

Climate crisis

# 2024 was hottest year on record for world's land and oceans, US scientists confirm

Tuesday 14 January 2025, by [MILMAN Oliver](#) (Date first published: 10 January 2025).

**Noaa says last year was the warmest since records began in 1850 and Nasa concurs: 'The long-term trends are very clear'**

*Michael Mullenax, 10, cools off in a mister before a baseball game in Kansas City, Missouri, on 24 June 2024. Photograph: Charlie Riedel/AP*

It was the hottest year ever recorded for the world's lands and oceans in 2024, US government scientists have confirmed, providing yet another measure of how the [climate crisis](#) is pushing humanity into temperatures we have previously never experienced.

Last year was the hottest in global temperature records stretching back to 1850, the National Oceanic and Atmospheric Administration (Noaa [announced](#), with the worldwide average 1.46C (2.6F) warmer than the era prior to humans burning huge volumes of planet-heating fossil fuels.

This new record, 0.1C (0.18F) hotter than the previous high mark set in 2023, means that all of the 10 hottest years since 1850 have occurred in the past decade. The data supports separate figures [released by European Union scientists](#) this week that also show a record 2024, albeit those figures showed 2024 was 1.6C (2.8F) hotter than pre-industrial times, the first measure beyond the internationally-agreed threshold of keeping long-term temperatures below a 1.5C (2.7F) rise.

Nasa, which also released its temperature data on Friday, [concurs](#) that 2024 was a record year, being 1.47C (2.6F) hotter than the pre-industrial era. "All the groups agree, regardless of how they put the data together, there's no question," said Gavin Schmidt, a senior climate scientist at Nasa. "The long-term trends are very clear."

Schmidt said the levels of global heating are pushing humanity [beyond its historical experience of the Earth's climate](#). "To put that in perspective, temperatures during the warm periods on Earth three million years ago - when sea levels were dozens of feet higher than today - were only around 3C warmer than pre-industrial levels," he said. "We are halfway to Pliocene-level warmth in just 150 years."

Last year saw a record hot year for the United States, Europe and Africa, as well as another record year for the Arctic, which is warming up at three times the rate of the global average.

The year was marked by severe events worsened by the climate crisis, with temperatures so hot in [Mexico](#) that howler monkeys fell from trees, a double-whammy of [hurricanes](#) that flattened swathes of the US south-east, devastating [floods in Spain](#) and [record low water levels](#) in the Amazon river. Southern Africa got just half of its normal rain levels.

The oceans, which suck up a vast amount of the heat generated by humans burning fossil fuels, had another record year of temperature. Overall, the globe's fever in 2023 and into 2024 has been so severe that scientists [have been searching for additional reasons](#) beyond just human-caused climate change and a periodic El Niño event, such as a reduction in shipping pollution and declining cloud cover.

"Last year wasn't quite as anomalous as 2023, but it was at the high end of what we predicted at the beginning of the year," Schmidt said. "There are other things giving us a bit of a boost beyond what you'd expect from the trends and El Niño."

The rate of warming may be accelerating, according to Robert Rohde, lead scientist at Berkeley Earth, which put out its own data that had last year's temperature rise similar to the EU's.

"The abrupt new records set in 2023 and 2024 join other evidence that recent global warming appears to be moving faster than expected," Rohde said. "Whether increased global warming is a temporary change or part of a new long-term trend remains to be seen."

While a single year above 1.5C does not void the Paris climate agreement target to help protect the most vulnerable countries from worsening heatwaves, droughts, storms and other impacts, scientists have said the goal is effectively ["deader than a doornail"](#) and will be surpassed in the longer term within a decade.

Governments have consistently failed to cut planet-heating emissions at the pace required to avoid the escalating consequences of the climate crisis, as starkly illustrated by fires [currently consuming Los Angeles](#). Despite pledging to shift away from fossil fuels two years ago, few of even the [wealthiest and well-positioned countries are doing so](#).

"Blazing temperatures in 2024 require trail-blazing climate action in 2025," said António Guterres, secretary-general of the United Nations. "There's still time to avoid the worst of climate catastrophe. But leaders must act - now."

**Oliver Milman**

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**P.S.**

• The Guardian. Fri 10 Jan 2025 19.21 CET:

<https://www.theguardian.com/environment/2025/jan/10/world-temperature-hottest-year-noaa>

• *Oliver Milman's articles in the Guardian:*

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