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Hawaii's 2023 deadly wildfires – Data and Tools to help

The catastrophic impacts from the wildfires in Hawaii, particularly the island of Maui have yet to be fully understood and the complex issues with community populations and ecological impacts are still being assessed. The situation in the historic town of Lahaina is especially tragic. People are asking why this disaster happened, and what could have been done to prevent it?

Data and tools released in 2020 showed that Lahaina had greater wildfire risk than 92% of communities across the United States. Sadly, Lahaina cannot turn the clock back, but there are roughly 2,000 communities in the United States with similar (or higher) wildfire risks in which there may still be time to prevent disaster. For those communities, there are easy to navigate tools to help government officials, community organizations, and everyday citizens measure their wildfire risk, identify actionable steps to mitigate that risk, and prepare their communities for better outcomes when the inevitable wildfire comes.

For over a decade, [LANDFIRE](#) has been producing landscape vegetation and fuel data and in the past 3 years, [Wildfire Risk to Communities](#) (WRC) has been providing tools and resources to individuals and communities interested in assessing their vulnerability and risk to wildfires (informed by LANDFIRE data). WRC measures wildfire risk data for every community, county, tribal area, and state and connects people with specific actions they can take to help reduce risk.

“Wildfire Risk to Communities is a free, easy-to-use website with interactive maps, charts, and resources to help communities understand, explore, and reduce wildfire risk. It was created by the USDA Forest Service under the direction of Congress and is designed to help community leaders, such as elected officials, community planners, and fire managers.”

While wildfires have always been a part of our history from an ecological perspective, their intensity, size, and frequency have changed in the recent past. To adapt to this changing fire regime, communities need to understand the current situation using tools such as WRC, LANDFIRE, and others. They may also need to reach deep into their toolboxes and use non-traditional strategies to mitigate threats from wildfires – especially in communities where wildfire risks were traditionally thought to be low.



This screenshot from the WRC website shows users that *the community of Lahaina had a very high risk of wildfire*. This information is based on wildfire risk variables that incorporate fuels information from the interagency LANDFIRE Program.

Hawaii’s high wildfire risk is primarily driven by climate variables and community proximity to areas where nonnative grasses such as guinea grass, molasses grass and buffel grass have invaded. Introduced to Hawaii in the late 18th century by European ranchers to supply drought-resistant livestock forage, invasive grasses now make up nearly a quarter of Hawaii’s lands once dominated by pineapple and sugar cane plantations. This widespread vegetation conversion, coupled with high winds and drought (nearly one third of Maui County is experiencing a drought), means that communities need resources and political will to prioritize active fire management strategies.

One well-known strategy to reduce fuels is to employ ungulate grazing in areas where invasive grasses need to be removed. There are many examples of how goats and other grazing animals have been used to reduce fire risks in highly vulnerable areas with steep hillsides that make weed control difficult for humans but quick work for goats. The Joint Fire Science Program (JFSP) Fire Science Exchange Network (a national collaboration of 15 regional fire science exchanges, including [Hawaii](#)) has [published work on this tactic](#).

While every community's risk factors and solutions may be unique, national research and tools, like WRC and LANDFIRE, can help leaders understand their vulnerabilities and take action to make people and communities safer.

Using the latest LANDFIRE data, wildfire risk data will be updated in late 2023 at the [Wildfire Risk to Communities](#) website: wildfirerisk.org.

Lahaina has a **very high risk of wildfire—higher than 92% of communities in the US.**

Understand your risk

Wildfire risk is based on several factors. Understanding which factors affect your community can help you identify strategies to reduce your risk.

