

A DANGEROUS CLIMATE

Human-caused global warming – the need for re-assessment

(Full version of an article published in the UK Sunday Telegraph, April 7, 2007)

Bob Carter

AT 4 deg. C, it is cold in the storage refrigerator. One needs to rug up well to work there.

I am at the U.S. headquarters of the Ocean Drilling Program at Texas A&M University, studying seabed cores from the southwest Pacific Ocean. As the cores pass through the British GEOTEK logging sensor that measures their character (FIG. 1), the rhythmic pattern of ancient climate change is displayed before me. Friendly, fossiliferous brown sands for the warm interglacial periods and hostile, sterile grey clays for the cold glaciations. For more than 90% of recent geological time the cores show that earth has been colder than today.



We modern humans are lucky to live towards the end of the most recent of the intermittent, and welcome, warm interludes. It is a 10,000 year-long period called the Holocene, during which our civilizations have evolved and flourished.

Backwards for hundreds of thousands of years the core alternations march. Some, metronomic in their occurrence, are ruled by changes in the earth's orbit at periods of about 20,000, 41,000 and 100,000 years; others are paced by fluctuations in solar output on a scale of centuries or millenia; and others display irregular yet rapid oceanographic and climate shifts that are caused by we know not what. Climate, it seems, changes ceaselessly in either direction: sometimes cooling, sometimes warming, oft-times for reasons that we do not yet fully understand. Similar cores through polar ice reveal, contrary to received wisdom, that past temperature changes were followed - not preceded, but *followed* - by changes in the atmospheric content of carbon dioxide. Yet the public now believes strongly that increasing human carbon dioxide emissions will cause runaway warming; it is surely a strange cause of climate change that naturally postdates its supposed effect?

Am I then the first scientist to have observed these climate patterns? Of course not. That climate changes frequently, rapidly and sometimes unpredictably has been conventional knowledge amongst earth environmental scientists since the early days of ocean drilling in the 1970s. Yet we do not read about natural climate change in the everyday news. Instead, in pursuit of their circulation needs, newspapers and radio and television stations now bludgeon us with a merciless stream of *human-caused* global warming alarmism. Such climate alarmism appears to sell copy second only to sex and sport, and it is egged on by a self-interested gaggle of journalists, environmental lobbyists, scientific and business groups, church leaders and politicians, all of whom preach that we must "stop climate change" by reducing human carbon dioxide emissions (by the by, two propositions that are each individually ridiculous). Material comforts assured, and insulated from financial pressure inside their private mansions, jets and limousines, celebrities such as Bono, Oprah Winfrey, and Barbra Streisand buy bogus carbon credits and urge the citizenry to don the hair-shirt of carbon taxes.

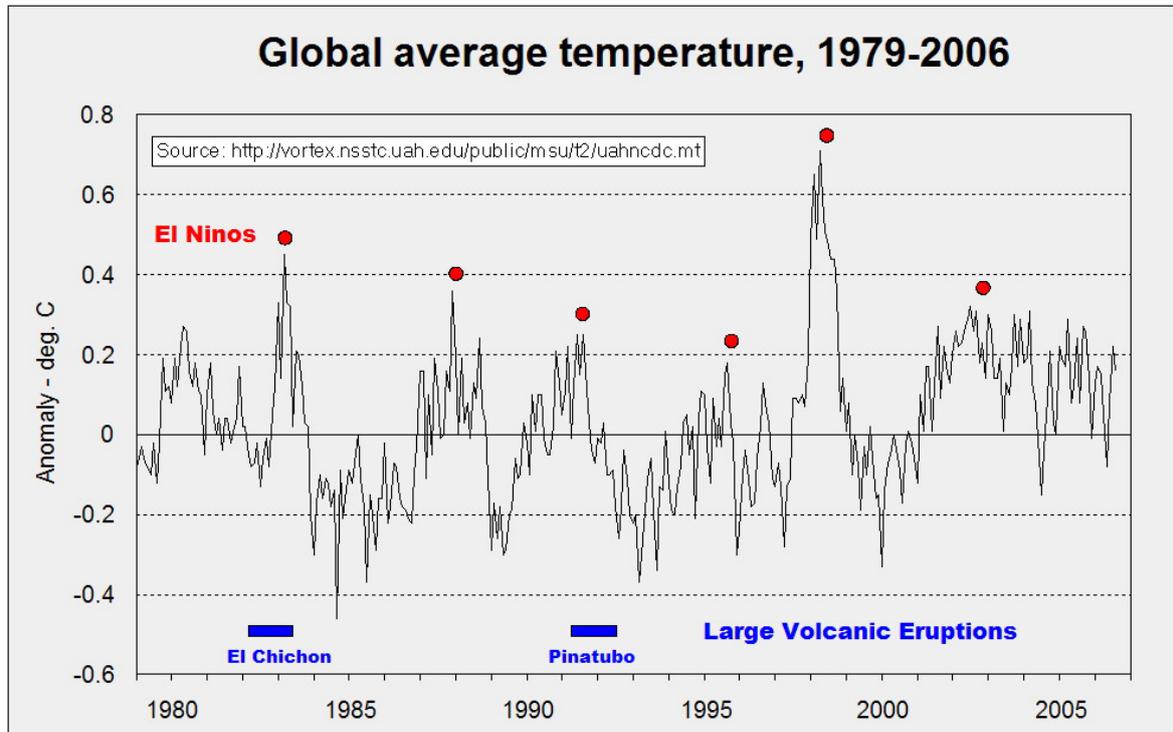
Public utterances by such prominent persons are marked by an utter ignorance of the important facts and uncertainties of climate science, as opposed to an easy familiarity with the repetitive climate propaganda furnished by NGOs and the U.N.'s Intergovernmental Panel on Climate Change (IPCC). Leading public figures, including Governor Arnold Schwarzenegger, Prime Minister Tony Blair and former Vice-President Al Gore, appear to be completely unaware of the foolishness of many of the policies that they espouse. As geologist Robert

Giegengack recently told his students at the University of Pennsylvania “Every single one of you knows more about (global warming) than Al Gore”. But the knowledge of geology students, even if summed around the world, carries little influence and is not heard amongst a media hysteria that feeds off the views of celebrities and biased journalists.

The body to which governments turn for advice on climate change is the IPCC. The IPCC has issued three substantial statements, the First (1990), Second (1995) and Third (2001) Assessment Reports, each of which incorporates the research and opinions of many hundreds of qualified scientists, and its 20 chapter, 1572-page Fourth Assessment Report was released yesterday (April 6). The full reports are detailed and compendious, and each is therefore accompanied by a short chapter termed a Summary for Policymakers (SPM) that is designed for political application. Many distinguished scientists refuse to participate in the IPCC process, and others have resigned from it, because in the end the advice that the panel provides to governments is political and not scientific. Despite accrued expenditure of at least US\$50 billion on climate research, the science arguments for a dangerous human influence on global warming have, if anything, become weaker since the establishment of the IPCC in 1988. Yet the rhetoric of IPCC alarm has been successively ramped up, from “the observed (20th century temperature) increase could be largely due to ... natural variability” (1990); to “the balance of the evidence suggests a discernible human influence on climate” (1995): to “there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities” (2001); to it is “90% probable” that the recent warming is “due to the observed increase in anthropogenic greenhouse gas concentrations” (2007). What *can* the evidence be for these increasingly dramatic warnings?

The IPCC advances three main categories of argument for a dangerous human influence on climate. The first is that over the 20th century global average temperature increased by about 0.7 deg. C, which indeed it did if you accept (against the odds) that the surface thermometer record used by the IPCC is accurate. More reliably, historical records and many geological data sets show that warming has indeed occurred since the intense cold periods of the Little Ice Age in the 14th, 17th and 19th centuries. The part of this temperature recovery which occurred in the 20th century is the much famed “global warming”, alleged by climate alarmists to have been caused by the accumulation of human-sourced carbon dioxide in the atmosphere. However, our most accurate depiction of atmospheric temperature over the last 25 years comes from satellite measurements (FIG. 2) rather than from the likely warm-biased ground thermometer record. Once the effects of non-greenhouse warming (El Nino) and cooling (volcanic eruptions) events are discounted, these measurements indicate an absence of significant global warming since 1979, i.e. over the very period

that human carbon dioxide emissions have been increasing rapidly. The satellite data signal not only the absence of substantial human-induced warming, by recording similar temperatures in 1980 and 2006, but also provide an empirical test of the greenhouse hypothesis as understood by the public - a test that the hypothesis fails.



The second category of alarmist argument rests upon circumstantial evidence. It is epitomized by Al Gore's film "An Inconvenient Truth", which claims that human greenhouse emissions are causing accelerated melting of icecaps, dangerous increases in the rate of sea-level rise, increases in the frequency and intensity of droughts or catastrophic storms, and enhanced rates of biodiversity loss. Every such circumstantial argument ignores two basic facts. The first is that all environmental phenomena fluctuate in their rate, frequency or intensity as part of the normal workings of our dynamic planet. The second, which follows, is that whether a particular short-term change over, say, the early 21st century has any human causation can only be assessed when all the causes of natural environmental change are fully understood. Many different fields of study are involved and all are the subject of intensive ongoing research. From this research emerges one implacable fact. It is that - despite the weekly promulgation of new alarmist headlines by notorious warmaholic journalists such as George Monbiot - in no case yet has any climate-sensitive environmental parameter been shown to be changing at a rate that exceeds its historic natural rate of change, let alone in a way that can be unequivocally associated with human causation. This generally happy news, of course, does

not mean that the planet has rendered a judgement of “not guilty” upon us, but rather that while the jury remains out a presumption of innocence applies. The scientific equivalent of this is Occam’s Razor (the principle of simplicity), under which environmental change is assumed to be natural until cause can be demonstrated otherwise.

The third line of IPCC argument, and the least convincing of all, is the use of computer calculations to assess the likely future course of climate. Many billions of dollars have been expended by major climate research groups around the world on honing complex General Circulation Models (GCMs) of the ocean and atmosphere. Each of these models comprises more than a million lines of code and all are deterministic, which is to say that they specify the climate system from the first principles of physics. The models are a great intellectual accomplishment, and their application helps us to understand environmental and climatic change in many different ways. GCMs are, however, not predictive tools, which is why even their proponents refer to their output as climate “scenarios” and not “predictions”. For many parts of the climate system, such as the behaviour of turbulent fluids or the processes that occur within clouds, our knowledge of the physics is incomplete, which requires the extensive use of parameterisation (read “educated guesses”) in the computer models. As Hendrik Tennekes remarked recently, “a (GCM) prediction fifty or a hundred years into the future is an idle gesture”. That the IPCC relies so heavily upon complex GCM-generated scenarios as the basis for its climate alarmism is in point of fact alarming in its own right; it also reflects the absence of any strong empirical evidence for human-caused climate change, as outlined earlier.

Special pleadings aside, the evidence for dangerous global warming forced by human carbon dioxide emissions is extremely weak. That the satellite temperature record shows no substantial warming since 1978, and that even the ground-based thermometer statistic records no warming since 1998, indicates that a key line of circumstantial evidence for human-caused change (the parallel rise in the late 20th century of both atmospheric carbon dioxide and surface temperature) is now negated.

In February this year, the IPCC released the SPM for its Fourth (Science) Assessment Report, followed yesterday by the launch of the full report. Using GCMs, the new report projects a temperature increase by 2100 of 1.1 to 6.4 deg. C. This is a wider range than the 1.6 to 5.8 deg. C projected in the third assessment report, which implies less rather than more certainty regarding future temperature trends. The report also continues the regrettable IPCC practice of allocating arbitrary numerical probability estimates to the causes and risks of future climate change. In the present state of knowledge, no scientist - IPCC acolyte or otherwise - can justify the statement that “most of the observed

increase in globally averaged temperature since the mid-20th century is very likely (= 90% probable) due to the observed increase in anthropogenic greenhouse gas concentrations”, as stated in the 2007 SPM.

The environmental catch phrase of the moment is “sustainability”. It is therefore a good question to ask how much longer politicians, responding to pressure from the IPCC and other lobby groups, and bombarded with alarmism by the media, can sustain the fiction that dangerous human-caused climate change is upon us. That climate change is part of our planet’s normal, ongoing dynamic behaviour is not in doubt. Nor should there be any doubt about the need for governments to prepare sensible response plans for future climate change, both warmings and coolings. But reflection on recent climatic episodes like the historic Little Ice Age makes it plain that future climatic coolings will cause much greater damage to our societies than will mild warmings similar to that of the 20th century. That 20th century warming - the most recent of many previous warm phases of similar or greater magnitude - was dangerous or human-caused, or even that the warming has continued after 1998, all yet remain to be demonstrated,

Bob Carter is geologist and environmental scientist at James Cook University, Australia. His webpage is http://members.iinet.net.au/~glrmc/new_page_1.htm
