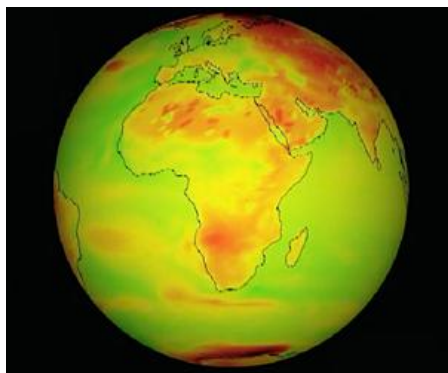


The recent pause in warming

July 2013 - Global mean surface temperatures rose rapidly from the 1970s, but have been relatively flat over the most recent 15 years to 2013. This has prompted speculation that human induced global warming is no longer happening, or at least will be much smaller than predicted. Others maintain that this is a temporary pause and that temperatures will again rise at rates seen previously.



The Met Office Hadley Centre has written three reports that address the recent pause in global warming and seek to answer the following questions:

- What have been the recent trends in other indicators of climate over this period?
- What are the potential drivers of the current pause?
- How does the recent pause affect our projections of future climate?

The first paper shows that a wide range of observed climate indicators continue to show changes that are consistent with a globally warming world, and our understanding of how the climate system works.

The second suggests that it is not possible to explain the recent lack of surface warming solely by reductions in the total energy received by the planet, i.e. the balance between the total solar energy entering the system and the thermal energy leaving it. Changes in the exchange of heat between the upper and deep ocean appear to have caused at least part of the pause in surface warming, and observations suggest that the Pacific Ocean may play a key role.

The final paper shows that the recent pause in global surface temperature rise does not materially alter the risks of substantial warming of the Earth by the end of this century. Nor does it invalidate the fundamental physics of global warming, the scientific basis of climate models and their estimates of climate sensitivity.

Links to each of the three papers are below.

 [Paper 1: Observing changes in the climate system \(PDF, 2 MB\)](#)

 [Paper 2: Recent pause in global warming \(PDF, 1 MB\)](#)

 [Paper 3: Implications for projections \(PDF, 663 kB\)](#)

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