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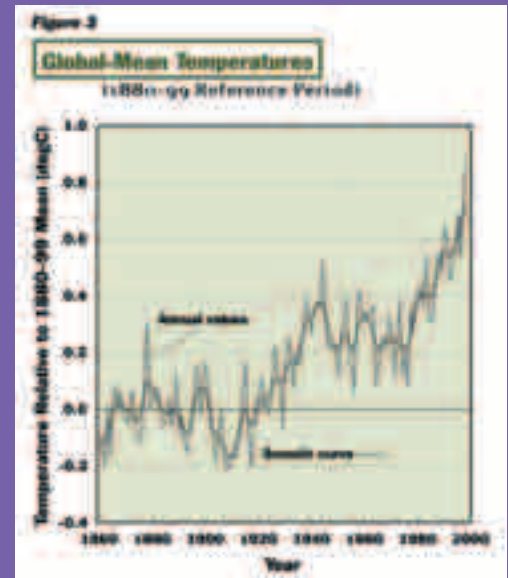
Global Climate Change: Causes and Impacts

Information taken from Pew Center on
Global Climate Change Publications

October 2005

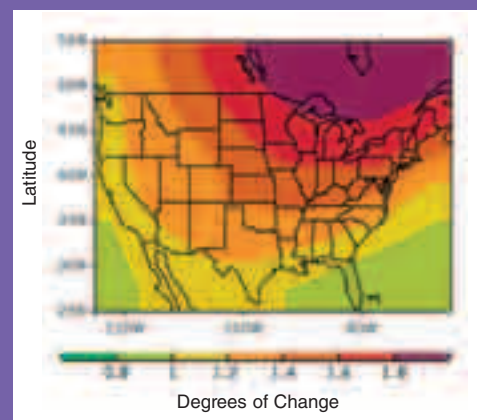
Understanding the Causes of Global Climate Change¹

- Recent decades have seen record-high average global surface temperatures.
- The years 1998, 2002, and 2003 were the three warmest years recorded in the instrumental record (which dates back to the mid-1800s) and the top 10 warmest years on record have occurred since 1990.
- Between 1900 and 2000, global surface air temperatures increased by 0.7-1.4°F (0.4-0.8°C).
- This warming has resulted from numerous factors that influence climate. Including:
 - Natural factors, such as changes in solar radiation and volcanic activity.
 - Anthropogenic factors, particularly emissions of greenhouse gases (GHGs) and land-use changes.
- Since the industrial revolution, human activities have had an increasing influence on the global system.
- The current scientific consensus is that, at least during the past 50 years, the major factor driving observed temperature increases has been human emissions of GHGs.
- Despite the long-term natural variability of the climate system, current scientific evidence indicates there is a significant human influence on current climate trends.
- This human contribution to global warming is projected to grow increasingly strong in future decades as human emissions of long-lived GHGs continue to alter the composition of the atmosphere.



Impact of Global Climate Change in the United States²

- Based on results from a number of climate models, the rate of future warming in the United States is expected to be noticeably faster than the global-mean rate.
- Changes in weather and climate extremes over the United States are certain to occur as the global climate changes. Some of these extremes might include:
 - An increased frequency of extremely hot days and a decreased frequency of frosts.
 - An increase in winter precipitation in northern latitudes, from the northern Great Plains to the northeastern states.
 - An increase in evaporation, which could significantly change the availability of water for agriculture, human consumption, and industry. This factor alone would lead to drier summer soil conditions and reduced runoff.



Ratio of projected change to global-mean change

WINTER (Dec - Jan - Feb)

¹ Taken from Pew Center on Global Climate Change Fact Sheet 1: Attribution From Pew Center on Global Climate Change <www.pewclimate.org/docUploads/Fact%20Sheet%20Attribution%2Epdf>

² Taken from The Science of Climate Change: Global and U.S. Perspectives <www.pewclimate.org/docUploads/env%5Fscience%2Epdf>