Why a few degrees of global warmings matter

What The Science Says:
A few degrees of global warming has a huge impact on ice sheets, sea levels and other aspects of climate.

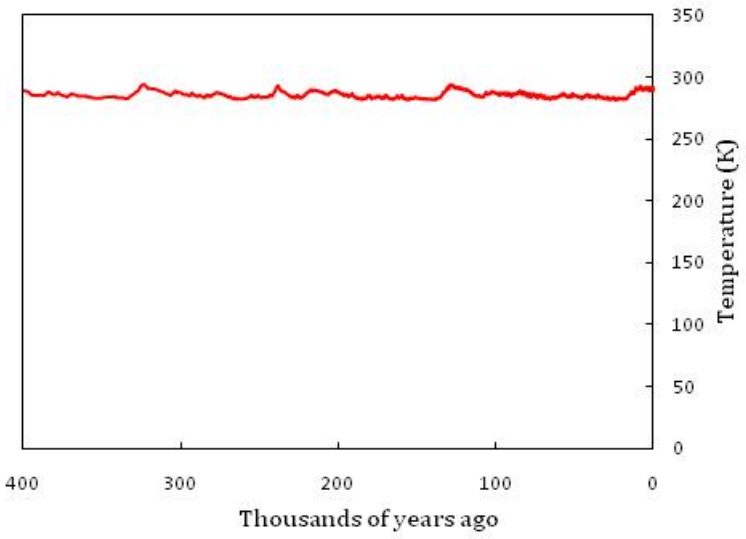
Climate Myth: It's only a few degrees
"There might be some adverse outcomes from that eight tenths of a degree of temperature rise threatening my Grandchildren in 2050, but neither I nor anyone else knows what those outcomes might be. We'll assuredly get an extra flood over here, and one less flood over there, it's very likely to be drier somewhere and wetter somewhere else, in other words, the climate will do what climate has done since forever — change." (Willis Eschenbach)

There are 3 problems with even small sounding global warming. Firstly, 2 °C is a very optimistic assessment: if the skeptical Dr Roy Spencer is correct here then we're on course to get more like 3.5 °C. If most climate science is correct then we'll get 6 °C by doubling CO2 twice.

Secondly, if we cause a ~2 °C warming, some scientists think feedbacks such as melting permafrost releasing more greenhouse gases might kick in. Ice and sediment cores suggest we haven't been this warm in at least 600,000 years so we're not sure – but this could trigger a lot more warming.

Finally, 6 °C, the actual "best estimate" for eventual global warming from current CO_2 trends still sounds small. But heating isn't distributed evenly: as we came out of the last ice age, the temperature in northern countries rose by more than at the equator. When you average over the entire world it turns out to have only been about 6 °C global warming: for people living in Northern Europe and Canada it's the difference between walking around in a t-shirt and a mile of ice over your head.

The graph below is the temperature calculated over the past 400,000 years in Antarctica from the Vostok ice core. The tiny peaks are a bit like today and the tiny troughs would force hundreds of millions from their homes. A few degrees of warming might sound small, but it can mean a lot and this is why scientists look at what the impacts of warming will be, rather than just saying "it doesn't look like much so it can't matter".



Update August 2015:

Here is a related lecture-video from Denial101x - Making Sense of Climate Science Denial

[*see video at* ***this link***.]

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.