



This is the print version of the [Skeptical Science](http://sks.to) article '[It hasn't warmed since 1998](http://sks.to/1998)', which can be found at <http://sks.to/1998>.

What has global warming done since 1998?

What The Science Says:

Every part of the Earth's climate system has continued warming since 1998, with 2015 shattering temperature records.

Climate Myth: It hasn't warmed since 1998

For the years 1998-2005, temperature did not increase. This period coincides with society's continued pumping of more CO₂ into the atmosphere. ([Bob Carter](#))

Even if we ignore long term trends and just look at the record-breakers, 2015, 2014, 2010, and 2005 were hotter than 1998.

The myth of no warming since 1998 was based on the satellite record estimates of the temperature of the atmosphere. However, as discussed in [the video below by Peter Sinclair](#), even that argument is no longer accurate. The satellites show warming since 1998 too.

There's also a tendency for some people just to concentrate on atmospheric or surface air temperatures when there are other, more useful, indicators that can give us a better idea how rapidly the world is warming. [More than 90% of global warming heat goes into warming the oceans](#), while less than 3% goes into increasing the atmospheric and surface air temperature. Records show that the Earth has been warming at a steady rate before and since 1998 and there is no sign of it slowing any time soon (Figure 1).

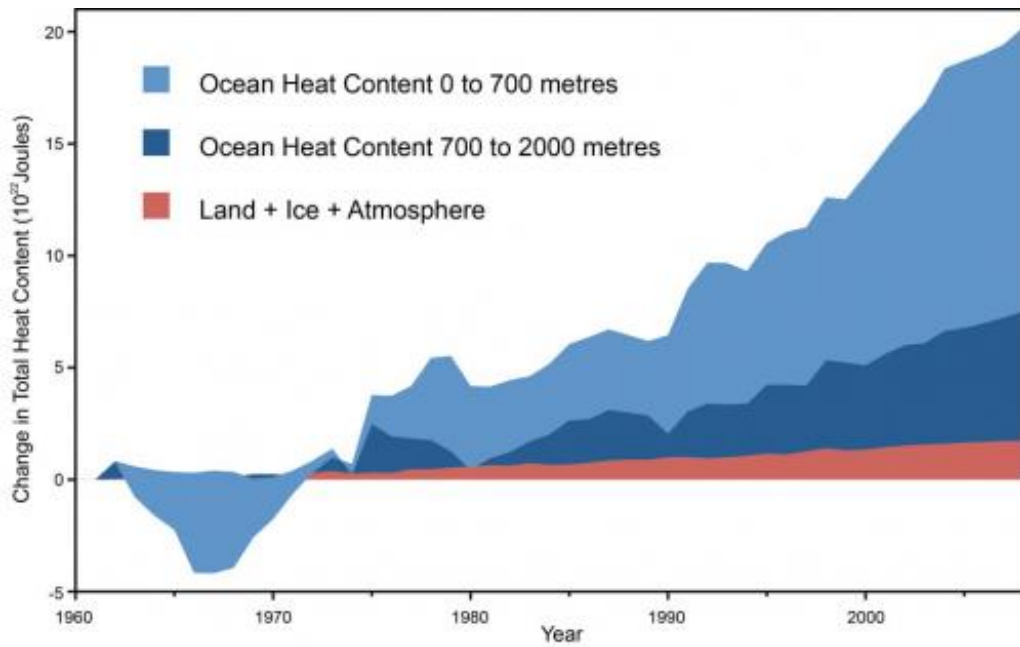


Figure 1: Land, atmosphere, and ice heating (red), 0-700 meter ocean heat content (OHC) increase (light blue), 700-2,000 meter OHC increase (dark blue). From [Nuccitelli et al. \(2012\)](#).

Even if we focus exclusively on global surface temperatures, [Cowtan & Way \(2013\)](#) shows that when we account for temperatures across the entire globe (including the Arctic, which is the part of the planet warming fastest), the global surface warming trend for 1997–2015 is approximately 0.14°C per decade.

Ultimately, every part of the Earth's climate system is warming, and has continued warming since 1998.



Skeptical Science explains the science of global warming and examines climate misinformation through the lens of peer-reviewed research. The website won the Australian Museum 2011 Eureka Prize for the Advancement of Climate Change Knowledge. Members of the Skeptical Science team have authored peer-reviewed papers, a [college textbook on climate change](#) and the book [Climate Change Denial: Heads in the Sand](#). Skeptical Science content has been used in university courses, textbooks, government reports on climate change, television documentaries and numerous books.



The [Skeptical Science](#) website by Skeptical Science is licensed under a Creative Commons [Attribution 3.0 Unported License](#).