

# Slowdown in global warming only temporary, new study finds

August 28 2013, by Richard Ingham

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A pelican flies over the Pacific Ocean at the Uramba Bahia Malaga natural park in Colombia, on July 16, 2013. A slowing in global warming that climate sceptics say undermines the greenhouse theory is simply a "hiatus" from higher temperatures, scientists said on Wednesday.

A slowing in global warming that climate sceptics say undermines the greenhouse theory is simply a "hiatus" from higher temperatures, scientists said on Wednesday.

Grasping one of the thorniest issues in climate politics, the researchers said the recent slowdown lies in a natural but temporary cooling in the tropical Pacific Ocean.

"The current hiatus is part of natural climate variability," they said.

Similar events may occur again, but when assessed on a timescale of decades, "(the) [warming trend](#) is very likely to continue with greenhouse-gas increase," they said.

The question touches on an anomaly in [climate science](#).

Contrary to earlier predictions, warming of Earth's surface in recent years has not occurred in lock-step with rising levels of heat-trapping gas in the atmosphere.

Over the last 50 years, temperatures have risen by an average of 0.12 degrees Celsius (0.21 degrees Fahrenheit) per decade.

But over the last 15 years, the increase has slowed to a rate of 0.05 C (0.09 F) per decade, even though fossil-fuel [carbon emissions](#) continue to break new records.

Skeptics have seized on the discrepancy as proof that if warming exists, it is not man-made but has natural causes such as fluctuations in [solar heat](#).

The new study, published in the journal *Nature*, uses a climate model—and not observed data, which is generally considered stronger—to say the riddle is explained by [ocean circulation](#).

Yu Kosaka and Shang-Ping Xie of the Scripps Institution of Oceanography in California factored the heat into a model of the central

and eastern tropical Pacific, a region covering about eight percent of the world's surface.

The cooling matches an unusually long, but natural, trend that is similar to La Nina, they said.

Under El Nino, a buildup of exceptionally warm water moves across from the west to the eastern Pacific. Under La Nina, things go into reverse, and the ocean in the eastern Pacific becomes cooler than normal. In both cases, extreme droughts or rainfall can result.

The ocean plays a huge role in the complex affair of [global warming](#). It absorbs carbon dioxide (CO<sub>2</sub>) and heat at the surface and then shifts these around by tides and currents.

Previous investigations into the so-called climate "halt" have explored the idea that the missing heat is being taken up by the deep sea.

The new research, though, suggests otherwise, said Richard Allan, a meteorologist at Britain's University Reading, in an invited comment.

It highlights the importance of turnover in the vast body that is the Pacific, but at relatively shallow depth, "particularly the upper few hundred metres rather than the deep ocean below 1,000 metres (3,250 feet)," he said.

In a separate study, also published in Nature, Durham University scientists in northeastern England said parts of the East Antarctic icesheet—the largest in the world—could be more vulnerable to climate change than thought.

Geographers using declassified spy satellite imagery measured 175 "outlet" glaciers that discharge ice on the coastline of Antarctica.

Their snapshot covered 5,400 kilometres (3,375 miles) of coastline from 1963 to 2012.

What surprised them was the glaciers' very fast response to periods of warming or cooling—they rapidly retreated or accelerated in consequence, said lead investigator Chris Stokes.

"If the [climate](#) is going to warm in the future, our study shows that large parts of the margins of the East Antarctic ice sheet are vulnerable to the kinds of changes that are worrying us in Greenland and West—acceleration, thinning and retreat," he said in a press release.

"When temperatures warm in the air or ocean, glaciers respond by retreating and this can have knock-on effects further inland, where more and more ice is drawn down to the coast."

Since 1750, the start of industrialisation, levels of carbon dioxide (CO<sub>2</sub>) have risen by 40 percent. Concentrations rose from 278 parts per million to 390.5ppm in 2011.

Earlier this year, a monitoring station in Hawaii briefly detected CO<sub>2</sub> levels higher than 400ppm.

**More information:** *Nature* paper [dx.doi.org/10.1038/nature12534](https://doi.org/10.1038/nature12534)

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