Scientific Consensus on Climate Change

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early two decades ago, leading climate scientists concluded that the burning of fossil fuels such as coal, oil and natural gas was increasing the levels of greenhouse gases in the atmosphere and causing climate change.

This led the United Nations to establish the Intergovernmental Panel on Climate Change in 1988. The panel – made up of more than 2,500 top scientists and experts – would become universally recognized as the world's most authoritative voice on the science of climate change.

The overwhelming majority of the world's climate scientists believe there already is a discernable human influence on the global climate. The most prestigious scientific bodies in the world – including the U.S. National Academy of Sciences, the Royal Society of the U.K. and the Royal Society of Canada – recently signed a declaration warning world leaders about the "clear and increasing" threat of climate change.

Donald Kennedy, editor-in-chief of Science, one of the world's most influential science journals, says of climate change: "We're in the middle of a large uncontrolled experiment on the only planet we have." A recent analysis in Science of 928 peer-reviewed climate studies published between 1993 and 2003 found not a single one disagreed with the general scientific consensus on climate change.

As with any significant societal issue, there are always those who are set to gain financially from maintaining the status quo. Various industries have fought change and denied the science on everything from the need to ban ozone-depleting CFCs, to making cars pollute less, and even opposed putting warnings on cigarette packages. Climate change faces similar campaigns of misinformation, even though the scientific consensus is indisputable.

Significant events in climate science:

February 1979: The first "World Climate Conference" organized by the World Meteorological Organization (WMO) states concern that "continued expansion of man's activities on earth may cause significant extended regional and even global changes of climate".

June 1988: At the World Conference on the Changing Atmosphere in Toronto, politicians and scientists conclude "humanity is conducting an unintended, uncontrolled, globally pervasive experiment whose ultimate consequences could be second only to a global nuclear war." The conference recommends reducing carbon dioxide emissions 20% by 2005.

November 1988: The Intergovernmental Panel on Climate Change (IPCC) is established and has its first meeting in Geneva. The IPCC, which has grown to 2,500 leading scientists and experts on climate change, is given a mandate to assess the state of scientific knowledge on climate change, evaluate its impacts, and formulate realistic solutions.

August 1990: The IPCC publishes its First Assessment Report, which concludes the increasing accumulation of human-made greenhouse gases in the atmosphere would "enhance the greenhouse effect, resulting on average in an additional warming of the Earth's surface" unless measures were adopted to limit the emissions of these gases.

December 1995: The IPCC releases its Second Assessment Report, which concludes: "The balance of evidence suggests a discernible human influence on global climate."

January-March 2001: The IPCC releases its Third Assessment Report, which states "there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities."

May 2001: Seventeen national and regional academies of science issue the following statement: "The work of the ... IPCC represents the consensus of the international science community on climate change science. We recognize IPCC as the world's most reliable source of information... and endorse its method of achieving this consensus."

June 2001: A report by the US National Academy of Sciences, commissioned by US President George W. Bush, is released. It states: "Greenhouse gases are accumulating in the earth's atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise ... National policy decisions made now and in the longer-term future will influence the extent of any damage suffered by vulnerable human populations and ecosystems later in this century."

November 2004: An unprecedented four-year scientific study of the Arctic conducted by an international team of 300 scientists is released. "The impacts of global warming are affecting people now in the Arctic," says Dr. Robert Corell, chair of the Arctic Climate Impact Assessment. "The Arctic is experiencing some of the most rapid and severe climate change on earth. The impacts of climate change on the region and the globe are projected to increase substantially in the years to come."

June 2005: The National Science Academies of the G8 Nations, plus those from China, India, and Brazil, sign a declaration warning world leaders about the "clear and increasing" threat of climate change and call for immediate action.



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