**THESE ARE THE FIVE MOST EXTREME HEATWAVES SINCE RECORDS BEGAN**

[**https://www.newscientist.com/article/2318699**](https://www.newscientist.com/article/2318699)

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The most extreme heatwaves ever recorded globally have now been identified, including five events that were more severe than the deadly [western North American heatwave](https://www.newscientist.com/article/2283407-climate-change-made-north-american-heatwave-150-times-more-likely/) last year.

“As far as we’re aware, we’re the first to assess heatwaves globally where you can compare them to each other at the same time,” says [Vikki Thompson](https://research-information.bris.ac.uk/en/persons/vikki-l-thompson) at the University of Bristol, UK. “We started by looking at the heatwave last June in the USA and Canada, which, at the time, everyone was quite shocked by. Then we found five events that were more extreme than that event. ”These heatwaves occurred in southern Brazil in 1985, South-East Asia in 1998, south-west Peru in 2016, south-east US in 1980 and Alaska in 2019. “Many of these events are in parts of the world where they were missed because they had less impact on us in the Western world, or where there are less people and they’re just not monitored so well,” says Thompson.

Thompson and her colleagues analysed historical temperature data collected from 158 regions of the world from 1968 to 2021. They used a climate model to fill in gaps in the measurements, before **pinpointing** daily temperatures in each region that were so high there was less than a 0.1 per cent chance of them occurring normally in that area.

The team also predicted how common heatwaves would be in North America in the future, under different scenarios of global warming. Under a worse-case scenario of climate change, which would see a 4.3°C increase in average global temperature by the end of the century, they estimated a 1-in-6 chance of an extreme heatwave occurring each year by the 2090s. In a low-**emissions** scenario, which would lead to an increase in average global temperature of 1.8°C by 2100, there would be a 1-in-1000 risk of an extreme heatwave each year by the same time period. “These heatwaves are projected to increase in line with the change in the **mean** climate. So, if we do bring down the emissions, we can reduce these extremes in the future,” says Thompson.

The researchers also identified places, such as India, where there is no record of such extreme heat events happening before, suggesting they will cope less well with heatwaves in the future. The **ongoing** [heatwave in India](https://www.newscientist.com/article/2317372-severe-indian-heatwave-will-bake-a-billion-people-and-damage-crops/) may prove to be one of the most extreme ever recorded, but it is too early to say just yet. “Although they’re breaking records for April, the hottest time of the year is yet to come. If [the temperatures] continue to be that much greater than what normally happens, then, yes, it might show up on [the extreme heatwave list],” says Thompson. Unfortunately, many regions – including most of Africa – weren’t included in the analysis due to a lack of reliable data, she says. “India and parts of Africa are projected to see the largest population increases in the future,” says Thompson. “So, the human impact will be magnified because of that. This makes those regions even more important to understand.”

**Questions**

1. What was the research of Vikki Thomson’s team aimed at?
2. Which measures might reduce the likelihood of the extreme heatwaves in the future?
3. Why are a number of the hottest regions not shown up on the heatwave list?
4. Is it worth analyzing temperature around the world?

**Vocabulary**

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