

Trends in 20th Century Climate

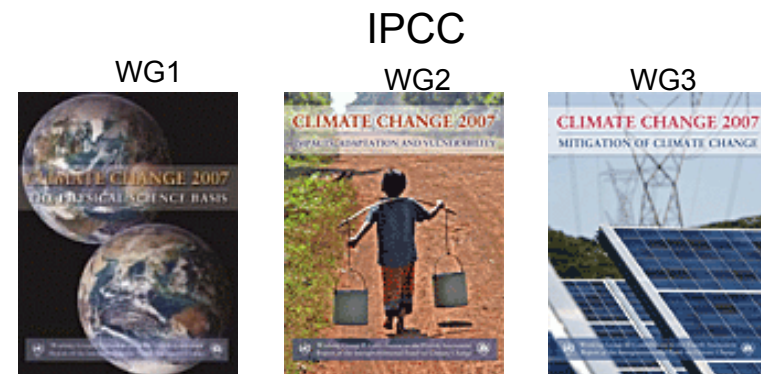
- Material taken from the most recent IPCC report
 - What is the IPCC?
- Global Trends
- Regional Trends
- Pacific Northwest
- Summary

What is the IPCC?

- WHAT?
 - A scientific intergovernmental body set up by the World Meteorological Organization (WMO) and by the United Nations Environment Programme (UNEP)
- WHO?
 - Thousands of scientists all over the world contribute to the work of the IPCC as authors, contributors and reviewers
 - Governments participate in plenary Sessions of the IPCC where main decisions about the IPCC work program are taken and reports are accepted, adopted and approved. They also participate in the review of IPCC Reports.

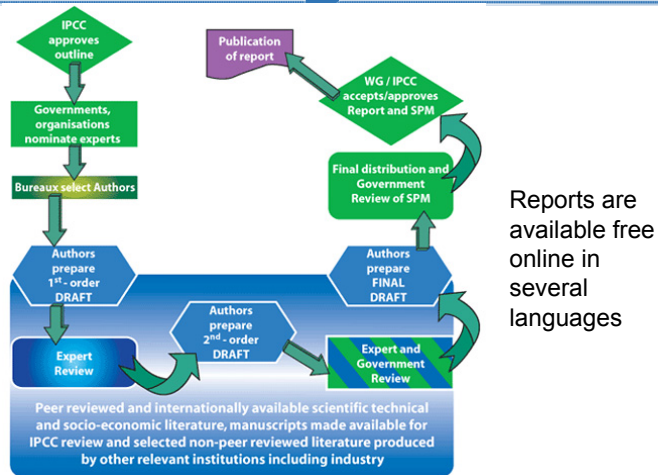
www.ipcc.ch/about/index.htm

- Mandate of the IPCC
 - to provide the decision-makers and others interested in climate change with an objective source of information about climate change.
 - to assess on a comprehensive, objective, open and transparent basis the latest scientific, technical and socio-economic literature produced worldwide relevant to the understanding of the risk of human-induced climate change, its observed and projected impacts and options for adaptation and mitigation.
- The IPCC does not conduct any research nor does it monitor climate related data or parameters
- IPCC reports
 - must be of high scientific and technical standards, and aim to reflect a range of views, expertise and wide geographical coverage.
 - must be neutral with respect to policy, although they need to deal objectively with policy relevant scientific, technical and socio economic factors.



- Regular Assessments mandated by governments (UN)
 - 1990, 1995, 2001, 2007, 2014 ...
- Summarize state of climate science* (WG1), impact of climate change (WG2), and possible mitigation options (WG3)

* Must be published in the peer-reviewed literature



A typical IPCC report takes ~ five years to produce and involves ~2700 scientists

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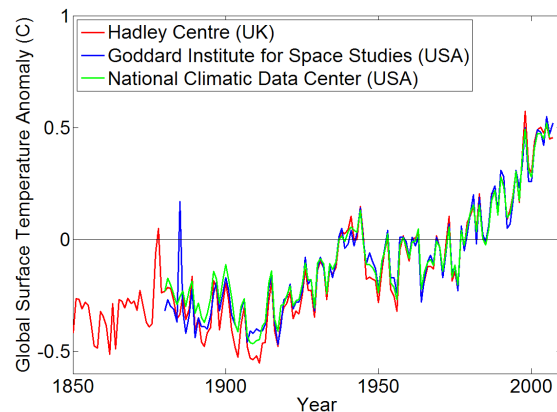
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Increasing surface temperature: vocabulary

"Global-Annual Average Surface Temperature (GAAST)"

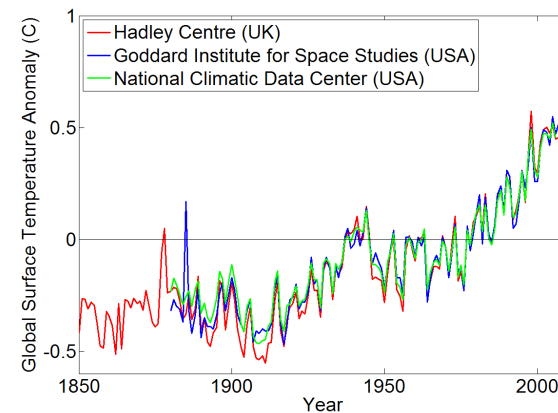
primarily index of change (although not what we really care about)



"Temperature Anomaly" change with respect to some reference period (here 1961-1990)

Can we believe the surface temperature record?

"How accurate is the surface temperature record?"



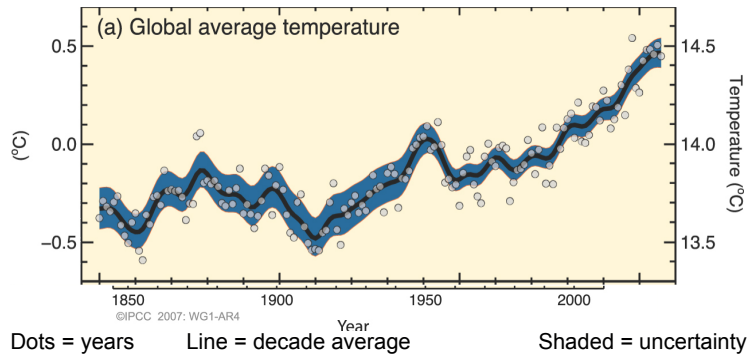
Quantifying Uncertainty

- key aspect of scientific method, knowledge
- often very difficult

One (partial) approach:

- independent groups analyzing the same data set

Global Annual Average Temperature



- The global annual averaged surface temperature has risen about 0.85C (1.5F) in the past 100 years
- The past decade is the warmest in the instrumental record

IPCC Fig SPM3