

2016 extreme weather events and ties to climate change

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Credit: NOAA Headquarters

According to a new research report published today in a special edition of the *Bulletin of the American Meteorological Society*, the 2016 global average temperature and extreme heat wave over Asia occurred due to continued long-term climate change. The report included research from NOAA scientists.

Additionally, [climate](#) change was found to have influenced other heat events in 2016, including the extreme heat in the Arctic, development of

marine heat waves off Alaska and Australia, as well as the severity of the 2015-2016 El Niño, and the duration of coral bleaching in the Great Barrier Reef.

The sixth edition of *Explaining Extreme Events from a Climate Perspective* presents 27 peer-reviewed research papers that examine episodes of extreme weather across six continents and two oceans during 2016. It features the research of 116 scientists from 18 countries—including five reports co-led by NOAA scientists—who analyzed historical observations and changing trends along with model results to determine whether and how climate change might have influenced an extreme event or shifted the odds of it occurring.

The findings

The new research found climate change increased the risk of wildfires in the western U.S., and the extreme rainfall experienced in China, along with South Africa's drought and resultant food shortages. Researchers found that climate change had reduced the likelihood of the cold outbreaks experienced in China and western Australia in 2016. No conclusive link to climate change was found by scientists examining severe drought in Brazil, record rains in Australia, or stagnant conditions creating [poor air quality](#) in Europe.

In the report, 21 of the 27 papers in this edition identified climate change as a significant driver of an event, while six did not. Of the 131 papers now examined in this [report](#) over the last six years, approximately 65 percent have identified a role for [climate change](#), while about 35 percent have not found an appreciable effect. There could be several reasons no climate signal was found by some papers; it might be that there were no changes in the frequency or severity for that type of event over time or that researchers weren't able to detect changes using the available observational record or scientific tools and models available

today. Future studies could yield new insights on the climate's influence on extreme weather.

The [BAMS annual report](#) is designed to improve the scientific understanding of the drivers of [extreme weather](#), provide insight into how the various weather extremes may be changing over time, and help community and business leaders better prepare for a rapidly changing world.

More information: Explaining Extreme Events from a Climate Perspective. [www.ametsoc.org/ams/index.cfm/ ... climate-perspective/](http://www.ametsoc.org/ams/index.cfm/...climate-perspective/)

Provided by NOAA Headquarters

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