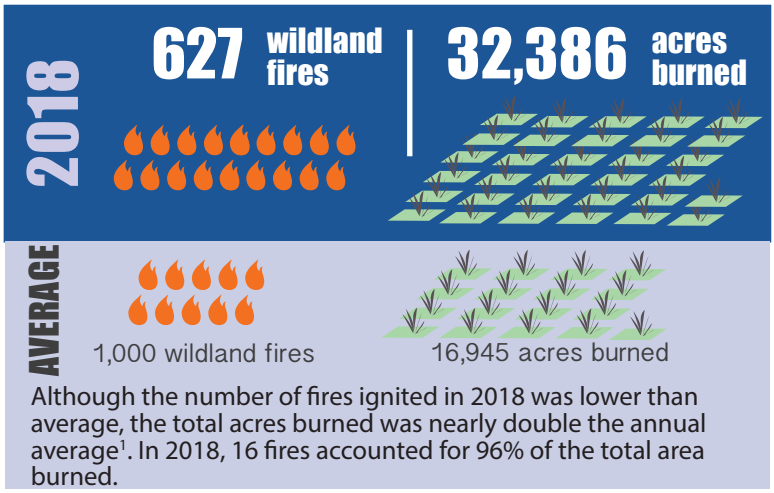
2018 Wildfires in Hawai`i | PFX Annual Summary

Every wildfire incident is part of a larger pattern and is an opportunity to gain experience and insight for wildfire management. Three main factors contribute to wildfire risk:

Vegetation - Wildfires burn plant material. The spread of non-native grasses and expansion of agriculture fallow lands have dramatically increased fire risk in Hawai`i.

Climate - Wildfire risk changes, in part, with rainfall. Large fires are most frequent during drought, but heavy rain prior to dry spells also increases risk by causing more plant (fuel) growth.

Ignitions - All wildfires are ignited by something or someone. Nearly all fires in Hawai`i are caused by people and about 75% of these are accidental, and therefore preventable.



Although the number of fires ignited in 2018 was lower than average, the total acres burned was nearly double the annual average[1]. In 2018, 16 fires accounted for 96% of the total area burned.

Land Cover of Areas Burned by Largest 16 Fires (94% of total)

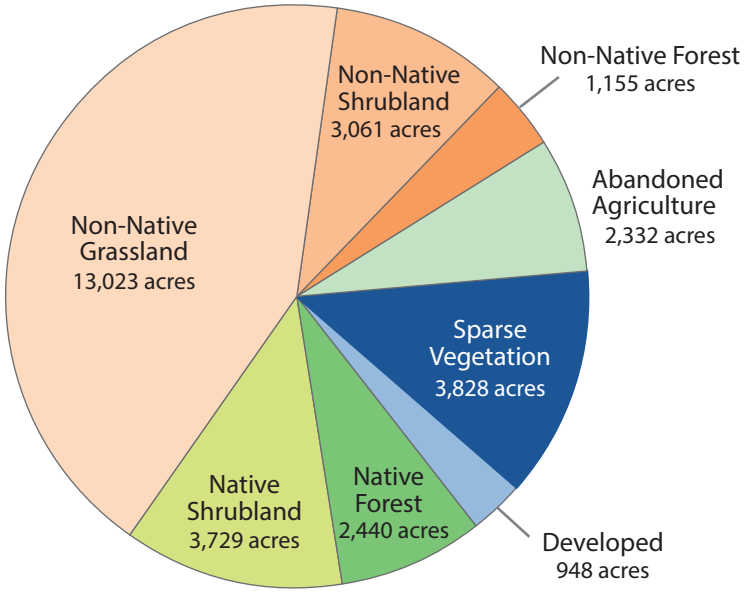


Figure 1. University of Hawaii's Wildland Fire Program used satellite images to map the vegetation types burned by the 16 largest fires of 2018.

Fires of Note The largest and most notable fires of 2018 were influenced by hurricanes that approached Hawaii in the month of August. Hurricane Hector neared Hawaii at the start of the month, drawing moisture towards itself and lowering the relative humidity (RH). Hurrican Lane followed a few weeks later. Both storms brought high winds that helped fires to spread.

Waikoloa On August 1st a fire ignited (cause undetermined) east of Waikoloa Village on Hawaii Island. The area's extensive and continuous grassy fuels in combination with strong winds spread the fire quickly, burning 15,337 acres. It was Hawaii's largest fire on record since 2005, and one of the five largest fires known in state history. The week-long suppression effort included county, state, and federal response agencies. Though no homes were threatened, the incident highlighted West Hawai`i Island's vulnerability to wildfire.

West Oahu Complex West O`ahu fires started on August 4th from multiple ignition points (arson suspected) in Waianae and Makaha Valleys and burned 4,444 acres. County, state, and federal agencies engaged in a multi-day suppression effort, which prevented any home loss despite the fires' close proximity to communities. Unusual fire behavior, with fire burning up and over ridges to adjacent valleys, spread fire from Makaha to Makua Kea'au Valley and burned 180 acres within the largest tract of native dry forest habitat on O`ahu.

Keauhou On August 5th, a human-caused fire just outside Hawai`i Volcanoes National Park, crossed the Park boundary, and grew to 3,502 acres over a week. The fire burned 2,154 acres of native forest and 717 acres of native shrubland. The fire came very close to, but did not reach, Kipuka Ki, a high-value restoration and endangered species area within the Park. The 2018 fire covered much of the area previously burned during fires in the 1970s.

West Maui Complex As Hurricane Lane approached Maui on August 24th, an ignition (cause unknown) in the Kaua'ula Valley area grew to a 1,835-acre fire. Later that morning another fire started at Kaanapali and burned 294 acres. The approaching storm stretched public safety resources and complicated the suppression response, with strong winds grounding air support and the fire forcing evacuation of a storm shelter within hours of predicted hurricane landfall. Twenty one residential structures, 27 vehicles, and an estimated 150 acres of active farmland were burned in the complex, making these fires among the most destructive in state history.

Acknowledgements

Fire Incident Data: Thanks to Hawai'i County FD, Honolulu FD, Kauai County FD, Maui County FD, and Hawaii Division of Forestry and Wildlife. Analysis: UH Wildland Fire Program.

1.Trauernicht, C. et al., 2015. The contemporary scale and context of wildfire in Hawai'i. Pacific Sci. 69:427-444.

Pacific Fire Exchange

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