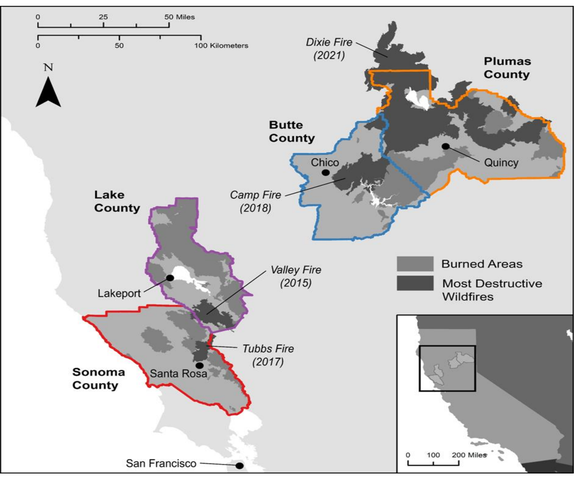
Place attachment in mitigation and recovery: A mixed methods study of residential adjustment following wildfires

Study summary

By any metric, California has had an unprecedented last decade of fires. Eleven out of 15 of the largest wildfires in California history have occurred since 2015, destroying over five million acres or about 8,000 square miles of land. Five of the 15 deadliest fires in state history have occurred since 2015, accounting for 138 confirmed deaths. Twelve out of 15 of the most destructive wildfires have occurred since 2015, destroying 41,831 structures. After these fires, affected households face a decision point whether to rebuild in the same place or relocate. It is important to understand how households make their post-disaster housing decisions as it is related to the longer-term recovery of the community. We conducted 70 photovoice interviews with homeowners from four counties in California that lost their homes during wildfires since 2015. According to our findings, dimensions of place attachment, dependence on place-based resources, and external factors (e.g. access to aid system and insurance coverage) influenced wildfire survivors' housing rebuilding decisions.

Study communities



Participant Highlights

•70 homeowners participated in the study.

•Our study included households from Butte (25), Plumas (8), Sonoma (23), and Lake (14) County.

•All participants were homeowners that suffered major damage or had lost their homes to wildfires since 2015.

•Study participants represented experience across nine different fires occurring in suburban and rural areas.

•Among the interviewed households, 25 had relocated, 35 had rebuilt in the same place, and 10 were in the process of rebuilding.

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?

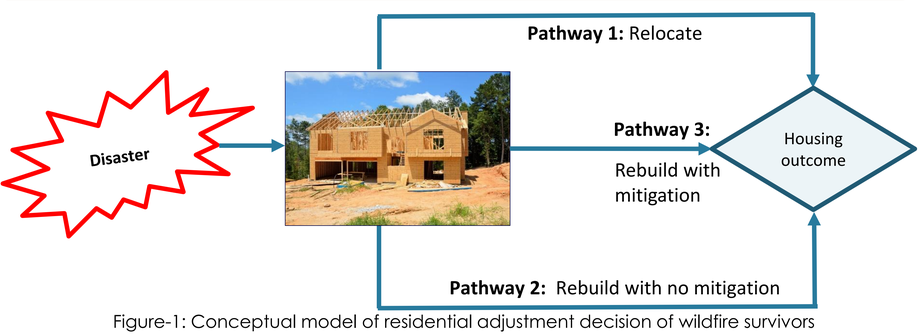
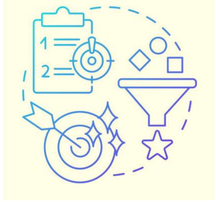


Figure-1: Conceptual model of residential adjustment decision of wildfire survivors

Model Highlights

- The model, built on community psychology literature, 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 their 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

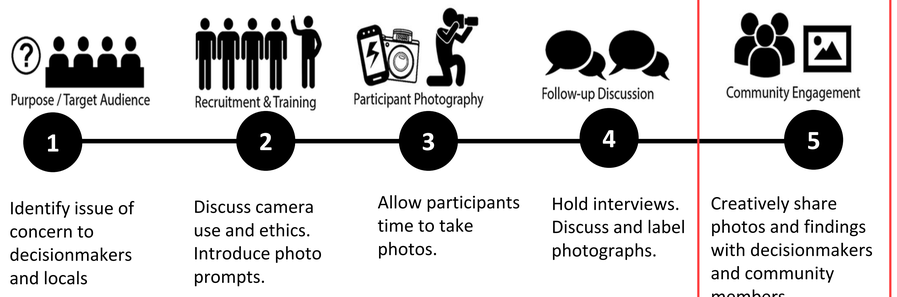


Building on an early pilot study

Our research team assembled in 2019 to study housing recovery after the recent California wildfires. To understand the challenges associated with balancing rapid recovery with measures to reduce exposure to future fires, we interviewed 37 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.

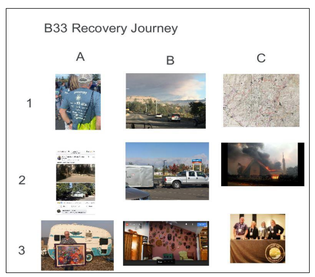
As we outline below, this phase of the research is focused on explaining how households make their residential adjustment decisions after a wildfire by using photovoice interview method.

Data Collection



Example of Recruitment and Data Collection

(a) Website post to look for eligible participants



(b) Online photovoice grid (Jamboard)

(c) In-person interview photovoice setup

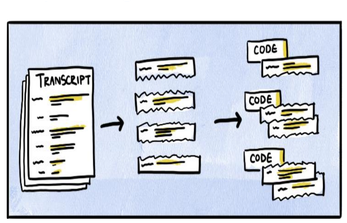
Number of participating households by time since their most impactful wildfire event

Highlights

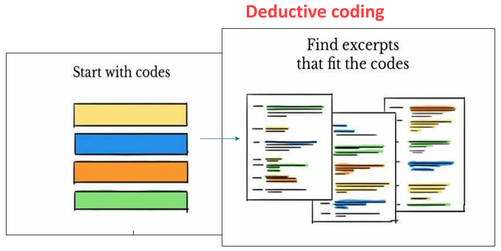
The largest group of participants had experienced their most impactful fire four years prior to enrolling in the study. We had eight participants that had experienced their most impactful fire only two years prior to enrolling, and 12 that had experienced their most impactful fire seven years before enrolling. As we continue with data analysis, we will explore how time since the fire affects residential decisions.

Data Analysis

Open coding



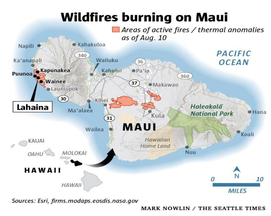
Deductive coding



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 townhall. ▪ ***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 photovoice 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.

Expanding to communities on Maui



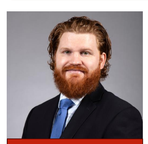
The 2023 Hawaii wildfires burnt 6,693 acres of land, destroyed 3,000 structures, and caused a financial loss of greater than $4 billion. Approximately 70% of the survivors were renters. With support from the National Science Foundation, we had added Maui county to this study. This provides us with the opportunity to share lessons learned from California and explore early-stage housing recovery decisions.

Next steps

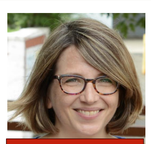
- Qualitative Comparative Analysis (QCA) will be used to explore the three household adjustment pathways illustrated in Fig-1. and to capture the similarities and differences across our participating counties.
- Deductive coding techniques will be used to identify how place attachment shapes interpretation of the post-disaster environment and residential decisions.
- A white paper will be developed after our townhalls 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

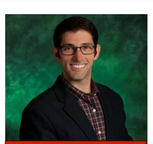
Meet our team



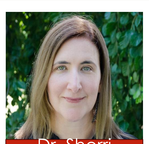
Dr. Alex Greer



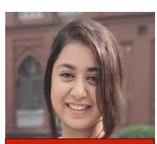
Dr. Miranda Mockrin



Dr. Ronald Schumann



Dr. Sherri Brokopp Binder



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Acknowledgments

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