

This is the print version of the <u>Skeptical Science</u> article '<u>Al Gore got it wrong</u>', which can be found at http://sks.to/gore.

Is AI Gore's An Inconvenient Truth accurate?

What The Science Says:

While there are minor errors in An Inconvenient Truth, the main truths presented - evidence to show mankind is causing global warming and its various impacts is consistent with peer reviewed science.

Climate Myth: Al Gore got it wrong

"Al Gore's Oscar-winning documentary on global warming, An Inconvenient Truth, was [...] criticised by a high court judge who highlighted what he said were "nine scientific errors" in the film.

Mr Justice Barton yesterday said that while the film was "broadly accurate" in its presentation of climate change, he identified nine significant errors in the film, some of which, he said, had arisen in "the context of alarmism and exaggeration" to support the former US vice-president's views on climate change." (<u>The Guardian</u>)

It's worth pointing out that Al Gore is a politician, not a climate scientist. Debunking Gore does not disprove anthropogenic global warming. Nevertheless, it is instructive to look at the purported errors in An Inconvenient Truth as it reveals a lot about climate science and the approach of his critics.

What Al got right

Retreating Himalayan Glaciers

Contrary to James Taylor's article, the American Meteorological Society's Journal of Climate never said growing glaciers are "confounding global warming alarmists" - that's a quote from the <u>Heartland Institute</u> website written by... James Taylor. He's actually quoting himself and attributing it to the AMS! To put the Himalayas in context, the <u>original AMS study</u> is not refuting global warming but observing anomalous behaviour in a particular region, the Karakoram mountains. This region has shown short term glacier growth in contrast to the long term, widespread glacier retreat throughout the rest of the Himalayas due to feedback processes associated with monsoon season. Overall, Himalayan glaciers are retreating - <u>satellite</u> measurements have observed "an overall deglaciation of 21%" from 1962 to 2007. In essence, the Karakoram glaciers are the exception that proves the rule.

Greenland gaining ice

Re Greenland, a big clue is the study's title:<u>Recent Ice-Sheet Growth in the Interior of Greenland</u>. The study finds increasing ice mass in the interior due to heavier snowfall - an expected side-effect of global warming - and doesn't factor in all the melting that occurs at the edges of the ice sheet. Overall, Greenland is losing ice according to satellite measurements <u>here</u>, <u>here</u> and <u>here</u>.

Antartica cooling and gaining ice

Antarctic cooling is a uniquely regional phenomenon. The <u>original study</u> observed regional cooling in east Antarctica. The hole in the ozone layer above the Pole causes increased circular winds around the continent <u>preventing warmer air from reaching eastern Antarctica and the Antarctic plateau</u> The flip side of this is the Antarctic Peninsula has "experienced <u>some of the fastest warming on Earth</u> nearly 3°C over the last halfcentury". While East Antartica is gaining ice, <u>Antartica is overall losing ice</u>. This is mostly due to melting in West Antarctica which recently had the <u>largest melting observed by satellites in the last 30 years</u>

Hurricanes

The dispute isn't that global warming is causing more hurricanes but that it's increasing their<u>severity and</u> <u>longevity</u>.

What Al got wrong

Mount Kilimanjaro

Indeed deforestation seems to be causing Mount Kilimanjaro's shrinking glacier so Gore got this wrong. In his defence, the <u>study by Philip Mote</u> came out after Gore's film was made. But Mote puts it in perspective: "The fact that the loss of ice on Mount Kilimanjaro cannot be used as proof of global warming does not mean that the Earth is not warming. There is ample and conclusive evidence that Earth's average temperature has increased in the past 100 years, and the decline of mid- and high-latitude glaciers is a major piece of evidence."

Dr Thompson's thermometer

Al Gore refers to a graph of temperature, attributing it to Dr Thompson . The graph is actually a combination of Mann's hockey stick (<u>Mann et al. 1998</u>) and CRU's surface measurements (<u>Jones et al. 1999</u>). However, the essential point that temperatures are greater now than during the Medieval Warm Period is correct and confirmed by multiple proxy reconstructions. <u>More on Dr Thompson's thermometer...</u>

An Inconvenient Truth - the court case

Gore's film has also drawn criticism on the grounds that it featured in a UK court case. The case, heard in the High Court in September 2007, was brought by a school governor against the Secretary of State for Education, in an attempt to prevent the film being distributed to schools. Mr. Justice Burton, in his judgement, ordered that teaching notes accompanying the film should be modified to clarify the speculative (and occasionally hyperbolic) presentation of some issues. However the broad theme was one he agreed with. About the film in general, he said this:

17. I turn to AIT, the film. The following is clear:

i) It is substantially founded upon scientific research and fact, albeit that the science is used, in the hands of a talented politician and communicator, to make a political statement and to support a political programme.

ii) As Mr Chamberlain persuasively sets out at paragraph 11 of his skeleton:

"The Film advances four main scientific hypotheses, each of which is very well supported by research published in respected, peer-reviewed journals and accords with the latest conclusions of the IPCC:

(1) global average temperatures have been rising significantly over the past half century and are likely to continue to rise ("climate change");

(2) climate change is mainly attributable to man-made emissions of carbon dioxide, methane and nitrous oxide ("greenhouse gases");

(3) climate change will, if unchecked, have significant adverse effects on the world and its populations; and

(4) there are measures which individuals and governments can take which will help to reduce climate change or mitigate its effects."

These propositions, Mr Chamberlain submits (and I accept), are supported by a vast quantity of research published in peer-reviewed journals worldwide and by the great majority of the world's climate scientists.

The judge did identify the errors discussed above and ordered that qualifications on the science and on its political implications should be included in the guidance notes for teachers. But whatever the deniers may claim, Al Gore was not involved in the case, was not prosecuted, and because the trial was not a criminal case, there was no jury, and no guilty verdict was handed down.

In a sense, one can look back and see that the court case was a snapshot of the climate - the political one, not the scientific one - in the mid 2000s. For those interested in such things, David Roberts at Grist did a good write-up of this particular storm in a tea-cup here. The full and lengthy high court judgement can be read here.

To conclude, the lesson here is that errors, concerning the minute details about the effects of climate change in various places, in no way discredit the vast body of hard evidence that climate change is happening, is caused by our relentless carbon emissions and is having adverse effects that will only get worse through time if we do nothing about it.

Note June 11, 2023: The intermediate version of the rebuttal was updated with the details about the court



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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 <u>college textbook on climate change</u> and the book <u>Climate Change Denial: Heads in the Sand</u>. Skeptical Science content has been used in university courses, textbooks, government reports on climate change, television documentaries and numerous books.



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