

Climate crisis exposed people to extra six weeks of dangerous heat in 2024

Analysis shows fossil fuels are supercharging heatwaves, leaving millions prone to deadly temperatures

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Nearly half of countries endured at least two months of high-risk temperatures, data shows. Photograph: Fernando Bustamante/AP

The climate crisis caused an additional six weeks of dangerously hot days in 2024 for the average person, supercharging the fatal impact of heatwaves around the world.

The effects of human-caused global heating were far worse for some people, [an analysis](#) by World Weather Attribution (WWA) and Climate Central has shown. Those in Caribbean and Pacific island states were the hardest hit. Many endured about 150 more days of dangerous heat than they would have done without global heating, almost half the year.

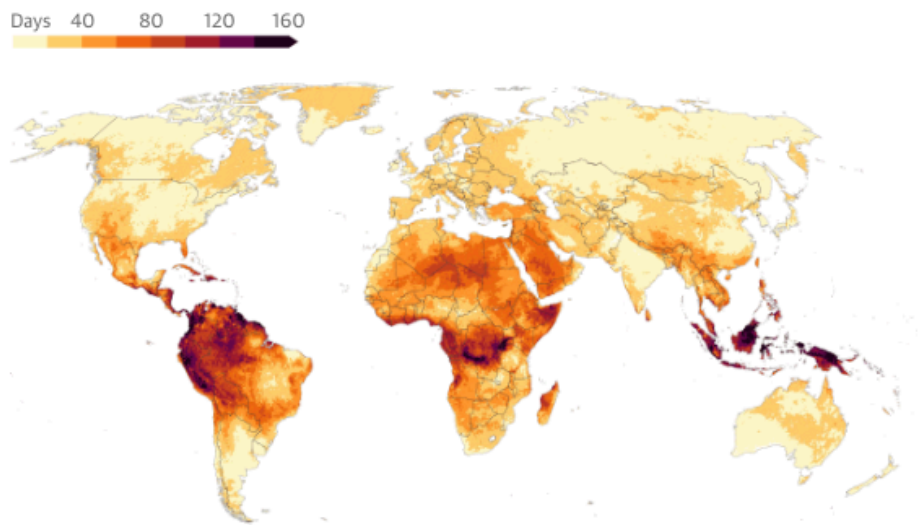


Climate crisis to blame for dozens of ‘impossible’ heatwaves, studies reveal

Nearly half the world’s countries endured at least two months of high-risk temperatures. Even in the least affected places, such as the UK, US and Australia, the carbon pollution from fossil fuel burning has led to an extra three weeks of elevated temperatures.

About half the world’s nations endured at least two months of high-risk temperatures in 2024

Additional days with temperatures above the 90th percentile due to climate breakdown, 1 Jan - 11 Dec 2024



Guardian graphic. Source: World Weather Attribution and Climate Central

Worsened heatwaves are the deadliest consequence of the climate emergency. An end to coal, oil and gas burning was vital to stopping the effects getting even worse, the scientists said, with 2024 forecast to be the hottest year on record with record-high carbon emissions.

The researchers called for deaths from heatwaves to be reported in real time, with current data being a “very gross underestimate” because of the lack of monitoring. It is possible that uncounted millions of people have died as a result of human-caused global heating in recent decades.

“The impacts of fossil fuel warming have never been clearer or more devastating than in 2024 and caused unrelenting suffering,” said Dr Friederike Otto, of Imperial College London and the co-lead of WWA. “The floods in Spain, hurricanes in the US, drought in the Amazon, and floods across Africa are just a few examples. We know exactly what we need to do to stop things from getting worse: stop burning fossil fuels.”

Joseph Giguere, a research technician at Climate Central, said: “Almost everywhere on Earth, daily temperatures hot enough to threaten human health have become more common because of climate change.”

The Guardian revealed in November that the climate crisis had caused dozens of previously impossible heatwaves, as well as making hundreds of other extreme weather events more severe or more likely to happen.

The new analysis identified local “dangerous heat days” by calculating the threshold temperature for the hottest 10% of days from 1991-2020. These days are associated with increased health risks.

The researchers then compared the number of days exceeding this threshold in 2024 to those in a scenario without global heating to calculate how many extra hot days were caused by the climate crisis.

They found the average person was exposed to a further 41 days of dangerous heat, highlighting how the climate crisis was exposing millions more people to dangerous temperatures for longer periods of the year.

Indonesia, home to 280 million people, experienced 122 days of additional dangerous heat, as did Singapore and many Central American states.

In the Middle East, people in Saudi Arabia endured 70 additional hot days, in a year when at least 1,300 hajj pilgrims died during extreme heat.

Brazil and Bangladesh endured about 50 extra hot days, while Spain, Norway and the Balkan countries had an additional month of high temperatures.

Five billion people, almost two-thirds of the global population, experienced raised temperatures made at least twice as likely by global heating on 21 July, one of the hottest days of the year.

Hurricanes were also supercharged by the climate crisis in 2024. Kristina Dahl, the vice-president for science at Climate Central, said: “Our analyses have shown that every Atlantic hurricane this year was made stronger by climate change, and that hurricanes Beryl and Milton, which were both category five storms, would not have reached that level were it not for climate change.”



A bee drinks water in the Bayram mountains, Turkey. Hot and dry weather has been fuelling wildfires across swaths of Europe in recent years. Photograph: Chris McGrath/Getty Images

Recent [WWA analysis](#) showed that an extraordinary sequence of six typhoons in the Philippines in 30 days, which affected 13 million people, was made more likely and more severe by global heating.

Julie Arrighi, the programmes director at the Red Cross Red Crescent Climate Centre, said: “Another devastating year of extreme weather has shown that we are not well prepared for life at [the current level] of warming. In 2025, it’s

crucial that every country accelerates efforts to adapt to climate change and that funds are provided by rich nations to help developing countries become more resilient.”

Measures should include better early warning systems, which saved lives, and the reporting of heat deaths, the researchers said.

“In most countries there is no reporting on heatwaves at all, which means the numbers we have are always a very gross underestimate,” Otto said. “If we can’t communicate convincingly that actually lots of people are dying, it’s much harder to raise awareness that heatwaves are by far the deadliest extreme events, and they are the extreme events where climate change is a real gamechanger.”