

## ***The Arctic in the News and Blogs –No Sense of History***

### ***POLAR BEARS AGAIN***

A series of [reports](#) by the USGS were released Friday predicting tough sledding ahead for the world's polar bear populations. More than two-thirds of the world's polar bears will be killed off by 2050 — including the entire population in Alaska — because of thinning sea ice from global warming in the Arctic, government scientists forecast Friday.

Yet according to the World Wildlife Fund (WWF), there are 20 distinct polar bear populations accounting for approximately 22,000 polar bears worldwide (up from approximately 8,000 in the 1970s). Populations do not show a temperature linked decline (NCPA 2007). Only two populations (16.4% of total) are decreasing and they are in regions such as Baffin Bay that are growing colder. Two populations about 13.6% of the total are increasing, and they are where the water is warming such as near the Bering Straits. Ten populations comprising 45.4% of the total are stable.

Thus the evidence does not suggest that rising temperature endangers them or will cause their extinction but don't let the facts get in the way of a good cause.

### ***ARCTIC ICE TO DISAPPEAR***

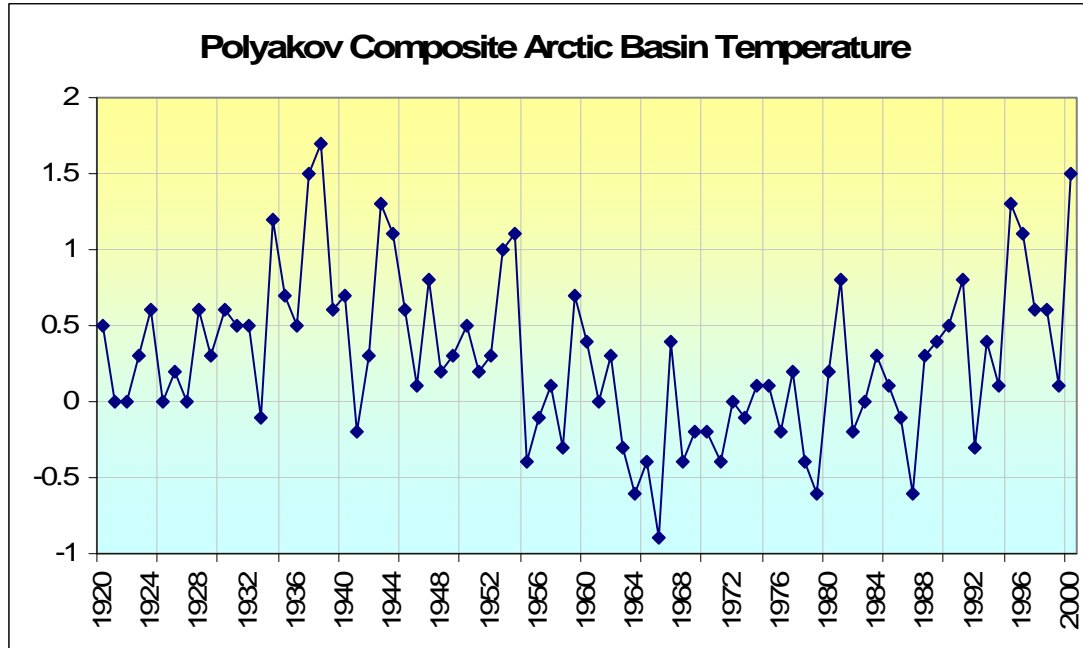
Jeff Masters in his [Wunderground blog](#) yesterday projected the decrease in arctic ice the last few decades will continue, eventually leaving the arctic ice free by 2030. He gets there by comparing the ice in 1979 to the ice cover in 2007 and noting it was disappearing faster than the climate models showed it would. The climate models had projected an ice free arctic from 2070-2100. He attributes this to of course to greenhouse induced global warming. He notes that although this will have little effect on sea level it will mean we have to reevaluate the melting of the Greenland icecap and revise its demise sharply upwards. This he notes would have a much greater effect on sea level.

Again Jeff and the researchers he quotes have little regard or understanding of the history of the arctic or Greenland, their horizons are short-sighted (last 30 years). Had they bothered to research data prior to 1979, they would have seen this very thing has happened before – every 70 years according to the Russians and if history repeats as it has for centuries, will very likely be short-lived with cold and ice returning in short order.

### ***CYCLES IN THE ARCTIC RELATED TO CYCLES IN THE SUN AND OCEANS***

There is considerable evidence that it was as warm or warmer and the ice was the same or less in the 1930s and 1940s than today in the arctic. Warming in the arctic is likewise shown to be cyclical in nature. This was acknowledged in the latest IPCC report which mentioned the prior warming and ice reduction in the 1930s and 1940s.

Polyakov et al (2002) created a temperature record using stations north of 62 degrees N. The late 1930s-early 1940s were clearly the warmest of the last century. In addition, the numbers of available observations in the late 1930s-early 1940s (slightly more than 50) is comparable to recent decades.



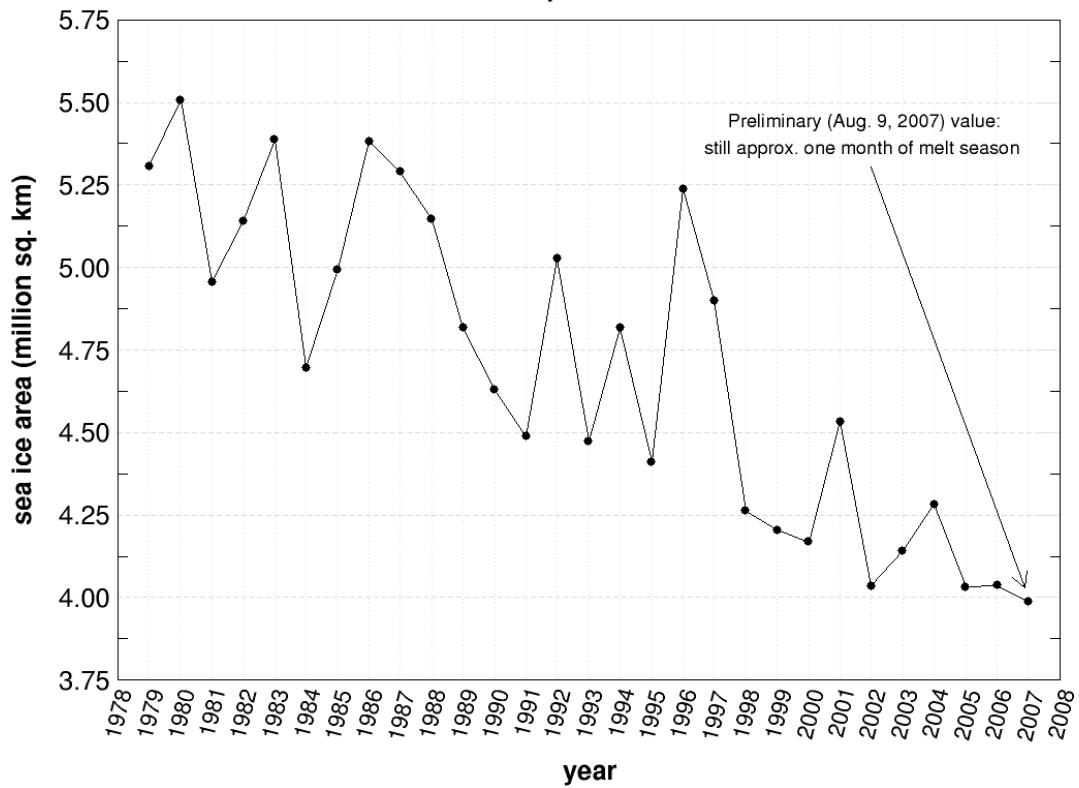
The Russians find this approximately 70 year cycle goes back hundreds of years. It was said that Russian fishermen were catching cod fish off the coast of Siberia in the warmer interlude just after the middle 1850s.

Japan's JAMSTEC finds that warm water makes its way into the arctic from the Pacific when the Pacific Decadal Oscillation is in its warm mode (as it has been since the Great Pacific Climate Shift in 1979) and there are El Ninos. Kevin Trenberth, an IPCC Lead Author in 1994 also found El Ninos lead to more warm Pacific water reaching the arctic.

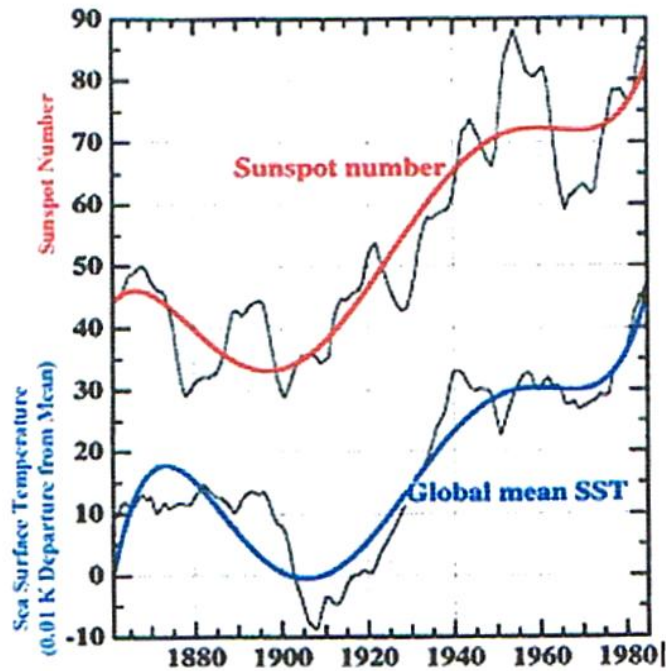
The Russians found the Atlantic water during the warm Atlantic Multidecadal Oscillation phase also makes its way under the ice and thins it and reduces cover as it did in the 1930s and to 1950s (and even the middle 1800s when stories have it they caught cod fish off Siberia). They have found in the last several years a layer of warm Atlantic water under the ice from the Atlantic warming cycle that began in 1995.

In this graphic of Northern Hemisphere sea ice area at summer minimum from [The Cryosphere Today](#) site at the University of Illinois. The summer ice extent is seen declining from 1979 when the Pacific warmed and El Nino frequency increased, it accelerated after 1995, when the Atlantic warmed.

## Sea ice area at summer minimum million square kilometers

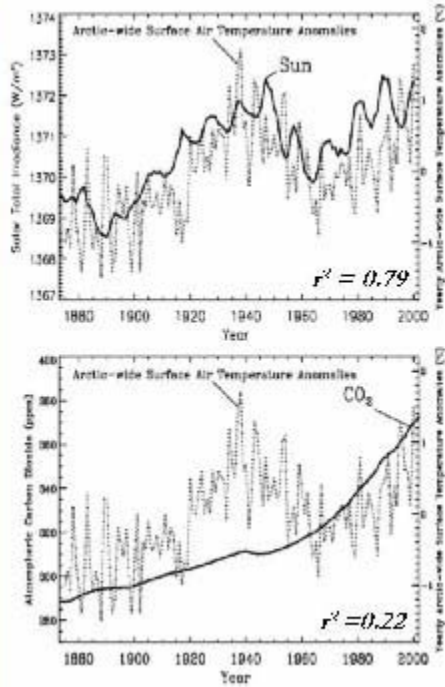


What causes the oceans to cycle warm and cold, well the correlation of the seas surface temperatures with the longer term solar suggest the sun drives the cycles.



Perhaps as the sun increases in its activity it introduces more heat into the tropical oceans, favoring more El Ninos which favor east coast storms and in the Atlantic more hurricanes. These help to transfer heat north and warm the higher latitude oceans and arctic. The thermohaline circulation may also be energized during these periods helping with this process of heat transport as a measure of compensation for the imbalances.

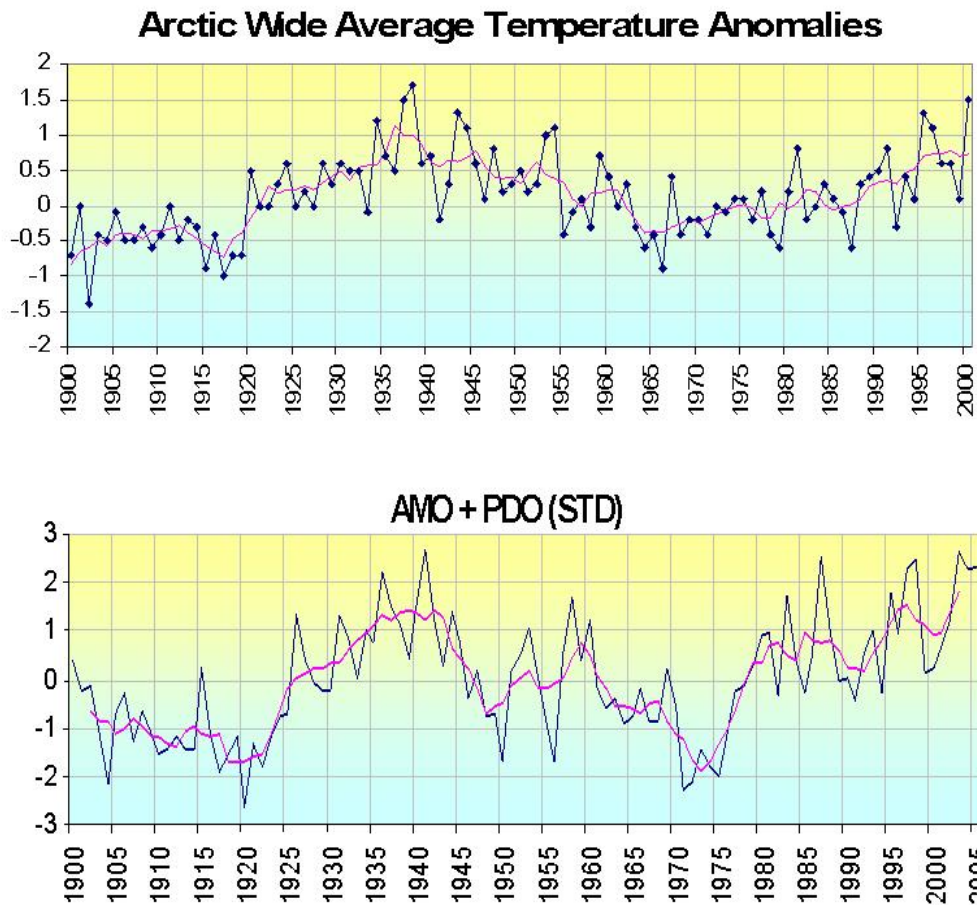
Indeed, the correlation of arctic temperatures with solar and ocean cycles is statistically significant (0.79 (for solar irradiance and 0.73 r-squared for ocean temperatures). That is not the case with CO2 (just 0.22 R-squared). The plot of solar irradiance (Hoyt and Schatten versus the arctic basin wide temperatures (Polyakov) is shown below (Soon 2006). Note also the poor correlation of arctic temperatures with the CO2 .



### Arctic Annual Mean Temperatures vs Solar Irradiance (Soon GRL 2005)

Fit is much better of solar irradiance with arctic temperatures (Polyakov) (79%) than with Greenhouse gases (22%)

Plot of annual standardized PDO (Pacific Decadal Oscillation) +AMO (Atlantic Multidecadal Oscillation) and arctic temperatures (Polyakov) is shown below. Note how well correlated, the arctic temperatures are to the degree of Atlantic and Pacific warmth.



The cycles suggest the changes in the arctic are cyclical and natural and will soon reverse as they have for centuries.

This thinking recently received support from a paper, described [here](#), published by a team of mathematicians which proposed a [startling new theory](#). Led by Dr. Anastasios Tsonis, their model says the known cycles of the Earth's oceans -- the Pacific Decadal Oscillation, the North Atlantic Oscillation, El Nino (Southern Oscillation) and the North Pacific Oscillation -- all tend to try to synchronize with each other.

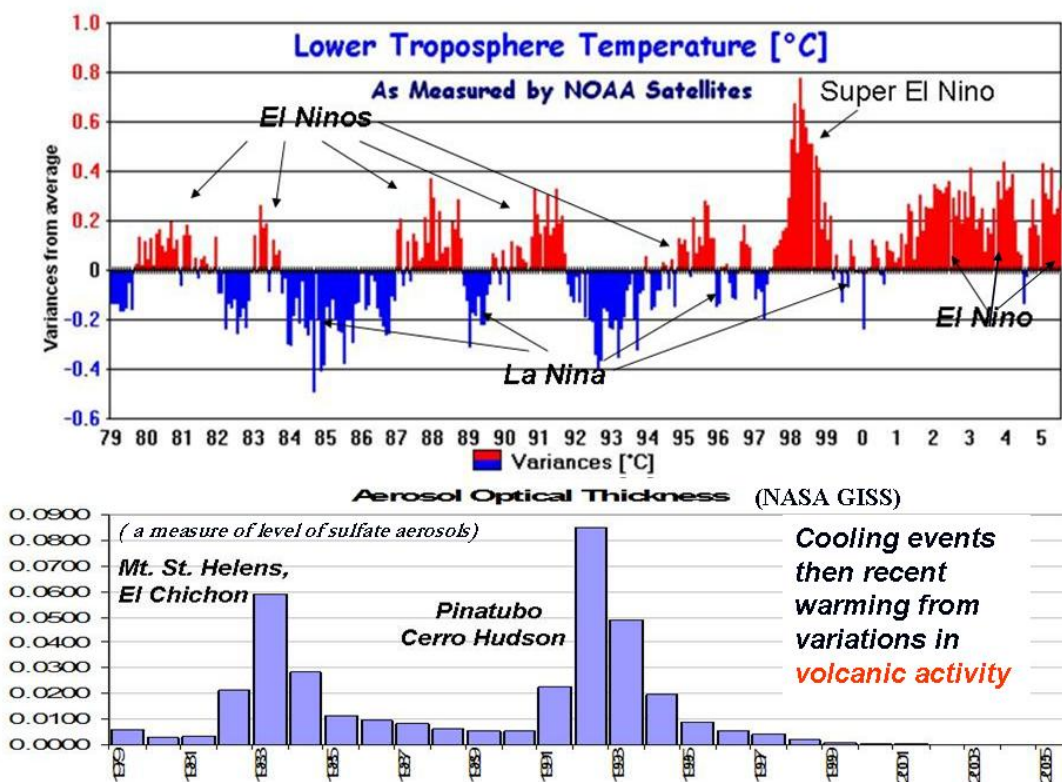
The theory is based on a branch of mathematics known as [Synchronized Chaos](#). The math predicts the degree of coupling to increase over time, causing the solution to "bifurcate," or split. Then, the synchronization vanishes. The result is a climate shift.

Eventually the cycles begin to sync up again, causing a repeating pattern of warming and cooling, along with sudden changes in the frequency and strength of El Nino events. Their model correctly predicted the last shifts around 1913, 1942 and 1978. It predicts more changes to come and cooler temperatures around 2100 not warmer.

## VOLCANOS TOO?

One more factor MAY be at play in the arctic- a lack of volcanic activity. Everyone accepts the fact that major volcanic eruptions leads to a global cooling as the stratospheric sulfate aerosol layer reflects some of the solar radiation (measured as much as 7% after Agung in the 1960s). This induces a cooling globally but especially in the Polar Regions where the amount of radiation already small is reduced further.

No one has looked at what happens when the atmosphere is unusually clean – devoid of such aerosols after a long period without a major eruption (usually one that reaches 80-100,000 feet or higher) capable of getting aerosols into the stratosphere. Since Pinatubo and Cerro Hudson in 1991, there have been no such major eruptions and the aerosol levels are at historic low levels.



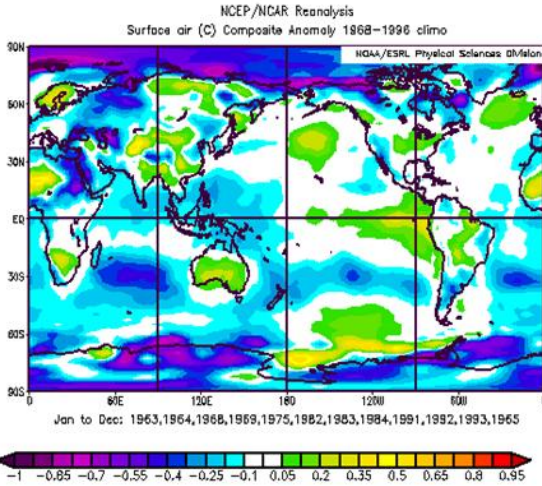
You can see the effect of the major eruptions and their high aerosol content on global temperatures in the lower atmosphere as determined by satellite (Spencer and Christy) in the early 1980s and 1990s. Note the low aerosol levels in the last several years, lowest of the satellite era and lowest according to NASA GISS since the 1930s to 1950s (when it may have also contributed to the warming observed).

How does high and low aerosol correlate with temperatures? I did a correlation of annual mean temperatures in years with greater than ½ STD above and below normal aerosols

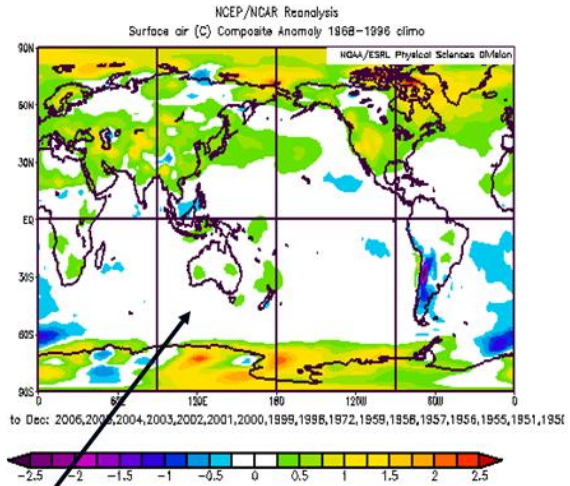
(using NASA GISS data). You can see the lower than normal levels correlates with polar warming while higher levels cooling. Current very low levels may be contributing to the recent warming along with the ocean warming and up until this decade the solar.

*Years with more than 1/2 STD departures stratospheric aerosols*

**More than 1/2 STD Above**



**More than 1/2 STD Below**



**January to December Annual Temperature Anomalies**

*Data NASA GISS, CDC*

Last 8-10 years

**AND OH YES, GREENLAND**

As for the claim that we will have to take another hard look at Greenland, Jeff you and the others never looked at it in the first place. If you had you would have seen the correlation of temperatures there with carbon dioxide has been negative for 5 decades.

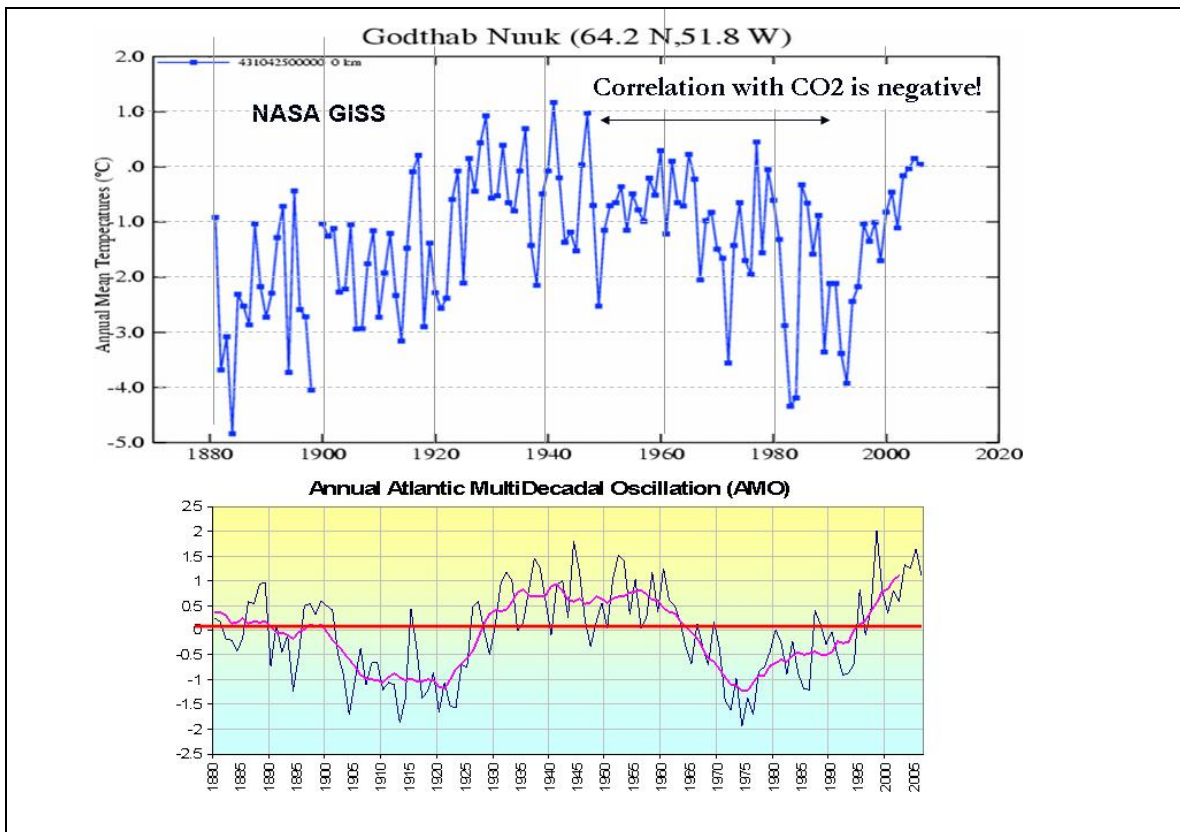
In an interview in the New York Times about a paper in Science he was lead author for published in 2007, Dr. Howat, University of Washington, no skeptic by any means noted:

*"Greenland was about as warm or warmer in the 1930's and 40's, and many of the glaciers were smaller than they are now. This was a period of rapid glacier shrinkage world-wide, followed by at least partial re-expansion during a colder period from the 1950's to the 1980's. Of course, we don't know very much about how the glacier dynamics changed then because we didn't have satellites to observe it. However, it does suggest that large variations in ice sheet dynamics can occur from natural climate variability."*



In a GRL paper in 2003, Hanna and Cappelen showed a significant cooling trend for eight stations in coastal southern Greenland from 1958 to 2001 (-1.29°C for the 44 years). The temperature trend represented a strong negative correlation with increasing CO<sub>2</sub> levels.

Shown below, the temperature plot for Godthab Nuuk in southwest Greenland. Note how closely the temperatures track with the AMO (which is a measure of the Atlantic temperatures 0 to 70N). It shows that cooling from the late 1950s to the late 1990s even as Greenhouse gases rose steadily, a negative correlation over almost 5 decades. The rise after the middle 1990s was due to the flip of the AMO into its warm phase. They have not yet reached the level of the 1930s and 1940s.



For more on the importance of the sun and oceans in the temperatures for the arctic, Greenland and the United States see this [prior blog](#).