



Global Warming, Causation, and Public Policy

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SUMMARY:

The purpose of this paper is to demonstrate that climate change or global warming is not causally related to anthropogenic emissions of carbon dioxide (CO₂) and, therefore, mitigation of such emissions, as a matter of public policy, is pointless. Rather, global warming, global cooling, and climate change has been occurring throughout the ages and is caused by purely natural mechanisms. Man's contributions to climate change through his activities (farming, land clearing, industrializations, and CO₂ emissions) are so small that the contribution is immeasurable because it is beyond the detection limits of our physical measurement capabilities. Furthermore, periods of warming are beneficial to human civilization, relative to cold periods. A thorough understanding of the causal mechanisms of climate change is needed before rational public policy can be formulated on these issues.

WHAT IS ANTHROPOGENIC GLOBAL WARMING (AGW)?

This is the scientific hypothesis that CO₂ emitted by man's activities causes the earth to warm. A corollary of this hypothesis states that this warming is detrimental to man by causing secondary severe weather events like flooding, droughts, heat waves, intense storms, pestilence, and disease. Another corollary is that limiting Man's CO₂ emissions will reverse or limit AGW and all of the pejorative secondary effects.

KEEP YOUR EYE ON THE BALL

If you are truly interested in mitigating global warming and all of the perceived negative effects, then you ONLY need to concern yourself with one single issue or question. Specifically, does anthropogenic (Man made) CO₂ CAUSE global warming? If that answer is found by scientific evidence and valid reasoning not to be true, then any and all policies designed to mitigate those emission is pointless. The following distractions are common in the argument for AGW:

The fact that the earth is warming
Does NOT prove that man-made CO₂ emissions caused it.



The fact that (3) polar bears died in a storm
Does NOT prove that man-made CO2 emissions caused it

The fact that ice has melted in the arctic
Does NOT prove that man-made CO2 emissions caused it

The fact that Hurricane Katrina occurred
Does NOT prove that man-made CO2 emissions caused it

The fact that we had record snowfalls in 2009
Does NOT prove that man-made CO2 emissions caused it

The fact that sea levels are rising (by 1 mm per year)
Does NOT prove that man-made CO2 emissions caused it

These are all distractions and are irrelevant to whether man-made CO2 causes global warming. Their existence or truth does not prove that man-made CO2 causes global warming, but they are frequently put forth as such proof. This reasoning is fallacious.

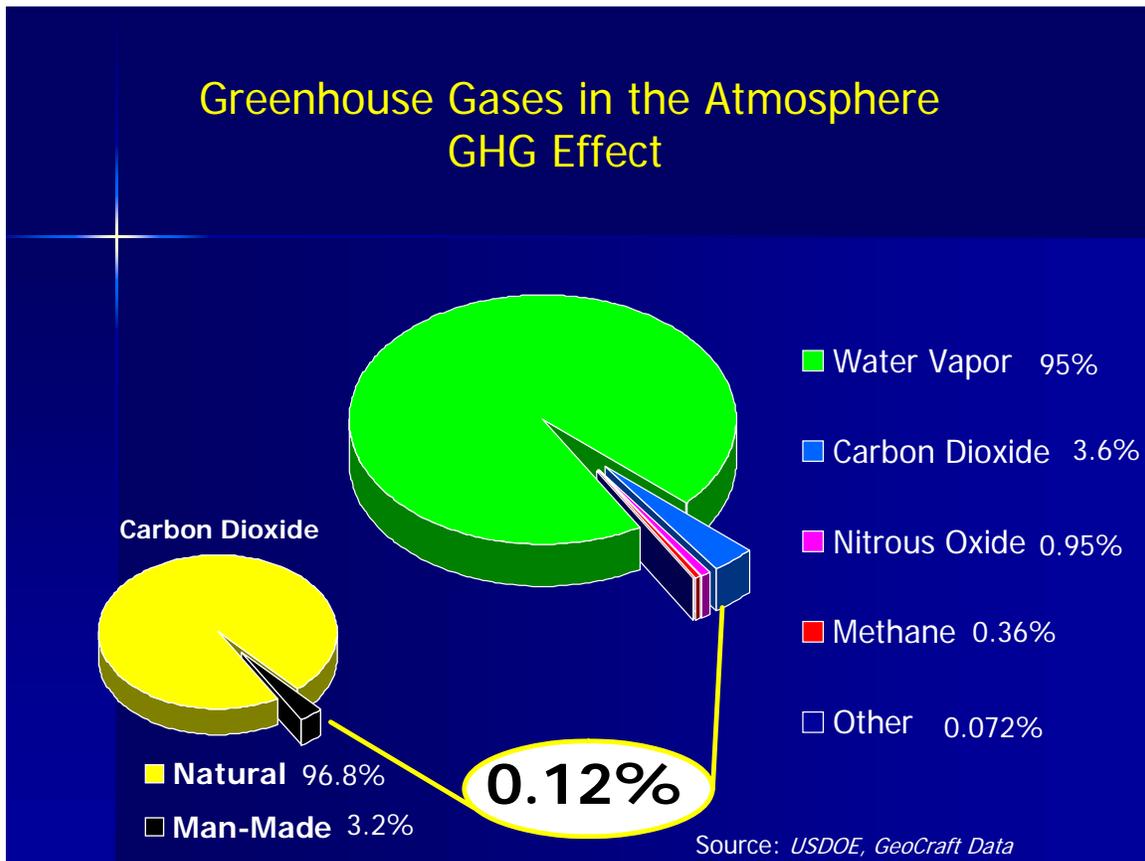
Almost all scientists agree on the following:

1. The earth has been warming since the last 18,000 years (end of the last ice age)
2. CO2 is a greenhouse gas, which warms the earth
3. Man contributes to atmospheric CO2 by burning fossil fuels and by clearing land
4. Man contributes to greenhouse gas warming

The real issue, however, is whether the miniscule amount of greenhouse effect that man is responsible for contributes significantly to the natural warming cycles that the planet has encountered for over millions of years? The answer is NO and here is why.

MAN-MADE CO2

So how much of the CO2 in the atmosphere is the result of Man's recent activities, which could contribute to greenhouse gas warming? To answer this we need to know two facts. One is how much CO2 is in the atmosphere and then, how much of that is due to human emissions and how much is natural. The chart below helps answer these two questions



So the predominate greenhouse gas is water vapor. CO2 only contributes about 3.6% to the total greenhouse gas effect. But, not all of that 3.6% of the greenhouse effect is attributable to MAN-MADE CO2. Of the 3.6% of the greenhouse gas effect attributable to carbon dioxide, only about 3.2% of that is man made. Multiplying 3.6% x 3.2% gives us the total greenhouse gas effect attributable to MAN-MADE CO2, which is only 0.12%. **In other words, 99.88% of the greenhouse gas effect in the atmosphere is due to NATURAL causes.** So while it is true that man contributes to the greenhouse warming of the earth, the amount is indeed small, relative to what nature furnishes. Sometimes an issue such as this is all about scale, magnitude, and common sense. If 99.88% of anything was beyond your control, would you take draconian measures to try to change the 0.12% that was? Likely not.



NATURAL CAUSES OF PLANETARY WARMING AND COOLING

Proponents of the anthropogenic global warming hypothesis contend that the warming over the last 30 years, which has gotten everyone so upset, was unique, and therefore, caused by human emissions of CO₂. However, it is more REASONABLE to contend that the recent warming over the last 30-40 years was not unique and was due to natural climate cycles and not due to man made CO₂ emissions over the last 30 years. Here is the evidence:

Every 100,000 years, 42,000 years, and 26,000 years, the orbital characteristics of the earth change slightly. These changes cause warming and cooling cycles since the amount of heat from the sun hitting the earth changes as the orbit changes. The obvious cycle is the coming and going of ice ages every 100,000 years, which is due to a change in the elliptical pattern of earth's orbit around the sun. The fossil record shows this clearly (figure below)

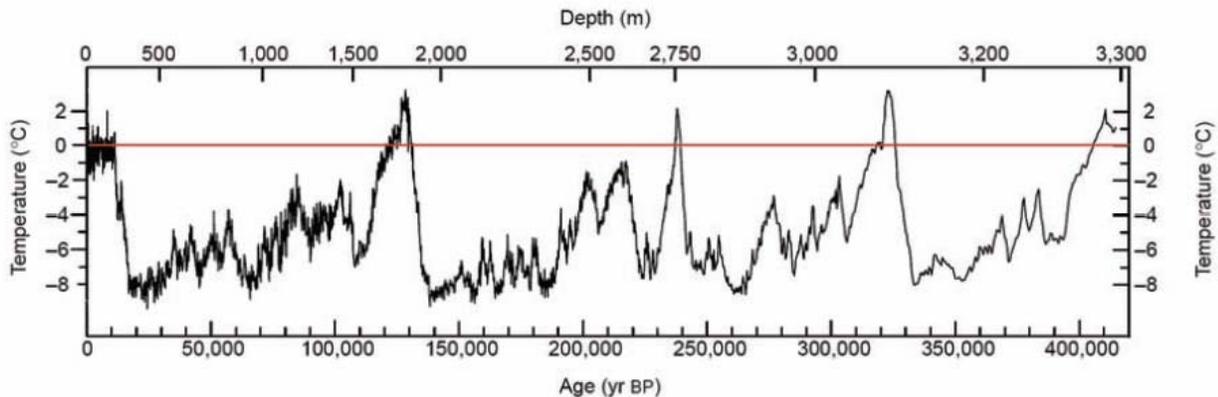
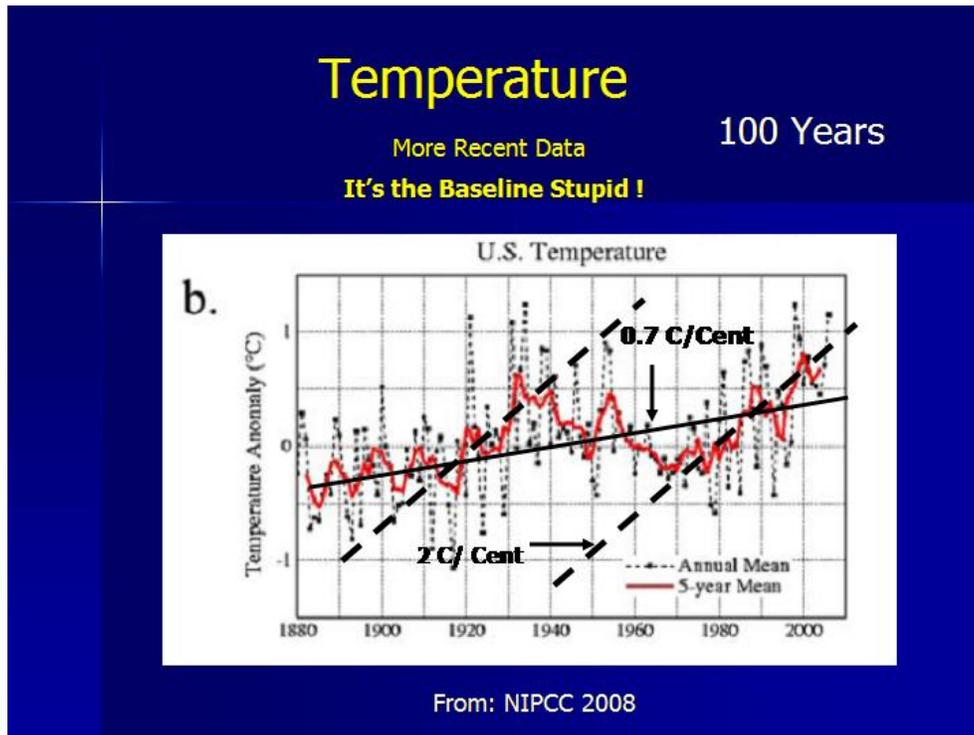


Figure 3.1. Temperature history derived by Petit *et al.* (1999) from an ice core extracted from the Russian Vostok drilling station in East Antarctica.

Our current temperature is at the far left on the graph. Clearly, the earth has been warming over the last 18,000 years because we are coming out of an ice age and in an interglacial warm period, not because mankind did anything over the last 30 years. We are warming because it is natural to do so just as it will be natural to begin a remarkable cooling in the next 500 years as we slip back into the next ice age. This ice age will last 80,000 years and cool the earth by about 15 degrees centigrade. Today, some are worried about the warming of the northern hemisphere over the last 40 years of about 0.4 degrees Centigrade. Again, it's all about scale, common sense and valid analysis of the data.

Let's look at the temperature record over the last century. We have had (2) warming periods, one in the 1920-30's and one in the 1980-2000 period. The last period is the one some are so worried about and blame on man derived CO₂. The first warm period is not due to man derived CO₂ because there was no

significant accumulation of man made CO2 until after the 1950's. The two warm periods are shown below. Can you tell which one should be man made and which one is natural?



Both have the same warming rate (dotted lines). One occurred with rising CO2 and one did not. The more likely explanation is that the second warming trend, which is being blamed on man-made CO2, was caused by the same natural forces that caused the first warming trend in the 1930's, which occurred during a stable CO2 period. In fact, we now have very compelling physical evidence that these 30 year warm and cool cycles are due to changes in heat transfer in the oceans. Such cycles as the Pacific Decadal Oscillator and the Atlantic Oscillator are more likely causes of these warmings. We don't need a to invoke a man-made CO2 argument to explain the recent warming because other known warming mechanisms are more likely, based on the available physical evidence.

Finally, it should be realized that the last warming period is over. The Earth has had no significant warming in the last 15 years, all while atmospheric CO2 concentrations continue to rise. This again argues that the last 30 year warm cycle was not caused by CO2 accumulation in the atmosphere, just as the first warming period in this century wasn't.



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CONCLUSION:

The only relevant question to address regarding global warming is whether the miniscule amounts of man made CO₂ cause the current global warming. Climate change is always occurring and is caused by natural forces. Man's contribution to greenhouse gas warming is insignificant and is so small that it is not even measurable. Therefore, trying to change the climate by trying to limit man derived CO₂ emissions through any type of public policy is pointless.