Introduction to Geological Perspectives of Global Climate Change

Power Point Presentation Notes
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Lee C. Gerhard

The PowerPoint presentation can be viewed at:
http://ff.org/centers/csspp/docs/gerhardppt.ppt

History has seen many memorable public confrontations between belief systems and science data. Despite the scientific merit of the data, belief systems are powerful endemic and forces against which science must struggle. Some modern examples are evolution and global climate change.

In both cases, complexity is added to the debates because scientists bring their own belief systems to the controversy. Although the scientific observations and information make a scientifically correct conclusion clear with respect to both evolution and global climate change, belief systems drive media, politics, and group thinking, keeping alive a debate that has no further useful purpose, but which distracts governments and the people from mitigating the effects of natural processes and enhancing public education.

Much of problem lies in the resurgence of a new cycle of anthropocentrism that started in the 1960's. It did not take very long for anthropocentric self-flagellation to begin and identify human beings as the cause of all things "bad". The next step was inexorable and led to the worship of the "state of nature," with removal of human beings as the ultimate good.

The United Nations, a political organization, is the acknowledged leader in the argument that human beings are the *cause* of global climate change as a result of their use of fossil fuels.

The mission of the Intergovernmental Panel on Climate Change (IPCC), a United Nations organization, is not to study *causes* of climate change, but to document only one cause, *human* impacts on climate. This kind of mandate validates the recent quote from geologist, Dr. Peter Flawn, President Emeritus of the University of Texas, Austin:

"All geologists early in their careers are introduced to solving problems through multiple working hypotheses - of deriving solutions from the data rather than, as is common among some social scientists, settling upon a solution consistent with the reigning theory and supporting it with data selectively chosen."

(Flawn, Peter T., 2006, The Compass, v. 79, p.19.)

The attached Power Point presentation documents the current state of scientific information about climate change. The substantial credible scientific evidence

establishes that a number of popular assumptions and hypotheses cannot be supported and in some cases are demonstrably false.

- Human emissions of carbon dioxide are a significant driver of climate. They are not.
- Climate change rates and the global warming of today are unprecedented. They are not.

However, the data does support a number of less popular hypotheses:

- Climate naturally changes constantly, from warmer to cooler and cooler to warmer, and at many levels of intensity over time at many scales.
- Variation in Solar activity closely correlates with global temperature variations, suggesting that the amount of solar energy reaching the surface of the earth is a primary climate driver at the time scale of decades to millennia.

Lee Gerhard's notes on power point slides

1. Many slides prepared by the Kansas Geological Survey, whose help is appreciated
2. We are pretty tired of fraudulent ad hominen attacks assuming we are funded by any industry. This work was not funded except for graphical assistance of the Kansas Geological Survey and the research I conducted under their auspices.
3. Humans try to be in charge and in control, the universe doesn't care about humans.
4. Humans have egos.
5. Nothing we do about our environment will make any difference in the long run if we don't address population.
6. A theory we will test in this presentation.
7. The correlations are obvious- CO2 and temperature don't co-vary. Solar energy and temperature do co-vary. Now let's look at data and theory.
8. Geologists are trained to think in 4 dimensions, unlike most scientists. This is especially important in assessing changes in dynamic earth processes which occur over time such as temperature and climate.
9. If earth processes were is equilibrium, this would be a dull and uninteresting place to live.
12.http://physics.ucr.edu/~wudka/Physics7/Notes_www/node6.html#SECTION02121000000000000000
Accessed 6-3-06
14. Overall, the earth's climate has been cooling for 60 million years, but that is only an average – temperature goes up and down, constantly.
15. This diagram shows that temperature rapidly rises, and then slowly cools naturally, called the sawtooth effect. The dashed lines are possible computer model projections of temperature. Moore, Peter D., Bill Chaloner, and Philip Stott, 1996, Global environmental change: Blackwell Science, Oxford, England, 244 p.
16. This diagram sows the highly variable nature of earth temperature over 16,000 years, with detail for the last 2000 years. Depending on the period of the earth's history that is chosen, the climate will either be warming or cooling. Choosing whether earth is warming or cooling is simply a matter of picking end points. Davis, John C., and Geoffrey Bohling, 2001, The Search for Patterns in Ice-Core Temperature Curves: in Gerhard, Lee C., William E. Harrison, and Bernold M. Hanson, eds.,2001, Geological Perspectives of Global Climate Change: American Association of Petroleum Geologists Studies in Geology #47, Tulsa, OK, p. 213-230.

17. Although the earth appears to be warming now, recently past events were warmer than the present one. See slide 18 for example.
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18. Even the last 120 years show significant variation in temperature for the United States. Data from NOAA and NASA. Note that the warm period of the 1930's exceeds current temperatures. This was also the dust bowl period.
22. Carbon dioxide is only one of many greenhouse gases, now about 380 parts per million concentration, and rising.
23. But of all the greenhouse gases, carbon dioxide represents only about ¼ of 1% of the greenhouse effect, hardly a device to drive the massive energy system of earth's climate.
Hieb, M., 2003, Global Warming: A Closer Look at the Numbers, in Hieb, M. and Hieb, H., 2003, Global Warming: A Chilling Perspective: http://www.clearlight.com/~mhieb/WVFossils/Ice_Ages.html, accessed 2/14/06
24. Berner, 1994, as cited in: Moore, Peter D., Bill Chaloner, and Philip Stott, 1996, Global environmental change: Blackwell Science, Oxford, England, 244 p.
25. NOAA data.
26. Arthur B. Robinson, Sallie L. Baliunas, Willie Soon, and Zachary W. Robinson, 1998
27. NOAA data, yellow emphasizes downturn in temperature from 1998 to present.
29. CO2 vs temperature plot. Smooth CO2 curve does not correlate except in general with actual temperature over 250 years history. Note CO2 starts rising prior to Little Ice Age. CO2 data drom Keeling, C.D., and T.P. Whorf. 1996. Atmospheric CO2 records from sites in the SIO air sampling network. In Trends: A Compendium of Data on Global Change. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, Oak Ridge, Tenn., U.S.A.
30. CO2 curve trails behind the temperature curve and is actually offset by 83 years; the actual data points do not connect. But it is a decent approximation of temperature vs. CO2.
31. The increase in atmospheric CO2 follows the temperature rise by hundreds of years. From Khilyuk, L. F., and G. V. Chilingar, 2003, Global warming: Are we confusing cause and effect?:Energy Sources 25: 357-370.
36. Gerhard, Lee C., William E. Harrison, and Bernold M. Hanson, Eds., 2001, Geological Perspectives of Global Climate Change: American Assoc. of Petroleum Geologists Studies in Geology #47, 373 p.
37. Meteorite impacts throw dust into the atmosphere, causing cooling by reflection.
38. Volcanic eruptions do the same.
41. Ewing, M., and W. Donn, 1956, A Theory of Ice Ages: Science, v. 123, p. 1061-1065
43. Gerhard, Lee C., and William E. Harrison, 2001, Distribution of Oceans and Continents: A Geological Constraint on Global Climate Variability: in., Gerhard, Lee C., William E. Harrison, and Bernold M. Hanson, eds., 2001, Geological Perspectives of Global Climate Change: American Assoc. of Petroleum Geologists Studies in Geology #47, Chapter 3, p. 51-82.
48. Bond, Gerard, Bernd Kromer, Juerg Beer, Raimund Muscheler, Michael N. Evans, William Showers, Sharon Hoffmann, Rusty Lotti-Bond, Irka Hajdas, Georges Bonani, 2001, Persistent Solar Influence on North Atlantic Climate During the Holocene: Science, Vol. 294, Issue 5549, 2130-2136.
49. Bond, Gerard, Bernd Kromer, Juerg Beer, Raimund Muscheler, Michael N. Evans, William Showers, Sharon Hoffmann, Rusty Lotti-Bond, Irka Hajdas, Georges Bonani,

2001, Persistent Solar Influence on North Atlantic Climate During the Holocene: Science, Vol. 294, Issue 5549, 2130-2136.
50. Daly, John, 2005, The 'Hockey Stick': A New Low in Climate Science: http://www.john-daly.com/hockey/hocky.htm (accessed 1/8/2006).
51. Solar intensity vs. earth temperature. A great correlation. Adapted from Hoyt, D. V., and K.H. Schatten, 1997, The Role of the Sun in Climate Change: Oxford University Press, New York, 279 p.
52. Note that it is likely WWII and atmospheric nuclear weapon testing has some effect on global temperature.
56. This primitive model more closely replicates past climate than any GCM. Data input 11 year, 80 year, and 1100 year solar cycles.
59. Kotov, Sergey R, 2001, Near-term Climate Prediction Using Ice Core Data from Greenland, Geol. Perspectives of Global Climate Change: AAPG Studies in Geology #47, p. 305-316.
64. Hoyt, D. V., and K.H. Schatten, 1997, The Role of the Sun in Climate Change: Oxford University Press, New York, 279 p. , withCO2 overlay from Keeling, C.D., and T.P. Whorf. 1996. Atmospheric CO2 records from sites in the SIO air sampling network. In Trends: A Compendium of Data on Global Change. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, Oak Ridge, Tenn., U.S.A.

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