

# UK 'increasingly likely' to see +40C temperatures: study

June 30 2020, by Kelly MacNamara

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In 2018 the UK summer temperature was a joint record high

Temperatures in Britain could exceed 40 degrees Celsius every three or four years by 2100 if greenhouse gas emissions continue unabated, research published Tuesday has found, as climate change increases the

likelihood of scorching heat waves.

The modelling study by Britain's Meteorological Office found that emissions are dramatically increasing the likelihood of extremely [warm days](#) in the UK, particularly in the southeast.

Without climate change, a summer in which the mercury went above 40 Celsius (104 Fahrenheit) somewhere in the UK would be expected around once in hundreds, or even thousands of years, the researchers found.

But sweltering 40C days have already become more likely with [global warming](#), and are currently estimated to occur every 100 to 300 years, they reported in the journal *Nature Communications*.

If the present high rates of [greenhouse gas emissions](#) continue, these extremes could occur every three to four years by 2100, the study concluded.

Even under a mid-range emissions scenario, they could still happen around every 15 years.

Lead author Nikolaos Christidis said the rate of change in the expected frequency of these high temperatures was "remarkable".

"Exceeding extreme temperature thresholds like the 40C in the UK would be accompanied by severe impacts— on [public health](#), transport infrastructure," he told AFP, adding that a key motivation for the study was to help build the country's resilience to such events.

## Temperature extremes

Last year the highest ever UK temperature, 38.7C, was recorded in the

eastern city of Cambridge.

In 2018 the sizzling UK summer temperature was estimated to have become 30 times more likely due to man-made [climate change](#).

"Our paper shows that the likelihood of hitting 40C is rapidly increasing," Christidis said.

Comparing local and countrywide temperature average, the research also identified parts of the country likely to exceed 30C, 35C and 40C by century's end.

They ran simulations using 16 [climate models](#) available from the Earth System Grid Federation to estimate the likelihood of extreme temperatures in a given location.

Globally, Earth's [average surface temperature](#) for the 12 months to May 2020 is close to 1.3C above preindustrial levels, the benchmark by which global warming is usually measured, according to recent data from the European Union's Copernicus Climate Change Service.

Under the 2015 Paris Agreement, nearly 200 countries have pledged to collectively cap the rise in Earth average surface temperature to "well below" 2C, and to 1.5C if possible.

**More information:** The increasing likelihood of temperatures above 30 to 40 °C in the United Kingdom, *Nature Communications* (2020).

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