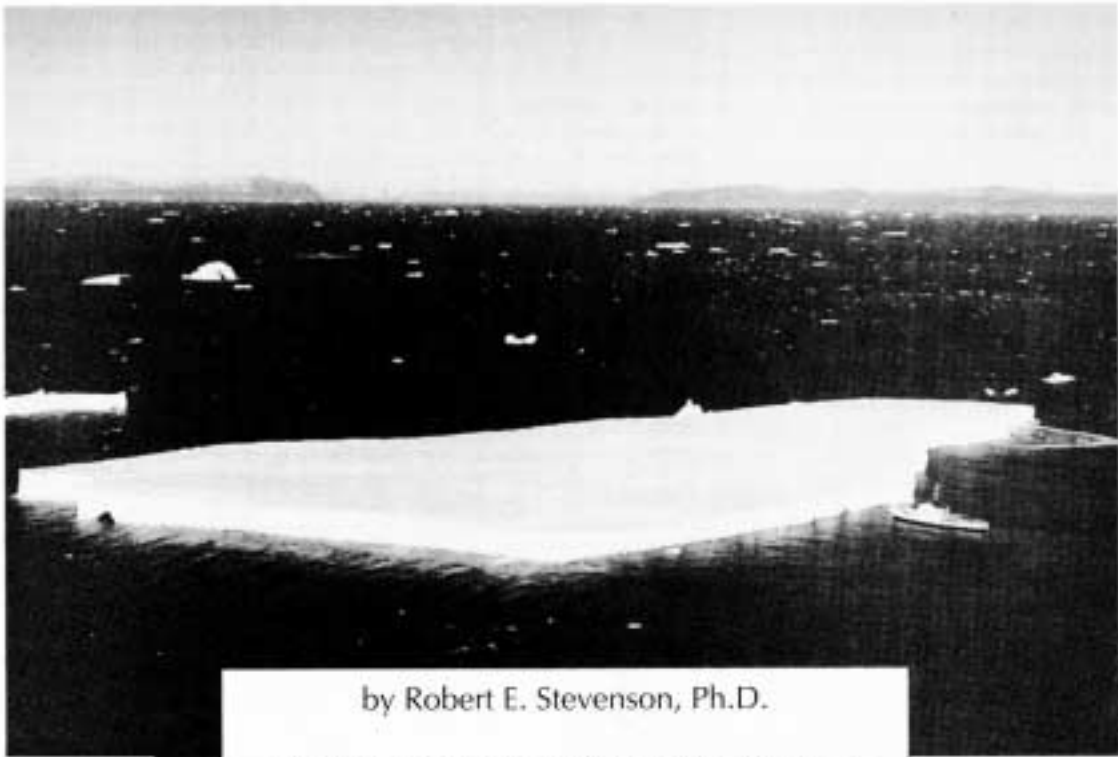


An Oceanographer Looks at the Non-Science of Global Warming



by Robert E. Stevenson, Ph.D.

The science of climate has been buried alive by an avalanche of ideology-based computer models.

Not so long ago, in the early 1970s, climate scientists thought in 100,000-year cycles, or at least 10,000-year cycles, and were talking about global cooling. Scientifically speaking, the evidence indicated that the Earth was coming out of a 10,000-year interglacial period, on the way to a new ice Age. Some scientists thought that this might happen in perhaps hundreds or thousands of years, while others thought it might take only 100 years. A lecture at Scripps Institution of

Oceanography in La Jolla, Calif., by Prof. John Isaacs in 1972, for example, startled the entire staff by promoting the latter fast track.

The National Science Foundation and the National Academy of Sciences both began looking at the Ice Age concept, and beating the bushes to look for scientists who would research climate. The emphasis seemed to be not so much one of science, but of devising scenarios to explain how climate change might be very rapid—and might adversely and drastically affect human behavior, for example, forcing entire populations to move south.

To give you the flavor of this: At the time (1974), the disaster-is-coming atmosphere was so thick, that I submitted, tongue-in-cheek, a proposal to the National Science Foundation (NSF) asking funds to study the Polynesians. My alleged rationale was that it would be useful to look at a population, which, for some reason, possibly environmental, had packed up all its members and possessions, and traveled via canoe thousands of miles to set up a new civilization on a faraway island. I requested funds for a three-year project that would outfit a large sailing ship, fully equipped, including medical specialists, in order to sail to the less populated islands and try to find out from the present residents, what events prompted their ancestors to move. (The idea of the doctors and dentists, was to offer islanders some services in exchange for their history.)

To my great surprise, the NSF was ready to fund this proposal; the funders were crushed to find out it was a joke! The science funding agencies, in this period, also gave birth to computer climate modeling. That action buried the actual science of climate, based on study of the solar-astronomical cycles and their correlation with long-term climate changes.

It was then, in the early 1970s, that ideology, and not science, began to drive so-called climate science. If a disaster scenario for global cooling might promote the use of more fossil fuels, and hence more industrialization and more population, another scenario would have to be found—equally scary but more directly blamable on human activity. The driving force, it seemed, was to get people to blame science for environmental disasters, to use fewer resources, and to shrink the world population, particularly its brown, black, and yellow parts.

And so the climate science funding proliferated, climate modeling proliferated, global warming and “greenhouse effect” propaganda proliferated—and climate science, based on study of solar astronomical cycles, oceanography, geology, and so on, was relegated to the closet.

Enter the Greenhouse

That there is a “greenhouse effect” in the atmosphere has been known and studied for more than 100 years. That there are certain obvious gases that make up the “greenhouse” has also been known; gases such as carbon dioxide, methane, nitrous oxide, ozone, and water vapor. The residual “natural” greenhouse effect (without the supposed anthropogenic input in the last 150 years), has been sufficient in the past 12,000 years to raise the Earth’s atmospheric temperature by about 15°C, mainly as a result of the presence of water vapor and carbon dioxide. Considering the temperature at the beginning of this rise (about 5°C), with glaciers extending across all of North America to Cairo, Illinois, and in northwestern Europe,

that increase in temperature has been rather beneficial to the well-being of humankind—to say the least.

It was as early as 1896 when Svant Arrhenius, at the University of Oslo in Norway, wondered, to himself and his colleagues, whether or not the expanding use of fossil fuels would lead to a shift in climate by the increase in atmospheric carbon dioxide. Professor Arrhenius was bringing to the surface an issue first commented on decades earlier by Jean-Baptiste Fourier and John Tyndall, both significant scientists in those days.

It was just 60 years later when Svant’s son, Gustav, convinced the director of Scripps Institution of Oceanography in La Jolla, Calif., Roger Revelle, that it was time to begin measuring regularly the atmospheric content of carbon dioxide. Revelle agreed and hired a young post-doc out of Cal Tech, Dave Keeling, to set up a CO₂ laboratory atop Mauna Loa, on the big island of Hawaii. At that height, it would be above the marine inversion layer and, therefore, represent a basic, “pristine,” Earth atmosphere.

By 1970, Keeling had enough useful measurements that Revelle considered it safe to announce that CO₂ in the atmosphere was increasing. Furthermore, because there were yet no carbon-12/carbon-13 microchemical analyses, the assumption seemed logical that the increase was from CO₂ produced by the burning of fossil fuels.

By the early 1980s, other carbon dioxide measuring stations had been established, in Bermuda and Antarctica especially. Furthermore, it was becoming possible to obtain useful samples from aircraft and high-altitude balloons. By 1990, the increase, as measured by all stations, indicated that the CO₂ content of the Earth’s atmosphere was about 23 percent higher than it had been in 1840. This 23 percent is an estimate, in reality, because in 1840 there were no reliable measurements of atmospheric CO₂.

Well, so a 23 percent increase in CO₂ isn’t as reliable as we might wish it to be. It is an increase, though, and it must be the result of the burning of fossil fuels. What else could it be? So, the presumption was born and grew under the careful tutelage of the new, growing breed, the green “environmentalists.” They, in turn, found kindred souls in the computer modelers who, finally, had computers with enough RAM memory and disk storage to carry enough input to make their predictions seem plausible.

As a result, a story began to emerge that seemed to be credible if we were to believe the “evidence.” And, who among the proletariat had any reason to doubt what “scientists say” or what “researchers say”? As the story goes, and it is familiar to us all, the increasing amounts of CO₂, methane, ozone, nitrogen oxides and the family of freon compounds produced by man will enhance the “greenhouse.” As a result, more Earth-reflected solar radiation than normal will be “trapped” in this intensified “greenhouse,” in the form of heat, thus raising the mean temperature of the globe.

The consequences, so the story continues, will be dire. Sea levels will rise because of the melting of the polar ice, large regions of forests and farmland will be destroyed, increased evaporation will wipe out all irrigation systems, and the changes in weather patterns will lead to droughts, or floods, or worse.

During the last period the Earth was significantly warmer

then it is today, during the "climatic optimum," about 1200 to 1400, there were vineyards in England and in Greenland ("Vineland"). Even as late as 1800, oranges grew at Natchez, Miss., and the Sahel was a vast, grassy plain. Considering climate change through the past 700 years, one can hardly say that today's globe is warming.

Speculation on Top of Speculation

There was, and is, of course, a disagreement about the reaction to a warming atmosphere, if there were to be one. Certainly, goes one argument, a warming ocean would result in increased evaporation, thence clouds and precipitation. The greater than normal cloud cover would decrease incoming radiation, lowering temperatures at the Earth's surface (V. Ramanathan of Scripps has verified this point). The increased precipitation would enlarge the continental glaciers, in Antarctica and Greenland, thereby resulting in a falling, rather than a rising, sea level. The greater-than-normal rainfall would enhance the growth of vegetation, crops, and forests, decreasing, as a result, the area of arid regions and improving the food supply worldwide.

So, we have speculation on top of speculation. Answers can come only when we know better than we do now the interactions, the fluxes, and the transports in the entire environmental system of the Earth. And, that's what research is all about.

The modelers would have none of this concept, however. Especially after James Hansen, of NASA's Goddard Space Flight Center, appeared before a Congressional committee in the summer of 1988, during one of the hottest months on record, and declared that there was no denying it, "Global warming is here!" Considering the temperature in Washington, D.C., at the time, it was simple for everyone to agree. The panic was on!

To scientists in federal laboratories, institutions funded by federal agencies, to the non-governmental organization (NGO) environmental advocacies (Worldwatch, World Wildlife Fund, Sierra Club, Greenpeace, and so on), and to a number of international organizations seeking a cause célèbre, the announcement and the political acceptance promised a bonanza. New federal offices were created, such as the U.S. Office of Climate Change, operating in the National Academy of Sciences. New international groups were created, such as the International Geosphere-Biosphere Program.

The United Nations, where control is the operative word, quickly organized the United Nations Environmental Program (UNEP), with Dr. Noel Brown, a social scientist (now retired), as the Director. UNEP immediately initiated the Intergovernmental Panel on Climate Change (IPCC), funded through the World Meteorological Organization (WMO). In turn, WMO quickly formed the World Climate Research Program (WCRP). And the money flowed.

One of the first "products" of these cliques was the preparation of a "treaty" to be signed by the world at an international "summit," so that the growing impact of humankind on the Earth's environment could be slowed (maybe stopped) to avoid the catastrophe unfolding from computer models. Humankind, especially those who lived the "good life" in the so-called Western world, were the unconscionable "bad guys" in this scenario, and they would bear the brunt of any controls. Those in the less affluent societies, who could not provide the

resources to avert the "discernible human influence on the global climate," would be covered by funds from the "bad guys"—about \$150 billion per year.

And so, the Rio Earth Summit took place in 1992, trumpeting the greed of the "Western populations"; and all but a handful of countries signed "treaties" giving the U.N. the authority to control those human activities that the models claimed were adversely impacting the global climate. Those nations that did not sign the treaty, include the United States, the former Soviet Union, China, India, and the European Community.

IPCC Sounds the Alarm

Before the Rio Summit took place, in the summer of 1992, it was necessary to have an "official" document of the effects to be experienced from the "human influence on the global climate." This document was dutifully produced by the IPCC in 1990, from a group of about 200 of the most "competent professionals" from member countries of the U.N.

Chaired by Dr. Bert Bolin, renowned meteorologist, this group included such other stalwarts as Sir John Houghton of the United Kingdom, Thomas Wigley from the U.S. National Oceanographic and Atmospheric Administration (NOAA), and a lot of other scientists of good repute. There were also a number of panel members who probably had clear conflicts of interest, such as Merylin Hedger, climate policy officer of the Worldwide Fund for Nature. Scientific truth could be expected from scientists as Bolin, Houghton, Wigley and the like. One might question the input from members who were environmental advocates and had, therefore, vested interests other than scientific truth.

Well, the 1990 IPCC report stated that in the past century (1) CO₂ had risen by more than 30 percent, (2) average temperatures worldwide had increased by 1.2° to 1.5° Celsius, and (3) sea level rose by 50 to 60 centimeters. Then they predicted that we could expect (1) CO₂ would grow by another 50 percent, (2) atmospheric temperatures would increase by 3° to 4° Celsius, and (3) sea level could rise up to six meters, as the polar icecaps melted with the global warming—all by the year 2050.

A good choice of timing: Who of these clowns would be around in 2050 to be faced with their predictions?

'Working Geophysical Scientists' Respond

I must say, also, that the "working geophysical scientists"—the oceanographers, the meteorologists, the atmospheric chemists and physicists, and the basic climatologists—were all caught by surprise by the vast publicity that spread through the media and popular press from what were clearly speculations—speculations that were publicized even though there was no suitable scientific research to support the claims. But, how was the the public to know that? Furthermore, it seemed that journalists, editors, and publishers, as well as the electronic media, had turned overnight from reporters into advocates.

Reputable scientists disagreed that an atmospheric crisis was at hand. Nils-Axel Morner, from Stockholm University, at a meeting of the American Association for the Advancement of Science in New York, scorned the prediction of rising sea levels. He noted that there was simply not enough water in mid-latitude glaciers to cause such a rise (of several meters),



Science was left by the wayside as scientists, journalists, non-governmental organizations, and political officials scrambled onto the greenhouse bandwagon.

and that a 4° Celsius increase in temperature (the modelers' claim for the year 2050) might result in sea level rising 4 inches. Morner got no play in *The New York Times* the next day, or elsewhere.

Robert Stewart, from Victoria University in Vancouver, British Columbia, had given a keynote address at the Joint Oceanographic Assembly, Acapulco, Mexico, in August 1988, on the conditions around the world that influence changes in sea level. Considering every possible factor, he noted that eustatic sea level had been rising at a rate no more than 1 millimeter per year for the past two centuries, and there were no natural or anthropogenic circumstances likely to change that rate for the next century.

K.O. Emery and David Aubrey, from the Woods Hole Oceanographic Institution, verified Stewart's analysis in their 1991 publication (*Sea Levels, Land Levels, and Tide Gauges*, Springer-Verlag), a *tour de force*, in which they analyzed every tide gauge location and its tidal curves worldwide for the century from 1880 to 1980. In those 100 years, eustatic sea level had risen 11 centimeters—about the rate at which juvenile water enters the Earth's ocean water cycle, at a snappy 1 millimeter per year.

Bob Balling, from Arizona State University, a world renowned and respected climatologist (who does not get invited to the IPCC) had the following to say at a 1994 meeting of Doctors for Disaster Preparedness in Tucson:

From 1979 to 1990, and during the time of most rapid buildup in atmospheric concentrations of greenhouse gases, the satellite-based temperature measurements have shown a planetary warming of only 0.001°C (including data from 1991 and 1992 would lower this value because of the cooling effects from the aerosols produced by Mt. Pinatubo). Most of the numerical models of climate suggest that the warming (given the known increase in equivalent CO₂) should be of the order of 0.3°C over the same period of time. The satellite data indicate virtually

no warming at all, and certainly do not support the claim of accelerated warming in recent decades.

From the global evidence, along with mounds of hemispheric and regional evidence not covered here, I firmly believe that the observed changes in planetary temperature are not consistent with expected changes given the known increases in the atmospheric concentration of various greenhouse gases. Most of the observed warming occurred before the bulk of the greenhouse gases were added to the atmosphere (in the decades of the '20s and '30s). The amount of warming has been too low to be consistent with catastrophic predictions. Many other factors other than the rise in CO₂ concentration account for the trend and variations in planetary temperature. In addition, this warming has not occurred in the right places to be consistent with the models (for example, the Arctic region). Furthermore, most of the warming has occurred at night, which is not a greenhouse expectation.

Very simply, the climate record over the last century, or decade, is not pointing in the direction of a greenhouse apocalypse.

These comments by Bob Balling were echoed by scientists around the world.

In addition, many climate scientists "jumped" on the computer models. The model problems of the 1980s, were, and still are today, that the models suffer from a bad case of holding too many things constant. Variations in sea-surface temperature, the effects of clouds, deep-ocean convection and circulation, and Lorenz's "butterfly effect," are either ignored, held constant, or even entered backwards. If clouds are entered, the assumption is that they will produce warming when, in fact, all satellite data indicate that clouds cool rather than heat the Earth.

Several reliable research scientists using and studying models, including Michael Schlesinger, from Oregon State Univer-

sity at Corvallis, pointed out that "You have every right to be skeptical [of today's models], but it is the best we can do [at this time]. Our ability to detect global warming is near zero." Mike was one of about two dozen who responded with similar caution. Several of them were in federal government laboratories; in NOAA and NASA, and who, after a few months of such reaction were heard from no more. And, as you might imagine, their responses never reached the popular media.

Scientists not under direct control of federal agencies, or dependent on federal funding, continued to provide and publish data that provided a contrary view to that of the IPCC, WMO, environmental NGOs, and federally "captured" scientists.

One of the more telling blows came from highly regarded scientists at the University of Oslo. After a detailed study of stable carbon isotope ratios of all carbon compounds that contribute CO₂ to the atmosphere, from 3,000-year old Antarctic ice cores, and evaluating Dave Keeling's data from Mauna Loa, and other Northern Hemisphere stations, Dr. T.V. Segalstad, from the University of Oslo, determined that

At least 96 percent of the current atmospheric CO₂ comes from non-fossil fuel sources; that is, natural marine and juvenile [volcanic] sources. Hence for the atmosphere CO₂ budget, marine degassing and juvenile degassing (from volcanic eruptions) are far more important, and the burning of fossil-fuel and biogenic materials much less important, than hitherto assumed.

This statement is from a paper that Segalstad presented at the 1992 Chapman Conference in Hawaii, on "Climate and Volcanic Aerosols." Over the next two years, he and his colleagues at the University of Oslo continued their evaluation of the carbon isotope ratios on thousands of additional samples from the atmosphere and stratosphere around the world. Segalstad published an update in 1994, showing that the ratios did not change from those determined in 1992. By this time, even Dave Keeling, at Scripps and Mauna Loa, agreed that the major contributions to atmospheric CO₂ come from natural sources.

You can easily imagine the reactions of the environmental activists upon hearing that there is no global warming, that the activities of "humankind" have had no impact on the world's atmosphere or stratosphere, and that there is no scientific expectation that there ever will be an anthropogenic influence on our "universal climate." The environmentalists expressed "horror" at such "callous disregard of future generations," to quote one of them. They fought back by name-calling: Scientists who oppose global warming are simply "fringe scientists." They also fought back by demanding more regulations than have already been produced by local, national, and international bureaucracies. And, unimaginable as it might seem, the environmentalists fought back with personal threats on the lives, careers, and families of those of us who have scientific truth as our fundamental agenda.

I won't bore you with the details of the interplay between scientists and environmental advocates that took place between 1990 and the next IPCC report in 1995. None of the geophysical data, nor the publications, nor the discussions by working scientists seemed to have the least bit of impact on the IPCC/WMO/UNEP.

In the popular media, it was "no contest"! The "advocates" were the clear winners. In peer-reviewed scientific literature, however, the results of fine research were "blowing the advocates out of the saddle." Since 1992, I have personally perused more than 2,800 papers that contradict "global warming."⁴

IPCC Reports to the World, Aug.-Dec. 1995

The long-awaited report from the IPCC, that all of us knew would be greatly revised from that of 1990, was a "comedy of errors."

In April, three months before the report was scheduled to be released, members of the IPCC, and observers appointed by various nations, met in Maastricht, the Netherlands, to preview and comment on the draft report prepared by the "working staff" of the IPCC. (Of course the IPCC has a staff. Do you really think the "Great and Good" at the top do all their own research, reading, delving, analyzing, interpreting, and writing?)

The members were to have the draft some weeks before the meeting, and then break up into working groups to address the many chapters and items in the report. Not only did none of the members receive the draft document ahead of time, but no copies were ready for them when they arrived in Maastricht. Nevertheless, during the confusion of the first few days, the staff—whoever they are—issued a press report to the world's assembled press, titled "Conclusions reached by the IPCC's studies over the preceding three years." As you might expect, this release was seen by none of the milling, assembled members of the Panel.

Dr. Fred Seitz, former president of the U.S. National Academy of Sciences and former president of Rockefeller University, among other credits, and currently director of the Marshall Institute, was not only unhappy; he was furious. He returned to Washington and immediately sought audiences with the Secretary of State and the president of the National Academy of Sciences. The results of these meetings were letters of condemnation, censure, you name it, to U.N. Secretary General Boutros Boutros-Ghali, the United Nations Environment Programme, WMO, and Bert Bolin, Chairman of the IPCC. The news release was retracted. Were any of the IPCC staff fired for this activity? No.

The next IPCC meeting was in Boulder, Colorado, in 1995, during the XXIst General Assembly of the International Union of Geodesy and Geophysics, at which the "official" IPCC report was discussed in several sessions over 8 hours. The IPCC had, indeed, modified the predictions made in 1990. The most obvious, and conspicuous, was the change of the prediction date from 2050 to 2100.

IPCC's 1995 Modifications

Yes, CO₂ would continue to increase in response to the burning of fossil fuels, the report said. Interestingly, there was no mention of the data and results from the research at the University of Oslo, nor of the information regarding the introduction of CO₂ from the oceans. There was considerable space used to address the increasing methane in the atmosphere—failing to mention, however, the production of methane by volcanic eruptions, of which in this past decade there have been three times the number that occurred in the past 40 years.

It was declared that "recent years have been the warmest since 1960," and that "global mean temperatures have

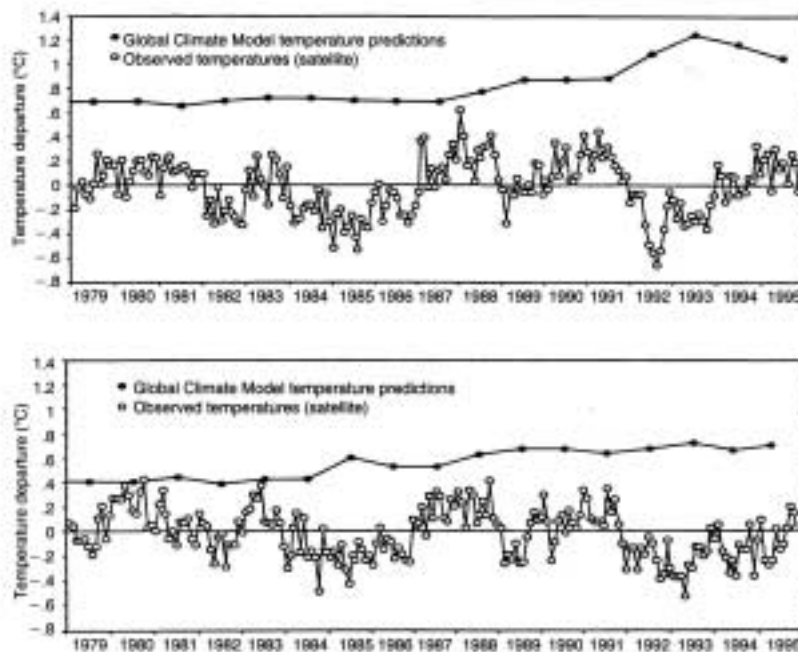


Figure 1
CLIMATE MODEL PREDICTIONS VS. SATELLITE MEASUREMENTS

Climate model predictions for temperature in the Northern and Southern hemispheres (solid black dots) are far higher than the actual satellite measurements. The observed warming is 0.5° C, while the models cited by the United Nations in 1992 predict warming between 1.3° and 2.3° C. In its 1995 report, the IPCC acknowledged that the earlier predictions were too high.

Source: Adapted from Patrick J. Michaels, testimony Nov. 16, 1995, before the House Committee on Science Subcommittee on Energy and Environment

increased by between 0.3 and 0.6° Celsius since the late 19th century.” The IPCC did not note, however, that the years between 1920 and 1940 were the warmest of this century. It was interesting, too, that the century-long increase “certified” by the IPCC is almost precisely that measured by meteorologists, and analyzed and reported by Bob Balling. He, of course, was not mentioned, even though the report had a rather extensive bibliography.

For the “future,” CO₂ would reach 500 ppmv, the report said—by the year 2100, I guess. They didn’t really say. And, during that century-long period, atmospheric temperatures would rise by 1°C. One degree Celsius! In other words, we’re going through all of this for 1° Celsius. Three-tenths of a degree is easily within the margin of error (for thermometers), and five-tenths of a degree is still dicey, because of the “heat island effect” of cities, which tends to artificially raise the average of temperatures measured.

As for sea levels: The report claimed that “global sea levels have risen by between 10 to 25 centimeters over the past century. [Ten yes, but 25, no way.] The increasing atmospheric temperature from 0.6°C (taking the highest) to 1.0°C

will result in “sea levels rising by another 15 cm.” Naturally, the IPCC report doesn’t describe the cause of this rise. Were they simply to do some elementary-school math, taking the coefficient of expansion of water (sea or otherwise), and applying an atmospheric temperature increase of 0.4°C, then reckoning with the manner of thermal distribution through the ocean surface, they would have easily produced the answer that the additional heat would raise sea level by 0.03 millimeter by the year 2100—a three-orders-of-magnitude miscalculation.

As for the temperature record: The accompanying illustrations show the following: Figure 1 compares 16 years of temperatures from U.S. satellites, as analyzed at Marshall Space Center in Huntsville, Ala., to the predictions of the climate modelers. Figure 2 is a graph produced by the staff of the “Great and Good” at WMO of global temperature anomalies from 1860, using 1951 to 1980 as the base. Notice the difference it would have made, had they used 1935 to 1965 as the base. Figure 3 is an extremely interesting graph of air temperature and sea surface temperatures from 1856 to 1987. This is from a joint study by people at the Massachusetts Institute of

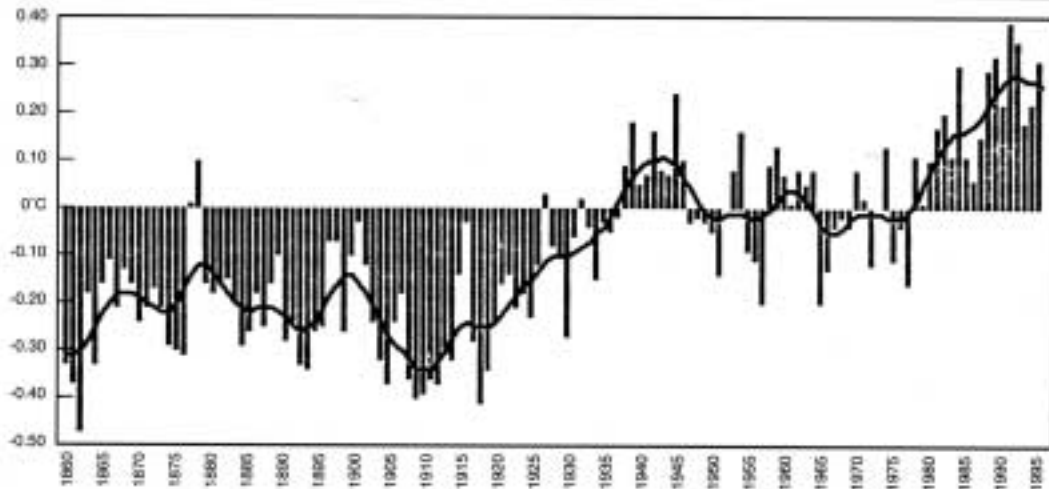


Figure 2

SEA SURFACE TEMPERATURE AND SURFACE GLOBAL TEMPERATURE ANOMALIES COMBINED (1860-1980)

Global land, air, and sea-surface temperature anomalies in °C are computed as departures from the 1951-1980 base-period means. The fitted curve is a 21-point binomial filter. This graph is updated from the one used in the 1992 IPCC report.

Source: Hadley Centre, Meteorological Office, U.K.

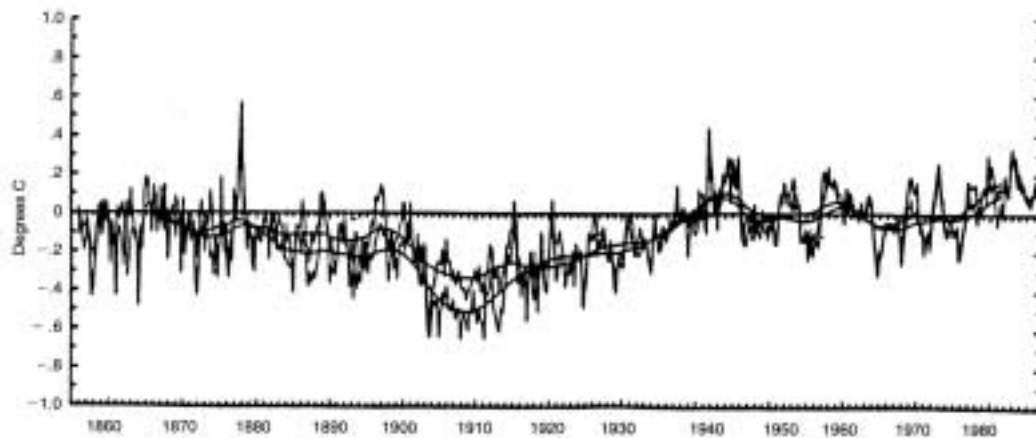


Figure 3

AIR AND SEA SURFACE TEMPERATURES (1856 TO 1987)

These data, taken from ships' logs over 130 years, indicate no change in sea surface temperatures. The higher line is water temperature; the lower line is air temperature.

The range in this graph and in Figure 2 is nearly the same; the graph in Figure 2 simply uses a larger scale than that of the seagoing data. The difference between the extremes of the data peaks in Figure 3 is 0.14°C. In Figure 2, the difference between the extremes is 0.08°C—in other words, nearly the same.

Source: Massachusetts Institute of Technology and the British Meteorological Office



The author looking out at the Pacific, near his home in California.

Technology (MIT) and the British Meteorological Office, taking the data from the logs of thousands of ships that sailed the world's oceans and seas in the 130 years in question. The researchers went to the effort to learn how water temperatures might be affected by winds blowing around the wooden and canvas buckets used to collect the water sample, and the influence of the ship on air temperatures, modifying the numbers by these results.

Everyone has agreed that the British/MIT graph indicates no change in sea-surface or marine air temperature in the 130 years since 1856. Notice, too, that the range in the WMO and the British/MIT graphs are nearly identical; the WMO simply uses a more exaggerated scale than that of the sea-going data.

Major Faux Pas

Up to this point, I've not elucidated any major *faux pas* in the IPCC report. Believe me, though, they made them: two wing-dingers, wowies, holy cows, you-got-to-be-kiddings, and you-clearly-were-absent-when-they-passed-out-brains.

The main advisory panel of the IPCC endorsed the conclusion that "the balance of evidence suggests that there is a discernible human influence on global climate." This misguided judgment created bitter arguments during a three-day meeting in Madrid in fall 1995, when "experts" from more than one country emphasized the "uncertain" nature of recent evidence pointing to human effects on climate.

The result of this discussion was to be a compromise in the language of the statement, but that did not happen. Despite the opposition of many signatory countries and their scientists, the leaders of IPCC published the "final version" using the phrase "discernible human influence," on the global climate. The un-

ethical editorial changes were exposed and published by Dr. Fred Seitz, the premier American scientist in the field. Even when exposed, the IPCC leaders claimed it was their "right" to change scientific conclusions so that political leaders could better understand the report. Unbelievable!

To the world's geophysical community, these unethical practices and total lack of integrity by the leadership of the IPCC have been enough to reveal that their collective claims were—and are—fraudulent.

The most interesting aspect of this ridiculous *faux pas* is that the responsible panel of the IPCC produced no documentation—raw data or otherwise—for their claim.

Then came the boldly false statement, of greater interest to me and other oceanographers than to others. The IPCC wrote:

It is clear that the oceans are warming significantly in response to the global warming of the atmosphere. Furthermore, this matches the evidence that coral reefs are dying.

I've already addressed the non-warming ocean to some extent, but let me add some additional documentation.

At meetings of the American Geophysical Union in 1992 (Hong Kong), 1993 (San Francisco), 1994 and 1995 (San Francisco), Warren B. White of Scripps, and six colleagues, presented a series of papers on the "Global Interannual/Interdecadal Variations in the Upper Ocean Thermal Structure." They had made careful examinations and analysis of more than 5,200,000 temperature-depth measurements between 30°S and 60°N in the oceans from 1979 to 1994. Both sea-surface temperatures and the upper ocean to a depth of 400 meters exhibited a cooling trend throughout the 1980s of about 0.1°C, followed by a similar warming through 1994. Although not a large change, the trends were clear and certain in all oceans, especially in the mid-latitudes.

In the tropics, the two extensive El Niños in the 1980s moderated the cooling tendency. By 1995, Warren had enough data, and had conducted sufficient analyses, to be convinced that the variations in both the Atlantic and Pacific followed closely the 11-year sunspot cycle.

Now for that blather about coral reefs: Richard Grigg, coral-reef expert of the University of Hawaii, has surveyed Pacific reefs and atolls multiple times in the past two decades. *There is no evidence of any reduction or detrimental modification in the growth of the corals on any Pacific or Indian ocean reef that can be attributed to warming waters.* Furthermore, from his colleagues, Grigg has learned of no such change in the reefs in any other tropical ocean or sea.

The IAPSO Data

At the August 1995 General Assembly of the International Association for the Physical Sciences of the Oceans, held in Hawaii, there were 14 symposia presented, 5 of which dealt with subjects related to climate scale variations in the oceans and marine atmosphere, in both time and space. These were (1) Large-Scale Ocean Circulation, (2) Decadal and Interdecadal Variations in the Oceans, (3) Carbon Dioxide in the Ocean, (4) Air-Sea-Ice Interactions and High Latitude Ocean Processes, and (5) Ocean-Atmosphere Coupling and the Tropical Ocean and Global Atmosphere. In those 5 symposia, about

450 oceanographers and atmospheric physicists/chemists gave papers based on research conducted in the past four years.

Without going into great detail, the "bottom lines" are as follows:

(1) *There is no warming trend in the oceans, and has not been in the past 50 years.* There are places in the ocean that get warmer than other locations for periods of time up to decades, but those waters then cool as other ocean areas warm. These periods are so close to the 11-year sunspot cycle that it is difficult not to consider a correlation. Yet, over all, there are no warming or cooling trends in any ocean, including the Southern Ocean near Antarctica.

(2) *Special attention was paid to the Arctic Ocean, when teams from the United States, Canada, and Russia occupied stations that had been visited repeatedly since 1937. The results? There is no warming trend in the Arctic, and has been none since 1937.* Indications by the Canadian team of warmer than normal water turned out to be an intrusion of water from the Atlantic. In the past 60 years, the Arctic ice pack has neither retreated nor thinned. These data are not controversial!

(3) *There is increasing evidence that the computer model calculations of the ocean's absorption of anthropogenic CO₂ may be seriously biased.* Furthermore, intermediate latitudes of the ocean are highly variable CO₂ sinks throughout the year, being disrupted by storms and mineralization of carbonates by biological processes. The ocean's summer warming, or warming by water-mass intrusions, or El Niños, makes the ocean a source of CO₂ rather than a sink, as is usually supposed. The consequence is that there is far more ocean-produced CO₂ in the atmosphere than hitherto considered.

(4) *There is a growing volume of evidence and, therefore, a rapidly growing suspicion, that an El Niño does not produce weather, such as, "El Niño rains," "El Niño droughts," and so on. Quite to the contrary. It seems that the weather comes first, then comes the El Niño!* This will cause a lot of heartburn among weather forecasters, and it also ruins the contention of the "global warmers," that much of the "warming" comes from El Niños.

(5) *It seems that the prime source of global weather (maybe even climate) lies in the tropics.* Throughout the 10 years of the International Tropical Ocean-Global Atmosphere program (TOGA), there was great evidence (a) for the basic, equatorial origin of tropical storms, such as hurricanes, typhoons, and cyclones; (b) that the equatorial ocean and atmosphere are more energetic than suspected; (c) that the Asian monsoons play significant roles in the formation of El Niños, droughts, and modifications in the ITCZ (Intertropical Convergence Zone); and (d) that El Niño characteristics in the Pacific and Indian oceans do not correlate, one with the other, in time and space.

Now, here is a scientific discovery that will have extraordinary consequences on global circulation models and the forecast models for weather systems!

(6) *There is a long way to go before we really understand all of the interactions, the vagaries, and products of weather and climate.* Furthermore, it is clear that mankind is at least an order of magnitude, in numbers, from becoming a "geophysical force" on Earth, if ever!

Were there any environmental groups, or advocates giving papers, or even in attendance at the Honolulu IAPSO Assembly? Need you ask?

Time to Get on with Real Science

So, despite the cries of Jim Hansen, Carl Sagan, Stephen Schneider, James Anderson, Susan Solomon, Rowland and Molina, Robert Redford, Barbra Streisand, Jimmy Carter, the Club of Rome, the United Nations Environmental Program, the 1992 Earth Summit in Rio, the Montreal Protocol, and Worldwatch, Greenpeace, World Wildlife Fund, Prince Philip, or even Al Gore, the human population of the Earth has not reached untenable numbers, has not become a geophysical force, and has not established practices nor products leading to "global warming!"

The evidence supporting the above six statements has become too voluminous to ignore. The "bottom line" of today is that the advocates of "global warming/ozone hole/There's no more room at the inn," have lost the game. Yet, they have so much invested in treaties, regulations, intra- and inter-governmental agencies, organizations, NGOs, prestigious positions, personal endorsements, and so on, that their efforts to blow true and selfless science out of the saddle must grow more and more pernicious by the day.

To the general populace, there may seem to be no battle at all—especially for those who read only the popular media, who are unfortunate enough to be in schools ruled by politically correct environmentalists, or who watch and believe only network news, PBS, the Discovery Channel, or the Captain Planet cartoons on CNN. But, there is a battle, and the real geophysical scientists around the world are rising to fight and intend to win—right over might, to coin a phrase.

I believe that the unabashed lies put out to the world by UNEP, IPCC, and WMO are a true injustice, a great crime, that is causing completely unwarranted anxieties for many people around the world. Officials in such international organizations are mouthing disinformation—information that is totally without merit of truth.

It is past time to bury these officials and their clique of supporters and get on with real science.

Robert E. Stevenson, an oceanography consultant based in Del Mar, California, trains the NASA astronauts in oceanography and marine meteorology. He was Secretary General of the International Association for the Physical Science of the Oceans from 1987-1995, and worked as an oceanographer for the U.S. Office of Naval Research for 20 years. He is the author of more than 100 articles and several books, including the most widely used textbook on the natural sciences.

Notes

* This total does not include the published information in scientific journals that proves the hoax of CFCs and ozone depletion. These papers would double the 2,800 figure. I, along with others, are putting together suitable documentation of this rather unbelievable story of scientific quackery. In the meantime, we can only deplore the awarding of Nobel prizes to the three leading contributors, and the arrival of the federal deadline in the United States for ceasing the production, distribution, and use of all of the CFC species. The accompanying hazards this ban on CFCs has introduced to aircraft operations, air conditioning, medical practices, and agriculture, because of a U.S. regulation based on a pure hoax, begins to devastate all.

I must add, too, that the Montreal Protocol "group" which met first in London in 1990, has become, as you might imagine, a "permanent group." At its December 1995 meeting in Vienna, a large number of objections were raised to the basis for the disappearance of CFCs: noted the economic hardships such losses would place on all developing countries; and heard requests from several countries, notably those of the former Soviet Union, to delay the deadline of a CFC phaseout from 2001 to a later date. As one delegate from China remarked, "Perhaps to 3001."