

Global warming is spiralling out of control: Earth could warm by a whopping 7°C by 2200, scientists predict - leading to flooding, famine, and catastrophic heatwaves

By Jonathan Chadwick on March 25, 2025

Our not-too-distant future relatives could be in for a rough ride - even if we manage to curb our carbon emissions, a new study suggests.

Earth could warm by a whopping 7°C (12.6°F) by 2200 even if CO₂ emissions are moderate, according to scientists at [Germany's](#) Potsdam Institute for Climate Impact Research (PIK).

Conditions would be too hot for common crops to grow properly, which would cause global food insecurity and even starvation.

Meanwhile, rising sea levels due to melting ice would force people to flee coastal cities as a result of flooding.

Also under such a scenario, intense extreme weather events such as drought, heatwaves, wildfires, tropical storms and flooding would be common.

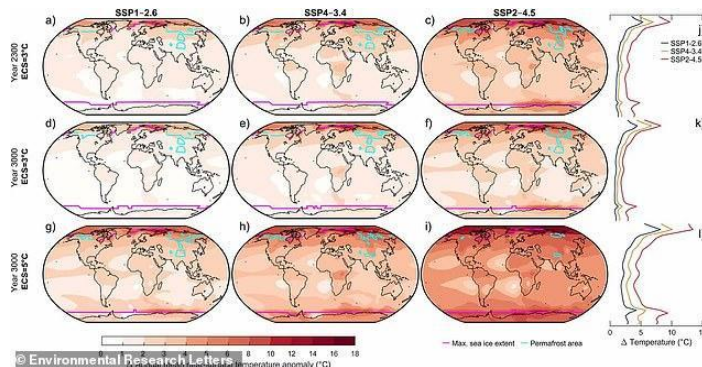
Especially in the summer, temperatures could reach dangerously high levels, posing a lethal threat to the people of all ages.

Lead study author Christine Kaufhold at PIK said the findings highlight an 'urgent need for even faster carbon reduction and removal efforts'.

'We found that peak warming could be much higher than previously expected under low-to-moderate emission scenarios,' she said.



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These maps show scenarios of changes in average air temperature under a range of emissions, from low emissions (left column) to medium (centre column) and high (right column)

Planet-warming greenhouse gases such as carbon dioxide (CO₂) and methane are largely being released by burning fossil fuels such as coal and gas for energy.

But greenhouse gas emissions come from natural processes too, such as volcanic eruptions, plant respiration and animals' breathing – which is why they call for **carbon reduction technologies**.

For the study, the team used their own newly developed computer model, called CLIMBER-X, to simulate future global warming scenarios. It integrates key physical, biological and geochemical processes, including atmospheric and oceanic conditions that involve methane.

Even more potent than carbon dioxide (CO₂), methane sources include the decomposition of landfill waste and natural emissions from wetlands.

The model considered three scenarios, called 'Shared Socioeconomic Pathways' (SSPs), based on low, medium and high projected global emission levels throughout the rest of this millennium.

According to the experts, most climate studies until now only predict as far into the future as 2300 – which may not represent 'peak warming'.

According to the findings, there's a 10 per cent chance that Earth will still warm by 3°C (5.4°F) by 2200 even if emissions stopped now.



Climate change is causing heavier rainfall, increasing the growth of flammable grass in the months leading up to wildfire season, which is usually between June to October. Extreme dryness and warmth then dries the plants out, making them more susceptible to catching fire



Conditions would be too hot for common crops to grow properly, which would cause global food insecurity and starvation. Pictured an Australian farmer inspects his dead wheat crop following a drought in New South Wales

Methane: A powerful greenhouse gas

Methane is a colourless, odourless flammable gas, and the main constituent of natural gas.

Methane is a greenhouse gas, and the second biggest cause of climate change after carbon dioxide.

It is also the primary component of natural gas, which is used to heat our homes.

When methane is burned as a fuel, it gives off carbon dioxide (CO₂), and so is not directly emitted at that point.

However, across all points of the extraction, transport and storage processes there are leaks of natural gas that contribute to greenhouse gas emissions.

The team say global heating over this millennium could exceed previous estimates due to 'carbon cycle feedback loops' – where one change to the climate amplifies another – which are being overlooked.

For example, rainy weather fuels the growth of certain flammable grass, which **when dried out cause wildfires to spread uncontrollably**.

Another example is where CO₂ dissolved in rainwater breaks down rocks potentially releasing further CO₂ into the atmosphere.

Worryingly, reducing emissions in the future may not be enough to limit these feedback processes, as already emitted greenhouse gases may continue to have lasting effects on the world's temperature.

What's more, achieving the Paris Agreement's aim of limiting global temperature rise to well below 2°C (3.6°F) is only feasible under very low emissions scenarios.

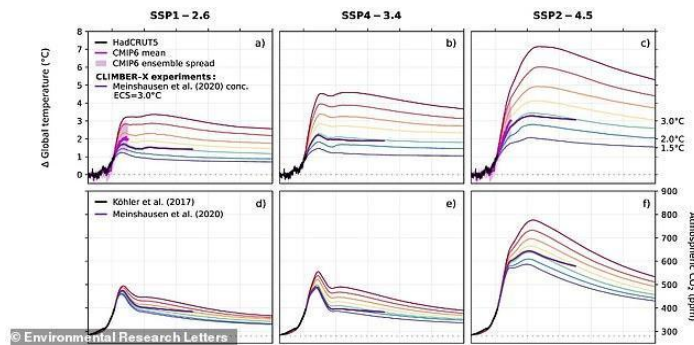
Signed in 2015, the landmark binding international treaty aims to keep global temperature increases below 2.7°F (1.5°C).

But according to the team, the window for limiting global warming to below 2°C is 'rapidly closing'.

'Carbon reduction must accelerate even more quickly than previously thought to keep the Paris target within reach,' said PIK scientist Matteo Willeit, study co-author.



Also under such a scenario, intense extreme weather events such as drought, wildfires, tropical storms and flooding. Especially in the summer, temperatures could reach dangerously high levels, posing a lethal threat to the people of 2200



These graphs plot global changes in (a)–(c) surface air temperature and (d)–(f) atmospheric CO₂ concentration from 1850–3000, under the three scenarios

The new study, published in [Environmental Research Letters](#), highlights 'uncertainties in projecting future climate change'.

'Our research makes it unmistakably clear – today's actions will determine the future of life on this planet for centuries to come,' said co-author and PIK director Johan Rockström.

'We are already seeing signs that Earth system is losing resilience, which may trigger feedbacks that increase climate sensitivity, accelerate warming and increase deviations from predicted trends.

'To secure a liveable future, we must urgently step up our efforts to reduce emissions.

'The Paris Agreement's goal is not just a political target, it is a fundamental physical limit.'