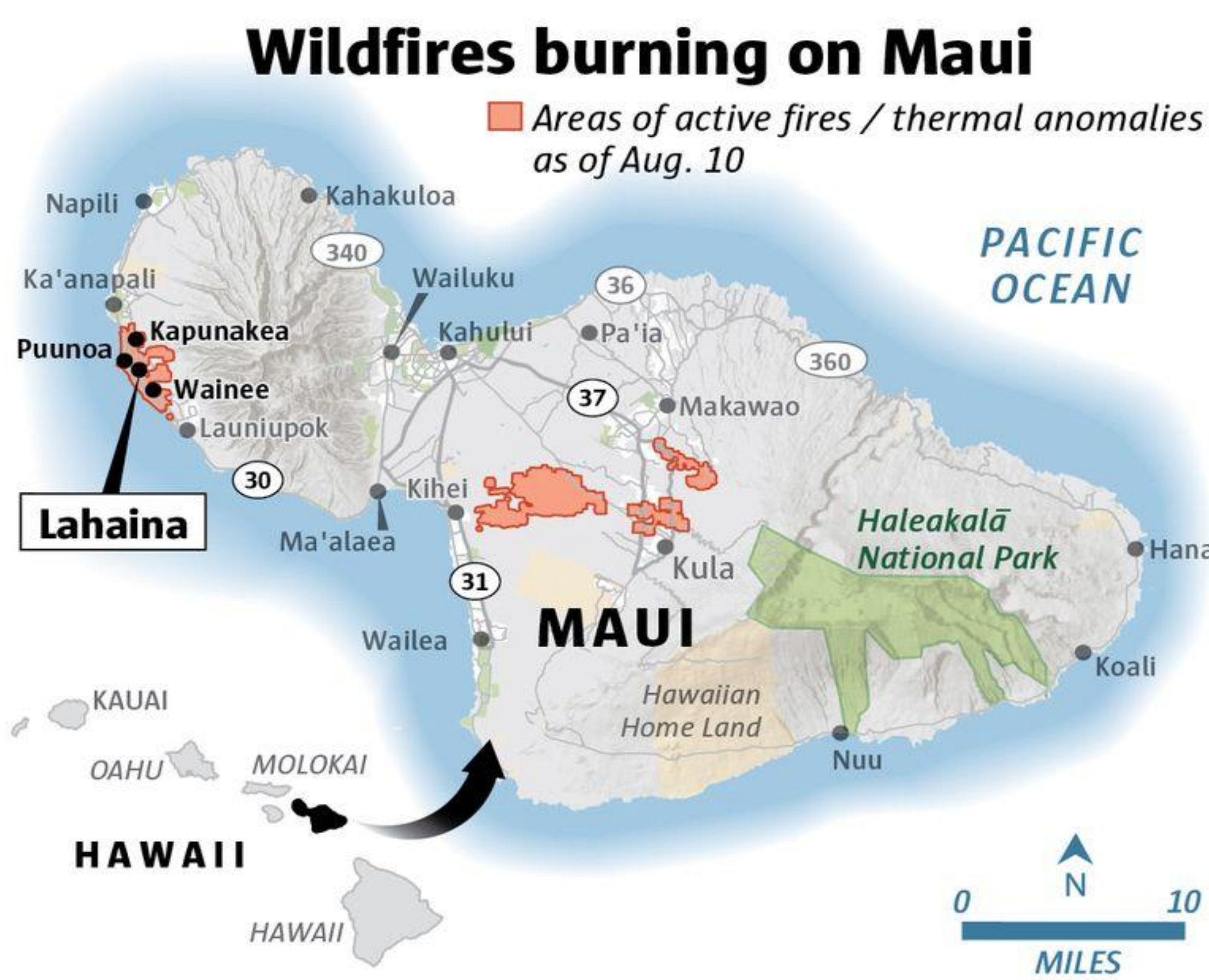# Place attachment in mitigation and recovery: A mixed methods study of residential adjustment following wildfires

Study summary

On August 8, 2023, Maui experienced one of the most destructive wildfires in US history. The fire destroyed 2,207 buildings, resulted in 102 confirmed fatalities, and caused economic losses of more than $6 billion. As we know from past disasters, survivors must make a critical decision: do they return to their previous community or relocate to a new site? Here, we partnered with the **Maui Housing Hui** and examined this question by interviewing 14 Maui participants who experienced the 2023 Lahaina Fire. This study builds on a prior study in California with 70 homeowners who also lost their homes to wildfire, where we found that place-based factors—such as social ties, emotional and functional ties to place, housing availability, and livelihood options — drove post-wildfire housing recovery decisions. While still preliminary, in Maui we have found that most of survivors want to return to their community, and feel deep ties to the land, the town, and their community. Their place-based functionalities — such as housing availability and livelihood options — play key roles in navigating their recovery journey. That said, we find that many survivors have had their decision-making capacity constrained by a lack of available housing, inadequate aid, and recovery policies that inhibit recovery efforts. Likewise, many survivors expressed concern regarding whether Lahaina would preserve its historical and cultural identity during the recovery effort while balancing a desire for reducing future wildfire risks and addressing the effects of sea-level rise.

Study communities

Wildfires burning on Maui

Sources: Esri, firms.modaps.eosdis.nasa.gov

MARK NOWLIN / THE SEATTLE TIMES

Participant Highlights

• All of the participants' primary homes were destroyed by the wildfire.

• 5 homeowners, 8 renters, and 1 individual living with family and friends participated in the study.

• Among the participants, 6 are living in the same community, 6 have relocated, and the other 2 are renting in a different location.

• The demographics included 7 white, 4 Asian, 1 Hispanic or Latino, 1 native Hawaiian, and 1 mixed indigenous participants.

• Approximately 90 percent of the participants had no other wildfire experience.

Our research questions

▪ What place-based factors influence residents' interpretation of the post-disaster environment?
▪ What role does place attachment play in post-disaster residential adjustment, including rebuilding, mitigation, and relocation?
▪ To what extent do current place attachment measures capture the observed dynamics of place attachment in disaster contexts?

How do people make rebuilding/relocation decisions?

Figure-1: Conceptual model of residential adjustment decision of wildfire survivors

Model Highlights
▪ The model, based in community psychology, starts with a disaster that interrupts community functioning.
▪ After disruption, households interpret their situations, and form narratives around what the disruption means to them and how it alters theirs relationship with their place of residence.
▪ In the response phase, households choose one of three potential outcomes: relocate to a new community (Pathway 1), rebuild without mitigating (Pathway 2), or rebuild with new mitigation measures (Pathway 3).
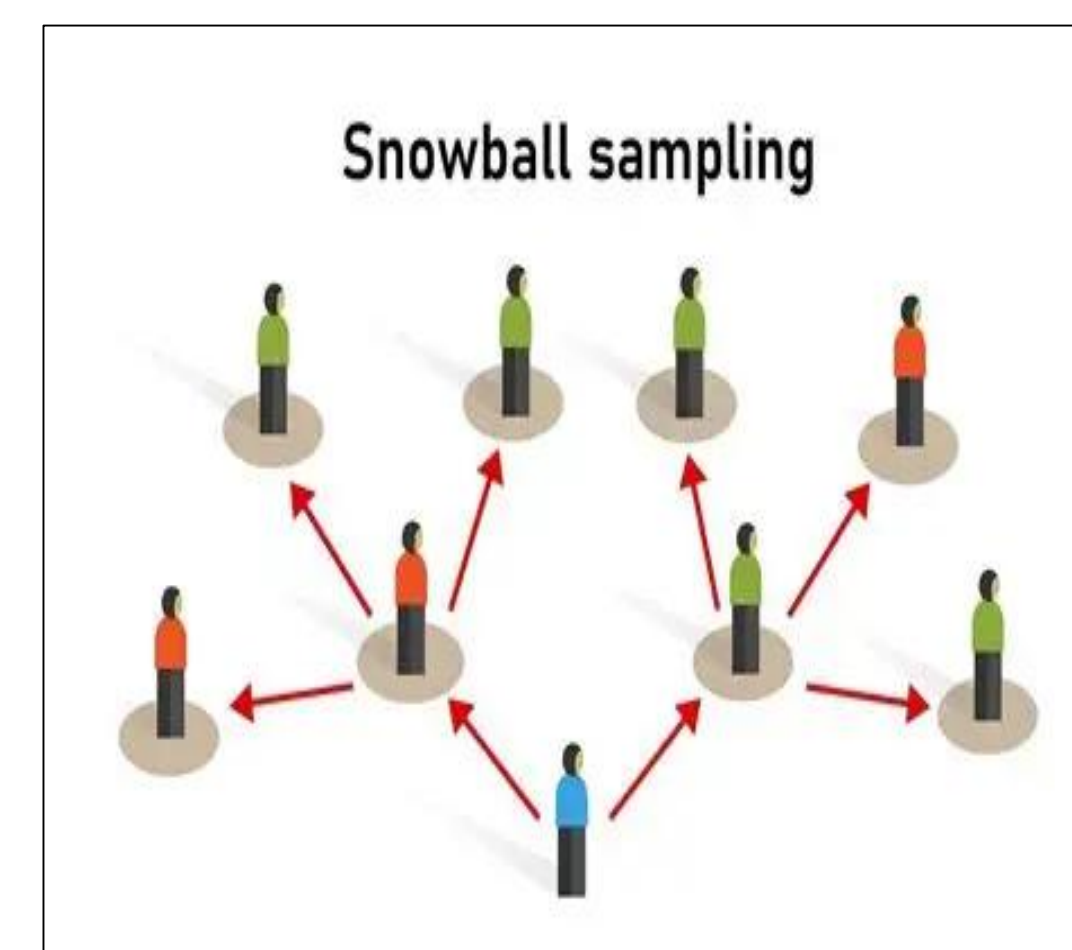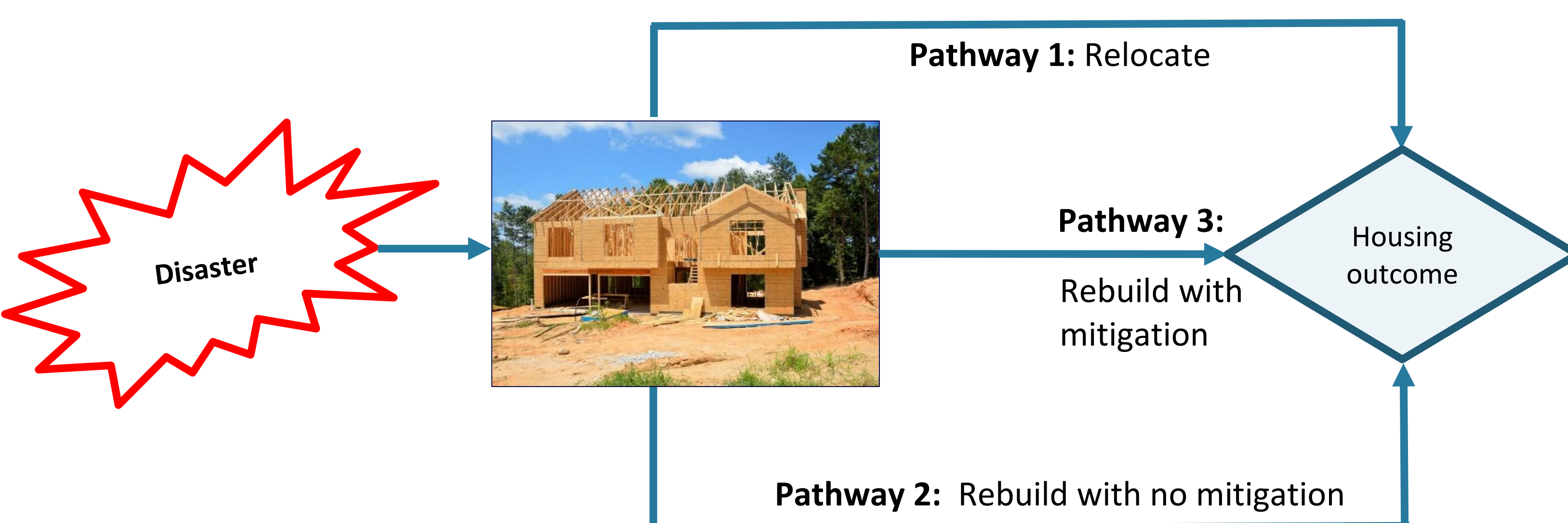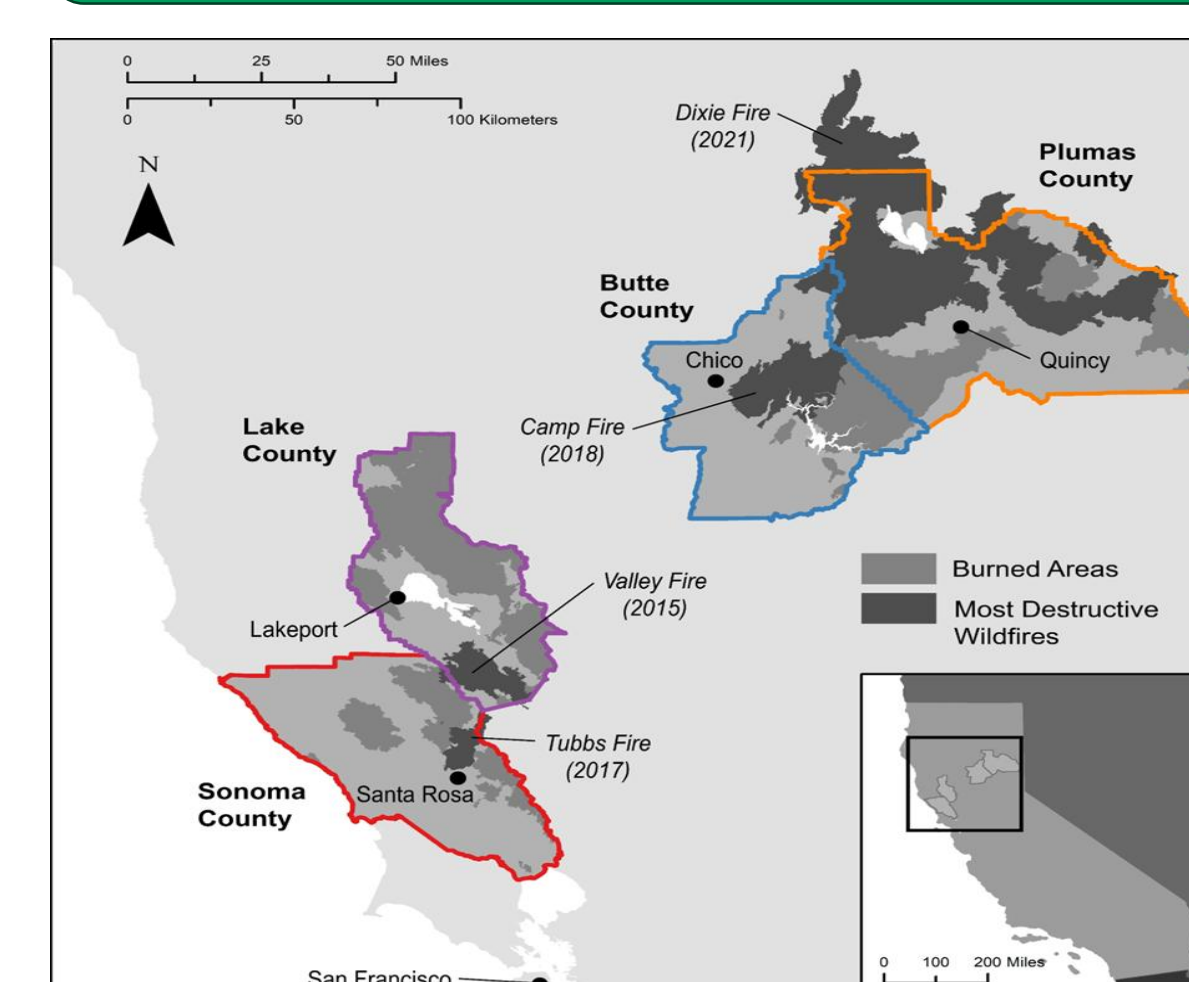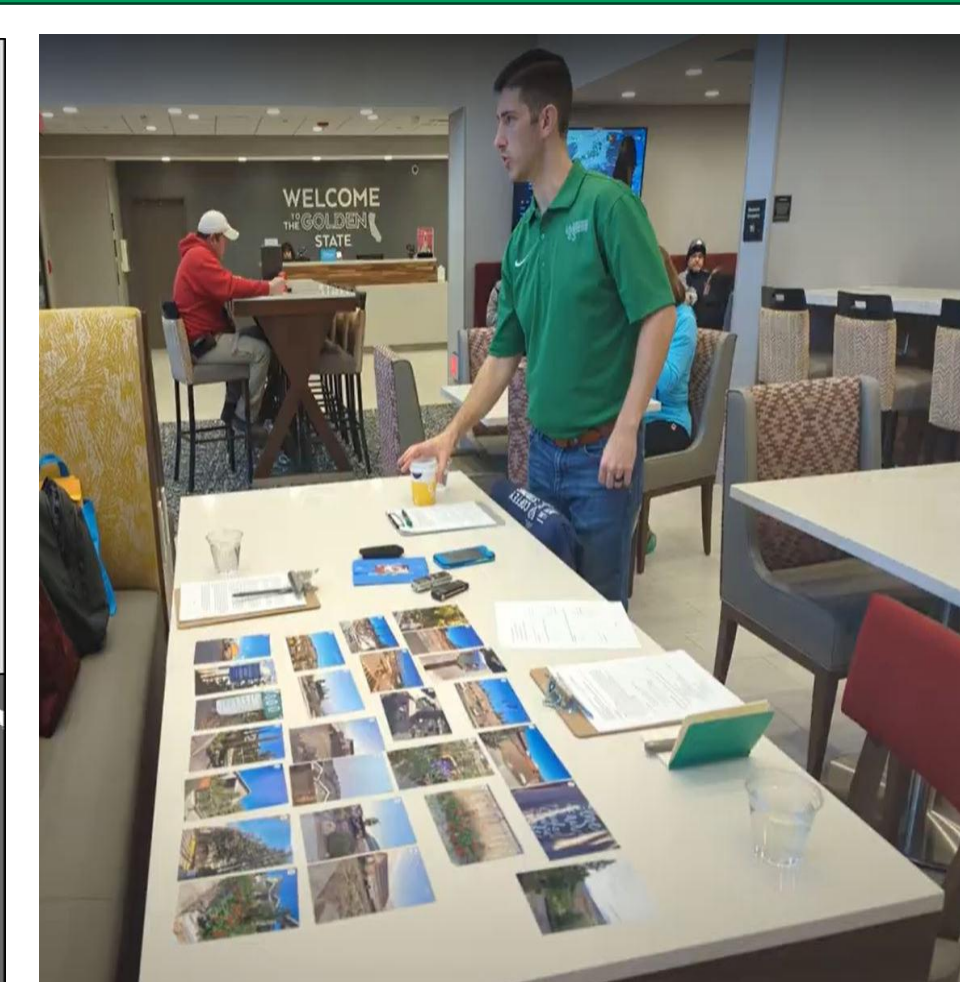
Our strategies to collect and analyze the research data

Our research team assembled in 2019 to study housing recovery after the California wildfires. To understand the challenges associated with balancing rapid recovery with measures to reduce exposure to future fires, we interviewed 37 key stakeholders, including federal, state, and local officials, wildfire professionals, and community leaders knowledgeable about ongoing wildfire recovery and risk reduction efforts. Our findings focused on four overarching themes: (1) conflicts between state and local priorities and perspectives, (2) environmental concerns that delay post-fire recovery and mitigation actions, (3) competition for resources among neighboring jurisdictions, and (4) challenges in fostering collective action to reduce wildfire losses. This initial study laid the groundwork for the study we are presenting here on place attachment and housing recovery. In total, we conducted this research across five counties (Butte, Plumas, Sonoma, and Lake Counties in Northern California, and Maui County, Hawaii). In the California, participants shared their recovery story along with photographs, referred to as photovoice method. In Maui, we interviewed the participants using a semi-structured interview guide, inviting participants to share photos after the interview.

Study design

Example of Recruitment and Data Collection

(a) Website post to recruit eligible participants at Maui

(a) Visual representation of snowball sampling technique

Highlights

▪ We partnered with the **Maui Housing Hui** to reach to primary participants, and later expanded our recruitment through snowball sampling.
▪ We conducted both in-person and virtual interviews to collect data from participants.
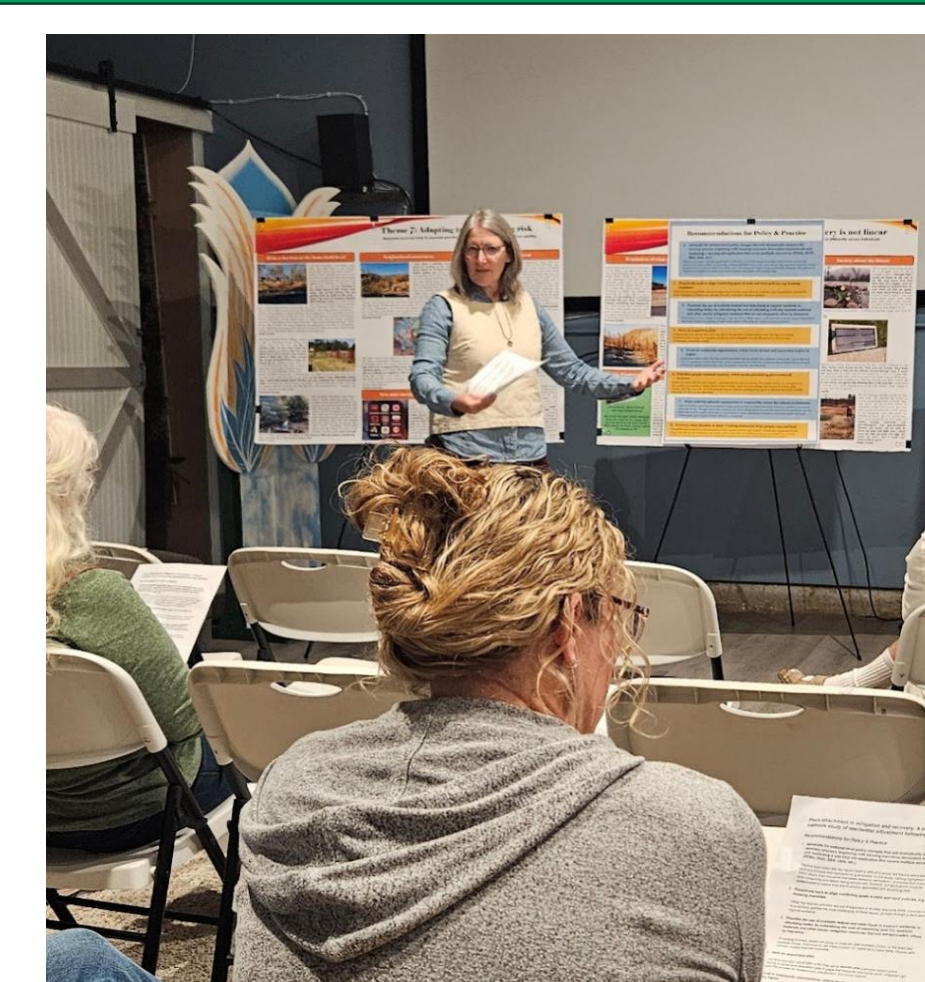
Data Analysis

Snapshot of California study

(a) Study area in California

(b) In-person interview photovoice setup in California

(c) Research findings presentation in California, 2024

▪ In total, 70 homeowners from Butte, Plumas, Sonoma, and Lake counties, who lost their primary homes in the 2015 wildfire or beyond, participated in the study.
▪ 8 households experienced the wildfire about 2 years ago; 11 households experienced the fire 3 years ago; 25 households experienced the fire 4 years ago; 12 households experienced it 5 years ago; and 2 and another 12 households experienced the fire about 6 and 7 years ago.
▪ Among the interviewed households, 25 were relocatees, 35 were rebuilders, and 10 were in the process of rebuilding
▪ Data were collected employing the photovoice interview method, where participants shared photographs along with their wildfire recovery journey.
▪ We found that place-based bonds, dependence on place-based resources such as the availability of housing and proximity to work, and external factors (e.g. aid provided and insurance coverage) influenced wildfire survivors' housing rebuilding decisions.

Agenda for the day

Timeline	What to expect
1st Segment 15 minutes	▪ **Introductory speech:** The research team will introduce themselves, brief on the current project, and explain the expected outcomes from this Talk Story. ▪ **Instructions for the event:** Following introductions, the research team will provide instructions for the remainder of the event.
2nd Segment 45 minutes	▪ **Poster orientation:** Several posters have been placed throughout the designated area, including an introductory poster (this poster) that encapsulates the overarching research and thematic posters that each convey specific insights extracted from the interviews. ▪ **A blank poster:** A blank poster has been set next to each thematic poster to collect feedback from the participants. ▪ **Fill-in-the-blank prompts:** You will have the opportunity at each poster station to complete the prompts we have prepared, providing us with feedback on the research findings and contributing additional points you deem crucial.
Final Segment 30 minutes	▪ **Group discussion:** After everyone has had a chance to circulate around the room, the research team will bring everyone together to discuss their impressions of the research findings, chat about what we may have missed in our analysis, and discuss next steps for the project. ▪ **Closing remarks:** The research team will provide some final remarks and a moment of gratitude for all of the study participants.

Next steps

▪ Qualitative Comparative Analysis (QCA) will be used to explore the three household adjustment pathways illustrated in Fig-1. and to capture the similarities and differences across our participating counties.
▪ Deductive coding techniques will be used to identify how place attachment shapes interpretation of the post-disaster environment and residential decisions.
▪ A white paper will be developed after our town halls focusing on policy recommendations to improve disaster recovery.
▪ All the results from this research will be published on the research website (see the QR code).

SCAN ME

Meet our team

Dr. Alex Greer | Dr. Miranda Mockrin | Dr. Ronald Schumann | Dr. Sherri Brokopp Binder | Ayesha Islam