.vice.com/en/article/t-his-is-what-america-could-look-li-ke-when-our-coasts-are-under-w-ater/>.

²⁵² “What Are Resilience Hubs?” Urban Sustainability Directors Network, accessed September 4, 2024, <https://resilience-hub.org/what-ar-e-hubs/>.

²⁵³ Gianpaolo Baiocchi et al., Green Social Housing at Scale: How a Federal Green Social Housing Development Authority Can Build, Repair, and Finance Homes for All (Climate and Community Institute, June 2024), <https://www.climateandcommuni-ty.org/green-social-housing-at-sc-ale>.

Governance

A governing board for the agency should strive for an inclusive, democratic approach with roles for state government leaders, impacted community representatives, and advocacy organizations. Suggestions include:

- Insurance commissioner;
- Affordable housing developer representative;
- Tenant organizing representative;
- Manufactured home resident representative;
- Environmental agency head;
- Consumer ombudsperson for dealing with complaints by insurance customers;
- Environmental justice organization representative; and
- Tribal government representative.

This governing board should include a mechanism to ensure that the voices of those most affected by disasters are heard and integrated into decision-making processes, like an impacted community advisory board. Such a mechanism should include representatives from communities impacted by disasters, such as residents from different geographic regions, socioeconomic backgrounds, and vulnerable groups (e.g., elderly, disabled, low-income households). Members should also be selected based on their exposure to and experience with disaster-related impacts, similar to the Environmental Justice Advisory Committee for the California Air Resources Board.²⁵⁴

Cross-state collaboration and solidarity

Interstate risk pooling

This report has refuted the perception that some states are “safe” from risks while others are not. Because risk spreading makes insurance work better, cooperation among a set of states (say, neighboring states) could be a way to spread that risk and pool resources for public insurance programs, as well as share knowledge and tools for risk reduction.

We propose, therefore, that HRAs set up cooperation agreements with each other to pool resources, share risk, and provide mutual support during disasters.

If one state resilience agency is at a loss because of a major disaster, for example, it could get liquidity from another state agency that isn’t facing a catastrophe at that time. The Swiss system of “inter canton solidarity”²⁵⁵ provides a compelling model for state-level insurance consortia and cooperation.²⁵⁶ This model features 19 cantonal public-sector insurers that provide compulsory disaster insurance at uniform rates. These cantonal insurers pool resources and spread risk, which enables them to ensure comprehensive coverage and maintain low insurance costs. These systems improve resilience across borders and ensure continuous coverage, even when individual cantons face catastrophic events.

²⁵⁴ “AB 32 Environmental Justice Advisory Committee,” California Air Resources Board, accessed August 23, 2024, <https://ww2.arb.ca.gov/ab-32-environmental-justice-advisory-committee>.

²⁵⁵ A canton is a subdivision of a country, similar to a state.

²⁵⁶ Paula Jarzabkowski et al., *Disaster Insurance Reimagined* (Oxford, UK: Oxford University Press, 2023), <https://fdslive.oup.com/www.oup.com/academic/pdf/openaccess/9780192865168.pdf>.

In the US, we could imagine, for example, a consortium between California, Oregon, and Washington. These states face many of the same types of risks, so could have a lot to share with each other on resilience measures. And yet the occurrence of disasters in each place is relatively unlikely to overlap significantly such that they could provide increased liquidity for each other.

Although the complexity of the US insurance regulatory system makes it unlikely that many states would agree to adopt the Swiss inter-canton solidarity system in the near future, existing mechanisms in the US demonstrate that cross-state pooling can be achieved. One such example is Risk Retention Groups, or RRGs. RRGs, established under the Liability Risk Retention Act of 1986, allow businesses in the same industry to collectively manage liability risks across state lines, bypassing traditional state-specific insurance regulations. While RRGs are primarily used for private insurance, and are an imperfect model in various respects, they demonstrate the potential for cross-state cooperation in risk management.²⁵⁷ Recent legislative efforts, such as those proposed by Senator Sherrod Brown (D-OH), aim to expand the scope of RRGs to include property insurance, which could provide a much-needed solution to the property coverage crisis facing housing developers and nonprofits.

Cross-state solidarity

A drawback of this state-level HRA proposal is that people in states that do not implement this proposal, or delay in doing so, would still be left with the current malfunctioning insurance system. As such, we propose that one way to both spread risk pools even farther and build solidarity across state borders would be a mechanism by which a state public insurance program, or a multi-state pool, provides a small percentage of its policies to people and communities in other states.

Financing

While funding a public insurance program and all the resilience needs contemplated in this proposal will require significant investment, spending public resources in this manner is essential to reduce the underlying risks and avoid losses, both to people and to public coffers. Premium income from the state insurance program should not be assumed sufficient; the financing difficulties of the NFIP demonstrate the imperative to seek funding sources outside of premiums in order to ensure premium affordability and financial stability of the HRA. Dedicated funding sources should also reduce the need for the state public insurance program to rely on heavily risky and/or expensive hedging products like reinsurance and catastrophe bonds.

When designing financing mechanisms for HRAs, we urge policymakers to consider which institutions are most responsible for today's home insurance crisis and which would most benefit from the system being fairer and more stable.²⁵⁸

²⁵⁷ It is worth noting that RRGs face a series of challenges compared to traditional insurers. For example, they have historically faced higher insolvency rates, with data from the Consumer Federation of America indicating that of the 44 RRG insolvencies as of 2020, 30 were concentrated in the medical malpractice (14) and transportation (16) sectors. RRGs also face a harder reinsurance market, where reinsurers have moved toward more "stable or profitable" casualty and specialty lines (CICA Staff, "Risk Retention Groups in 2021—Challenges and Opportunities," CICA World, June 7, 2021, <https://www.cicaworld.com/risk-retention-groups-in-2021-challenges-and-opportunities/>; L.S. Howard, "Challenging Market, Elevated Claims, but Reinsurers' Profits Return: Reports," Insurance Journal, <https://www.insurancejournal.com/magazines/mag-features/2023/09/18/740230.htm>).

²⁵⁸ Rebecca Elliot, *Underwater: Loss, Flood Insurance, and the Moral Economy of Climate Change in the United States, Society and the Environment* (New York: Columbia University Press, 2021).

When it comes to assigning responsibility, we point in particular to the fossil fuel producers causing climate change and the insurance industry players that long knew climate change was a risk to housing and did little to change industry practices.²⁵⁹

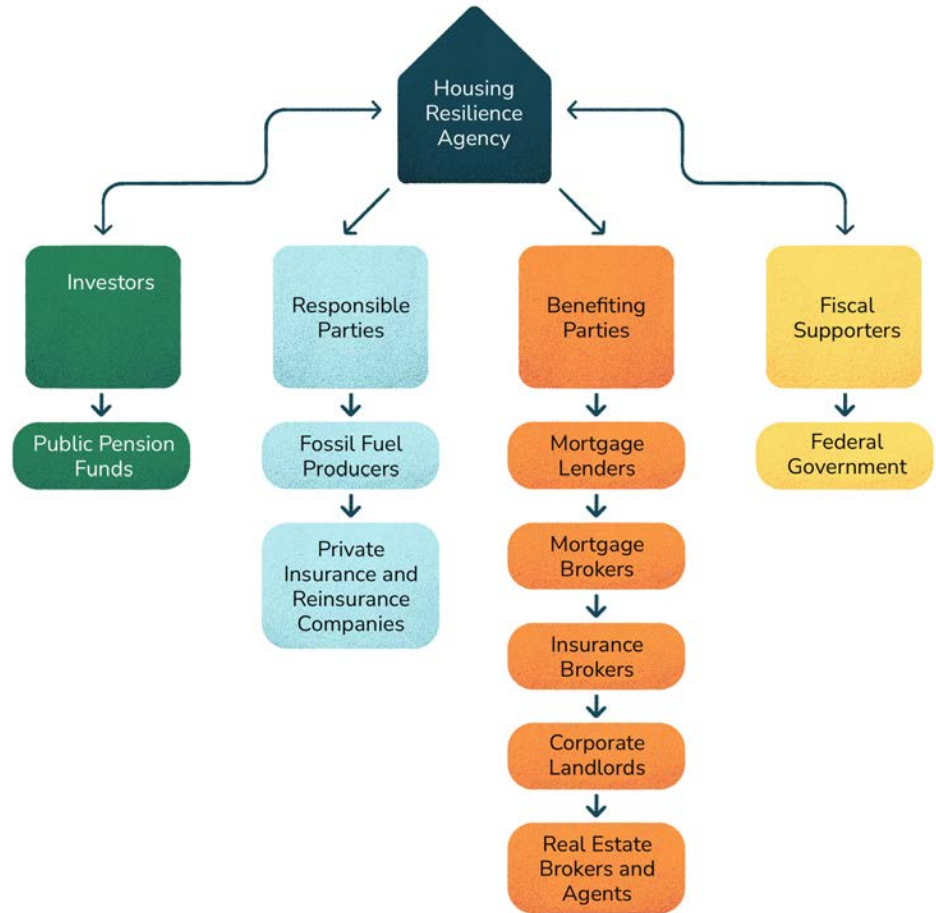
In terms of identifying the entities and institutions that would most benefit, we note the immense financial risk faced by the mortgage lending, real estate, rental property, and even insurance brokerage industries as a result of today's home insurance crisis.²⁶⁰

Policymakers should also consider a role for public pension funds in supporting housing resilience, rather than in investing in securitized financial products like insurance-linked securities that arguably are financially risky, particularly when linked to high climate risk industries like insurance. Though it is outside the scope of this report to provide a detailed proposal, we suggest that different kinds of financial products be developed to allow for public investment in the kinds of resilience activities that we propose in this report, such that they can contribute to housing resilience for beneficiaries and communities.

²⁵⁹ Peter Bosshard, *Fifty Years of Climate Failure: 2023 Scorecard on Insurance, Fossil Fuels and the Climate Emergency* (Insure our Future, November 2023), <https://global.insure-our-future.com/wp-content/uploads/sites/2/2023/11/IOF-2023-Scorecard.pdf>.

²⁶⁰ Don Jergler, "How California's Homeowners Insurance Crisis Is Affecting Brokers," *Claims Journal*, July 24, 2024, <https://www.claimsjournal.com/news/national/2024/07/24/325276.htm>.

Figure 26: Sample funding structure for an HRA



Federal policy visions

A federal Housing Resilience Authority

Much of what we outline here for a state HRA could be adapted to federal policy — and if fully implemented would render state-level HRAs unnecessary. A federal HRA could coordinate and invest in robust, community-oriented disaster prevention and risk reduction projects across the country, establish a national climate risk model, set up a climate risk advisory council, and establish a federal public disaster insurance program. This would have the advantage of circumventing the fact that many states with the biggest insurance crises have governments that are so captured by the industry that an overhaul like the one proposed here would be unlikely. It would also have the advantage of the federal government’s unlimited financing capacity. In the case of a federal HRA that operates across the country, this public insurance program would fully replace the NFIP, and also provide solutions for US territories.

While the McCarran-Ferguson Act currently prohibits most federal regulation of the private insurance industry, the language in the statute does not prohibit a federal insurance program, as demonstrated by the existence of the Terrorism Risk Insurance Act

(TRIA) and the NFIP. Unless McCarran-Ferguson Act provisions prohibiting federal regulation of private insurance are repealed, however, a federal approach to insurance disaster management would be constrained from bolstering state regulation of private insurers' consumer protection and climate risk management in the ways that we suggest above.

This is concerning, since one major lesson from the 2008 financial crisis is that the existing patchwork of federal and state financial regulators all missed clear warning signs. To account for this, Congress created the Financial Stability Oversight Council (FSOC) and required that at least one of its voting members have insurance expertise. In recent years, FSOC leaders and members have repeatedly voiced concerns about the financial system's exposure to climate risk through insurance markets. But because of McCarran-Ferguson, federal regulators have limited authority to monitor and address this growing threat to financial stability.

One possible fix for this is a requirement that the federal HRA condition state access to the agency's benefits on state insurance commissioner implementation of the consumer protection and climate risk regulations, though this could lead to major gaps in federal HRA application, given political dynamics in various states. Another drawback of a federal HRA would be the inability to enact the disaster risk reduction provision of the state HRA to regulate private insurance investment in and underwriting of fossil fuels and require climate risk disclosures.

Federal reinsurance for state HRAs

Instead of a national HRA, the federal government could set up a federal reinsurance program that incentivizes and supports states that set up state-level HRAs. State-level residual market and reinsurance institutions (like Florida Citizens and the Florida CAT Fund) are already active CAT bond issuers, and there are several examples of sovereign disaster risk financing facilities around the world; experiences from these interventions can inform the design of such a federal facility. As noted in the discussion of state-level public reinsurance above, a federal-level reinsurance fund could provide an overarching facility to support activities like public CAT bond financing at scale, with potential for cost efficiencies. This would be a lighter lift financially and administratively than a federal HRA, though would forgo the benefits of creating an enormous countrywide risk pool and of tying disaster insurance so directly to risk reduction. Another incentive mechanism could be the conditioning of some federal disaster preparedness and disaster response dollars on the setup of state HRAs.

Federal reinsurance is not a new idea — the US government set up a terrorism reinsurance program, known as TRIA (for the Terrorism Risk Insurance Act), after the September 11, 2001 attacks. Federal reinsurance for HRAs, however, would back up public programs rather than private insurance companies. It is also worth noting that while insured losses from September 11 were

sufficient to justify the creation of a new federal reinsurance program, losses from Hurricane Katrina²⁶¹ five years later nearly doubled the losses of the September 11 attacks.²⁶² Such disaster loss numbers will likely be exceeded again in the future by other climate disasters.

Federal risk reduction

Either as a federal complement to state HRAs or part of the streamlining of existing risk reduction/resilience initiatives under the one roof of a federal HRA, we note some specific recommended adjustments to existing federal resilience programs:

- Ensure that FEMA resilience grants are available to multifamily buildings.
- Improve the collection, management, accessibility, and sharing of climate risk and resilience data among federal, state, and local agencies.
- Enact nationwide restrictions on construction in zones identified as high- or extreme- risk. This could take several forms:
 - Prohibit new construction in zones identified as extremely high-risk;
 - Limit the rebuilding of old structures in high-risk areas, to gradually reduce the number of properties exposed to such risks; and
 - Enact building codes (similar to the 1976 HUD Code for manufactured homes) in areas of moderate risk to promote more resilient construction.

²⁶¹ Elana Schor, "Katrina Could Blow TRIA to Passage," The Hill, September 13, 2005, <https://thehill.com/business-a-lobbying/2951-katrina-could-blow-tria-to-passage/>.

²⁶² Jason Bram, James Orr, and Carol Rapaport, "Measuring the Effects of the September 11 Attack on New York City," FRBNY Economic Policy Review, Federal Reserve Bank of New York, November 2002, <https://www.newyorkfed.org/mediaLibrary/media/research/epr/02v08n2/0211rapapdf.pdf>.

²⁶³ Council of Economic Advisers, Office of Management and Budget, and Department of the Treasury, "Memorandum: Tools to Support the Management of near-Term Macroeconomic and Financial Climate Risks," memorandum, December 22, 2023, https://www.whitehouse.gov/wp-content/uploads/2023/12/Memo_Tools-for-Near-Term-Climate-Risk-Management.pdf.

²⁶⁴ FEMA, "FEMA Supports \$11 Million Flood Reduction Infrastructure Project in Historic North Carolina Community," press release, June 25, 2024, <https://www.fema.gov/press-release/20240625/fema-supports-11-million-flood-reduction-infrastructure-project-historic>.

²⁶⁵ Virginia Fall, Andy Fox, and Lindsey Naylor, "Damaged by Hurricanes, a Historic North Carolina Town Plans for a Resilient Future," ChangeLab Solutions, February 6, 2019, <https://www.changelabsolutions.org/story/damaged-hurricanes-historic-north-carolina-town-plans-resilient-future>.

Federal catastrophe risk modeling platform

The federal government should establish a National Catastrophic Modeling Platform able to quantify extreme weather risks across the country, as recommended by the Treasury Department and others.²⁶³ If the federal government does this, states would not have to host their own state-specific models. Consistency in model types would also harmonize private financial sector usage of models, providing more transparency in how financial decisions are made based on climate risk.

Overhaul of the federal disaster response system

The current federal disaster response system often doesn't serve the needs of those impacted by disaster and can lead to contradictory responses. Take, for example, Princeville, North Carolina in the aftermath of Hurricane Matthew (2016). While the US Army Corps of Engineers sought to build a levee to protect residents from future storms, FEMA simultaneously offered to buy residents out of flood-prone homes. Meanwhile, the state of North Carolina campaigned to move residents to a new Princeville. Eventually, a combination of buyouts, relocations, and infrastructure investments, including a \$11.2 million grant for flood reduction,²⁶⁴ were implemented. Only a small fraction of the allocated federal funds was disbursed promptly, delaying the recovery process. As a result, recovery was slow, in some cases taking years for residents and public services to return to normal.²⁶⁵

The Princeville case study highlights a few key issues in federal disaster response: For example, simultaneous proposals for levee construction and resident buyouts showcased the lack of coordinated action and conflicting objectives. While it is beyond the scope of this report to make specific recommendations for federal response, it is clear we urgently need coordinated federal action that more holistically, strategically, and effectively addresses both disaster risk reduction and relief.

Adoption of the Green Social Housing Development Authority

The Climate and Community Institute has elsewhere proposed the creation of a federal Green Social Housing Development Authority (Green SHDA) to build and preserve millions of homes outside of the predatory real estate market, allowing people to have a permanent roof over their heads, to build roots in their communities, and to live safely in our changing climate.²⁶⁶ In addition to the many benefits of the Green SHDA, like protections against rent hikes, housing stability for the housing insecure, and healthy, climate-resilient, fossil fuel-free housing options, the Green SHDA would provide a relocation option for those who must leave their current homes in the face of extreme climate risk and/or in the aftermath of major disaster, as well as help address the housing crunch created by building restrictions in risky areas.

²⁶⁶ Baiocchi et al., “Green Social Housing at Scale.”

A general note on insurance data

It is very difficult to obtain data on insurance policies (e.g., coverage, premium, deductible) and nearly impossible to obtain data on claims processing, which is especially important as policies become increasingly complicated and unstandardized. Further, all of the data used in this report is homeowner data; it is even more difficult to obtain data for policies covering rental housing. State lawmakers have done very little in terms of transparency-oriented reforms,²⁶⁷ leaving consumers largely in the dark and making regulatory accountability much more difficult. These issues do not just reflect nontransparency in how insurers set prices and process claims, but also how they determine risk. Even data at the zip-code level, as used in this report, may mask significant variation in what really drives premium prices at the property level. In our view, improving systematic and official data collection efforts on insurance outcomes presents state policymakers with an opportunity to broadly improve the well-being of their constituents.

Risk and socioeconomic data

To characterize local risk associated with different hazards, we use data from the FEMA National Risk Index ²⁰²³. Specifically, we use estimates of annual expected annual loss (EAL) values and expected annual loss rates for buildings. Expected annual loss values represent the total volume of property damage expected in a typical year. Expected loss rates are estimated as expected loss values divided by total property value (e.g., in a typical year we expect 1 percent of total property value to be lost). The FEMA National Risk Index makes estimates for the following risk categories: avalanche, coastal flooding, cold wave, drought, earthquake, hail, heat wave, hurricane, ice storm, landslide, lightning, riverine flooding, strong wind, tornado, tsunami, volcanic activity, wildfire, and winter weather.

When describing **overlapping risks**, we first categorize every location (e.g., counties, tracts) as **“high risk”** for each risk category if expected losses exceed the **90th** percentile of expected losses across all risks and locations. Note that using this absolute threshold means that several risk categories never meet the definition of “high risk” in any location (e.g., lightning) while other risk categories with relatively high average expected losses (e.g., coastal flooding) meet the definition of “high risk” much more often.

Our choice of absolute threshold for “high risk” is ultimately arbitrary and there is no academic or industry standard for this threshold. Still, we believe highlighting “high risk” counties is a useful way to characterize counties that are at substantively high risk across multiple risk categories. In Methodology Figure 1 and

²⁶⁷ Daniel Schwarcz, “Transparently Opaque: Understanding the Lack of Transparency in Insurance Consumer Protection,” *UCLA Law Review* 61 (February 2013): 394, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2130908.

Methodology Figure 2, we compare EAL totals and rates aggregated across all hazards vs. the number of overlapping hazards categorized as “high risk.”

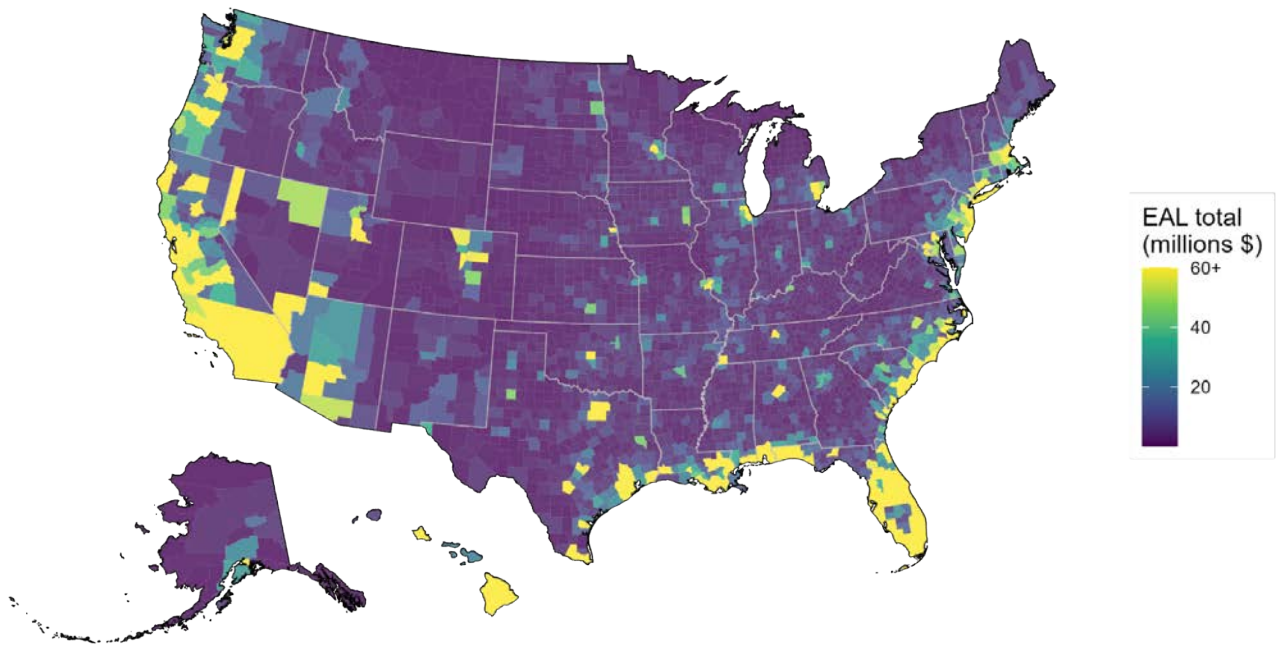
In Methodology Figure 3 and Methodology Figure 4, we compare using the 90th vs. 95th percentile to categorize counties as “high risk.” For EAL totals, these percentile thresholds correspond to EAL totals of roughly \$0.6 million and \$1.6 million, respectively. For EAL rates,

these percentile thresholds correspond to EAL rates of roughly 0.01 percent and 0.02 percent, respectively.

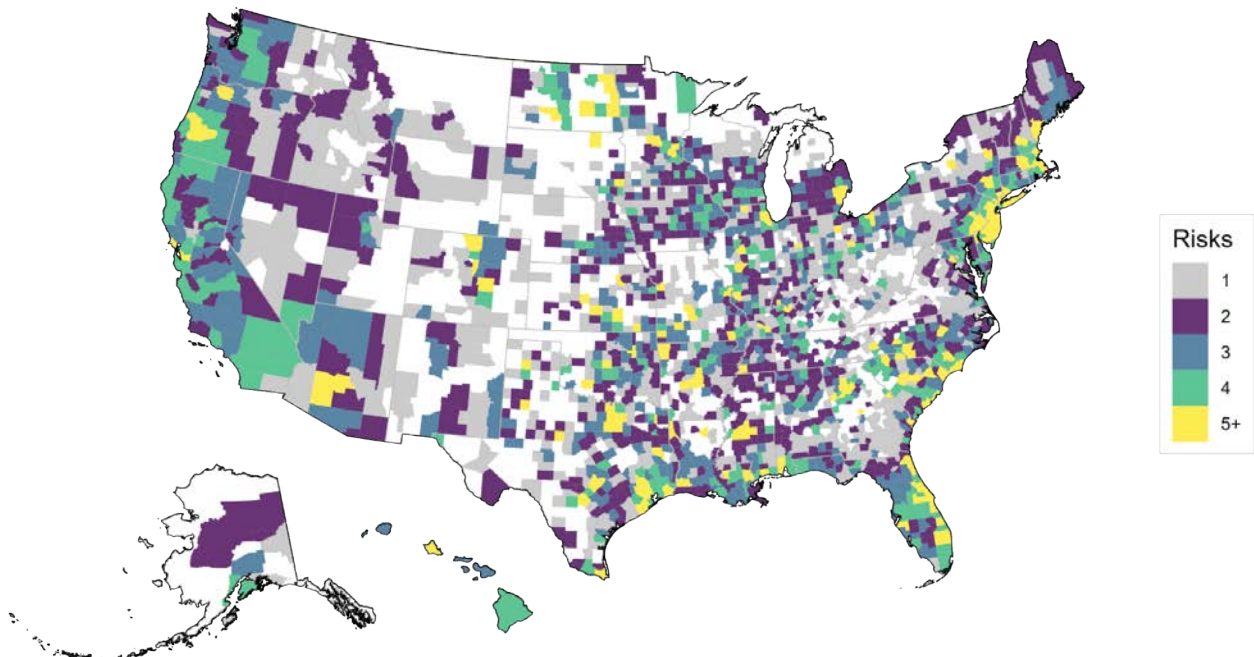
Throughout our analyses, we use county and zip code–level estimates from the American Community Survey 5-Year Data (2018–2022) of **total homeowner households, median annual household income, and racial composition.**

Methodology Figure 1. County-level expected annual loss totals across all hazards **(A)** and number of unique hazards with “high” annual expected loss totals **(B)**, where “high” is any expected loss total greater than the 90th percentile across all county-level risks nationally. If we look at total losses over all hazards, the coasts are really highlighted (top map). But this is not simply driven by a single risk, like flooding. There are many parts of the country, on the coast and otherwise, that are at very high risk from multiple unique hazards simultaneously (bottom map).

A

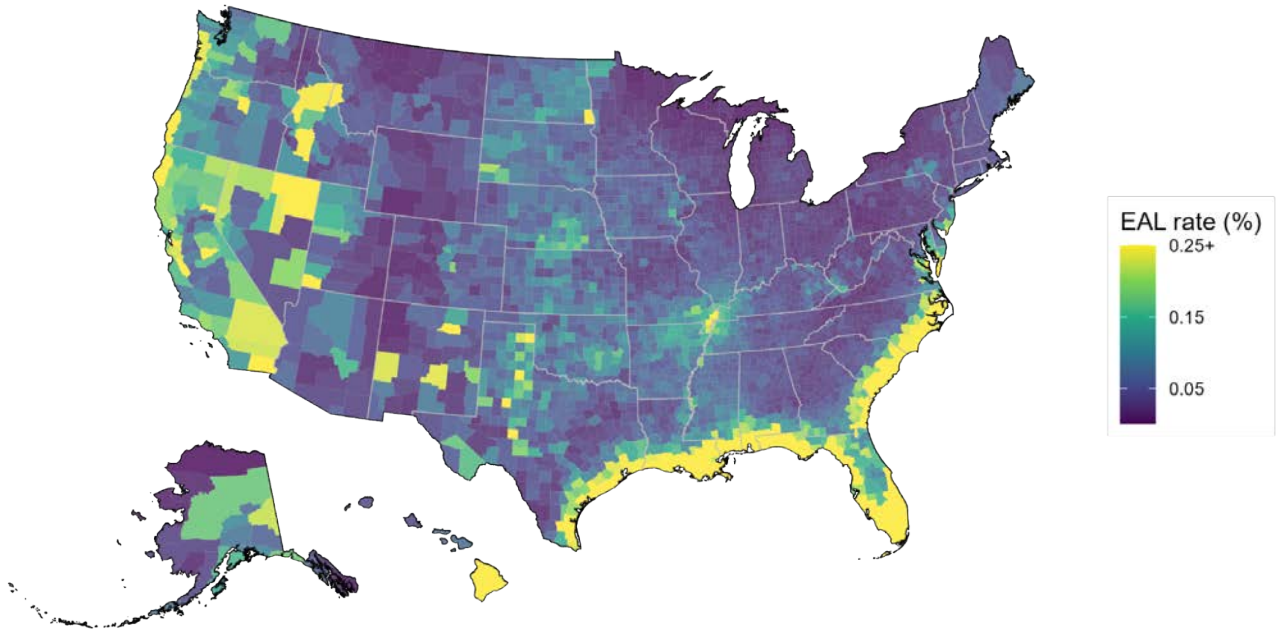


B

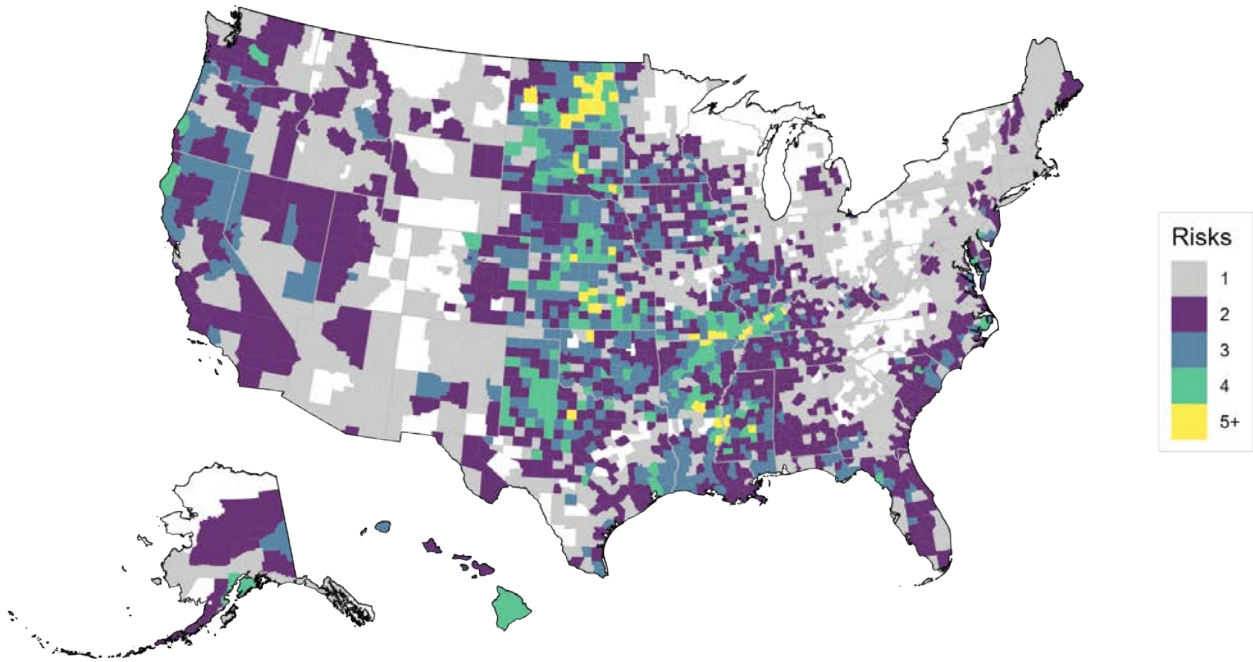


Methodology Figure 2. County-level expected annual loss rates across all hazards **(A)** and number of unique hazards with “high” annual expected loss rates **(B)**, where “high” is any expected loss total greater than the 90th percentile across all county-level risks nationally.

A

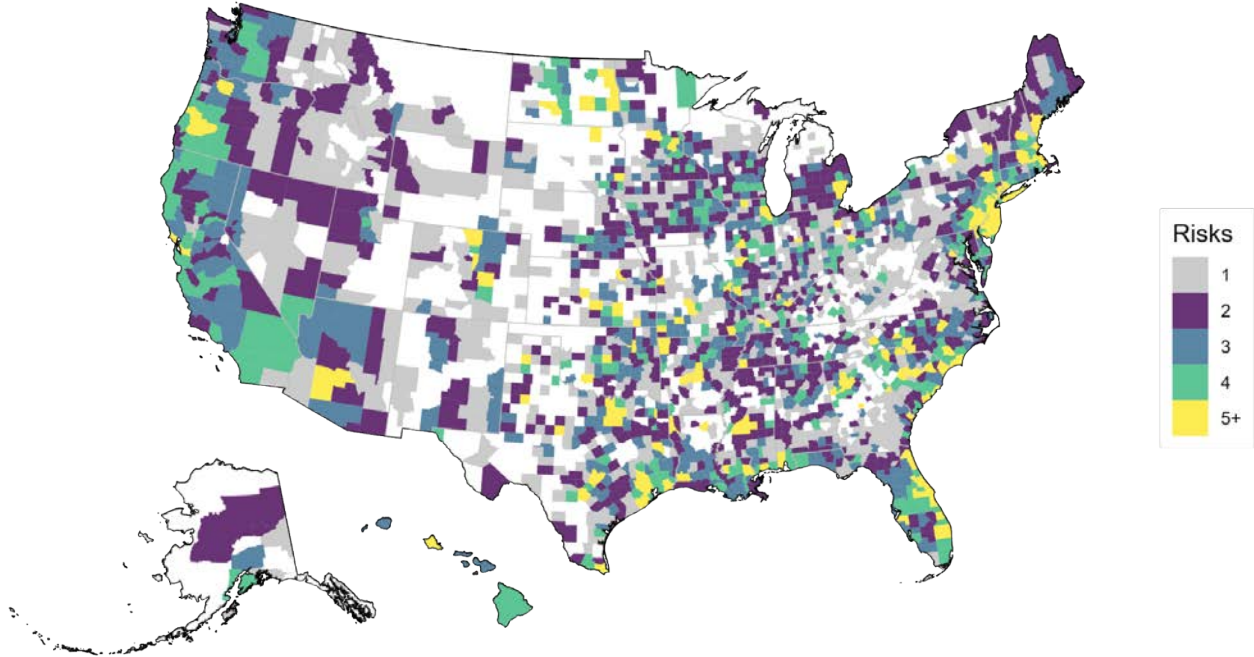


B

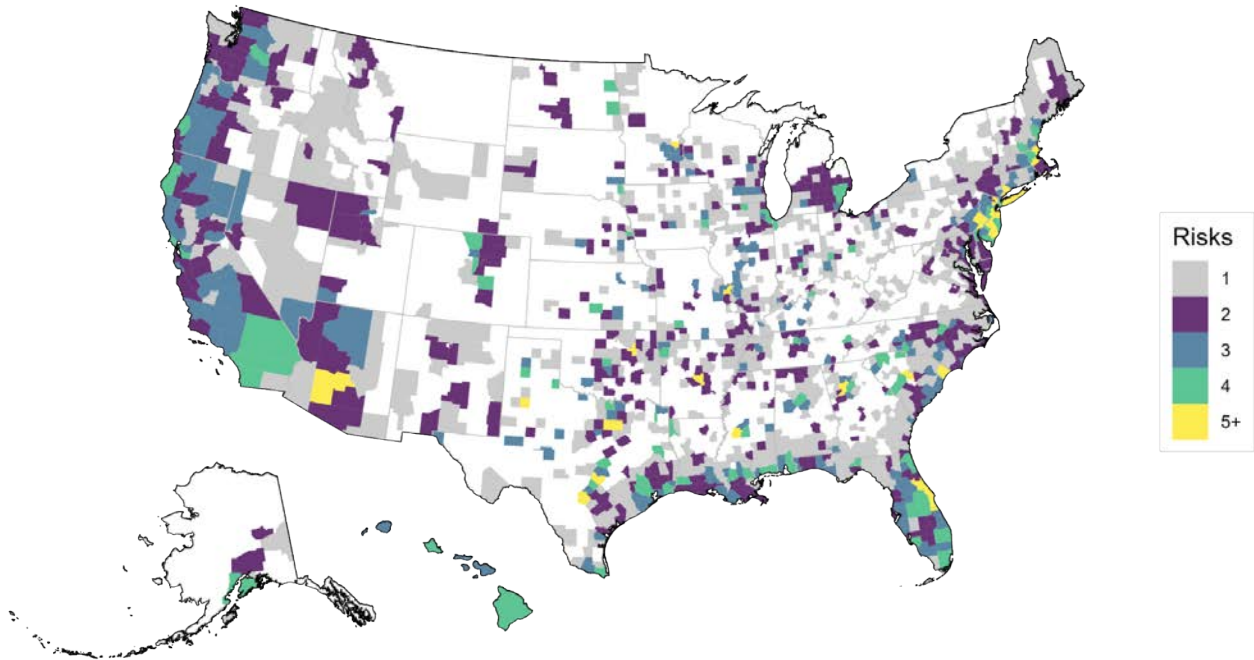


Methodology Figure 3. County-level number of unique hazards with “high” annual expected loss totals, where “high” is any expected loss total greater than the 90th **(A)** or 95th **(B)** percentile across all county-level risks nationally.

A

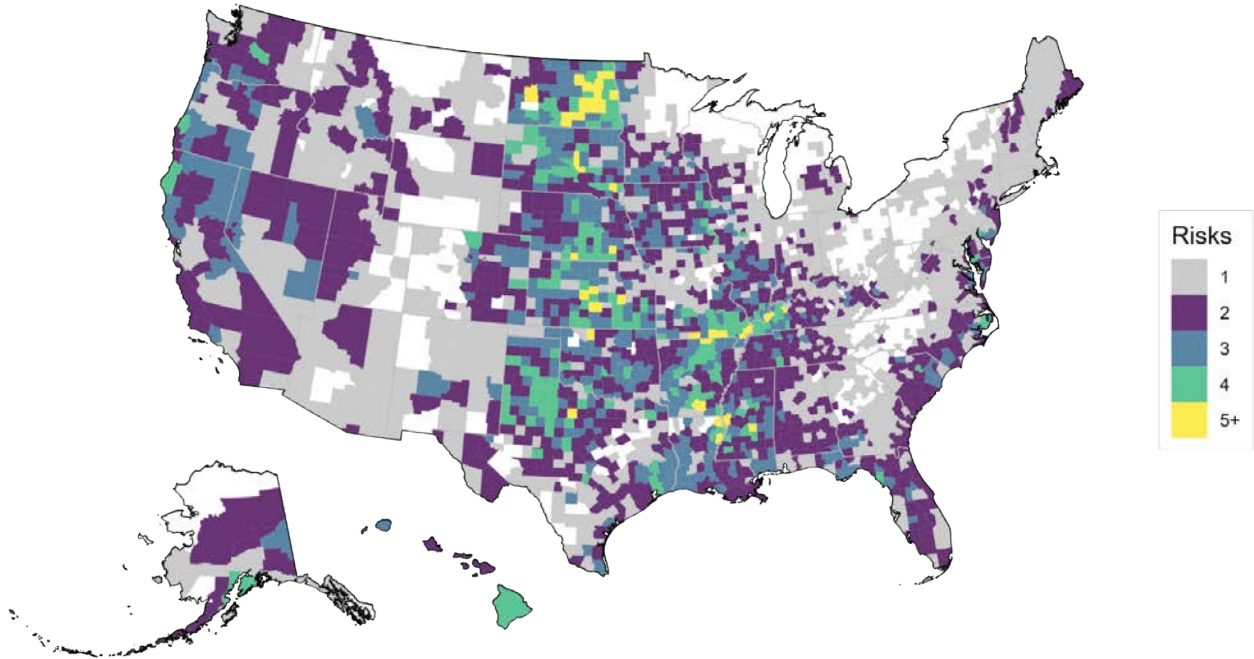


B

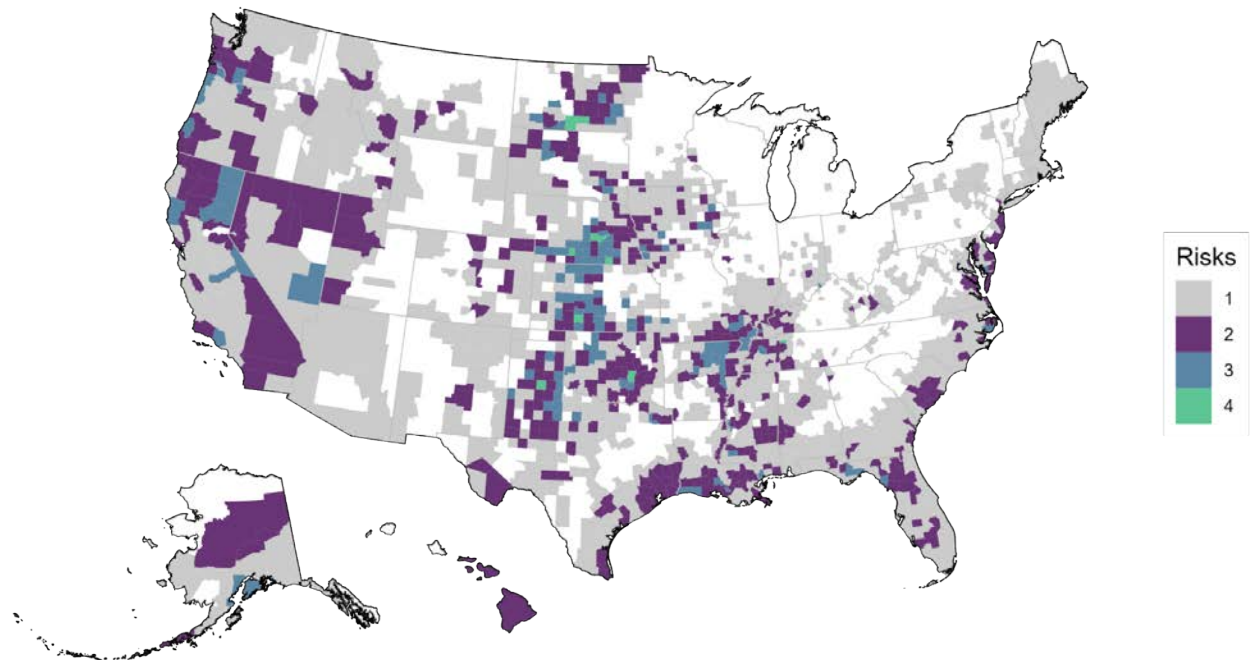


Methodology Figure 4. County-level number of unique hazards with “high” annual expected loss rates, where “high” is any expected loss rate greater than the 90th **(A)** or 95th **(B)** percentile across all county-level risks nationally.

A



B



Insurance data

California. Policy data for California at the zip-code level covering 2017–2022 was obtained from the California Department of Insurance via a public records request. Policy data is obtained by the Department of Insurance through the Personal Property Experience (PPE) data call. The PPE data call is conducted every other year, and collects data from the two years prior to the reporting year. Insurers that wrote \$10 million or more in premiums in the NAIC Annual Statement Lines 1 or 4 are required to report (>98 percent of the voluntary market). This dataset includes private multi-peril policies, private fire policies, and public fire policies (FAIR Plan).

Florida. Policy data for Florida at the zip-code level from 2019–2023 was obtained from the Citizens Property Insurance Corp. via a public records request. This dataset only contains policies from Citizens, with policies split into multi-peril and wind.

Minnesota. We submitted a public records request to the Minnesota Department of Insurance, which reported that it does not collect policy data at the zip-code level.

We calculate and report three metrics using the California and Florida policy data. First, we calculate annual **coverage ratios** by dividing total policies by total homeowner households from the American Community Survey 5-Year Data (2018–2022). Second, we calculate annual premium rates by dividing total premium revenue by total policies. Note that change over time in **premium rates** calculated this way must be interpreted with caution, as change will reflect both change in the rate charged per dollar of coverage and change in the composition of coverage itself. Third, we calculate annual **premium burden** by dividing annual premium rates above by total annual gross household income from the American Community Survey 5-Year Data (2018–2022).

Pension data

Using the private markets database Prequin, we matched public pension fund holdings with private funds that hold ILS-linked securities and catastrophe bonds. The holdings are current as of May 15, 2024.

Appendix 1: Home insurance primer

Property insurance in the US today covers a wide range of risks and industries, such as residential and commercial real estate, retail, manufacturing, and education. Without it, many industries — air traffic, electricity, and medicine — would not exist or operate at their current scale. Home insurance, which is one kind of property insurance, is meant to ensure that people can maintain safe homes even after disasters. Like other forms of insurance, home insurance operates by defining responsibility for damages, determining the legitimacy of claims, assigning accountability, and providing compensation for losses.²⁶⁸

The historical roots of property insurance extend back to 1,000 BCE when the Phoenicians used loan-based systems to protect merchants and ships against risks associated with sea voyages.²⁶⁹ Similar contracts continued into the origins of the maritime industry, where marine insurance protected merchants from losses due to shipwrecks, piracy, and other maritime hazards. During the transatlantic slave trade, slave traders used maritime insurance to protect against the loss of human “cargo.” In the notorious Zong massacre of 1781, 130 enslaved Africans were thrown overboard by the crew to claim insurance money for “lost cargo.”²⁷⁰ Since these early origins, insurance has remained “an indispensable infrastructure in economic life,” protecting assets, and perpetuating scalability and growth across different economies.²⁷¹

The development of insurance in the US is deeply interconnected with systemic racism, which continues to shape the industry. In the 20th century, the practice of redlining systematically denied coverage to African American communities, or charged them exorbitant rates. This was often justified under the guise of increased risk but was more accurately a reflection of racial bias and discrimination. Extensive documentation demonstrates that these discriminatory practices in the insurance industry were not merely rational responses to risk but deliberate strategies to segregate and marginalize BIPOC communities. The legacy of these practices persists today.²⁷²

Fundamentals of insurance design

Insurance premiums are typically paid by individuals for the protection of their assets. In this way, insurance is like a one-to-one contract: people pay in with the expectation that they will be paid out if their home incurs damage. But insurance is more collective than the individual premium payer purchasing a service because it brings together many people across many different risks and geographies with the intention of reducing the burden of a particular risk for everyone. The fundamental principles of insurance are the **pooling** and **spreading** of risks across a broader population so that financial harm from disaster is more easily absorbed by a greater number of people sharing the risk.

Pooling different levels of risk ensures that when a specific event

²⁶⁸ Elliott, “What is Insurance?”

²⁶⁹ Luisa Piccinno, “Genoa, 1340–1620: Early Development of Marine Insurance,” in *Marine Insurance: Origins and Institutions, 1300–1850*, ed. A. B. Leonard (London: Palgrave Macmillan UK, 2016), 24–45, https://doi.org/10.1057/9781137411389_2.

²⁷⁰ Ian Baucom, *Specters of the Atlantic: Finance Capital, Slavery, and the Philosophy of History* (Chapel Hill, NC: Duke University Press, 2005).

²⁷¹ Turo-Kimmo Lehtonen, “Objectifying Climate Change: Weather-Related Catastrophes as Risks and Opportunities for Reinsurance,” *Political Theory* 45, no. 1 (February 2017): 32–51, <https://doi.org/10.1177/0090591716680684>.

²⁷² Gregory D. Squires, “Insurance Redlining: Still Fact, Not Fiction,” *Shelterforce*, January 1, 1995, <https://shelterforce.org/1995/01/01/insurance-redlining-still-fact-not-fiction/>; Gregory D. Squires, *Insurance Redlining: Disinvestment, Reinvestment, and the Evolving Role of Financial Institutions* (Washington, DC: Urban Institute, 1997), <https://webarchive.urban.org/publications/207030.html>.

occurs in one area, such as a hurricane striking coastal Georgia, sufficient resources from unaffected areas can be allocated to support those impacted by disaster. Pooling works by distributing the risk of damage across a population. The law of large numbers applies to risk pooling: the larger the pool, the more predictable and manageable the total losses become. In pooling resources from the many, insurers can compensate for the periodic losses of a few. Pooling risks can also make premiums more affordable for the insured since there are more people paying into the system.

Once risk is pooled, insurers then distribute it, or spread it, across several exposures or entities. Spreading risk ensures that no single event collapses the entire pool. Oftentimes, this occurs through spreading risk across different geographic areas, types of insurance, or sectors. For example, Allstate underwrites policies in multiple regions throughout the US to avoid risk concentration in one area prone to natural disasters. Risk pooling and spreading are important concepts for understanding the interconnectedness of insurance markets. A premium in Florida can be used to cover exposure in California; an increased premium in Minnesota may cover increasing risk in Louisiana.

Mechanics of insurance financing

Another key to understanding property insurance (of which home insurance is a subset) is to appreciate how insurance industry finance works. Let's start with the policy contract: An insurance company typically issues ("writes") a policy to a consumer, providing a predefined scope of coverage. This insurer is known as the primary insurer. Consumers can purchase insurance directly from a primary insurance company or through an agent or broker, both of which are called producers.

Various factors determine premium rates, some of which we explore in more detail below. Insurers typically refuse to share how they set premiums, but one typical input is insight from catastrophe models. Insurers use CAT models to price risk by simulating the frequency, location, and intensity of catastrophic events, and by combining this with information about financial losses resulting from damage to their insured assets. "Forward looking" (or predictive) catastrophe models generate hypothetical hazards based on historical data, meteorological science, and probabilistic methods. In some states, like Florida, CAT models must be approved by state regulators before they are used by admitted insurers.²⁷³

The primary insurer typically manages the premiums collected in three main ways: retaining risk, investing for profit, or purchasing reinsurance to spread (or "transfer") risk. These strategies (listed below) are interrelated, and an insurer's decision on which mix of strategies to take depends on the investment market, regulation, and other factors.

²⁷³ How CAT models are created, amended with new scientific insight, and regulated by governments have been subject to critique and conflict. See, e.g., <https://www.bloomberg.com/news/articles/2024-08-09/clashing-risk-predictions-cast-doubt-on-black-box-climate-models>.

- *Risk retention*: First, insurers hold on to some premium. This “reserve” or “retention capital” is the minimum amount of cash they need to have on hand to pay immediate claims and remain solvent in a given scenario. There are international, national, and state regulations that may shape the amount an insurer ultimately chooses to reserve, depending on where and how they sell insurance.
- *Investment for profit*: Insurers invest some premium income. The returns on these investments can go to covering claims and generating profit for the insurer. Insurers can invest in a variety of industries, although they do not typically invest in property in the places where they conduct business. Investment decisions are based on market conditions, regulatory constraints, and the relative size and portfolios of the insurer. What kind of investments an insurance company makes is determined mostly by the size and type of the company; a small privately held Florida insurer, for example, is likely to have a very different investment footprint relative to a multi-state or multinational insurer that pools premiums globally. Some insurers, particularly the larger ones, invest in fossil fuels (and/or have arms that underwrite fossil fuel production), which climate campaigners have pointed to as evidence of hypocrisy, particularly for companies that also insure properties now impacted by climate change.²⁷⁴
- *Risk transfer*: Insurers use part of consumer premiums to purchase reinsurance and allow insurers to transfer some of their risk exposure. Reinsurers themselves can also buy reinsurance through a practice called retrocession. The traditional reinsurance business model looks and feels somewhat like that of a generic primary insurer, while “alternative” reinsurers tend to focus more on products like CAT bonds and other forms of ILS (see the Glossary for definitions).

BOX: The financial opacity of reinsurance

The movement of capital through the global reinsurance system is vital to its everyday working — the ability to back risks in California with capital from the Netherlands is a unique feature of this market. But this system is hard to grasp in a single picture — the farther one moves away from primary insurers in the US, where financial regulations lead to some disclosure of reinsurance programs, the cloudier financial relationships become. Where does capital for reinsurance come from, and who pays for it? As climate change increases insured losses, and capital providers demand a higher return on investment to finance risk, these financial questions become more important than ever. Over the long term, we may see reinsurance becoming more and more of a seller’s market. All else equal, this means consumers will ultimately pay more for coverage, or will be able to afford less.

We have a snapshot of how reinsurance finance looks in Florida, where a significant proportion of CAT bond/ILS activity happens. Up to half of the global ILS market centers

²⁷⁴ Zoë Schlanger, “The Hypocrisy at the Heart of the Insurance Industry,” *The Atlantic*, October 18, 2023, <https://www.theatlantic.com/science/archive/2023/10/climate-change-home-insurance-companies/675681/>.

on Florida, despite the market's recent growth and diversification. An analysis found that, in 2015, a subset of 28 Florida insurers spent about half of every premium dollar in reinsurance, which they purchased from 164 distinct reinsurance entities (many of which were subsidiaries of the same parent).²⁷⁵ These reinsurers were registered in 36 "jurisdictions," or locations where companies are regulated — including foreign countries and other US states, with Bermuda's tax-friendly environment making it a particularly important place for reinsurers offering more speculative forms of coverage. Many of these reinsurers purchased additional coverage, making this a complex global chain. These practices ultimately impact consumer costs in important ways — and not only in Florida. A national study estimated that about a third of insurance premium increases from 2018 to 2023 were attributed to higher reinsurance in the riskiest zip codes.²⁷⁶

This phenomenon creates a cycle: Insurers charge consumers a premium, then transfer some of that premium to reinsurers; reinsurers raise coverage costs to maintain margins and profits; insurers then raise premiums to transfer rising costs of reinsurance back onto consumers. These relationships can also be quite entangled; for example, some primary insurers and reinsurers belong to the same corporate structure.

How an insurance company divides premiums between these three strategies shifts as markets ebb and flow. The extent to which an insurer buys reinsurance, for example, is shaped by global market conditions. It is also shaped by regulator and policymaker behavior, like when governments create public reinsurance funds for private insurers, as in cases where specific hazards — such as Florida hurricane wind risk or California earthquake risk — are not covered by the private market. These factors interplay with each other as well; more access to cheaper reinsurance, for example, might mean a primary insurer would maintain fewer reserves.

Basics of insurance regulation

In 1945, Congress passed the McCarran-Ferguson Act, which prohibits federal regulation of private insurance. This means that each state has its own set of insurance laws, and each state insurance regulator (often called a "commissioner") can adopt and enforce regulations and guidance for insurance companies that are registered in or operate in the state. Generally speaking, state insurance regulators have authority on policies related to insurance companies' solvency and ability to pay out claims, as well as on "market conduct," meaning things like consumer protections and how (and at what levels) companies set premium rates.²⁷⁷ Importantly, since most reinsurance companies are not US-based, US regulators have limited control over them, and their overseas regulation varies between jurisdictions.

²⁷⁵ Taylor, "The Real Estate Risk Fix."

²⁷⁶ Benjamin J. Keys and Philip Mulder, "Property Insurance and Disaster Risk: New Evidence From Mortgage Escrow Data," NBER Working Paper Series (Cambridge, MA: National Bureau of Economic Research, June 2024), https://www.nber.org/system/files/working_papers/w32579/w32579.pdf.

²⁷⁷ Federal Insurance Office, Insurance Supervision and Regulation of Climate-Related Risks.

Many current and recent state insurance regulators previously worked as insurance agents or as insurance industry lobbyists.²⁷⁸ All state insurance regulators are members of and receive guidance from the National Association of Insurance Commissioners (NAIC), a private professional organization that wields significant influence over state insurance regulatory policy. The NAIC receives substantial funding from industry,²⁷⁹ which scholars argue leads to regulatory capture.²⁸⁰

Public insurance programs

Responding to different moments of home insurance market failure, state and federal governments have set up various public insurance programs (sometimes referred to as “protection gap entities” or “residual markets”).

The National Flood Insurance Program

After a hurricane slammed the Gulf Coast in September of 1965 — the first natural disaster to cause more than \$1 billion in damages (1965 USD),²⁸¹ Congress began planning for what would become the National Flood Insurance Program (NFIP). President Lyndon B. Johnson and Congress deemed a federal flood insurance program necessary because private insurers at the time did not write flood insurance policies, and they didn’t want the federal government to be expected to regularly provide unplanned-for emergency assistance for flood-related disasters.²⁸² Therefore, the NFIP was designed to bring federal disaster relief costs down, in part by incentivizing better community-wide floodplain management practices and in part by creating a federally run flood insurance program.

The Federal Emergency Management Agency (FEMA) manages the NFIP. FEMA produces flood risk maps to determine where flood insurance should be purchased; those in Special Flood Hazard Areas (SFHAs), defined as an area with a 1 percent annual chance of flooding, are required to purchase flood insurance as a condition of receiving a federally backed mortgage.²⁸³ Homeowners outside of SFHAs can also purchase flood insurance through the NFIP.

However, uptake of NFIP policies has declined in recent years,²⁸⁴ likely due to a lack of enforcement of the policy requirement for SFHAs — both in terms of SFHA coverage requirements as well as community-level compliance with floodplain management practices — as well as to the fact that most homeowners, whether in SFHAs or not, do not realize the standard home insurance policies do not cover floods.²⁸⁵ Furthermore, the maps used to define SFHAs do not account for intense rainfall as a source of flood risk. In this way, **the NFIP violates a core principle of proper insurance function: risk spreading.** In essence, it functions like a health insurance program that only enrolls the sickest patients. And, as we will see from the risk analysis below, flood risk exists not just in the “likely” places. Flood loss insurance claims also demonstrate this — about 20 percent of them come

²⁷⁸ Jordan Haedtler and Kenny Stancil, *Demystifying the National Association of Insurance Commissioners* (Washington, DC: Revolving Door Project, April 2024), <https://therevolvingdoorproject.org/wp-content/uploads/2024/04/Demystifying-the-National-Association-of-Insurance-Commissioners.pdf>.

²⁷⁹ National Association of Insurance Commissioners (NAIC), *Conquering the New Normal Together: 2022 Annual Report*, (Washington, DC: NAIC, 2022), <https://content.naic.org/sites/default/files/annual-report-2022.pdf>.

²⁸⁰ Susan Randall, “Insurance Regulation in the United States: Regulatory Federalism and the National Association of Insurance Commissioners,” *Florida State University Law Review* 26, no. 3 (1999): 625–99, <https://ir.law.fsu.edu/cgi/viewcontent.cgi?article=2480&context=lr>.

²⁸¹ Rawle O. King, “The National Flood Insurance Program: Status and Remaining Issues for Congress” (Washington DC: Congressional Research Service, 2013), <https://digital.library.unt.edu/ark:/67531/metadc462628/>.

²⁸² Rebecca Elliot, *Underwater: Loss, Flood Insurance, and the Moral Economy of Climate Change in the United States, Society and the Environment* (New York: Columbia University Press, 2021).

²⁸³ Christina Hughes Babb, “Examining the State of Flood Insurance,” *MortgagePoint*, <https://themortgagepoint.com/examining-the-state-of-flood-insurance/>.

²⁸⁴ Thomas Frank, “FEMA Removes Data Showing Drop in Flood Insurance Policies,” *E&E News* by POLITICO, September 12, 2022, <https://www.eenews.net/articles/fema-removes-data-showing-drop-in-flood-insurance-policies/>.

²⁸⁵ *Insurance Journal*, “Survey: Most Homeowners Believe Their Policy Covers Flood,” *Insurance Journal*, June 20, 2024, <https://www.insurancejournal.com/news/national/2024/06/20/780393.htm>.

from outside designated flood zones,²⁸⁶ though this likely understates the need, since most people outside of SFHAs do not have flood insurance and therefore cannot file claims.

Since standard homeowner (and renter) policies do not cover flood damage, flood insurance policies add an additional outlay to housing cost burdens. Furthermore, most flood policies do not cover temporary housing,²⁸⁷ unlike standard home insurance policies. And households that do not have flood insurance but are required by SFHA maps to do so may find themselves ineligible for certain types of FEMA-provided disaster assistance after a flood.²⁸⁸ This cost burden can help explain why nearly 70 percent of homeowners in designated risky places do not buy this coverage.²⁸⁹ In some contexts, flood insurance coverage take-up is even more limited: Only 13 percent of Florida households have NFIP policies, for example.²⁹⁰ This constrains the risk spreading pool even further, leaving fewer resources available to cover claims payouts. When extensive payouts are required, the NFIP has primarily turned to Treasury debt to cover costs, though in recent years Congress has authorized it to purchase reinsurance.²⁹¹

²⁸⁶ Sheets, “Flood Damage Raises Alarms about California’s next ‘Disaster Insurance Gap.’”

²⁸⁷ Sheets, ““Flood Damage Raises Alarms about California’s next ‘Disaster Insurance Gap.’”

²⁸⁸ “Flood Insurance and FEMA Assistance,” FEMA, last updated October 3, 2022, <https://www.fema.gov/fact-sheet/flood-insurance-and-fema-assistance>.

²⁸⁹ “Closing the Flood Insurance Gap,” The Wharton School Environmental, Social and Governance (ESG) Initiative, accessed June 28, 2024, <https://esg.wharton.upenn.edu/centers-labs/climate-center/closing-the-flood-insurance-gap/>.

²⁹⁰ Insurance Journal, “Hurricane Debby Brings Six Deaths, Widespread Flood Losses in Florida, Georgia, SC,” Insurance Journal, August 6, 2024, <https://www.insurancejournal.com/news/southeast/2024/08/06/787224.htm>.

²⁹¹ “National Flood Insurance Program’s Reinsurance Program,” FEMA, last updated March 26, 2024, <https://www.fema.gov/flood-insurance/work-with-nfip/reinsurance>.

²⁹² California Assembly Insurance Committee, “Oversight Hearing: California FAIR Plan,” March 13, 2024, https://ains.assembly.ca.gov/system/files/2024-03/asm-ins-fair-plan-background-final_0.pdf; Regina Stephenson, “What You Need to Know About States’ Insurers of Last Resort,” AgentSync (blog), June 12, 2023, <https://agentsync.io/blog/insurance-101/states-insurers-of-last-resort-for-property-insurance>.

²⁹³ California Assembly Insurance Committee, “Oversight Hearing: California FAIR Plan.”

State FAIR Plans and insurers of last resort

In addition to refusing to insure flooding across the country, the insurance industry has refused to insure specific perils in certain places. In places like Florida, Texas, or South Carolina, for example, many private insurers refuse to cover windstorms. To address this insurance gap, many states have established state-level programs that provide property insurance to people who cannot obtain coverage through the private market, often known as “FAIR” (Fair Access to Insurance Requirements) Plans, “insurers of last resort” or “residual markets.” FAIR Plans originated with the Civil Rights Act of 1968 as a way to address racial discrimination in the home and insurance industries, typically by setting up an association of private insurers in the state to offer “last resort” policies.²⁹² Today, most states have their own kinds of such plans, now mainly focused on filling disaster-related insurance gaps. Some states, such as Colorado, have only recently created FAIR Plans as a response to growing climate risk.

The following programs are referenced regularly throughout this report:

- California FAIR Plan
 - In 1968, California developed its FAIR Plan to address the unavailability of property insurance in Black neighborhoods in the wake of the Los Angeles Watts Riots.²⁹³ Today, California’s FAIR Plan covers wildfire insurance for dwellings and commercial buildings. It also covers lightning, internal explosions, and smoke. The California FAIR Plan is funded through a combination of policyholder premiums and assessments on property insurance companies operating in the state.

- Florida Citizens Property Insurance Corporation
 - Florida’s insurer of last resort is called Citizens. Citizens covers multiple perils, such as fire, lightning, wind, hail, and other non-environmental hazards, but does not cover structures around homes like carports, porches, patios, pools, etc. Citizens is funded through policyholder premiums and, when faced with major insured losses, assessments on all Florida property and casualty insurance policyholders. It also relies on reinsurance.²⁹⁴
- Minnesota FAIR Plan
 - The Minnesota FAIR Plan covers fire and lightning, as well as other non-environmental hazards. The Minnesota FAIR Plan is primarily funded through policyholder premiums and assessments on property insurance companies operating in the state.

While establishing a FAIR Plan can be seen as a policy response to climate-driven insurance disruptions, it is, at best, a stopgap measure. Because residual market programs primarily provide policies for the regions and/or specific perils that private insurers deem to be “too risky,” these programs run opposite to the principle of risk spreading. This means they are particularly vulnerable to large, correlated loss events such as major wildfires or hurricanes. These programs can then further exacerbate affordability issues because, when they face losses they cannot cover, they (typically) have the authority to make assessments on all admitted insurers (which will then pass costs on to existing policyholders via premium increases or surcharges), or directly on residual market policyholders.

Moreover, these plans can create perverse incentives for private insurers, for example by giving private insurers an excuse to stay away from high-risk areas. Residual market plans may also incentivize higher private rates for some policyholders, as in Florida, where Citizens requires applicants to show that private insurance would cost 20 percent more than a Citizens policy in order to qualify for Citizens coverage. Consequently, private insurers might maintain rates just below this threshold, charging consumers the maximum possible price before they can opt for Citizens.

State guaranty funds

All US states have guaranty funds, which pay policyholder claims in the case that an admitted insurer becomes insolvent and cannot make claims payments. The money for these funds generally comes from assessments on all insurance companies operating in the state, but this does not mean public money is off the hook: Insurers often pass on their costs for guaranty fund assessments directly to policyholders through surcharges, or states give them tax breaks. An extreme example of this comes from Florida and Louisiana, where the guaranty funds took on hundreds of millions of dollars of debt in 2023; it is expected that policyholder charges and state tax breaks will cover the balance and interest payments on that debt.²⁹⁵

²⁹⁴ Citizens Property Insurance Corporation, “Citizens Secures Reinsurance Coverage for 2024 Hurricane Season,” press release, July 10, 2024, <https://www.citizensfla.com/-/20240710-citizens-secures-reinsurance-coverage-for-2024-hurricane-season>.

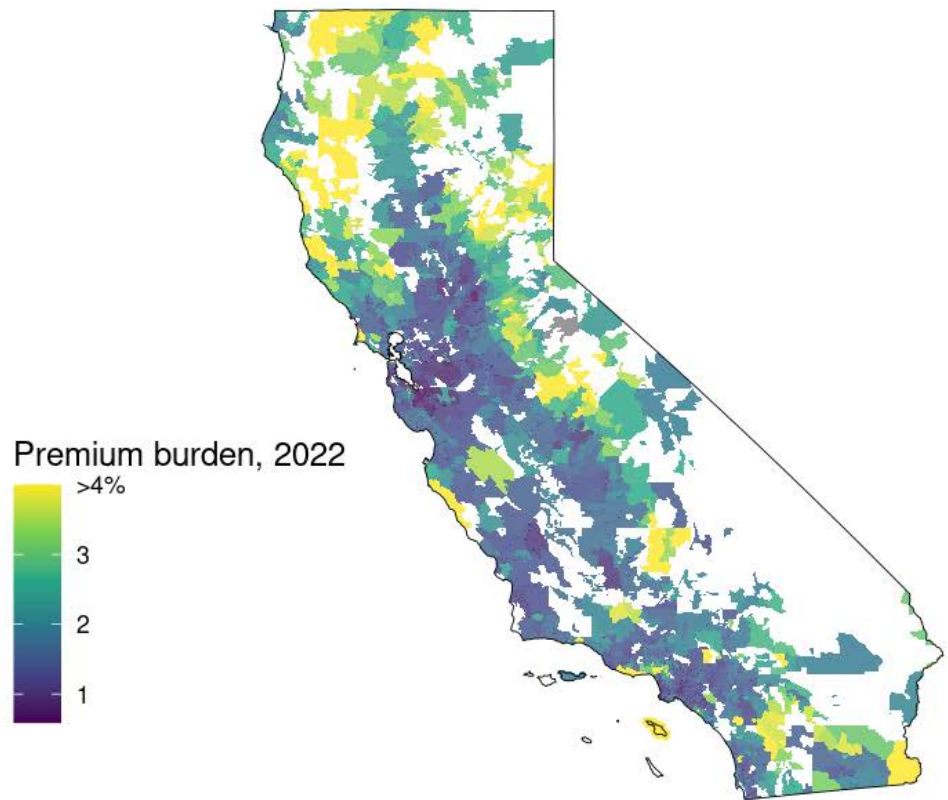
²⁹⁵ Thomas Frank, “Fla. and La. Must Borrow Millions to Pay Insurance Claims,” E&E News by POLITICO, May 2, 2023, <https://www.eenews.net/articles/fla-and-la-must-borrow-millions-to-pay-insurance-claims/>.

Households that have policies with non-admitted carriers — often called “surplus lines” — do not have access to state guaranty funds and thus have no protection if their insurer becomes insolvent. Despite this lack of protection, consumers are turning to surplus lines in greater numbers; surplus lines’ share of property and casualty insurance markets grew by double digits in many states in recent years.²⁹⁶

²⁹⁶ Insurance Journal, “For the Fifth Straight Year, Surplus Lines Sees Double-Digit Growth: AM Best,” Insurance Journal, October 2, 2023, <https://www.insurancejournal.com/magazines/mag-features/2023/10/02/741762.htm>.

Appendix 2: Additional figures

Appendix Figure 1. Distribution of financial burdens stemming from private multi-peril insurance costs across California zip codes. The cost burden stemming from multi-peril insurance policies faced by a typical California household varies markedly from community to community — with residents paying between 1 percent and more than 4 percent of their annual incomes on multi-peril policies. *Note: This figure displays how premium burdens vary from zip code to zip code in California. Premium burden is the premium rate divided by median annual household income in a zip code. Calculated only for zip codes with 30 or more policies.*



Appendix Figure 2. Premium burdens resulting from private multi-peril policies across California zip codes by climate risk and household income level. *Note: Multi-peril premium burdens appear to be highest among the lowest-earning zip codes in California. Across all zip codes, insurance rates relative to household earnings appear loosely related to climate risk. “Premium burden” is defined as the average premium rate of a zip code divided by the median household income of a zip code. “Risk rank” summarizes the magnitude of climate risk faced by California communities, in terms of deciles of annual expected losses. E.g., a risk rank of “1” describes California zip codes facing the lowest 10 percent of expected losses from climate disasters across the state, while a rank of “10” describes California zip codes facing the*

highest 10 percent of climate-related damages across the state. Panels show quartiles of median household incomes. For instance, the panel labeled “lowest-income zip codes” shows how premium burden changes according to climate risk among zip codes whose residents earn, on average, the lowest 25 percent of incomes across the state.

