

Hottest summer on record could lead to the warmest year ever measured

September 6 2024, by Seth Borenstein



Margarita Salazar, 82, wipes the sweat off with a tissue inside her home in Veracruz, Mexico on June 16, 2024. Credit: AP Photo/Felix Marquez, File

Summer 2024 sweltered to Earth's hottest on record, making it even more likely that this year will end up as the warmest humanity has

measured, European climate service Copernicus reported Friday.

And if this sounds familiar, that's because the records the globe shattered were set just last year as human-caused [climate change](#), with a temporary boost from an El Niño, keeps dialing up temperatures and extreme weather, scientists said.

The northern meteorological summer—June, July and August—averaged 16.8 degrees Celsius (62.24 degrees Fahrenheit), according to Copernicus. That's 0.03 degrees Celsius (0.05 degrees Fahrenheit) warmer than the old record in 2023. Copernicus records go back to 1940, but American, British and Japanese records, which start in the mid-19th century, show the last decade has been the hottest since regular measurements were taken and [likely in about 120,000 years](#), according to some scientists.

The Augusts of both 2024 and 2023 tied for the hottest Augusts globally at 16.82 degrees Celsius (62.27 degrees Fahrenheit). July was the first time in more than a year that the world did not set a record, a tad behind 2023, but because June 2024 was so much hotter than June 2023, this summer as a whole was the hottest, Copernicus Director Carlo Buontempo said.

"What those sober numbers indicate is how the climate crisis is tightening its grip on us," said Stefan Rahmstorf, a climate scientist at the Potsdam Institute for Climate Research, who wasn't part of the research.

It's a sweaty grip because with the high temperatures, the dew point—one of several ways to measure the air's humidity—probably was at or near record high this summer for much of the world, Buontempo said.

Until last month Buontempo, like some other climate scientists, was on the fence over whether 2024 would smash the hottest year record set last year, mostly because August 2023 was so enormously hotter than average. But then this August 2024 matched 2023, making Buontempo "pretty certain" that this year will end up hottest on record.

"In order for 2024 not to become the warmest on record, we need to see very significant landscape cooling for the remaining few months, which doesn't look likely at this stage," Buontempo said.

With a forecasted La Niña—a temporary natural cooling of parts of the central Pacific—the last four months of the year may no longer be record-setters like most of the past year and a half. But it's not likely cool enough to keep 2024 from breaking the annual record, Buontempo said.

These aren't just numbers in a record book, but weather that hurts people, climate scientists said.



A boy cools himself with an electric fan on a sweltering day at a park in Tongzhou, on the outskirts of Beijing, Monday, June 10, 2024. Credit: AP Photo/Andy Wong

"This all translates to more misery around the world as places like Phoenix start to feel like a barbecue locked on high for longer and longer stretches of the year," said University of Michigan environment dean and climate scientist Jonathan Overpeck. The Arizona city has had more than 100 days of 100 degrees Fahrenheit (37.8 degrees Celsius) weather this year. "With longer and more severe heat waves come more severe droughts in some places, and more intense rains and flooding in others. Climate change is becoming too obvious, and too costly, to ignore."

Jennifer Francis, a climate scientist at the Woodwell Climate Research

Center in Cape Cod, said there's been a deluge of extreme weather of heat, floods, wildfires and high winds that are violent and dangerous.

"Like people living in a war zone with the constant thumping of bombs and clatter of guns, we are becoming deaf to what should be alarm bells and air-raid sirens," Francis said in an email.

While a portion of last year's record heat was driven by an El Niño—a temporary natural warming of parts of the central Pacific that alters weather worldwide—that effect is gone, and it shows the main driver is long-term human-caused climate change from the burning of coal, oil and natural gas, Buontempo said.

"It's really not surprising that we see this, this heat wave, that we see these temperature extremes," Buontempo said. "We are bound to see more."

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