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## Global Warming Surprises

*Temperature data in dispute can reverse conclusions  
about human influence on climate.*

By S. Fred Singer<sup>1</sup>

*This is a slightly revised version of an essay that appeared online on May 11, 2017, at  
[http://www.americanthinker.com/articles/2017/05/a\\_global\\_warming\\_surprise.html](http://www.americanthinker.com/articles/2017/05/a_global_warming_surprise.html)*

Exploring some of the intricacies of climate science can lead to surprising results that have major consequences. In a recent invited talk at The Heartland Institute's Twelfth International Conference on Climate Change, I investigated three important topics:

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1. Inconsistencies in the surface temperature record.

2. Their explanation as artifacts arising from the misuse of data.

3. Thereby explaining the failure of the United Nations' Intergovernmental Panel on Climate Change (IPCC) to find credible evidence for anthropogenic global warming (AGW).

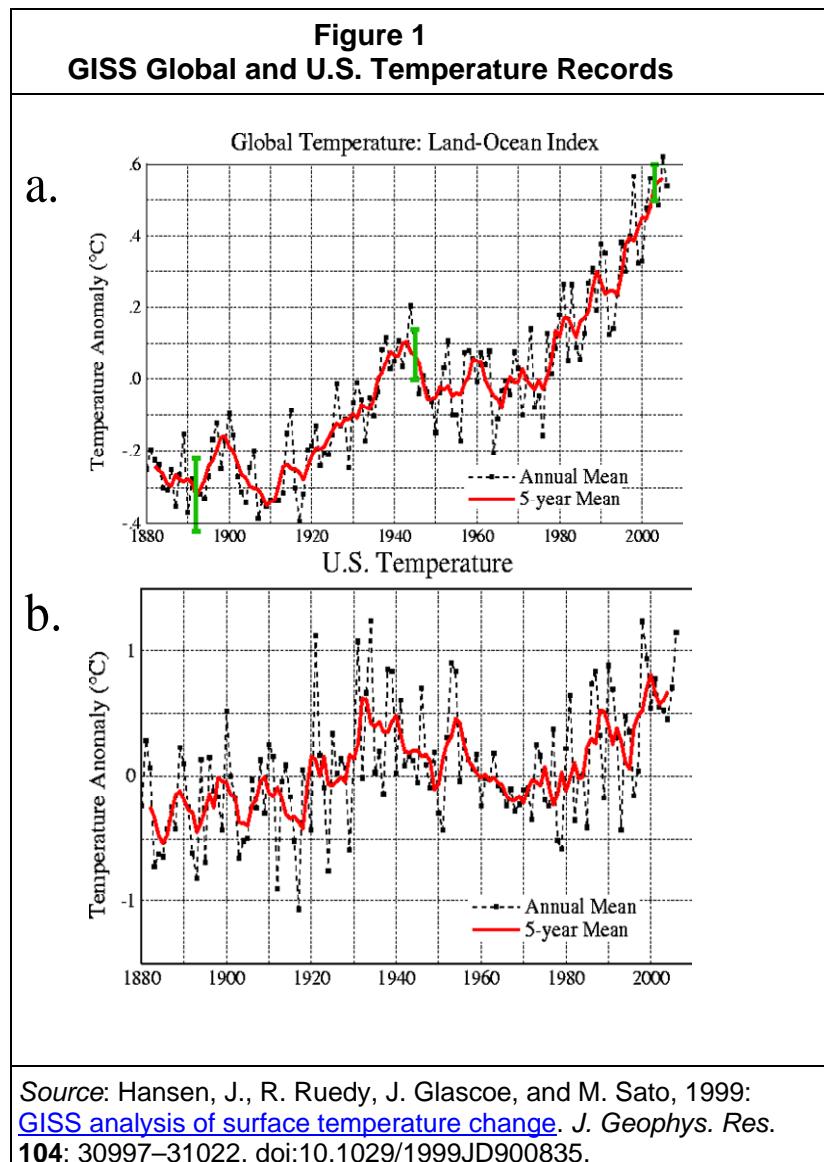
### A Misleading Graph

In the iconic picture of the global surface temperature of the twentieth century [Figures 1a and 1b on the following page] one can discern two warming intervals—in the initial decades (1910–42) and in the final decades, 1977–2000.

<sup>1</sup> **S. Fred Singer** is professor emeritus at the University of Virginia and a founding director of the Science & Environmental Policy Project. For a more complete bio, see page 5.

Although these two trends look similar, they are really quite different: The initial warming is genuine, but the later warming is not. What a surprise! I wouldn't exactly call it 'fake,' but it just does not exist. I try to demonstrate this difference as an artifact of the data-gathering process, by comparing the GISS graphs with several independent data sets covering similar time intervals.

The *later warming* is contradicted by every available dataset, as follows:



1997), whether measured with balloon-borne radiosondes or with microwave sounding units (MSU) aboard weather satellites. (See Figure 8 in [Reference 2](#).)

■ Compatible data on *solar activity* show nothing unusual happening. Interestingly, the solar data had been assembled for a quite different purpose—namely, to disprove the connection

■ The surface record for the continental United States shows a much lower trend than the global record. (See Figure 1b.) Presumably there is better control over the placement of weather-stations and their thermometers in the U.S. than in any other part of the world, so the U.S. temperature record, showing less warming, is the *more reliable* of the two records.

■ The trend of global sea surface temperature (SST) is much less than the terrestrial record, with 1995 temperature values nearly equal to those of 1942, according to [Gouretski and Kennedy](#), as published in *Geophysical Research Letters* in 2012. Likewise, the trend of night-time marine air-temperatures (NMAT), measured with thermometers on ship decks.

■ According to data from J. Kennedy, Hadley Centre, UK, *atmospheric* temperature trends are uniformly much lower and close to zero (during 1979–

between cosmic rays and climate change (see Figure 14 of [Reference 2](#)), assuming that the late-century warming was real. In the absence of such warming, as I argue here, this attempted critique of the cosmic-ray–climate connection collapses.

■ Proxy data also show near-zero trends, whether from tree rings or ice cores, as noted about 20 years ago (see Figure 16 in [Reference 1](#) and Figures 2 and 3 of [Reference 2](#)). If you look carefully at Mann’s original 1998 paper in *Nature* or subsequent copies, you will note that his proxy temps cease suddenly in 1979 and are replaced by temps from thermometers from CRU-EAU, the Climatic Research Unit of East Anglia University. This substitution not only supplies the ‘blade’ of Mann’s ‘hockey-stick’ but enables the claim of IPCC-AR3 (2001) that the twentieth century was the warmest in the past 1,000 years, surpassing even the high temps of the Medieval Warm Period. In Climategate e-mails Mann’s substitution was referred to as “Mike’s *Nature* trick.” I can’t help wondering if Mann’s original post-1979 proxy data showed warming at all. Perhaps that has some bearing on why Mann has withheld these data; it could have killed the blade and spoiled the IPCC claim.

On the other hand, the *early* warming trend (1910–40) is supported by many proxy data, including temperatures derived from tree rings, ice cores, etc. Unfortunately, we could not find any temperature data of the upper troposphere. However, I bet they would have shown an amplified warming trend – a hot spot.

## The Hotspot and Hockeystick

In the climate science literature, the “hotspot” refers to an enhanced temperature trend in the tropical upper troposphere (UT). It is produced by convection of latent energy through water vapor (WV) and is the dominant agent for heating the UT.

This recital of data should suffice to convince alarmists and climate skeptics alike that the late twentieth-century global warming does not exist.

In IPCC-AR2 (1996), Ben Santer mistakenly identified the hotspot as the fingerprint for greenhouse warming, which has led to much confusion in the technical literature, fostering the mistaken claim that the hotspot owes its existence to tropospheric CO<sub>2</sub>. But according to textbooks, it is merely an amplification of *any* temperature trend at the surface through the ‘moist’ atmospheric lapse rate. It surely must have existed during 1910–42 but we lack data to prove it. The virtual absence of the hotspot during 1979–97 (see Figure 8 of [Reference 2](#)) implies a near-zero surface trend in that interval. This observation also disproves the anthropogenic global warming hypothesis of IPCC-AR2 [1996] that led to the Kyoto Protocol.

This recital of data should suffice to convince alarmists and climate skeptics alike that the late twentieth-century global warming does not exist. We should note, however, that both

IPCC-AR4 (2007) and AR5 (2013) rely on such (non-existing) warming in trying to prove that its cause is anthropogenic.

## Explaining the Climate-Trend Artifact

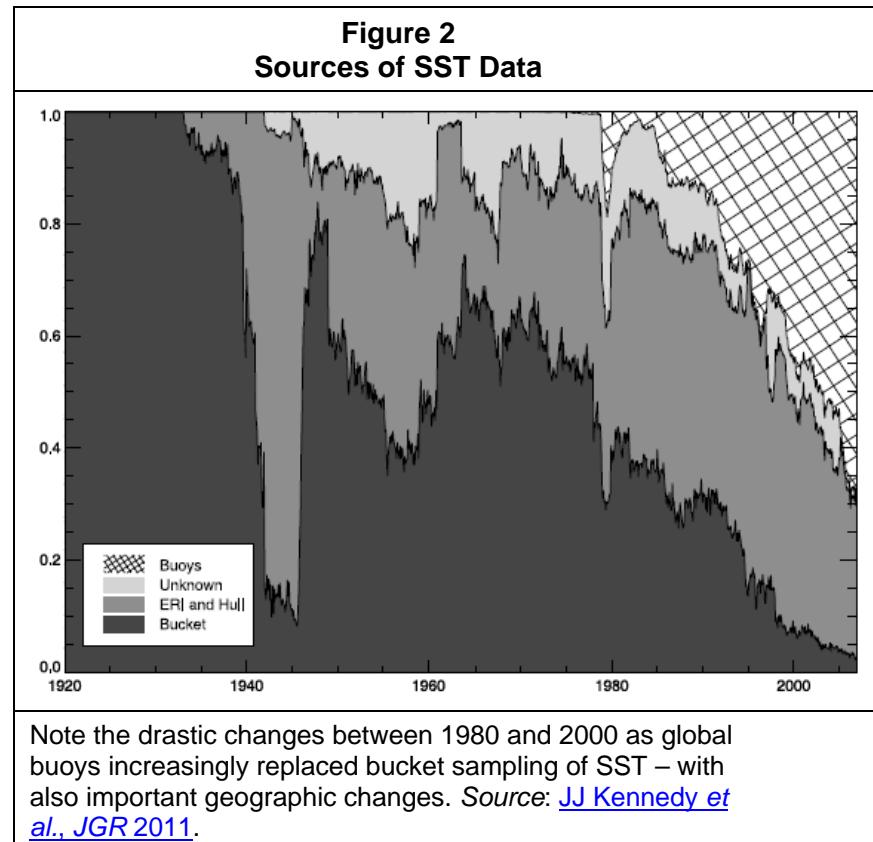
Now we tackle, using newly available data, what may have caused the fictitious temperature trend in the latter decades of the twentieth century.

We first look at *ocean data*. As seen from Figure 2, there was a great shift in the way sea surface temperatures (SSTs) were measured. Data from floating buoys increased from zero to 60% between 1980 and 2000.

But such buoys are heated directly by the sun, as indicated in the graphic in Figure 3 below, showing a floating buoy in the solar-heated top layer and unheated engine inlet water in lower ocean layers. This combination leads to a spurious rise in SST when the data are mixed together.

In merging them, we must note that buoy data are global, while bucket and inlet temps are perfectly confined to mostly commercial shipping routes. Nor do we know the ocean depths that buckets sample: inlet depths depend on ship type and degree of loading. Disentangling this mess requires data details that are not available. About all we can demonstrate is a distinct diurnal variation in the buoy temps.

*The land data* have problems of their own. During the same decades, quite independently, there was a severe reduction in ‘superfluous’ (mostly) rural stations unless they were located at airports. See Figure 12 in [Reference 2](#). As seen from Figure 4, the number of stations decreased drastically in the 1990s but the number at airports declined less sharply, leading to a major rise in the fraction of reporting stations at airports, according to basic NOAA data.



This led to a huge increase, from 35% to 80%, in the fraction of airport weather stations—producing a spurious temperature increase from all the construction of runways and buildings and airplane emissions—hard to calculate in detail. About all we can claim is a general increase in air traffic, about 5% per year worldwide [see Figure 19 in [Reference 1](#)].

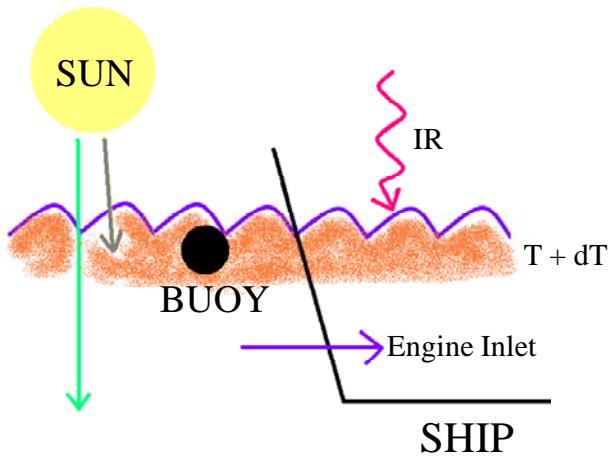
We have however MSU data from weather satellites for the lower atmosphere over both ocean and land. They show little difference; so we can assume that both land data and ocean data contribute about equally to the fictitious surface trend reported for 1977 to 1997.

The absence of such a warming trend removes all of IPCC's evidence for anthropogenic global warming. Both IPCC-AR4 (2007) and IPCC-AR5 (2013) rely on the 1979–1997 warming trend to demonstrate anthropogenic global warming. (See the chapters on “attribution” in their respective final reports.)

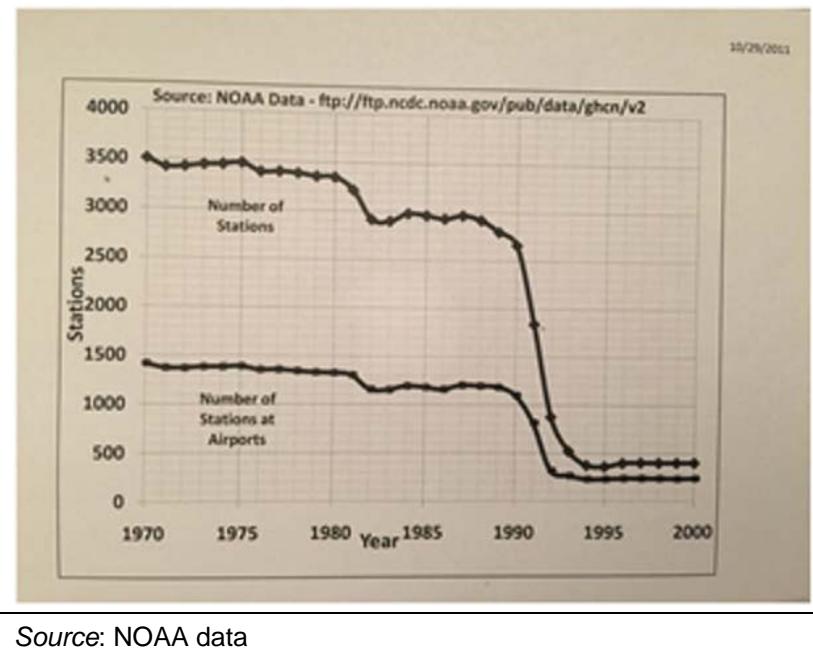
Obviously, if there is no warming trend, these demonstrations fail—and so do IPCC's proofs for AGW.

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**Figure 3**  
**Graphic Showing Floating Buoy In Solar-Heated Layer And Inlet For Engine Cooling Water**



**Figure 4**  
**Weather Stations at Airports**



**S. Fred Singer** is professor emeritus at the University of Virginia and a founding director of the Science & Environmental Policy Project; in 2014, after 25 years, he stepped down as president of SEPP. His specialty is atmospheric and space physics. An expert in remote sensing and satellites, he served as the founding director of the U.S. Weather Satellite Service and, more recently, as vice chair of the U.S. National Advisory Committee on Oceans &

Atmosphere. He is an elected fellow of several scientific societies and a senior fellow of The Heartland Institute and the Independent Institute.

Singer co-authored the New York Times best-seller ***Unstoppable Global Warming: Every 1500 years***. In 2007, he founded and has chaired the NIPCC (Nongovernmental International Panel on Climate Change), which has released several scientific reports (See the [NIPCC website](#).) For recent writings see his page at [American Thinker](#) and also [Google Scholar](#).

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Reference 1: Singer, S.F. [\*Hot Talk, Cold Science\*](#). Oakland, CA: Independent Institute, 1997 and 1999.

Reference 2: Singer, S.F. [\*Nature, Not Human Activity, Rules the Climate\*](#). Chicago, IL: The Heartland Institute, 2008.