

Scientific Method and Peer Review

Biogeography
Geography 410
Jeff Hicke

Media Do Not Decide About Scientific Conclusions

THE MYTH OF THE 1970s GLOBAL COOLING SCIENTIFIC CONSENSUS

There was no scientific consensus in the 1970s that the Earth was heading into a period of global cooling. The possibility of anthropogenic warming dominated the peer-reviewed literature from then.

THE MYTH When climate modelers first started to simulate the evolution of the climate system, the consensus in the 1970s was that the world was heading into a period of global cooling. The modelers' results were based on a simple energy balance model that included only such things as the solar constant, the albedo of the Earth, and the greenhouse effect. The modelers' results were based on a simple energy balance model that included only such things as the solar constant, the albedo of the Earth, and the greenhouse effect. The modelers' results were based on a simple energy balance model that included only such things as the solar constant, the albedo of the Earth, and the greenhouse effect.

REPEATING THE MYTH The following are examples of statements written and published in the 1970s that suggest a global cooling consensus. The statements are taken from the following sources: (1) "The Myth of the 1970s Global Cooling Scientific Consensus" by Robert C. Anderson, William R. Conway, and John R. Ehler, *Journal of Climate*, 2009. (2) "The Myth of the 1970s Global Cooling Scientific Consensus" by Robert C. Anderson, William R. Conway, and John R. Ehler, *Journal of Climate*, 2009. (3) "The Myth of the 1970s Global Cooling Scientific Consensus" by Robert C. Anderson, William R. Conway, and John R. Ehler, *Journal of Climate*, 2009.

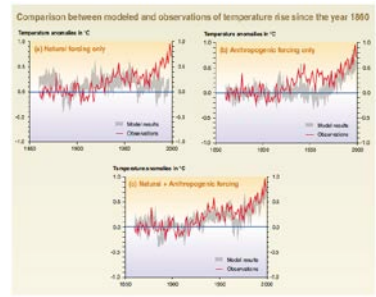
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How Science Works

3. Science advances by steps

IPCC, 2001: Global mean T observations, modeling



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IPCC, 2007: Continental mean T observations, modeling

Global and Continental Temperature Change

Line: Observations
Band: Models w/ natural forcing
Band: Models w/ natural forcings, human forcings

Biogeography Prof. J. Hicke

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Example 2: Mismatch between radiosondes, satellite observations of lower atmospheric temperature trends

Fig. 3. Global maps and zonal averages of linear temperature trends (1979–2003). Missing data are shown as white areas. (A) TLT temperature trends from this work. (B) TLT temperature trends from Christy et al. (5). (C) Surface temperature trends from (28). Trend difference, surface minus TLT, (D) this work and (E) Christy et al. (F) TLT trend difference, this work minus Christy et al.

Christy et al. (2000, 2003) reported cooling of lower atmosphere temperatures as estimated by satellites

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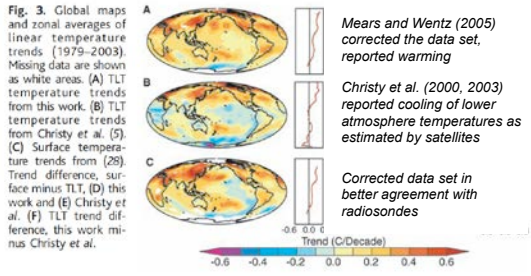
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Mears and Wentz (2005) corrected the data set, reported warming
Christy et al. (2000, 2003) reported cooling of lower atmosphere temperatures as estimated by satellites

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