



Changing Climate and Wildfire: a Crisis Brewing in the Pacific

As the climate crisis rages on, wildfires will become ever more frequent, more intense, and more wide-spreading in Hawai'i and across the Pacific. The most affected areas will be grasslands and savannas which surround residential areas and the edges of watershed forests.

Did You Know?

Becoming wildfire-ready and wildfire-resilient are key climate adaptation strategies.

On our current trajectory, increasing temperatures and natural disasters will likely push us beyond society's current capacity to adapt.

Wildfire readiness and resilience can be achieved through a combination of actions, many of them readily achievable. See next page for specific details.



- Wildfire risk in Hawai'i and around the Pacific is due to vast areas of highly flammable grasslands and shrublands (10–25% of island land area) and human-caused ignitions (up to 99% of all fires).



- Warming air and changing rainfall patterns from climate change will increase our wildfire risk.



- Heavier rainfall increases grass growth and makes more fuels, which, followed by more intense droughts increases the likelihood and intensity of fires.



- Firefighters' reports of recent, large fires in Hawai'i indicate that drought and higher temperatures are already increasing our fire risk.



- More frequent and intense fires will harm resources and infrastructure on land and sea that Pacific island communities value for recreation, traditions, sustenance, and our multi-cultural identities and livelihoods.



- **Reducing Fire Risk Is One Piece of the Climate Crisis That We Know How to Address**



There are actions we can take to reduce our wildfire risk in a warming world:

- Wildfire prevention education
- Community hazard reduction
- Community and landscape-level fire planning
- Vegetation management
- Increased firefighting capacity
- Protection of sensitive areas and critical municipal resources

Firefighting is the very last line of defense. We can ease the burden and increase our resilience when everyone takes action ahead of time to reduce fire risk factors.



Wildfire Readiness IS Climate Adaptation

3 Actions For Wildfire Readiness

1 Create Fire Adapted Communities

- Prepare your family, home and yard for wildfire.
- Work within your neighborhood and community to learn more about wildfire. Take action together.
- Protect community and municipal infrastructure (roads, water, power, cell).
- Advocate for wildfire policy and planning.



2 Make Landscapes Wildfire Resilient

- Protect sensitive areas.
- Create long-term vegetation management programs.
- Limit access to highly vulnerable areas during high fire risk conditions.
- Increase fire science research and fire modeling to better track, understand, and predict wildfires.



3 Optimize Wildfire Response

- Improve physical access and water resources for emergency responders around homes and communities.
- Make sure firefighters have up-to-date equipment and training.
- Develop fire management plans for sensitive areas.



Fire Science Sidebar!

The Relationship Between the Climate Crisis, Wildfire, and Pacific Island Predictions



Fun/Not-So-Fun Fact

- ☼ In mainland and continental areas, wildfires are becoming more frequent and intense due to rising temperatures, declining rainfall and snowfall, and lengthening of the wildfire season.^{1,2} In the Pacific, the relationship between wildfire and climate change is harder to predict.³

What We Do Know:

- ☼ Fire risk is closely tied to wet & dry cycles where grassland and savannas grow and then dry out.⁴ These fire-prone areas make up a significant proportion of Hawai'i (25%) and the western Pacific (10%–22%).
- ☼ Hawai'i, Guam, Palau, and Yap burn a larger proportion of the total land area than in many western U.S. states in most years.^{5,6} As grasslands and savannas expand, native ecosystems are unable to recover in the absence of land management.^{7,8} Soil erosion and sedimentation increase with wildfires, which damage coral reefs.^{9,10}
- ☼ Our best available information predicts that climate change will result in more frequent, intense rainfall and droughts.¹¹ This includes the Asian monsoon¹², which causes seasonal rainfall in the western Pacific, and El Niño¹³, which causes Pacific-wide droughts.
- ☼ Hawai'i's local climate models also show that dry, leeward areas will get drier¹⁴, causing fire risk to shift to higher elevations.⁴ Firefighters are reporting that hotter temperatures may already be increasing the intensity and speed at which fires are burning.

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