

RESEARCH BRIEF SERIES QUICK RESPONSE

This research brief is part of an award program designed to support the collection of perishable data following disasters and other extreme events to promote social science innovation in hazards and disaster research. This program fosters new knowledge and perspectives by prioritizing research that fills gaps in the literature and is unlikely to be funded rapidly by other means.

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AWARD AMOUNT:

\$5,000

SOCIAL VULNERABILITY TO WILDFIRES AMONG HISPANIC/LATINO POPULATIONS IN THE TEXAS WILDLAND-URBAN INTERFACE

OVERVIEW

Texas is a hotspot for large wildfires in the United States due to a growing population in the wildland-urban interface (WUI), changes in land use, and weather patterns. The 2024 wildfire season in the state exemplified the increasing wildfire crisis in the region, as the Smokehouse Creek Fire in February-March 2024 became the largest fire in recorded Texas history.

Minority groups, such as Hispanic/Latino communities, are twice as likely to live in areas with the most wildfire threat relative to the overall U.S. population. Drawing on results from an online English-Spanish bilingual survey—which was co-developed by academic researchers at the Texas A&M Forest Service and professionals at the Spring Fire Department—this study advances our understanding of the complex interplay of linguistic, cultural, and socioeconomic factors that shape vulnerability and wildfire awareness and preparedness among Texas' Hispanic/Latino populations living in the wildland-urban interface.

Ultimately, understanding and addressing these factors is crucial for building more resilient communities and mitigating the disproportionate impacts of wildfires on vulnerable populations. Our results will potentially contribute to shaping future U.S. Forest Service educational materials and information resources for Hispanic/Latino populations in the United States.



Firefighters extinguish a brush blaze in Brownwood, Texas, August 2020.

Cass Tippit / Shutterstock.com

KEY FINDINGS

- Nearly half (43.6%) of respondents felt prepared for a wildfire emergency, while large minorities felt unprepared (37.1%) or unsure about their preparedness (19.3%).
- Lower-income individuals and younger women demonstrated higher vulnerability, while older, higher-income, and more educated respondents reported greater preparedness.

- Most respondents perceived that the initial responsibility to respond to a wildfire event was held by local firefighters, while the distribution across other responding authorities was not significant. The majority (68.8%) of survey respondents indicated they would call 911 in the initial response to a wildfire, followed by 22.3% who would contact their local fire department.
- A significant majority (82.2%) of respondents did not know what the wildland-urban interface was. Respondents most commonly identified excessive dry vegetation, low branches, and leaf litter build-up as wildfire risks. Human activities and the lack of firebreaks were also frequently mentioned.
- Most respondents (84.2%) had not experienced a wildfire near their home in the past five years. Despite their lack of awareness of WUIs and direct wildfire experience, most also considered it beneficial to have information about WUIs available in English and Spanish. Educational videos, informational brochures, and training workshops were identified as the most helpful potential resources.

RESEARCH IMPLICATIONS

- Our results align with existing research that links socioeconomic disparities to reduced resilience. Addressing socioeconomic barriers is critical to enhance community wildfire preparedness.



Heavy smoke during the Smokehouse Creek Fire in February 2024.

Photo Credit: Wikimedia Commons

- Among survey respondents, there was a critical gap in public awareness about the wildland-urban interface and the risk factors in these areas. Providing bilingual wildfire preparedness information and resources to explain what the WUI is, the types of risks experienced in the WUI, recommended risk reduction and emergency plans, and key contacts in event of a wildfire is crucial to ensure effective hazard communication.
- Emergency management agencies should work to build trust and improve communication channels with Hispanic/Latino communities, ensuring that evacuation plans and emergency protocols are clearly understood and accessible for those living in WUI areas.
- There is a need for greater emphasis on integrating social vulnerability considerations into wildfire management plans and resource allocation strategies. Policymakers must work to address the systemic inequalities that contribute to wildfire vulnerability, such as limited access to information and resources as well as underrepresentation in decision-making processes.

AUDIENCE

This research is relevant for policymakers, fire departments, emergency managers, and alerting authorities concerned with wildfire vulnerability and preparedness.

Full Report: Hernandez-Perez, R., Ruggiero, R., Ortiz Cardona, M., Hines, K., & Bregenzer, A. (2026). Social Vulnerability to Wildfires Among Hispanic/Latino Populations in the Texas Wildland-Urban Interface. (Natural Hazards Center Quick Response Research Report Series, Report 370). Natural Hazards Center, University of Colorado Boulder. hazards.colorado.edu/quick-response-report/social-vulnerability-to-wildfires-among-hispanic-latino-populations-in-the-texas-wildland-urban-interface



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