

# Climate change supercharged this summer's record heat: study

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A boy cools off inside a barrel filled with water during a hot summer day in New Delhi.

Record-shattering temperatures that impacted billions of people in the northern hemisphere this summer were given a massive boost by human-

caused climate change, an analysis showed Thursday.

The new paper by the nonprofit Climate Central group [examined the period](#) from June to August 2023, finding that [greenhouse gas emissions](#) pumped into the atmosphere since the start of the industrial era made the [heat waves](#) that baked Asia, Africa, Europe and North America far more likely.

Nearly half of the global population—more than 3.8 billion people—were exposed to 30 or more days of extreme [heat](#) worsened by [climate](#) change, while at least 1.5 billion people lived through such temperatures every day over those three months.

"Virtually no one on Earth escaped the influence of global warming during the past three months," said Andrew Pershing, Climate Central's vice president for science.

"In every country we could analyze, including the [southern hemisphere](#) where this is the coolest time of year, we saw temperatures that would be difficult—and in some cases nearly impossible—without human-caused climate change. Carbon pollution is clearly responsible for this season's record-setting heat."

The analysis relied on peer-reviewed methods to determine the likelihood of daily temperatures in each country of the world with and without today's levels of carbon pollution.

A similar approach has allowed scientists to identify the climate influence, or "fingerprint," of [extreme weather events](#), including recently the fire prone weather conditions that led to this year's wildfires in Quebec.

Climate Central has developed a Climate Shift Index (CSI) that ranges

from -5 to 5, with positive levels indicating temperatures that are becoming more likely due to climate change.

A CSI of level 0 means climate change had no detectable influence, while level 3 indicates it made the odds of recording a specific temperature in a given time and place three times greater.

According to the team's calculations, 48 percent of the world experienced 30 days during June-August with a CSI level of 3 or higher, while 1.5 billion people had such heat over the whole summer.

"There really is this divide between the countries that have been the most responsible for climate change for the pollution that is driving the heat that we're experiencing right now," said Pershing.

The world's least-developed nations and small island states, he said, are experiencing heat that is three to four times more climate-supercharged than G20 countries with the largest economies.

Global exposure meanwhile peaked on August 16, 2023, when 4.2 billion people worldwide experienced climate-caused extreme heat.

"A big part of what we're trying to do with this analysis, is to really come up with ways to try to localize that climate, that experience that individuals are having with [climate change](#)," said Pershing.

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