Science Informing Policy:
The Intergovernmental Panel on Climate Change

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The Intergovernmental Panel on Climate Change (IPCC) assesses climate change science in a policy-relevant but not policy-prescriptive way

www.ipcc.ch

Free download of the full 2007 IPCC Fourth Assessment Report [AR4] is available now.

This report is also published in hard copy by Cambridge University Press.

The Working Group One part (1,000 pages) of AR4 deals with the physical climate system.


COSTA RICA
DENMARK
MEXICO
MONGOLIA
CUBA
LEAD AUTHORS

Policymakers need an objective source of the most widely accepted scientific information about climate change, its effects, and possible response options.

The IPCC was established in 1988 to meet this need. Both governments and scientists were involved in creating the IPCC and deciding how it would work.

The World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) jointly established the IPCC.

It is important to understand that the IPCC is both governmental and scientific.

This fact has consequences: One is that the governments participate in writing IPCC reports. They are

IPCC does **not** conduct new research (caveat: IPCC, by its stature, indirectly influences what types of research are done).

The IPCC mandate is to **assess**, on a comprehensive, objective, open and transparent basis, the available scientific information in peer-reviewed literature.

IPCC reports are policy-**relevant** but

The 1990 IPCC First Assessment Report [FAR] confirmed the scientific basis for concern about climate change.

It helped persuade governments to adopt the UN Framework Convention on Climate Change, signed at the Earth Summit in Rio de Janeiro (1992).

The 1995 IPCC Second Assessment Report [SAR] contributed crucially to the negotiations that led to the adoption of the Kyoto Protocol in 1997.

The Kyoto Protocol, which mandates reduced emissions of greenhouse gases, came into force in February 2005, despite the refusal of the United States to ratify it.

The 2001 IPCC Third Assessment Report [TAR] confirmed the fundamental scientific finding that most of the observed global warming in recent decades is caused by human activities.

Although the mainstream climate research community generally considers this as settled science, many non-scientists and a few experts still remain unconvinced.

The IPCC places great emphasis on the accurate characterization of scientific uncertainty.

It uses carefully calibrated and consistent language in its reports.

Sometimes uncertainty is a matter of expert judgment, and sometimes it can be inferred quantitatively from data and/or models.

Greenland: up to 7 meters of sea level

"Ice sheets have contributed meters above modern sea level in response to modest warming [~3°C, or 5°F]…a threshold triggering many meters of sea-level rise could be crossed well before the end of the century."

Overpeck et al., *Science*, 2006

Sea level rise is one of the surest consequences of a warmer climate.

However, the quantitative answer is elusive. It depends on thermal expansion and melting ice on land, and on instabilities that are difficult to model and predict.

Destabilizing large ice sheets, if it happens, is extremely serious. We don't know yet how likely this is. The


QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Hurricanes and their connection to climate change is an area of active research.

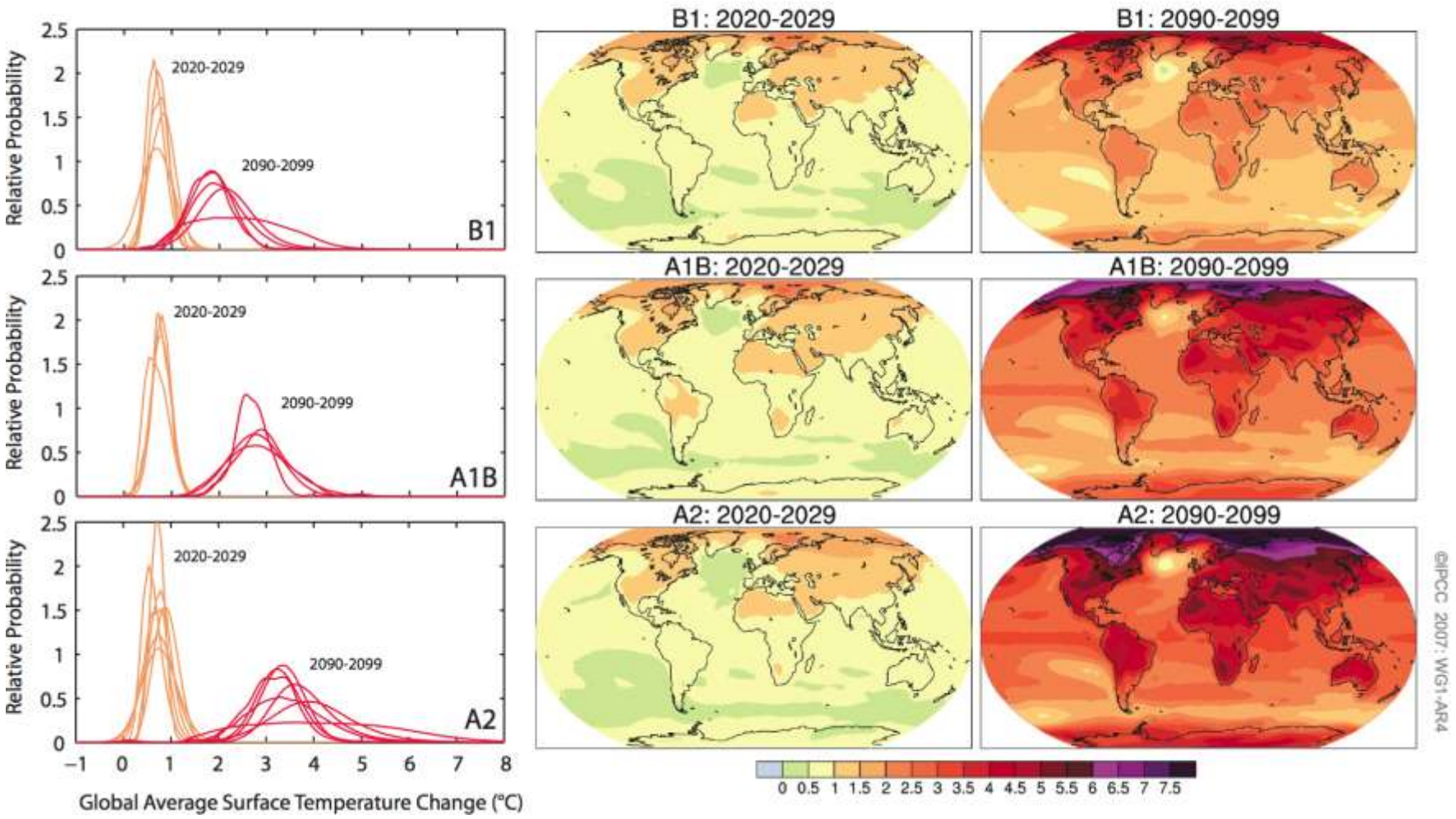
Because hurricanes are rare and highly variable, it generally takes a long time to observe statistically significant trends.

Climate change cannot “cause” Katrina, or any hurricane, but it may change various probabilities, including

To the extent that the state of the science permits, the IPCC reports allow informed policymakers to see the consequences of alternative decisions.

In this sense, the IPCC can help provide sound scientific input to the making of wise policy.

However, this input is strictly science-based and is always policy-neutral.



Updated: PLENARY

Figure SPM-6

The 20-page Summary for Policymakers was negotiated and approved line-by-line at a plenary in Paris in January-February 2007.

More than 100 governments unanimously approved every word of the Summary. The 22 principal IPCC authors were present to answer questions and to ensure that the Summary conformed with the full report.

The science was never compromised

“The balance of evidence suggests a discernible human influence on global climate.” - IPCC (1995).

“There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities.” - IPCC (2001).

“Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.”

- IPCC, Paris, 2 February 2007.

“Most of the observed increase in globally averaged temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic greenhouse gas concentrations.”

- IPCC, Paris, 2 February 2007.

(‘*very likely*’ means at least 90% probable)

http://www.ipcc.ch

Fourth Assessment Report: 152 lead authors
(including 22 coordinating lead authors).

700 author nominations from governments.
25% earned highest degree in last 10 years.
75% were not previous IPCC authors.
35% from developing countries and

The most recent WGI IPCC report took three years to write, and more than 30,000 review comments were received on the various drafts. The authors' responses to every comment are in the public record.

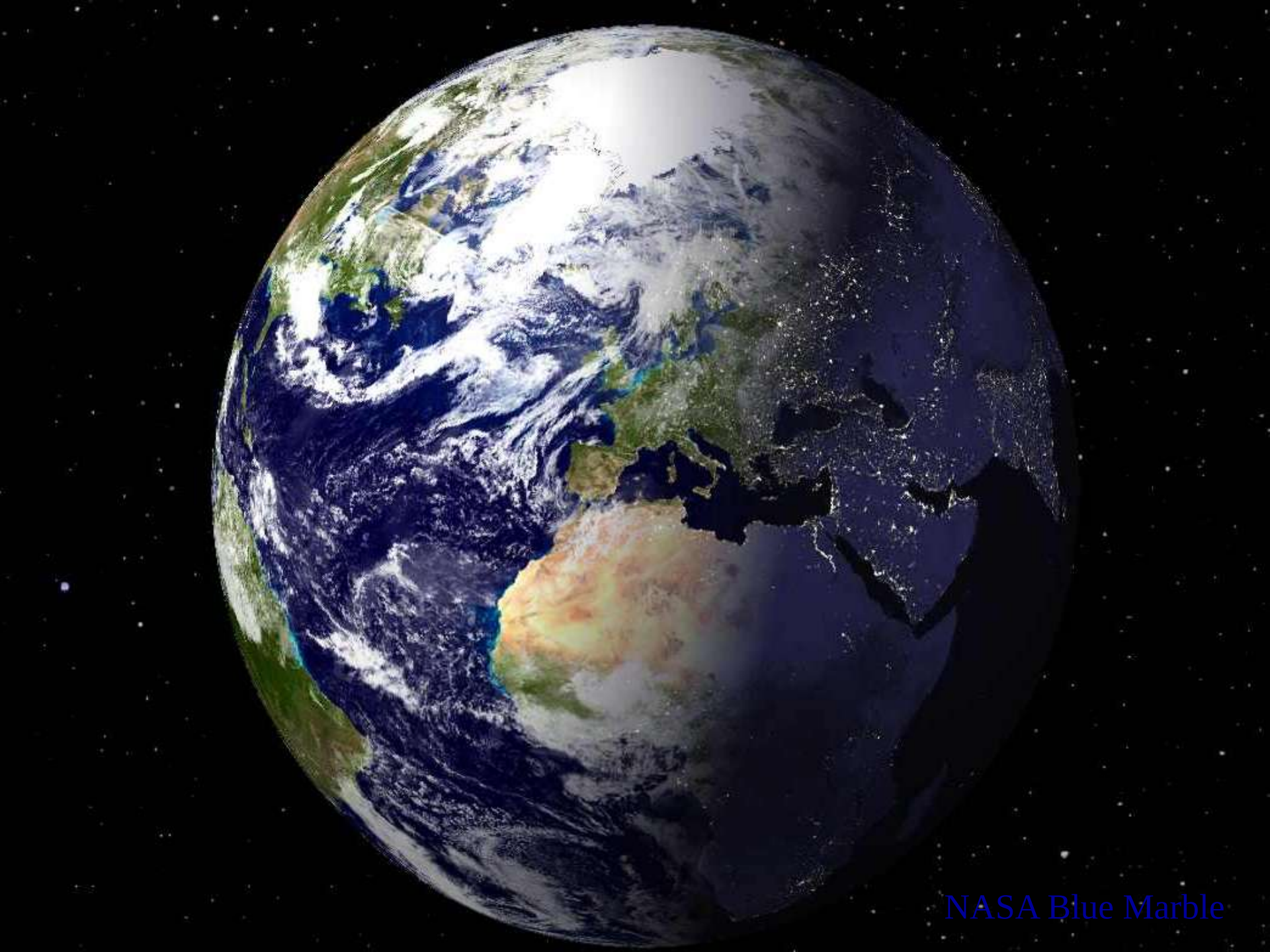
The open and transparent attributes of the IPCC process, the multiple stages of peer review, and the credentials of the authors, all contribute to the stature of the report.

The Intergovernmental Panel on Climate Change (IPCC)

and

Al Gore

shared the 2007 Nobel Peace Prize


NASA Blue Marble