

2025 was the third hottest year on record

It should have been a relatively cool year; it was anything but

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What ought, in normal circumstances, to have been a relatively cool year turned out to be one of the hottest on record. **This week the main climate- and weather-monitoring groups in Europe and America released their report cards for 2025. These are consistent with an acceleration in the pace of global warming.**

The past 11 years are the warmest since records began, with the past three top of the leaderboard. Hottest of the lot was 2024, which coincided with a strong Niño—a pattern of winds and ocean currents that nudges the thermometer upwards—combined with a peak of the 11-year solar cycle when the sun shines brightest. But in 2025 El Niño tailed off, to be replaced by its opposite pattern, La Niña, and the sun—only a minor part of the story in any case—began to dim. That 2025 was cooler than its predecessor was thus no surprise. But as La Niña years go, it was sweltering: the hottest yet.

The most recent previous year that La Niña showed up—2022—was 1.15°C warmer than the world's preindustrial average temperature, according to the World Meteorological Organisation. Last year was 1.44°C warmer, a significant bump upward for a Niña year. **The average warming over pre-industrial levels of the past three years has been between 1.48°C and 1.5°C, depending on which set of data you consult.**

Many climate scientists are reluctant to draw grand conclusions about the exceptional warming since 2023 because they remember a time when the opposite happened. In the early 2000s temperatures were persistently lower than climate models predicted—resulting in a so-called “climate hiatus”. That prompted sweeping declarations from sceptics that climate change had simply stopped. In fact, what had occurred was that several natural climate cycles had conspired, temporarily, to cool things down somewhat.

There are, nevertheless, [several lines of evidence](#) that a sustained acceleration of warming is going on. One is that the underlying problem, manmade greenhouse-gas emissions, especially but not only of carbon dioxide, is not only continuing, but increasing in size. Another, paradoxically, is that a second sort of pollution, by sulphate particles in the atmosphere, is diminishing. Sulphates are bad for human health and stricter regulation has diminished two of their main sources—cargo ships and Chinese coal-fired power plants. But sulphates also serve to reflect solar radiation back into space, preventing it from heating the planet. So, while stripping sulphates out of the air is a hygienic boon, it also boosts warming.

There is also debate about whether the climate may be more sensitive to the warming power of greenhouse gases than is generally assumed. A joint project published this week by climate researchers at the University of Exeter, in England, and members of Britain's Institute and Faculty of Actuaries suggests this sensitivity is at the upper end of mainstream estimates and warns that, if this is true, the **global temperature rise could pass 2°C by mid-century (2050)**. (AA note: all research says passing +1.5 will be really bad & disruptive. Passing +2.0 will be catastrophic. There is no time to lose to reduce carbon emissions.) Climate models show that the effects of global warming, including the **risk of irreversible tipping points, are much greater beyond 2°C than the 1.5°C** enshrined in the UN Paris agreement, signed in 2015 and intended to co-ordinate a global response to climate change.

One factor behind last year's extreme heat was unusually hot weather at the ends of the Earth. February 2025 saw the lowest ice cover across both poles since satellite observations began in the late 1970s, and Antarctica experienced its hottest year on record. In Europe, meanwhile, hot and windy conditions spread wildfires, particularly in Spain and Portugal, in late July and early August. These added nearly 14m tons of carbon to the atmosphere, in the form of carbon dioxide and also soot which, being black, absorbs solar radiation and thus contributes to global warming. That is significantly more than recorded in any previous year.

If warming trends continue in coming years, the 1.5°C milestone will be passed sooner than expected. Casting the rate of warming from the past 30 years forward gives a crude estimate that this could happen in the final year of this decade. That is consistent with other calculations published late last year. Carlo Buontempo, director of Europe's Copernicus Climate Change Service, says a change in mentality is required. "It's not a question of not having the overshoot [of 1.5°C]," he says, "but of figuring out how to manage it."

Perhaps the next 12 months will throw a curveball and bring cooler temperatures. But that seems unlikely. Forecasters are expecting a return of El Niño later this year. Climate researchers expect 2026 to be another one for the leader-boards. ■

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