

Bushfires are frequently followed by dust storms, and they're likely to get worse

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Approximately half of the large wildfires occurring between 2003 and 2020 were followed by dust events—storms of strong winds lifting dust and sand from dry soils, according to an analysis of more than 150,000

wildfires in *Nature Geoscience*.

Wildfires destroy vegetation, leaving a bare landscape that is a source of dust emissions and is particularly susceptible to wind erosion. Dust emissions from post-fire landscapes have been reported in North America, but global insights to answer questions about post-fire dust event frequency, hotspots, and severity and duration trends, have been lacking. Answers to these questions may aid the development of practical measures that mitigate the societal impacts of [wildfires](#) associated with dust storms.

Yan Yu and Paul Ginoux used global satellite measurements on active fires, aerosol abundance and characteristics, vegetation cover, and soil moisture from 2003 to 2020 to provide insights into post-fire dust events.

The authors found that about 90% of the large wildfires—defined as those with more than 20 active fires occurring in a 0.1° pixel (approximately 10 kilometers) within seven consecutive days—during this period were associated with a significant reduction in vegetation cover, and that more than 50% of them were followed by dust events in the subsequent 60 days.

These [dust storms](#) often occurred in savannahs, which made up about half of post-fire dust events. These events can last for days or weeks, largely depending on the severity of wildfires, including their temporal and spatial extent and impacts on vegetation cover. Pre-fire drought conditions were found to increase the occurrence and intensity of post-fire dust events.

Throughout the study period, the duration of post-fire dust events increased significantly as a result of intensified regional wildfires and [drought conditions](#) due to climate change. The authors predict that future

wildfires and associated dust events may become even more extreme as a result of climate change.

More information: Yan Yu et al, Enhanced dust emission following large wildfires due to vegetation disturbance, *Nature Geoscience* (2022). DOI: [10.1038/s41561-022-01046-6](https://doi.org/10.1038/s41561-022-01046-6)

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