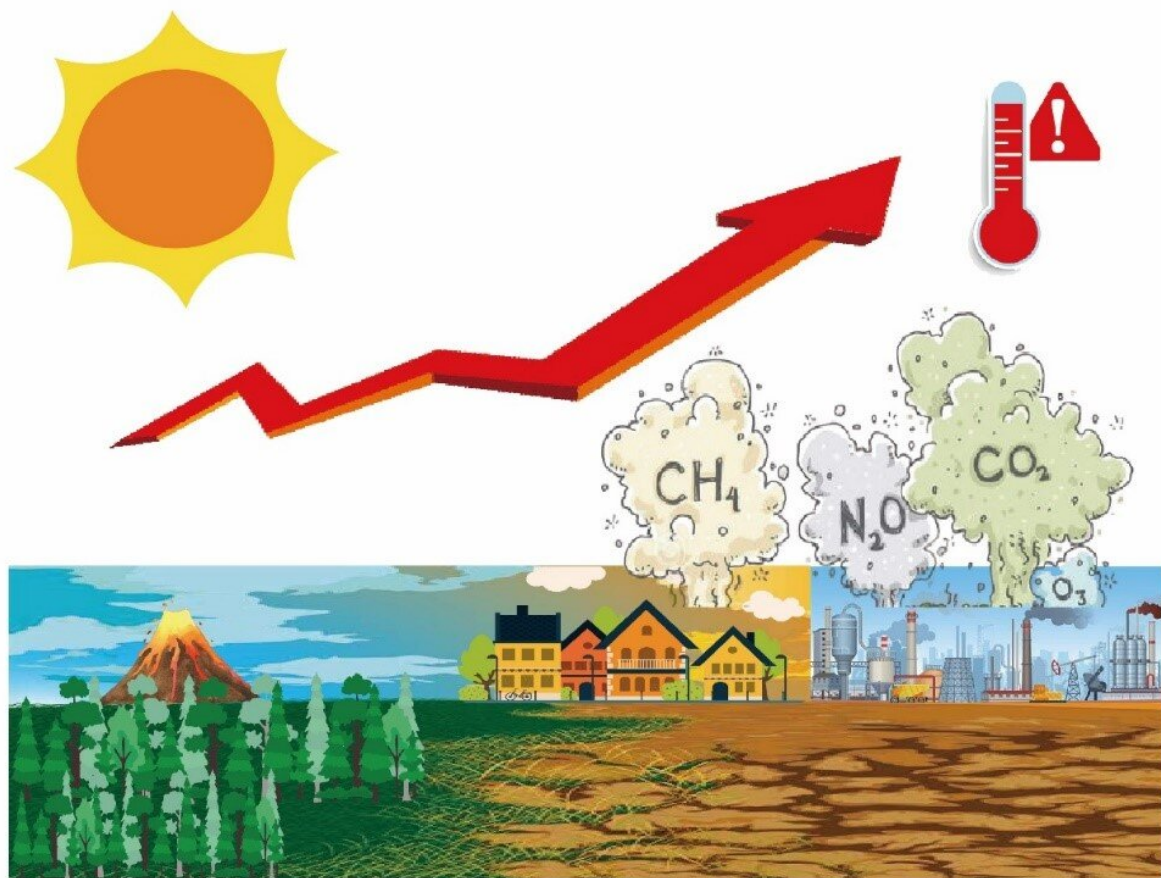


Extreme flash droughts will continue into the future

September 7 2022



Schematic diagram of flash drought events intensified by climate change. Credit: Yumiao Wang

In the summer of 2020, an extreme flash drought event broke out over

the southeastern coastal region of China, which had serious impacts on local agriculture and the environment. It was identified as one of the top 10 extreme weather and climate events of 2020 in China. Under climate warming, the frequent occurrence of flash droughts over the southeastern coastal region of China in recent years has aroused considerable attention as to whether climate change can affect the evolutionary processes of local flash drought events and change the future risk.

Focusing on the evolution of the aforementioned flash drought in 2020 over the southeastern coastal region of China, Professor Xing Yuan and his graduate student Yumiao Wang from Nanjing University of Information Science & Technology quantified the impact of climate change on the onset speed and severity of the event, and estimated the risk of similar events in the future based on the CMIP6 the latest Coupled Model Intercomparison Project Phase 6 (CMIP6) climate model simulation and projection data. Their findings were recently published in *Atmospheric and Oceanic Science Letters*.

"Under the influence of the precipitation deficit and high temperatures caused by the persistently high geopotential height anomaly and dry land–atmospheric coupling, this event developed into a severe drought condition within 10 days, at an onset speed and intensity that were highly abnormal in southeastern China that year," explains Prof. Yuan.

The study involved an attribution analysis for this extreme flash drought event, and the results showed that [anthropogenic climate change](#) has not only increased the likelihood of the onset speed and intensity like those of the 2020 flash drought event, by about 93% and 18% respectively, but also increased the chance of their concurrence by about 86%.

"In addition," continues Professor Yuan, "the likelihood of such an onset speed and intensity will further increase under a business-as-usual

emissions scenario in the future, which will significantly increase the challenge of drought adaptation."

This research discusses the reasons for the acceleration and intensification of flash drought over the southeastern coastal region of China from the perspective of [climate change](#), which can provide guidelines for the [early warning](#) and prevention of flash drought.

More information: Yumiao Wang et al, The anthropogenic acceleration and intensification of flash drought over the southeastern coastal region of China will continue into the future, *Atmospheric and Oceanic Science Letters* (2022). [DOI: 10.1016/j.aosl.2022.100262](https://doi.org/10.1016/j.aosl.2022.100262)

Provided by Atmospheric and Oceanic Science Letters

Citation: Extreme flash droughts will continue into the future (2022, September 7) retrieved 25 April 2024 from <https://phys.org/news/2022-09-extreme-droughts-future.html>

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