

GLOBAL WARMING: FACT OR FICTION

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The question of global warming (or cooling) has been debated for over 40 years, but the debate accelerated with the testimony of James Hansen of NASA before a Senate hearing in 1988. Hansen outlined a scenario whereby the earth was growing increasingly warm due to the "greenhouse effect" brought on primarily by an increase in carbon dioxide (CO₂). He further testified that the increase in CO₂, and therefore global warming, was due to the burning of fossil fuels. The debate has now attained headline status in the news media and worldwide political circles with the majority of media and politicians pointing to activities of man as the primary cause of the warming.

Interestingly, the present head of NASA, Michael D. Griffin, in an interview on National Public Radio (May 31, 2007), stated that he doubted that global warming was "really a problem" for man to wrestle with.

Actually, I believe global warming is real, but so is global cooling. Billions of years of geologic data point to the fact that the earth has periodically experienced both for over 3 billion years. Fortunately, we have a great deal of data supporting global warming and cooling over the last 2 million years, and the facts lead to one inescapable conclusion: We are experiencing global warming, and except for some minor interruptions in the 17th century, we have been experiencing this phenomenon for the last 10,000 years!!

To get a feel for the cyclic nature of global warming/cooling, consider the last 2 million years of Earth's history. During this time period, numerous studies have indicated that the earth experienced four major glacial ice advances (global cooling) followed by periods during which the glaciers melted (global warming).

Obviously, man could not have caused these climate changes, but if not man, what did cause them? Geologic data and other scientific literature explains it very well.

First, let's look at CO₂, the popular "whipping boy" for warming. Each year 186 billion tons of CO₂ enters the atmosphere, 90 billion of which comes from biologic activity in the oceans, and 90 billion of which comes from volcanic activity. This leaves only 6 billion tons from all the other sources, including man. Even with that much CO₂ released to the atmosphere, our air only contains 368 parts per million of CO₂, which is less than 0.4 of 1%.

Secondly, the warming/cooling cycles of the last 2 million years correlate very closely to variation in solar radiation caused primarily by the following cycles:

- 1- Change in the shape of the earth's orbit around the sun from almost a perfect circle to an oval-shaped orbit (a 100,000 year cycle).
- 2- The axis of the earth is tilted, and the angle of the tilt varies between 22 and 24 degrees every 41,000 years.
- 3- The earth wobbles on its axis as it spins. The planet's axis wobbles toward and away from the sun over the span of 19,000 to 23,000 years.
- 4- Sunspot activity which varies over 11-year and 206-year cycles.

From exceedingly strong evidence afforded us by the geologic record, and by the abundance of recent data, it is apparent that we are in a period of global warming much like three other periods within the last 2 million years. It is also apparent that climate changes are the result of complex geophysical phenomena, none of which is under human control.