

MACH Focus Areas



Housing, Insurance, and Mortgage Markets



Coastal Climate Risk



Adaptation Strategy Design



Municipal Finances



Household Decision-Making



Transdisciplinary Research
and Co-Production Design

coastalhub.org

What problem does this focus area address?

Climate change is now affecting every part of the United States. From stronger hurricanes to more frequent floods and wildfires, disasters are becoming more frequent, severe, and costly. MACH's Housing, Insurance, and Mortgage Markets research group is working to understand how these events are putting stress on financial systems—particularly those supporting housing—and how public policy can help protect households, communities, and businesses from these growing dangers.

A primary focus of the group is the mispricing of climate risk in housing, insurance, and mortgage markets across the United States. When the purchase price of a house or the cost of an insurance policy fails to accurately indicate these risks, it can inadvertently encourage development in hazardous areas and discourage investments in risk reduction. One area that the researchers are investigating is the impact that risk-based pricing for flood insurance policies, like Risk Rating 2.0, the recent reform to the National Flood Insurance Program, could have on policy coverage. Changes to this program could be a critical tool for communicating climate risk; however, when faced with higher prices, many policyholders opt to drop their coverage despite deciding to stay in a risky location. Analyses like these can provide useful information to policymakers for further reforms.

What is MACH?

The Megalopolitan Coastal Transformation Hub (MACH) is a consortium of 13 institutions that brings together academics, policymakers, and community leaders to research climate change impacts and develop effective, evidence-based responses in the Philadelphia–New Jersey–New York region and beyond. Learn more about MACH at coastalhub.org.

How can this research be used?

The audience for this work includes private insurers and local governments, as well as policymakers at state and federal agencies who oversee insurance pricing and mortgage lending. The research group uses econometric methods to investigate how both pricing strategies and improved access to information can influence decisions in the housing, mortgage, and insurance sectors. The aim is to enable consumers, lenders, and insurers to price climate risk accurately and to provide incentives to invest in risk reduction and reduce development in hazardous areas.

How does this research relate to the work of other focus areas?

Underlying this research is a recognition that climate change is not only an environmental threat; it's an economic force. Owning a house often becomes a family's largest asset, and mortgage lending is deeply embedded in the United States' financial system. The integration of information from the Coastal Climate Risk group could help to further inform public and private institutions about the emerging climate risks, thereby protecting households from the economic shocks of climate-related disasters.

The work described here is conducted by researchers at the Environmental Defense Fund affiliated with the MACH consortium. Reach out to coastalhubinfo@gmail.com for more information.

KEY POINTS

- Climate disasters increase missed mortgage payments; insurance is becoming more expensive or unavailable in some locations.
- Mortgage rates and insurance premiums often do not reflect true climate risks, leading to risky development.
- Mortgages exposed to climate risk are bundled and sold as mortgage-backed securities, making the overall financial system more vulnerable.
- Using econometric methods, this research group quantifies climate-related financial risks and assesses effective mortgage and insurance-related strategies for adaptation.
- The group's research helps inform housing market policies, consumers, and institutions.



Clockwise from top left: Flooded homes in Bound Brook, NJ, after Hurricane Irene; a plea for help in Breezy Point, New York City, and the remains of a house in Union Beach, NJ, after Hurricane Sandy; cleaning up after Tropical Storm Ida in Lambertville, NJ. When disasters such as these strike residential areas, many homeowners don't have the means to recover.

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