

Climate crisis

# World will look back at 2023 as year humanity exposed its inability to tackle climate crisis, scientists say

Friday 26 January 2024, by [WATTS Jonathan](#) (Date first published: 29 December 2023).

## Disastrous events included flash flooding in Africa and wildfires in Europe and North America

The hottest year in recorded history casts doubts on humanity's ability to deal with a climate crisis of its own making, senior scientists have said.

As historically high temperatures continued to be registered in many parts of the world in late December, the former Nasa scientist James Hansen told the Guardian that 2023 would be remembered as the moment when failures became apparent.

"When our children and grandchildren look back at the history of human-made climate change, this year and next will be seen as the turning point at which the futility of governments in dealing with climate change was finally exposed," he said.

"Not only did governments fail to stem global warming, the rate of global warming actually accelerated."

After what was probably the [hottest July in 120,000 years](#), Hansen, whose testimony to the US Senate in 1988 is widely seen as the first high-profile revelation of global heating, warned that the world was moving towards a "new climate frontier" with temperatures higher than at any point over the past million years.

Now director of the climate programme at Columbia University's Earth Institute in New York, Hansen said the best hope was for a generational shift of leadership.

"The bright side of this clear dichotomy is that young people may realise that they must take charge of their future. The turbulent status of today's politics may provide opportunity," he said.

*James Hansen wants young people to take over and lead the world away from climate disaster. Photograph: Murdo MacLeod/The Guardian*

His comments are a reflection of the [dismay among experts at the enormous gulf between scientific warnings and political action](#). It has taken almost 30 years for world leaders to acknowledge that fossil fuels are to blame for the climate crisis, yet this year's United Nations Cop28 summit in Dubai [ended with a limp and vague call for a "transition away" from them](#), even as evidence grows that the world is already heating to dangerous levels.

Scientists are still processing data from this blistering year. The latest to state it will be a record [was the Japanese meteorological agency](#), which measured temperatures in 2023 at 0.53C above the global average between 1991 and 2020.

This was far above the previous record set in 2016, when temperatures were 0.35C above that average. Over the longer term, the world is about 1.2C hotter than in preindustrial times.

The US [National Oceanic and Atmospheric Administration previously calculated](#) that there was a “greater than 99% chance” that 2023 would be the hottest year in its 174-year dataset. This followed six record warm months in a row, including the [northern hemisphere’s warmest summer](#) and autumn.

Driven by human-caused global heating and El Niño, the heat refused to relent. In November, there was an even greater anomaly, with two days warmer than 2C above the preindustrial average, according to Europe’s Copernicus Climate Change Service.

*A firefighter runs away from flames while trying to extinguish a wildfire near Athens, in Greece, where the country suffered greatly due to heatwaves and blazes. Photograph: Louisa Gouliamaki/AFP/Getty Images*

It too has already [confirmed](#) the annual record, as has the World Meteorological Organization. In December, many parts of the world sweltered through the hottest-ever Christmas. With the new year approaching, monthly temperature records were still being beaten in central Asia, South America, Europe and Australia.

[Berkeley Earth has predicted](#) that average temperatures in 2023 will almost certainly prove to have been 1.5C higher than preindustrial levels. Although climate trends are based on decadal rather than annual measurements, many scientists say it is probably only a matter of time before the world overshoots the most ambitious of the Paris agreement targets.

Veteran climate watchers have been horrified at the pace of change. “The climate year 2023 is nothing but shocking, in terms of the strength of climate occurrences, from heatwaves, droughts, floods and fires, to rate of ice melt and temperature anomalies particularly in the ocean,” Prof Johan Rockström, the joint director of the Potsdam Institute for Climate Impact Research in Germany, said.

He said these new developments [indicated the Earth was in uncharted territory](#) and under siege. “What we mean by this is that we may be seeing a shift in Earth’s response to 250 years of escalated human pressures ... to a situation of ‘payback’ where Earth starts sending invoices back to the thin layer on Earth where humans live, in the form of off the charts extremes.”

*It has taken almost 30 years for the Cop conference to acknowledge the damage done by fossil fuels. Photograph: Amr Alfiky/Reuters*

Rockstrom was among the authors of the 2018 [“Hothouse Earth” paper](#), which warned of a domino-like cascade of melting ice, warming seas and dying forests could tilt the planet into a state beyond which human efforts to reduce emissions will be increasingly futile.

Five years on, he said that what disturbed him most in 2023 was the sharp increase in sea surface temperatures, which have been abrupt even for an El Niño year.

“We do not understand why the ocean heat increase is so dramatic, and we do not know what the consequences are in the future,” he said. “Are we seeing the first signs of a state shift? Or is it [a] freak outlier?”

In the Antarctic, scientists have also been perplexed and worried by the pace of change. The new Brazilian scientific module Criosfera 2, a solar and wind-powered laboratory that collects meteorological information, measured the lowest extent of sea ice in the region both for summer and winter.

“This environmental alert is a sign of ongoing global environmental changes and poses a daunting challenge for polar scientists to explain,” said Francisco Eliseu Aquino, a professor of climatology and oceanography at the Federal University of Rio Grande do Sul and the deputy director of Brazil’s polar and climatic centre.

West Antarctica was affected by several winter heatwaves associated with the landfall of atmospheric rivers. In early July, a Chilean team on King George Island, at the northern tip of the Antarctic peninsula, registered an unprecedented event of rainfall in the middle of the austral winter when only snowfalls are expected.

In January, a massive iceberg, measuring about 1,500 sq km, broke off from the Brunt ice shelf in the Weddell Sea. It was the third colossal calving in the same region in three years.

Aquino said human influence - through the burning of fossil fuels - had also created “frightening” dynamics between the poles and the tropics. Cold wet fronts from the Antarctic had interacted with record heat and drought in the Amazon to create unprecedented storms in between. Floods in southern Brazil killed 51 people in early September and then returned with similarly devastating force in mid-November.

Aquino said this “record record” was a taste of what was to come as the world entered dangerous levels of warming. “From this year onwards, we will understand concretely what it means to flirt with 1.5C [of heating] in the global average temperature and new records for disasters,” he said.

This is already happening. This year’s deadliest climate disaster was the flood in Libya that killed more than 11,300 people in the coastal city of Derna. In a single day, Storm Daniel unleashed [200 times as much rain](#) as usually falls on the city in the entire month of September. Human-induced climate change [made this up to 50 times more likely](#).

*A memorial to some of the people killed in the Lahaina wildfire on the island of Maui. Photograph: Lindsey Wasson/AP*

Forest fires burned a record area in Canada and Europe, and killed [about 100 people in Lahaina on Maui island](#), the deadliest wildfire in recent US history, which happened in August. For those who prefer to calculate catastrophe in economic terms, the US broke its annual record of billion-dollar disasters by August, by which time there had already been 23.

Raul Cordero, a climate professor at the University of Groningen and the University of Santiago, said the effects of this year’s heat were being felt across South America in the form of unprecedented water stress in Uruguay, record-breaking fires in Chile, the most severe drought in the Amazon basin in 50 years, prolonged power shortages in Ecuador caused by the lack of hydropower, and increased shipping costs along the Panama canal due to low water levels.

Cordero said El Niño was forecast to weaken in the coming year, but above average or record temperatures were likely to persist for at least the next three months.

And, as science has proved beyond any doubt, global temperatures would continue to rise as long as humanity continues to burn fossil fuels and forests.

In the years ahead, the heat “anomaly” and catastrophes of 2023 would first become the new norm, and then be looked back on as one of the cooler, more stable years in people’s lives. As Hansen warned, unless there is radical and rapid change, failure will be built into the climate system.

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## **P.S.**

- The Guardian. Fri 29 Dec 2023 15.26 CET:  
<https://www.theguardian.com/environment/2023/dec/29/world-will-look-back-at-2023-as-year-humanity-exposed-its-inability-to-tackle-climate-crisis>

This article was amended on 1 January 2024. Owing to an error in the editing process an earlier version referred to the wildfire in Lahaina on Maui island as the “deadliest in US history”. That should have said “deadliest in *recent* US history”.

- *Jonathan Watts’ articles in The Guardian:*  
<https://www.theguardian.com/profile/jonathanwatts>

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