

OCEAN TEMPERATURE AND CO₂

Global Climate Change Has Natural Causes

by Lance Endersbee

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Prof. Lance Endersbee

In the 15th and 16th centuries, the climate in Europe was cold and unpredictable. Crops failed. Famine followed famine, bringing epidemics. There was a belief that crop failures must be due to human wickedness. But who were the wicked ones? It was believed that there must be some witches who are in the grip of the devil. Witches were named, Inquisitors tested their faith, and a large number of poor souls were condemned and

burnt at the stake. For decade after decade, fires burned in most towns in Europe.

It is an example of a public delusion. In 1841, Charles MacKay wrote a book, *Extraordinary Public Delusions and the Madness of Crowds*, which has since been reprinted. MacKay describes several popular delusions such as "The South-Sea Bubble," "The Tulipmania," "The Crusades," and "The Witch Mania." We read it today with a detached amusement, but there have been many other popular delusions since MacKay wrote his book. We are not immune to the madness of crowds.

Today, there is global warming. The droughts and warm weather are regarded as punishment for the environmental sins of mankind. The particular cause is claimed to be the use of carbon fuels.

Over the past two decades, the concepts of "man-made global warming" and "man-made climate change" have come to be accepted as reality. They are repeated every day, in the papers, on TV, in schools and universities. Many governments, and the United Nations, have declared their faith that man is causing global climate change. But is it true, or is it just another extraordinary popular delusion?

In Australia, the newly elected government won support on the popular understanding that they would *stop* climate change. Such a claim is arrogant, and scientifically impossible. But there was no demur.

Many scientists, engineers, farmers, and others around the world have sound reasons to believe that global climate change has natural causes, but there is little learned discussion. The reason is that *climate change* has now become a political and economic issue, and is no longer a scientific issue. These days, scientists from various disciplines cannot even reason together on climate change. If one has a scientific opinion opposing the popular doctrine of *climate change*, it is au-

1. *A Voyage of Discovery* may be obtained from www.bookshop.monash.edu.au.

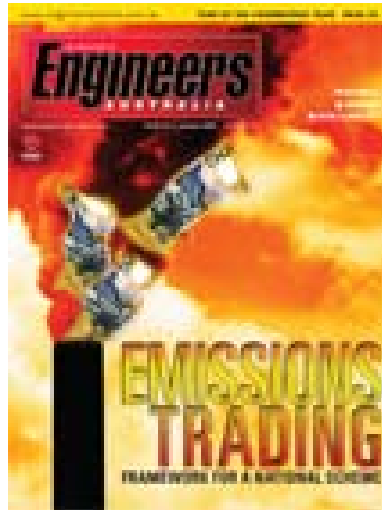
tomatically treated as a political statement.

A good example is Engineers Australia. This learned society adopted climate change as policy, without any learned discussion at all. The recent issue of *Engineers Australia* magazine for January 2008 was about “Emissions Trading,” with the footnote, “Framework for a National Scheme.” There was no room for the learned view that emission trading is a popular delusion.

In Australia and New Zealand, many farmers have noted that there is no evidence of man-made climate change in their farm records for over a century and more. Similarly, engineers have noted that the records of rainfall and runoff for over a century show no evidence at all of man-made climate change.

Setting Evidence Aside

Yet the Council of Engineers Australia decided to set all that historical evidence aside in favor of a vague notion of man-made “climate change.” I am a past president of this learned society and think that the decision was harmful to the members. Engineers carry responsibilities for planning



Endersbee: “No room for the learned view that emission trading is a popular delusion.”

and building our future infrastructure, including electricity and water. Their professional responsibilities demand intellectual independence, and a critical awareness of world knowledge in their field. They are harmed when their own learned society sets political acceptability above intellectual integrity.

An early action of the newly elected government in Australia was to attend the recent United Nations Conference on Climate Change in Bali and to sign the Kyoto Protocol. The protocol is designed to reduce carbon emissions. The scientific basis is the assumption that carbon dioxide is a pollutant. It is merely an *assumption*.

A group of about 100 scientists from around the world, including the author, united by common concern about the scandalous promotion of *man-made climate change*, made a formal submission to the Secretary-General of the United Nations at the time of the recent Bali Conference. The dissident scientists were concerned that the Intergovernmental Panel on Climate Change (IPCC) and its supporters were quite wrong in their predictions of rising carbon dioxide levels, continued warming, rising sea levels, and so on, and were thereby subverting governments



NOAA

Most of the change in atmospheric CO₂ levels results from changes in ocean surface temperature. A warmer ocean releases more carbon dioxide into the atmosphere.

and the public. The submission was made, but it was not at all welcome.

The Australian government has initiated an enquiry into the economic consequences of "Emissions Trading," chaired by Prof. Ross Garnaut, an economist. The basis of the enquiry is the assumption that man-made climate change is a fact. Another group of concerned scientists and engineers submitted a proposal for a Joint Australia-New Zealand scientific Royal Commission on Climate Change, insisting that the government should get the science right first. I am a signatory.

An example of the strength of scientific criticism of IPCC can be seen in a paper by two distinguished German physicists on the key assumptions in the IPCC computer studies. Their paper, "Falsification of the Atmospheric CO₂ Greenhouse Effects Within the Frame of Physics," by Dr. Gerhard Gerlich, of the Institute of Mathematical Physics at the Technical University Carolo-Wilhelmina in Braunschweig, and Dr. Ralf D. Tscheuschner in Hamburg, July 2007, may be found at <http://arxiv.org/abs/0707.1161v3>. It is rather advanced physics, but it certainly gives an idea of the solid scientific criticism of IPCC.

Putting Climate Change in Perspective

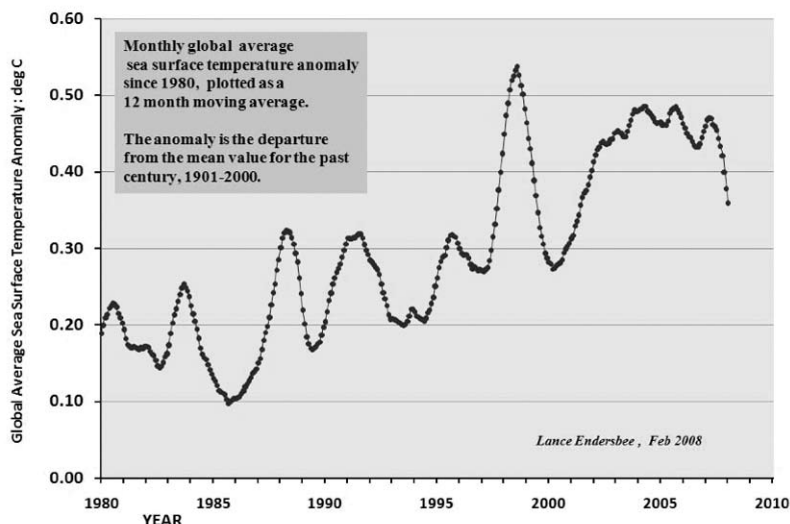
Two years ago I published my book, *A Voyage of Discovery*. It is a history of ideas about the Earth, with a new understanding of the global resources of water and petroleum, and the problems of climate change. Since then, I have continued my studies. My present understanding on global climate change is outlined below.

It is my belief that:

- Climate change is a characteristic feature of the dynamic system of the Earth, Sun, and Cosmos.
- Air pollution and global warming are scientifically separate issues.
- Emissions of carbon dioxide are not a cause of global climate change.
- Carbon dioxide is not a pollutant. It is essential for all life.
- The solubility of carbon dioxide in the oceans decreases with an increase in sea temperature, and increases with cooling.
- The oceans breathe carbon dioxide in and out with the seasons, and with major climate changes such as El Niño and La Niña events.
- The vast surface area of the oceans determines the interchange of gases between the atmosphere and the oceans.

FIGURE 1
Global Average Sea Surface Temperature Anomaly Since 1980

(12-Month Moving Average)



Note the cyclic behavior and the peak temperature in 1999, and the overall cooling since then. The causes of the cyclic behavior are not known. The major influence is probably variations in heat flow on the ocean floor from undersea volcanoes and vents.

- There is no need for carbon trading, or geosequestration.
- Carbon trading is the result of fear mongering about global warming by the IPCC and others.
- Carbon trading has not arisen from market forces, and presents enormous risks to investors.
- When it is recognized that carbon dioxide is not a pollutant, carbon trading will collapse.
- The vast areas of black pavements and dark buildings in large cities cause local heating, called an urban heat island effect.
- The deadly pollution of dust, acid gases, and water vapor entering the atmosphere in many world cities adds to the heat island effect.
- Such cities can be most unhealthy places. The problems are local, not global, and correction to this man-made pollution must be industry- and city-centered.

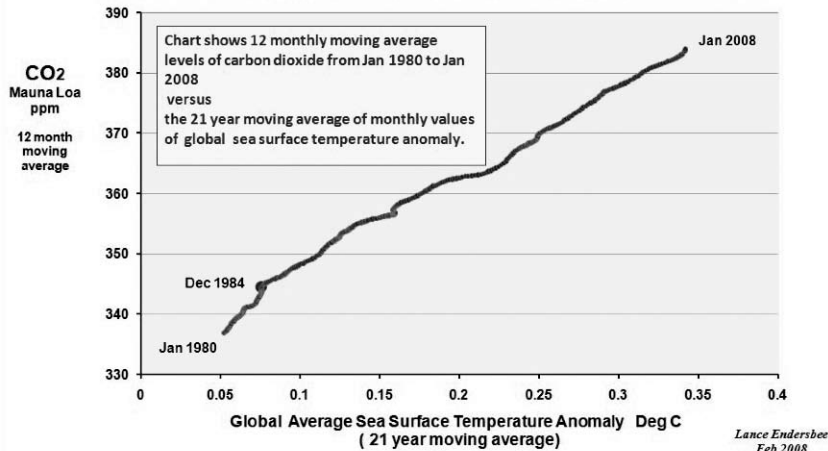
The Sun Drives Our Climate

The major driving forces causing climatic variations on Earth are the variations in the full spectrum of radiation of the Sun, the variations in the orbit of the Earth around the Sun, the varying gravitational influence of the larger planets on the Sun, and the influence of cosmic radiation on both the Sun and the Earth.

The oceans have a major influence in helping to regulate

FIGURE 2

Experience Curve Relating Actual Atmospheric CO₂ Levels With Actual Global Average Sea Surface Temperature



This is not a time scale, but just the simple relation between two physical parameters— atmospheric CO₂ and sea surface temperature— independent of time. The line shown is the sequence of actual plotted points for each end-month of the two moving averages. There is strong consistency from December 1984 onwards, which reflects the better accuracy and consistency of the temperature records from satellite data. During the period of record on the chart, the sea temperatures have been rising. Sea temperatures are now starting to fall, and it is expected that the strong relationship between sea surface temperatures and CO₂ will continue to hold.

climate on Earth. The two accompanying charts show the cyclic behavior of the surface temperature of the oceans, and the way the oceans and the atmosphere comprise an integrated system.

It is difficult to see any influence of human activity in the variations of sea surface temperatures shown in the chart (Figure 1). The gaseous emissions of our industrial world are virtually constant. However, the popular assumption is that the overall increase in temperature is due to carbon dioxide emissions.

Overall, the sea surface temperature over the period from 1980 to 2007 has been warmer by about 0.3°C above the mean temperature for the past century. Thus, on a long-term average, the sea surface temperature would be expected to be 0.3°C cooler than today.

The present Winter in the Northern Hemisphere has been the coldest for several decades. Scientists studying solar behavior report that the Sun is relatively quiet and that we may expect a further cooling of Earth climate.

Thus it seems probable that the recent cooling of sea surface temperatures will continue.

The 21-year moving average of sea surface temperatures was used in order to cover a complete solar cycle, including the change in polarity of the Sun. It also covers the cycle of El Niño and La Niña influences on global climate. Such a

long-term moving average also recognizes the vast storage capacity of the oceans for carbon dioxide, and the slow changes.

There is a clear and strong relationship between levels of atmospheric carbon dioxide and long-term average sea surface temperature. This would be expected from the solubility curves for carbon dioxide in water. At 15°C (59°F) and atmospheric pressure, water can absorb its own volume of carbon dioxide. At 5°C cooler, i.e., 10°C (50°F), water absorbs 19% more than its own volume; and at 5°C warmer, i.e., 20°C (68°F), water absorbs 12% less than its own volume. Thus a warmer ocean releases more carbon dioxide into the atmosphere. Figure 2 reflects the strong sensitivity of the solubility of carbon dioxide in water to variation of temperature of the water.

The deeper oceans have a great capacity to store and release carbon dioxide. If we just double the pressure in the water to two atmospheres, equivalent to a depth of water of 10 meters (32.8 feet), the volume of gas absorbed is also doubled.

The experience curve shows the huge capacity of the oceans to absorb the carbon dioxide emissions of mankind without departure from the experience curve.

The clear relationship in Figure 2 is only evident in the recent data on global average sea surface temperatures derived from satellite observations. The earlier data on sea temperatures from ships and moored buoys were limited in areal coverage, and in frequency of observations. It is understandable that the historical data are quite inconsistent with the recent satellite data.

It is emphasized that this chart is just a plot of actual experience. It is not a theoretical construct. If the IPCC ever included this actual experience curve of carbon dioxide and sea temperatures in its computer simulations, this would have a dramatic effect on its conclusions.

The recent observations of a quieter Sun, together with the much colder weather in the Northern Hemisphere Winter, suggest that it is probable that there will be continued global cooling. Thus we may expect a continued decline of sea surface temperatures. In that event, we may anticipate that carbon dioxide levels in the atmosphere will also decline.

In essence, I anticipate that within about three years we will be experiencing natural global cooling, and we will be recognizing that the present fears of man-made global warming were just a delusion.