

Has global warming stopped?

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'The fact is that the global temperature of 2007 is statistically the same as 2006 and every year since 2001'. Plus read [Mark Lynas's response](#)



Global warming stopped? Surely not. What heresy is this? Haven't we been told that the science of global warming is settled beyond doubt and that all that's left to the so-called sceptics is the odd errant glacier that refuses to melt?

Aren't we told that if we don't act now rising temperatures will render most of the surface of the Earth uninhabitable within our lifetimes? But as we digest these apocalyptic comments, read the recent IPCC's Synthesis report that says climate change could become irreversible. Witness the drama at Bali as news emerges that something is not quite right in the global warming camp.

With only few days remaining in 2007, the indications are the global temperature for this year is the same as that for 2006 – there has been no warming over the 12 months.

But is this just a blip in the ever upward trend you may ask? No.

The fact is that the global temperature of 2007 is statistically the same as 2006 as well as every year since 2001. Global warming has, temporarily or permanently, ceased. Temperatures across the world are not increasing as they should according to the fundamental theory behind global warming – the greenhouse effect. Something else is happening and it is vital that we find out what or else we may spend hundreds of billions of pounds needlessly.

In principle the greenhouse effect is simple. Gases like carbon dioxide present in the atmosphere absorb outgoing infrared radiation from the earth's surface causing some heat to be retained.

Consequently an increase in the atmospheric concentration of greenhouse gases from human activities such as burning fossil fuels leads to an enhanced greenhouse effect. Thus the world warms, the climate changes and we are in trouble.

The evidence for this hypothesis is the well established physics of the greenhouse effect itself and the correlation of increasing global carbon dioxide concentration with rising global temperature. Carbon dioxide is clearly increasing in the Earth's atmosphere. It's a straight line upward. It is currently about 390 parts per million. Pre-industrial levels were about 285 ppm. Since 1960 when accurate annual measurements became more reliable it has increased steadily from about 315 ppm. If the greenhouse effect is working as we think then the Earth's temperature will rise as the carbon dioxide levels increase.

But here it starts getting messy and, perhaps, a little inconvenient for some. Looking at the global temperatures as used by the US National Oceanic and Atmospheric Administration, the UK's Met Office and the IPCC (and indeed Al Gore) it's apparent that there has been a sharp rise since about 1980.

The period 1980-98 was one of rapid warming – a temperature increase of about 0.5 degrees C

(CO₂ rose from 340ppm to 370ppm). But since then the global temperature has been flat (whilst the CO₂ has relentlessly risen from 370ppm to 380ppm). This means that the global temperature today is about 0.3 deg less than it would have been had the rapid increase continued.

For the past decade the world has not warmed. Global warming has stopped. It's not a viewpoint or a sceptic's inaccuracy. It's an observational fact. Clearly the world of the past 30 years is warmer than the previous decades and there is abundant evidence (in the northern hemisphere at least) that the world is responding to those elevated temperatures. But the evidence shows that global warming as such has ceased.

The explanation for the standstill has been attributed to aerosols in the atmosphere produced as a by-product of greenhouse gas emission and volcanic activity. They would have the effect of reflecting some of the incidental sunlight into space thereby reducing the greenhouse effect. Such an explanation was proposed to account for the global cooling observed between 1940 and 1978.

But things cannot be that simple. The fact that the global temperature has remained unchanged for a decade requires that the quantity of reflecting aerosols dumped put in our atmosphere must be increasing year on year at precisely the exact rate needed to offset the accumulating carbon dioxide that wants to drive the temperature higher. This precise balance seems highly unlikely. Other explanations have been proposed such as the ocean cooling effect of the Interdecadal Pacific Oscillation or the Atlantic Multidecadal Oscillation.

But they are also difficult to adjust so that they exactly compensate for the increasing upward temperature drag of rising CO₂. So we are led to the conclusion that either the hypothesis of carbon dioxide induced global warming holds but its effects are being modified in what seems to be an improbable though not impossible way, or, and this really is heresy according to some, the working hypothesis does not stand the test of data.

It was a pity that the delegates at Bali didn't discuss this or that the recent IPCC Synthesis report did not look in more detail at this recent warming standstill. Had it not occurred, or if the flatlining of temperature had occurred just five years earlier we would have no talk of global warming and perhaps, as happened in the 1970's, we would fear a new Ice Age! Scientists and politicians talk of future projected temperature increases. But if the world has stopped warming what use these projections then?

Some media commentators say that the science of global warming is now beyond doubt and those who advocate alternative approaches or indeed modifications to the carbon dioxide greenhouse warming effect had lost the scientific argument. Not so.

Certainly the working hypothesis of CO₂ induced global warming is a good one that stands on good physical principles but let us not pretend our understanding extends too far or that the working hypothesis is a sufficient explanation for what is going on.

I have heard it said, by scientists, journalists and politicians, that the time for argument is over and that further scientific debate only causes delay in action. But the wish to know exactly what is going on is independent of politics and scientists must never bend their desire for knowledge to any political cause, however noble.

The science is fascinating, the ramifications profound, but we are fools if we think we have a sufficient understanding of such a complicated system as the Earth's atmosphere's interaction with sunlight to decide. We know far less than many think we do or would like you to think we do. We must explain why global warming has stopped.

David Whitehouse was BBC Science Correspondent 1988–1998, Science Editor BBC News Online 1998–2006 and the 2004 European Internet Journalist of the Year. He has a doctorate in astrophysics and is the author of *The Sun: A Biography* (John Wiley, 2005).] His website is www.davidwhitehouse.com