



This is the print version of the [Skeptical Science](http://sks.to/heatwave) article '[Heatwaves have happened before](http://sks.to/heatwave)', which can be found at <http://sks.to/heatwave>.

Global warming is increasing the risk of heatwaves

What The Science Says:

Global warming is increasing the frequency, duration and intensity of heatwaves.

Climate Myth: Heatwaves have happened before

"Australia has always had extreme heat, droughts, bushfire and flooding rains... Whatever is the extent of global warming and any human contribution to climate change, exaggerating the 2013 heatwave is just another green lie which will blow up in all our faces." ([Miranda Devine](#))

Global warming is causing more frequent heatwaves. Record-breaking temperatures are already [happening five times more often](#) than they would without any human-caused global warming. This means that there is an 80% chance that any monthly heat record today is due to human-caused global warming.

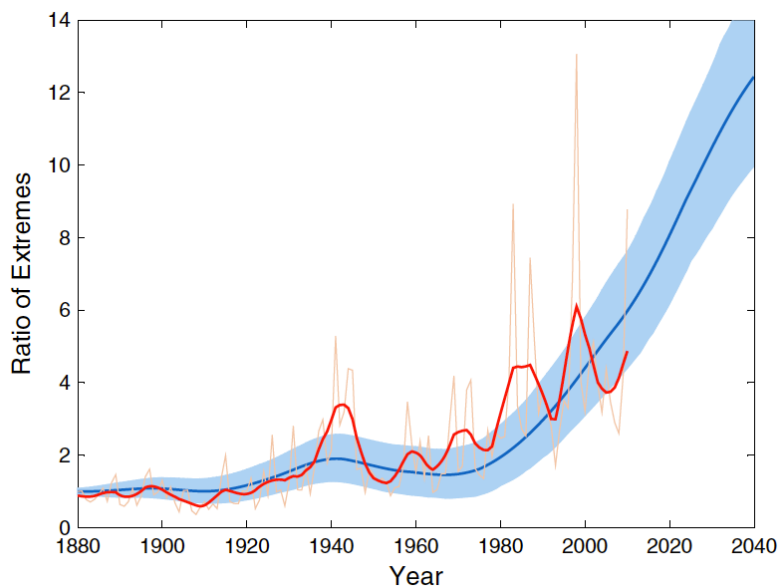


Figure 1: Likelihood of heat records compared to those expected in a world without global warming.

What will heatwaves be like in the future? If we continue to rely heavily on fossil fuels, [extreme heatwaves will become the norm](#) across most of the world by the late 21st century. However, if we take major steps to reduce human greenhouse gas emissions, the number of extreme heatwaves will stabilize after 2040. Either way, we will see more heatwaves, but how much more depends on us.

However, the growing risk from heatwaves is ignored by some who argue that heatwaves have happened in the past, hence current heatwaves must be natural. This line of argument is logically flawed, using a logical fallacy called a *non sequitur* (Latin for 'it does not follow'). This is a fallacy where your starting statement does not lead to your conclusion. For example, this is

like arguing that people have died of cancer long before cigarettes were invented, hence smoking can't cause cancer.

The longer we continue to rely on fossil fuels and the higher our greenhouse gas emissions, the more extreme heat we'll lock in. If we manage to take serious action to reduce our greenhouse gas emissions, we can limit global warming to a level where extreme heat events will become more commonplace, but we can manage to adapt to.

Basic rebuttal written by John Cook

Update July 2015:

Here is a related lecture-video from [Denial101x - Making Sense of Climate Science Denial](#)

[see video at [this link](#).]



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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.



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