

# TEN MAJOR FAILURES OF CONSENSUS SCIENCE

*by Joseph D'Aleo, CCM, AMS Fellow*



SPPI ORIGINAL PAPER



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## INTRODUCTION

The US congress sub-committee on Energy and Commerce Committee held hearings on whether to restrict in some way the EPA's regulatory authority relative to greenhouse gas emissions.

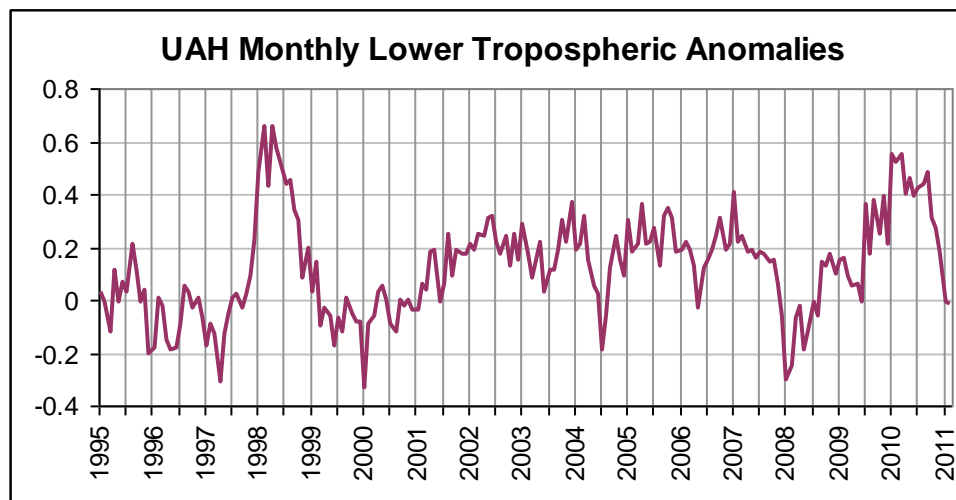
There were 7 scientists invited to testify. Three of the four who argued not to restrict the EPA played a key role in the last IPCC report (and will also in the next one) and generally started with the position that IPCC science was sound and there was a consensus of all real scientists.

In the attached analysis we take a look at the IPCC based science. We are going to ignore all the many 'gates' that were uncovered like the Himalayan glaciers, Amazon rain forests, how many real scientists there were who authored the key summaries and all the issues as to whether the summaries truly reflected the scientific information in the chapters and despite claims to the contrary, how a significant percentage of citations were not peer reviewed.

We will not attempt to address the issues of sensitivity for CO<sub>2</sub> or solar and cloud and water vapor feedbacks relative to the models. We will also ignore the many model shortcomings - like inability to forecast regional patterns, ocean oscillations, etc. We will focus on how actual data compares to the consensus science, model based virtual world view of climate.

We will look at some of the major findings, assessments or model predictions from the IPCC and other national climate centers and NGOs, that we believe have failed and let you decide then whether or not the their science and model projections should be the bedrock onto which we build public policy.

### **1. Warming is said to be unprecedented and accelerating. It is neither.**

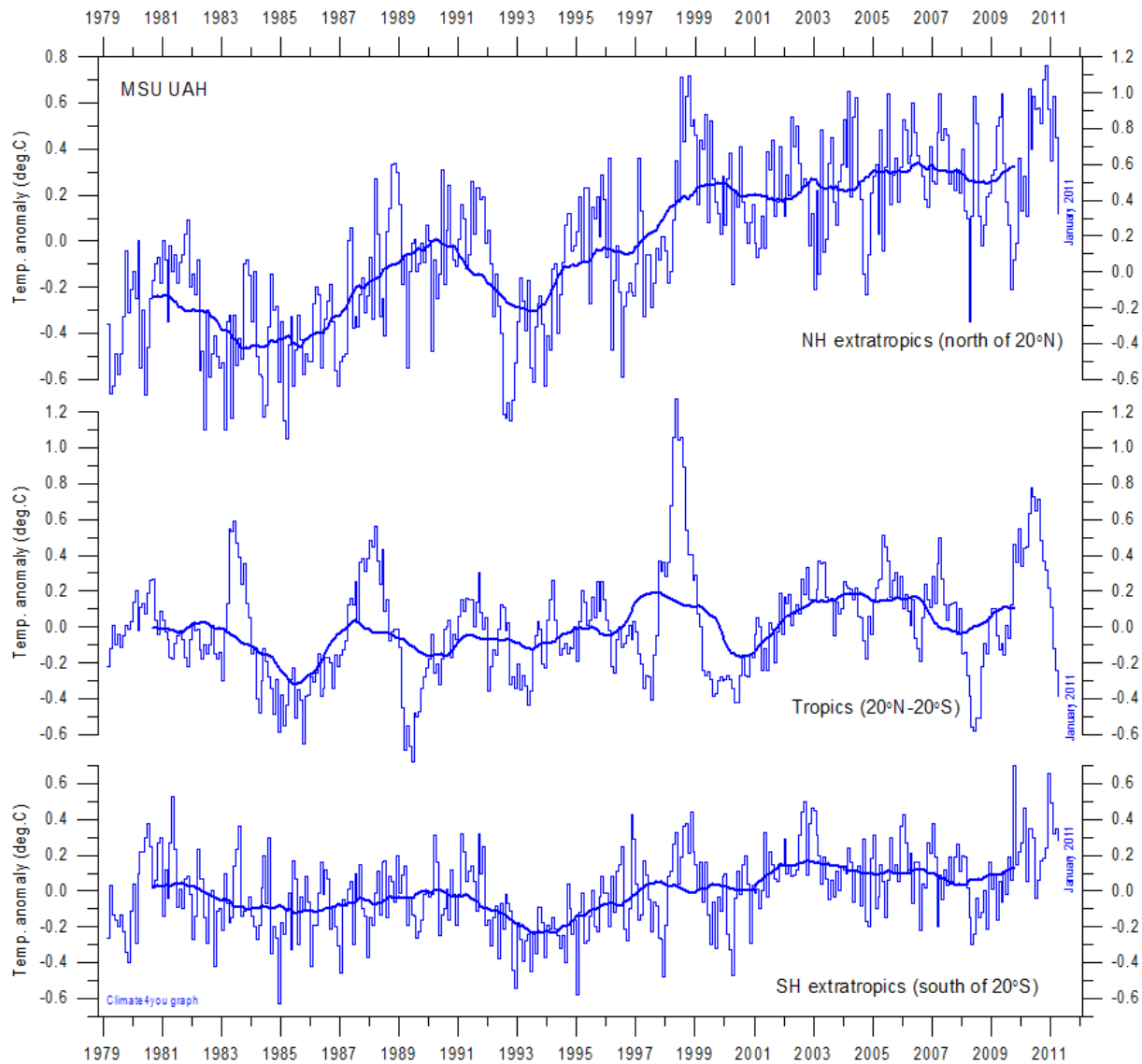
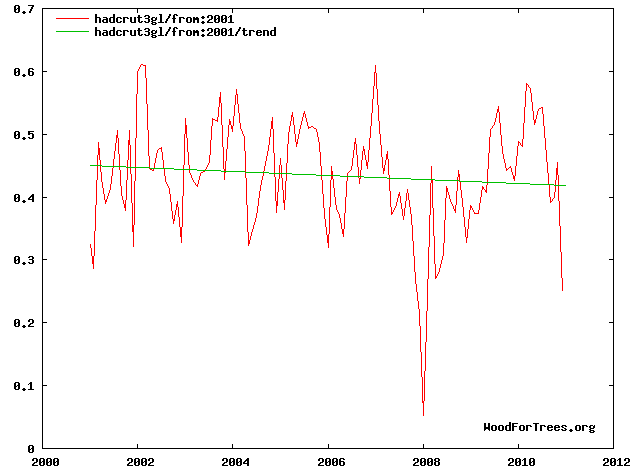


*Satellite and surface data shows no warming for 15 years despite CO<sub>2</sub> increases.*

Phil Jones of the CRU admitted there was no statistically significant warming since 1998 with a slight cooling in from 2002 to 2009 (0.12C).

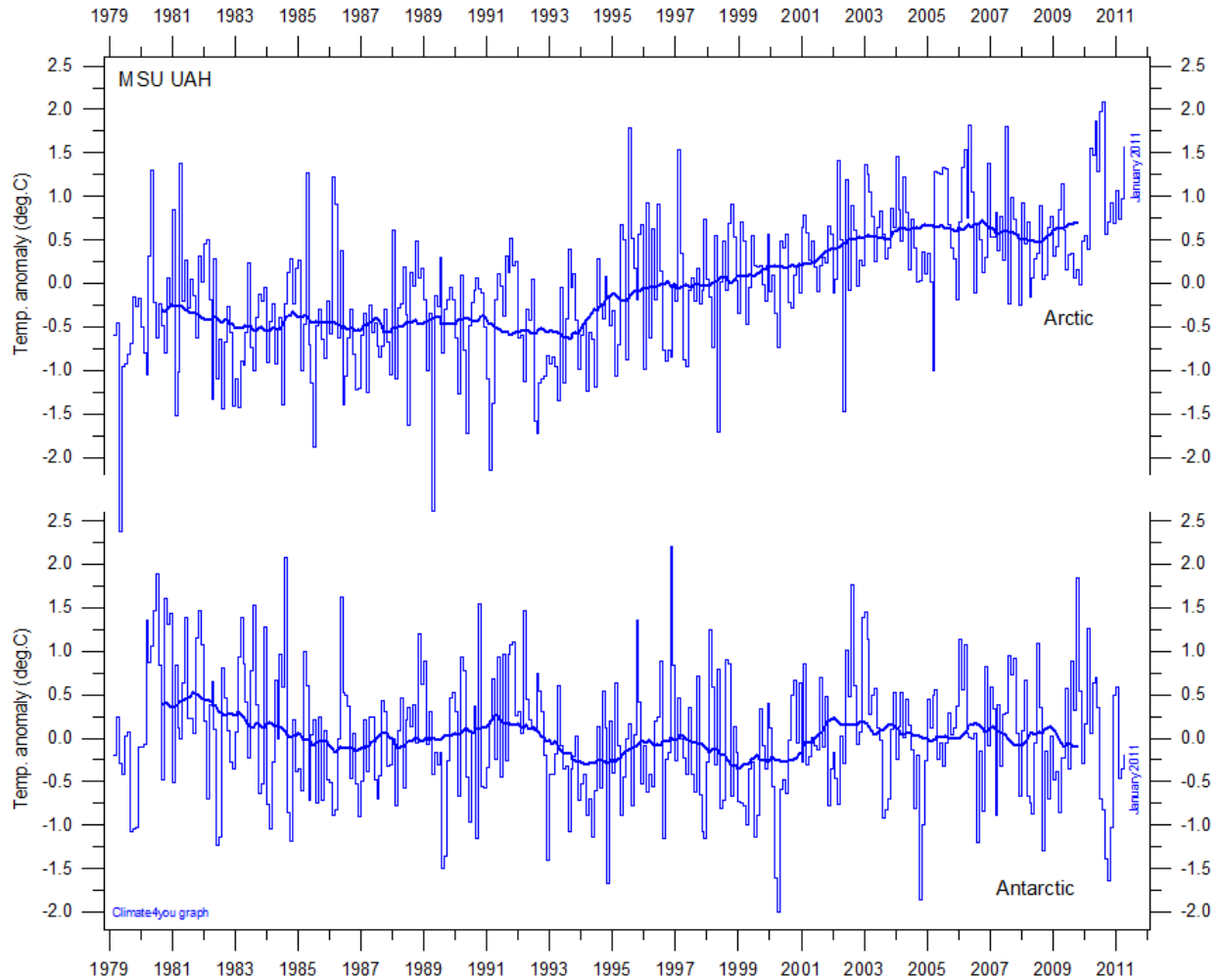
## 2. Global warming is not GLOBAL.

The UAH satellite shows the changes since 1979 for the northern and southern hemisphere extratropcs and the tropics (20N to 20S).



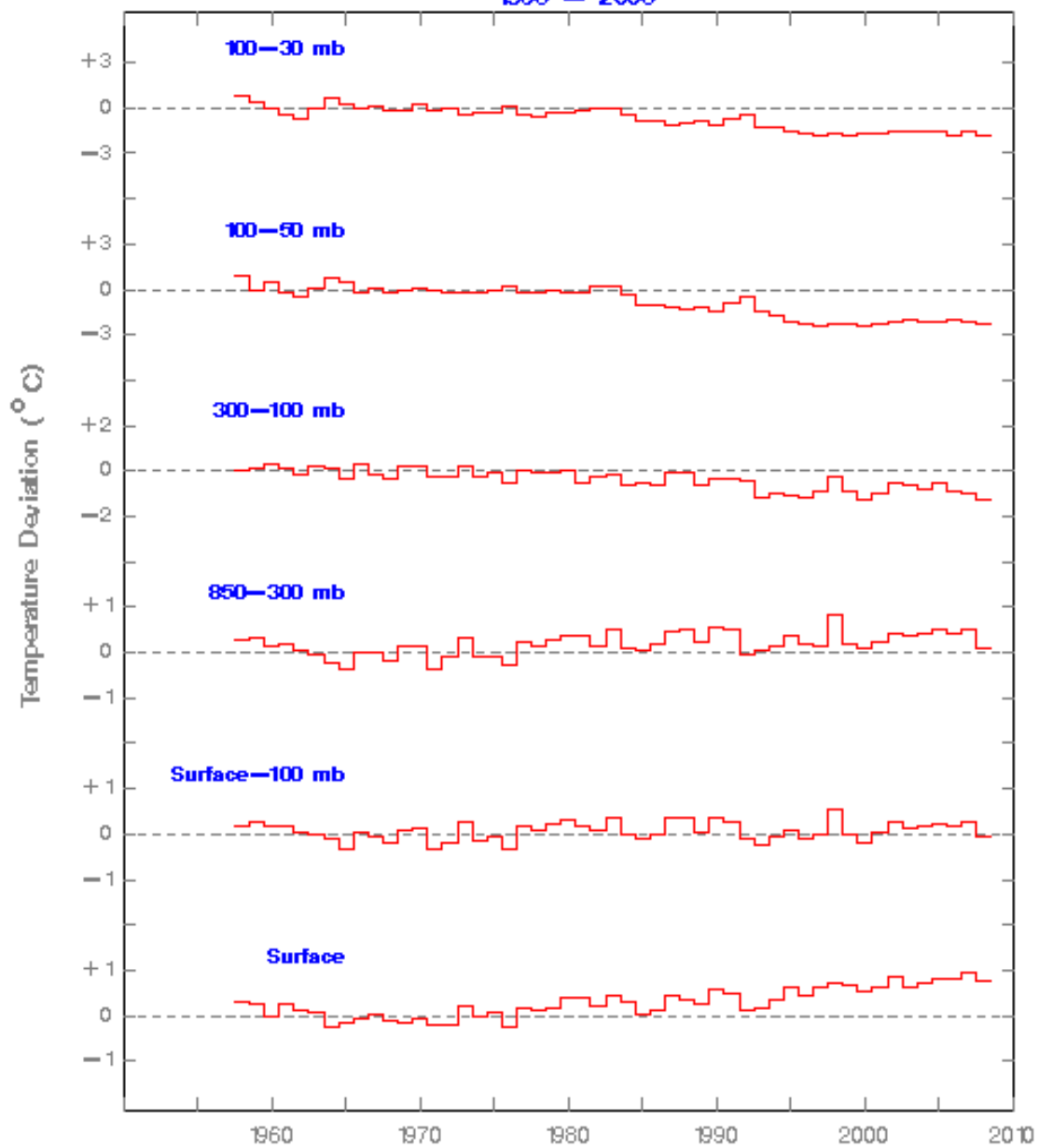
The warming was primarily in the Northern hemisphere north of 20N and most all of that warming prior to 1998. There was no warming in the tropics and no statistically significant warming in the southern hemisphere extratropics (south of 20S).

The warming was greatest in the arctic. No change or even a slight cooling meanwhile was observed in the Antarctic. [This analysis](#) shows the arctic temperature changes are cyclical and relate to multidecadal changes in the Atlantic and Pacific and on the sun.

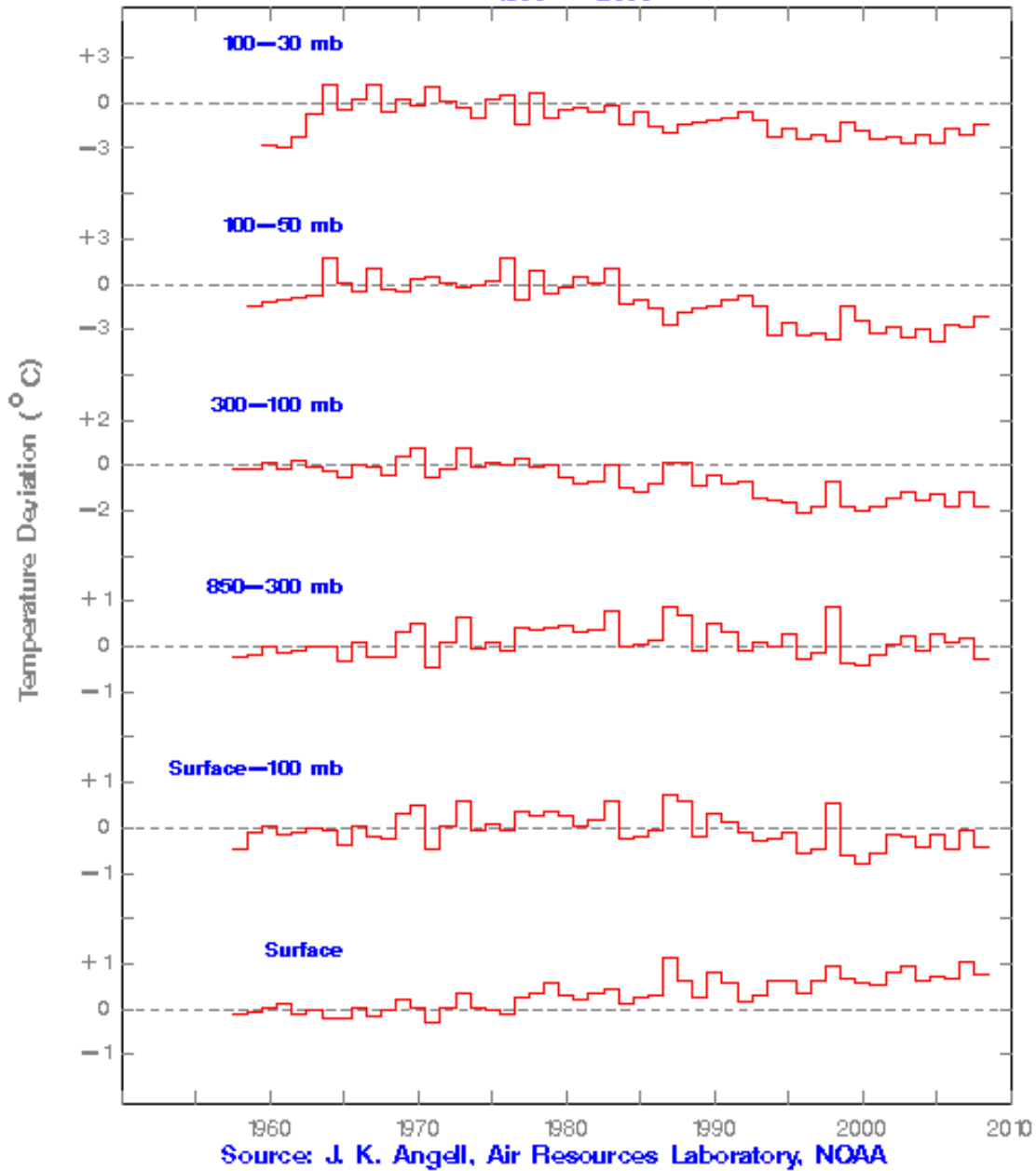


Weather balloons show no warming except at the surface for the globe and even slight cooling in the tropics in the low to mid troposphere where all the climate models suggest the warming should be greatest (Source: Angell NOAA ORNL).

### Global Annual Temperature Deviations 1958 - 2008

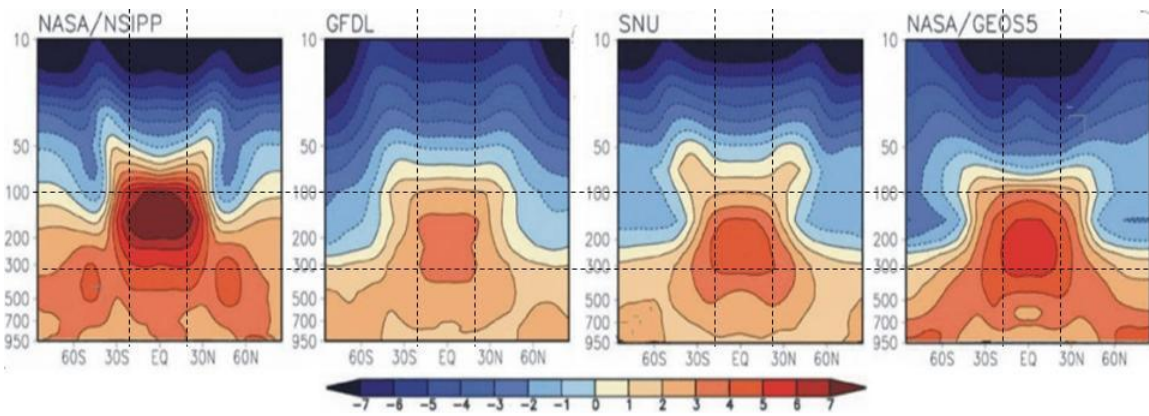


### Equatorial (10S–10N) Annual Temperature Deviations 1958 – 2008

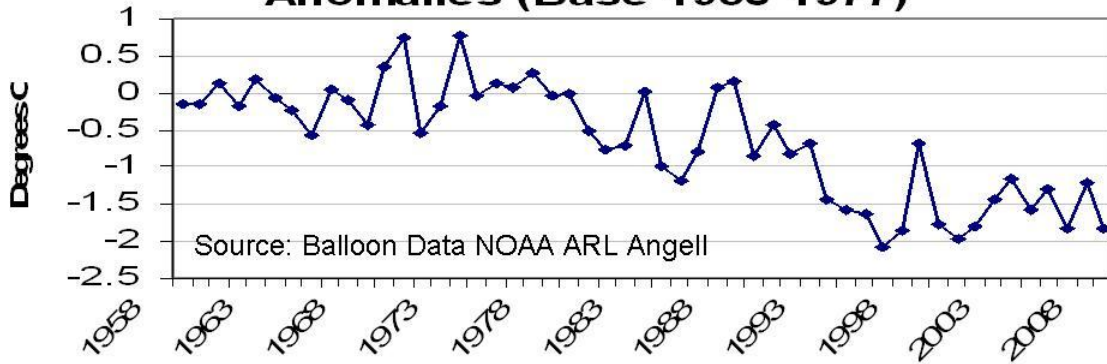


These are the climate models which uniformly suggest this tropical mid tropospheric hot spot. See the downtrend in the temperatures in the layer where the greenhouse warming is modeled the greatest!

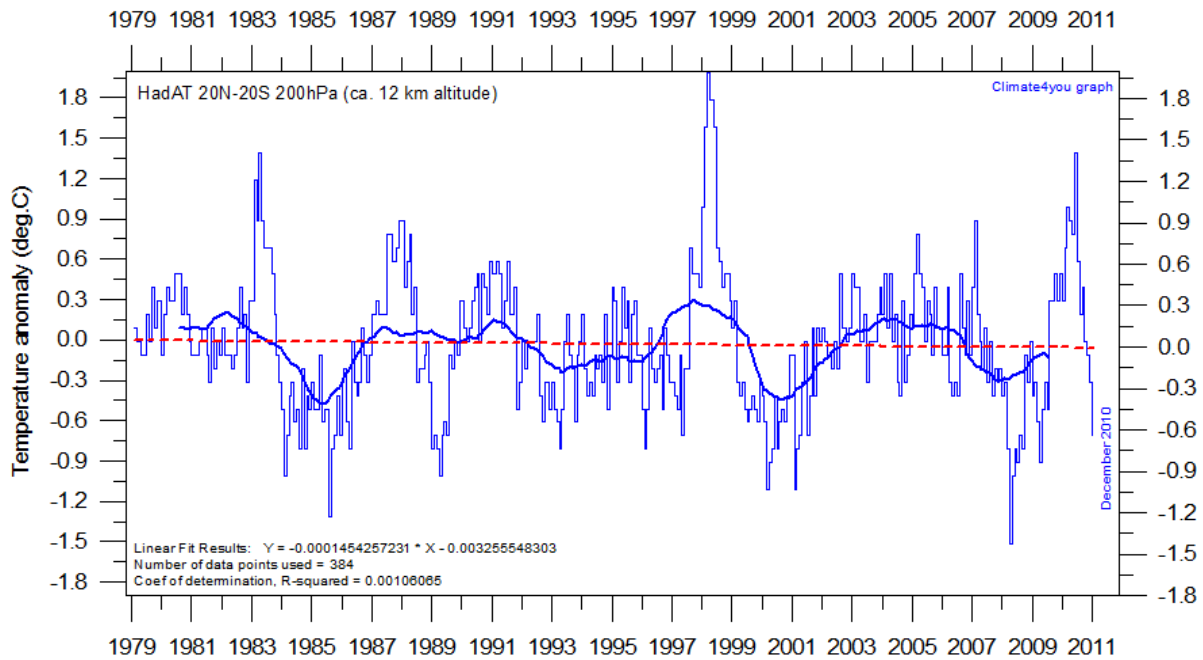




**20N to 20S 100-300mb Temperature Anomalies (Base 1958-1977)**

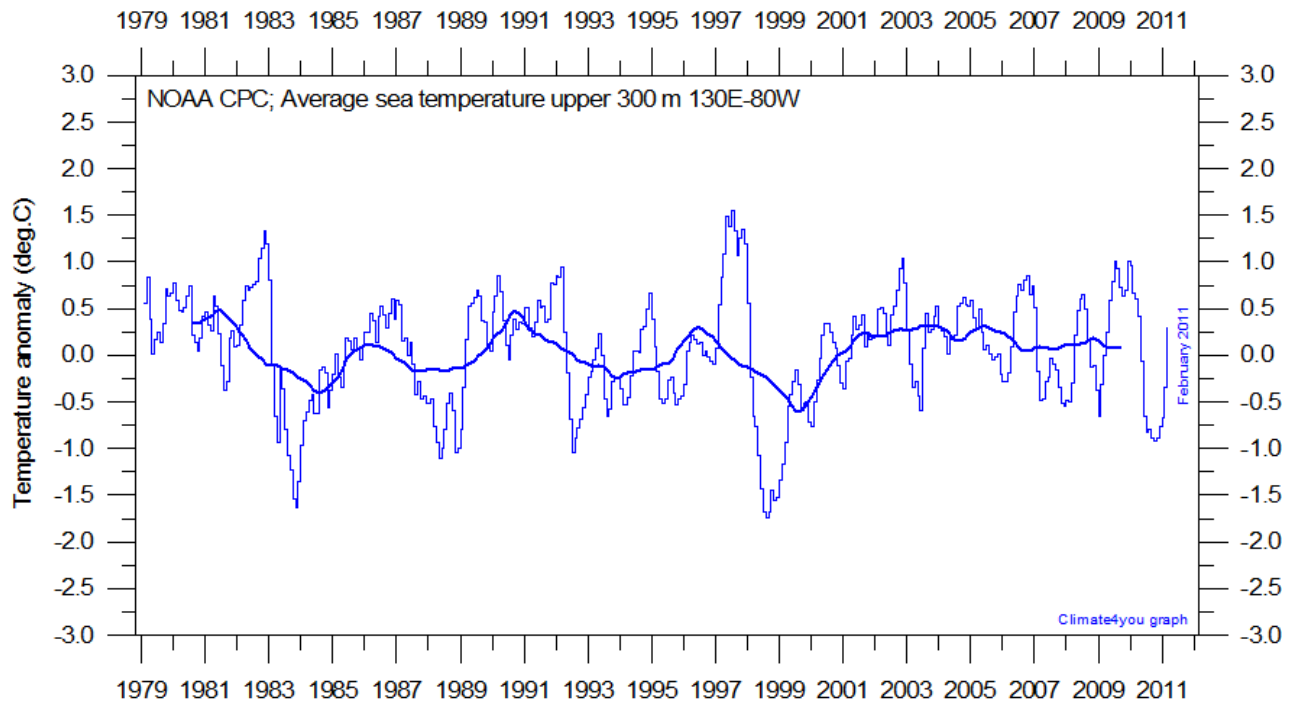


This is a Hadley centre analysis based on balloon data that confirms the lack of warming for now over 30 years in this important greenhouse signature mid tropospheric level.





Roger Pielke Sr. testified that ocean heat content was the most robust measure of climate change. Tropical sea surface temperatures are measured very accurately using buoys. They show no change since 1958 in the ocean heat content in the tropics down to 300 meters depth in the entire equatorial Pacific from 130E to 80W.



### **3. Winters would grow increasingly warm.**

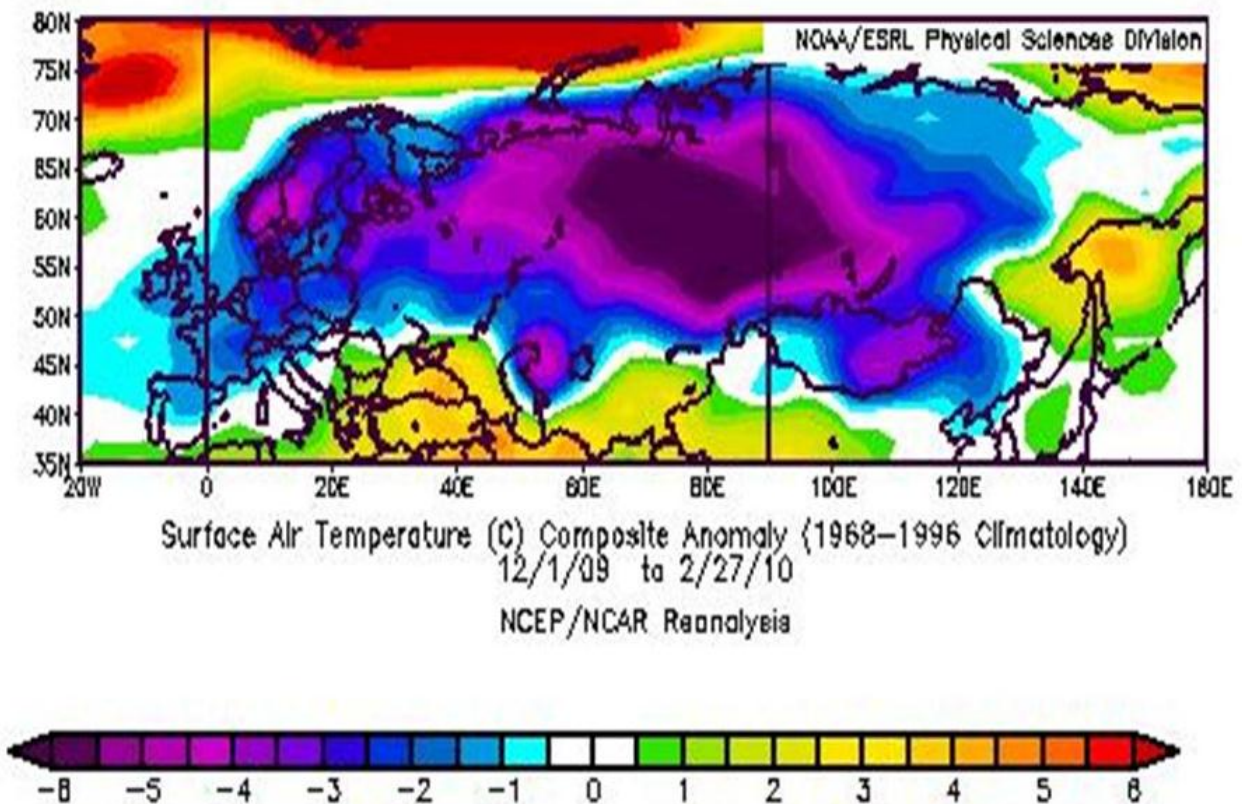
NASA [claimed in 1999](#) that winters would warm across the hemisphere based on their models.

NOAA in the [2009 CCSP](#) claimed: *“...cold days and cold nights are very likely to become much less frequent over North America.”*

The [IPCC warned in 2007](#) *“In addition to warmer winters, Europe’s northern regions will experience more precipitation and run-off. The expansion of forests and agricultural productivity will be accompanied by greater flooding, coastal erosion, loss of species and melting of glaciers and permafrost.”*

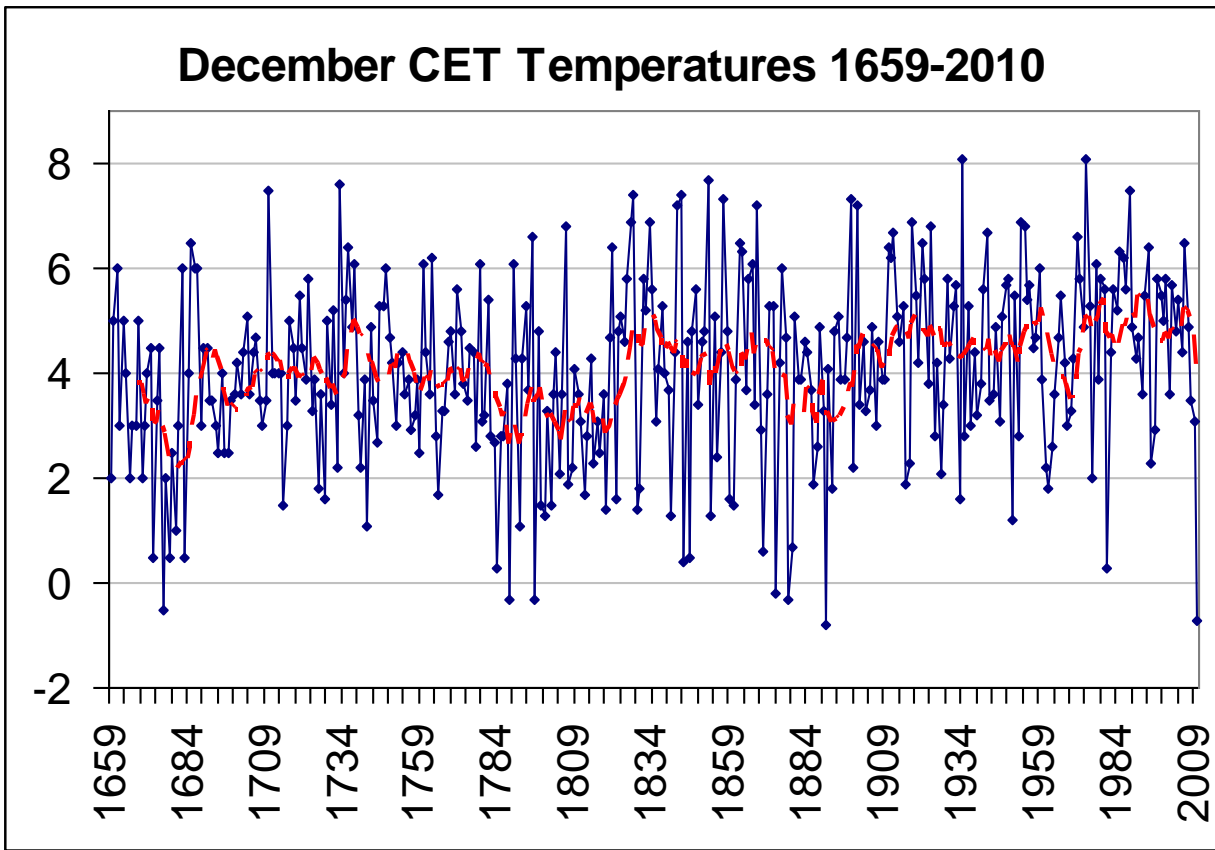
This winter marks the fourth consecutive winter where that forecast has failed. So much so that the UK Met Office under intense public and media pressure has stopped issuing winter forecasts.

The 2009/10 was brutal across all of Europe and Asia. It was the coldest ever in parts of Siberia.



In the UK, the winter of 2010/11 got off to an historic start. The Central England Temperature record is one of the longest continuous temperature records in the world extending back to the Little Ice age in 1659.

December 2010 was the coldest December in 120 years with an average of  $-0.7^{\circ}\text{C}$  just short of the record of  $-0.8^{\circ}\text{C}$  recorded in December 1890 and the **Second Coldest December Temperature** in the entire record (352 years).



And in the Central England temperature record, 2010 ranked 9th coldest since 1900! Annual average temperatures in degrees C.

Central England Temperature Annual		
1	1963	8.47
2	1919	8.48
3	1917	8.51
4	1909	8.55
5	1962	8.59
6	1922	8.67
7	1986	8.74
8	1979	8.81
9	<b>2010</b>	<b>8.83</b>

According to [Met Eireann](#), Ireland's meteorological service, December 2010 was officially the coldest month ever since records began 130 years ago.

Ireland's Armagh Observatory has a long period of record extending back to 1795. The Armagh mean monthly temperature was  $-0.3$  degrees Celsius (31.4 degrees Fahrenheit), about 5.4 Celsius below average, making **December 2010 the second coldest December** in Armagh. The three coldest Decembers in Armagh are now those of 1878, 2010 and [1796](#), with average temperatures of  $-0.5$  C,  $-0.3$  C and  $0.6$  C respectively.

Probably the most notable record was the new all time record low for Northern Ireland, of  $-18.7$ C recorded on the 23rd of December at Castleterragh, County Tyrone.

#### **NORTHEAST EUROPE**

Germany has experienced the coldest December in more than 40 years, the German Weather Service (DWD) said. See report [here](#). The average temperature in December was 4.3 degrees C below the past records on average, the DWD said. People have never seen such a freezing December since 1969.

The bitter cold was mainly stuck in the north and east of the country, where night temperatures in many places were below minus 20 degrees C, the weather agency added. A DWD monitoring station near northeastern city of Potsdam recorded only four days when the temperatures were above zero degrees this month. Poland temperatures were over 5C below normal.

#### **SCANDINAVIA**

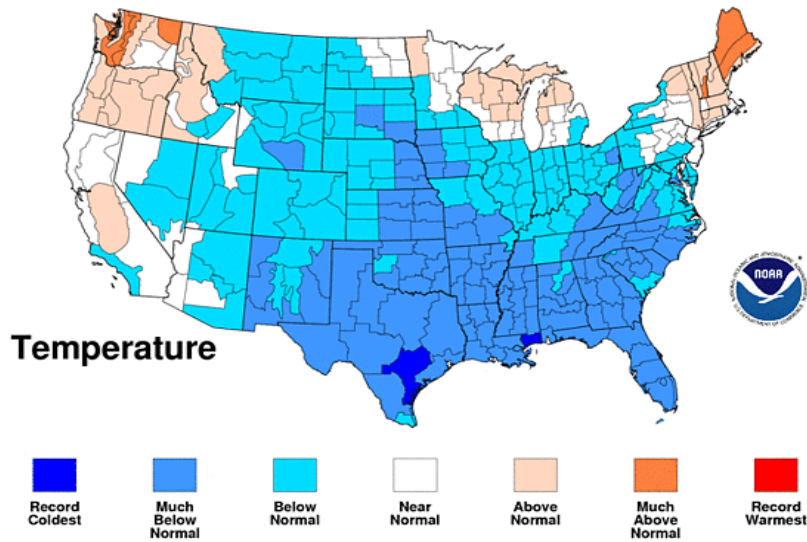
According to the Swedish meteorological agency SMHI, several parts of Sweden, including the Gotland and eastern Svealand, experienced the coldest December in at least 110 years. In addition, 2010 was the coldest year in Sweden for 23 years and the coldest on Norway since 1941.

#### **UNITED STATES WINTERS CONTINUE RAPID COOLING**

The winter of 2009/10 averaged 2.2F below normal and was the coldest ever in parts of Texas and Mississippi and among the top coldest in much of the south.

## Dec 2009 - Feb 2010 Divisional Ranks

National Climatic Data Center/NESDIS/NOAA

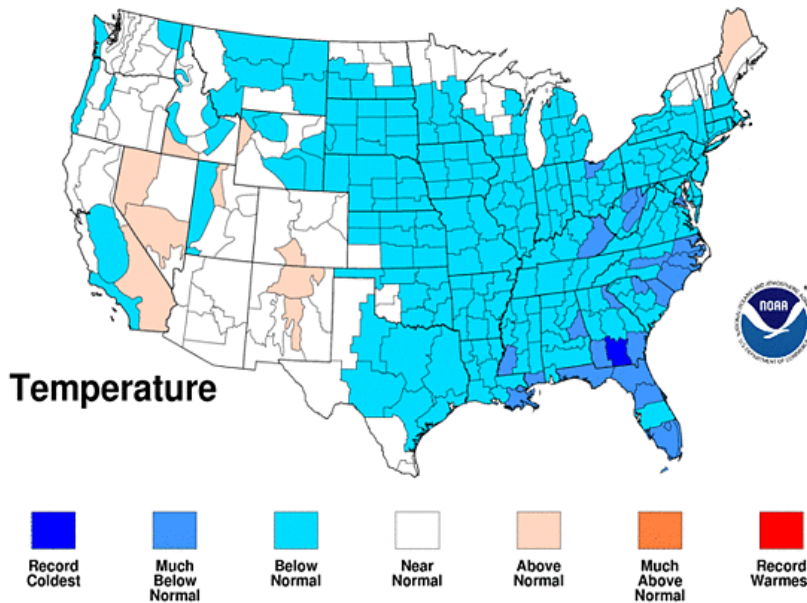


December 2010 was the coldest ever December in Florida and Georgia. December 2010 and January 2011 was the coldest such period in Florida.

This past winter was the 39<sup>th</sup> coldest for the United States.

## Dec 2010 - Feb 2011 Divisional Ranks

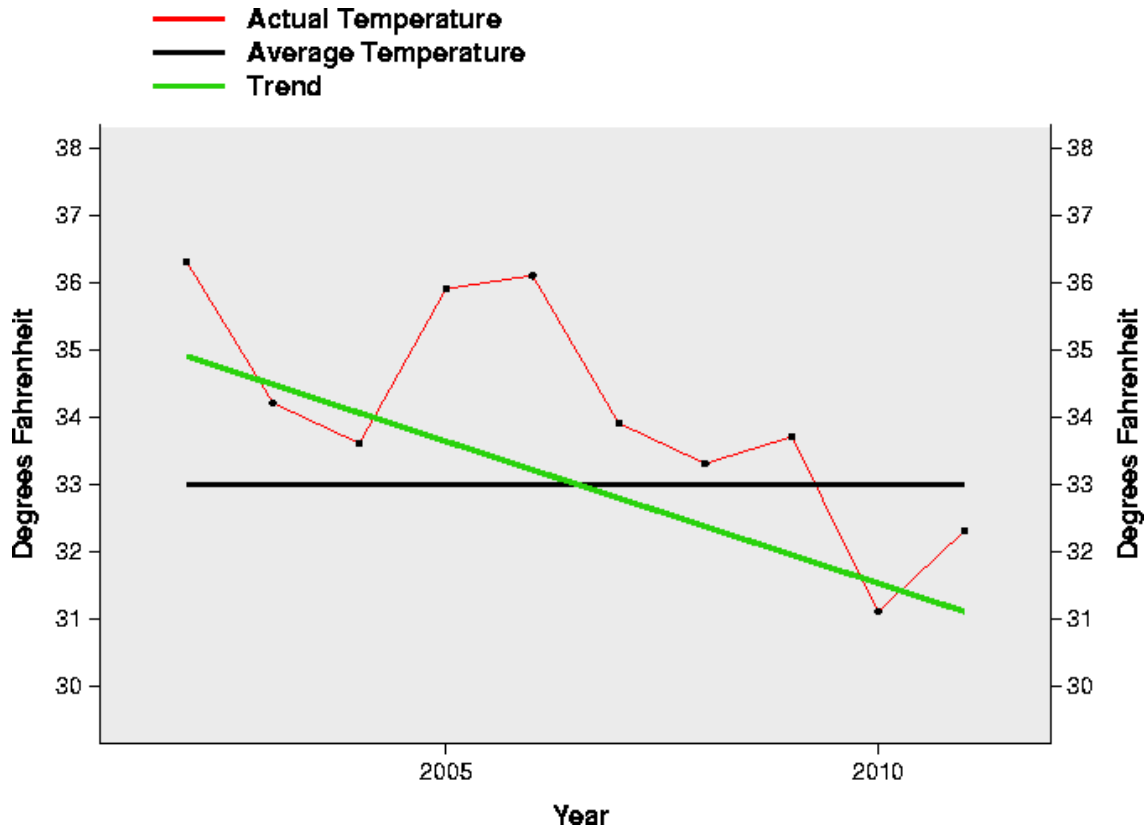
National Climatic Data Center/NESDIS/NOAA



This continues a downtrend the last century of an amazing 4.1F per decade or 41F per century. NO climate model suggested this kind of interlude.

Here is the very latest NOAA plot of decadal winter temperatures for the United States.

### US Winter (Dec-Feb) 2002–2011 Trend = -4.10 degF/Decade



#### ***4. The entire Northern Hemisphere would experience less snow and snowcover.***

The IPCC, the UK Hadley and CRU, NOAA CCSP and NASA models all predicted less snow and cold.

On March 20, 2000, The Independent, a British newspaper, reported that the Dr. David Viner of [the UK's Climate Research Unit](#) warning within a few years snowfall will become “a very rare and exciting event.” Indeed, Viner opined, “Children just aren’t going to know what snow is.” Similarly, David Parker, at the UK’s Hadley Centre for Climate Prediction and Research, said that eventually British children could have only “virtual” experience of snow via movies and the Internet.

The last three winters in the UK were forecast by the UK Met Office to be mild and snowless. Instead, brutal cold and snow in the UK has the UK Met Office on their heels. Indeed the cold and snow was a throwback to the age of Dickens in the early 1800s. UK MPs called for Official Parliamentary Probe into whether the UKMO reliance on their ideology and CO<sub>2</sub> models had biased their predictions.

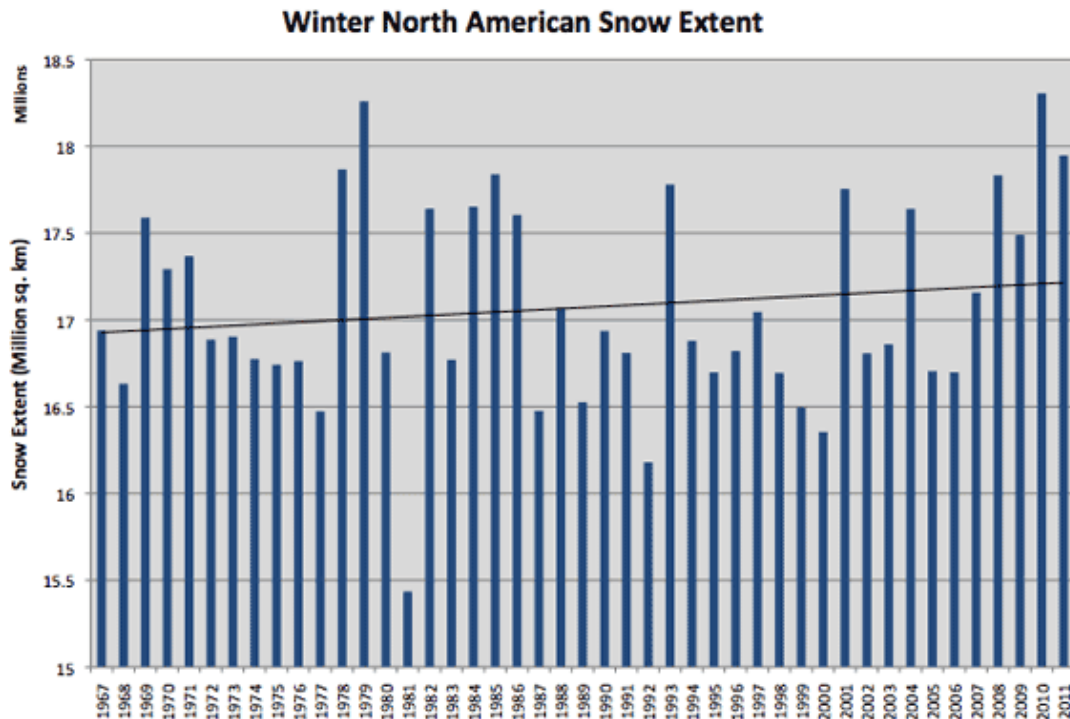
In the United States, NOAA echoing the UN IPCC, claimed snow would retreat north with the storm tracks and major cities would get more rain than snow along with milder, shorter winters.

The Union of Concerned Scientists opined confidently in 2004 [scientists claim winters were becoming warmer and less snowy](#). In 2008, [Robert F. Kennedy Jr.](#) bemoaned that children would be robbed of the childhood joys of sledding and skiing in the DC area due to global warming. A year later, the area set a [new seasonal snowfall record](#) with 5 to 6 feet of snow and sleds and skis were the only way to get around.

Snowfall was very heavy across Europe this past December. Munich, Germany, recorded a snowfall total for December, 2010 of 52 inches and the temperature averaged 6.3C below normal. 42 inches of snow was reported in Berlin. For the first time since 1981, all people in every place of the country celebrated "a white Christmas" together in this December. In western Poland, the city of Poznan had a snowfall total of 58 inches.

Snowcover for the hemisphere has been increasing the last 45 years with records abounding the last 4 years. A new record was set for this December/January this past winter, last year ranks 2<sup>nd</sup> for that period. 1977/78 was third, 2007/08 fourth.

For the entire winter, 2009/10 was top, 1977/78 second and 2010/11 third greatest, 2007/08 not far behind.



Source: [Rutgers NOAA Data Snow Lab](#).



After the fact, scientists scurried to find an excuse for the forecast failure. It was stated that extremes of weather – bigger, stronger, wetter storms are consistent with global warming.

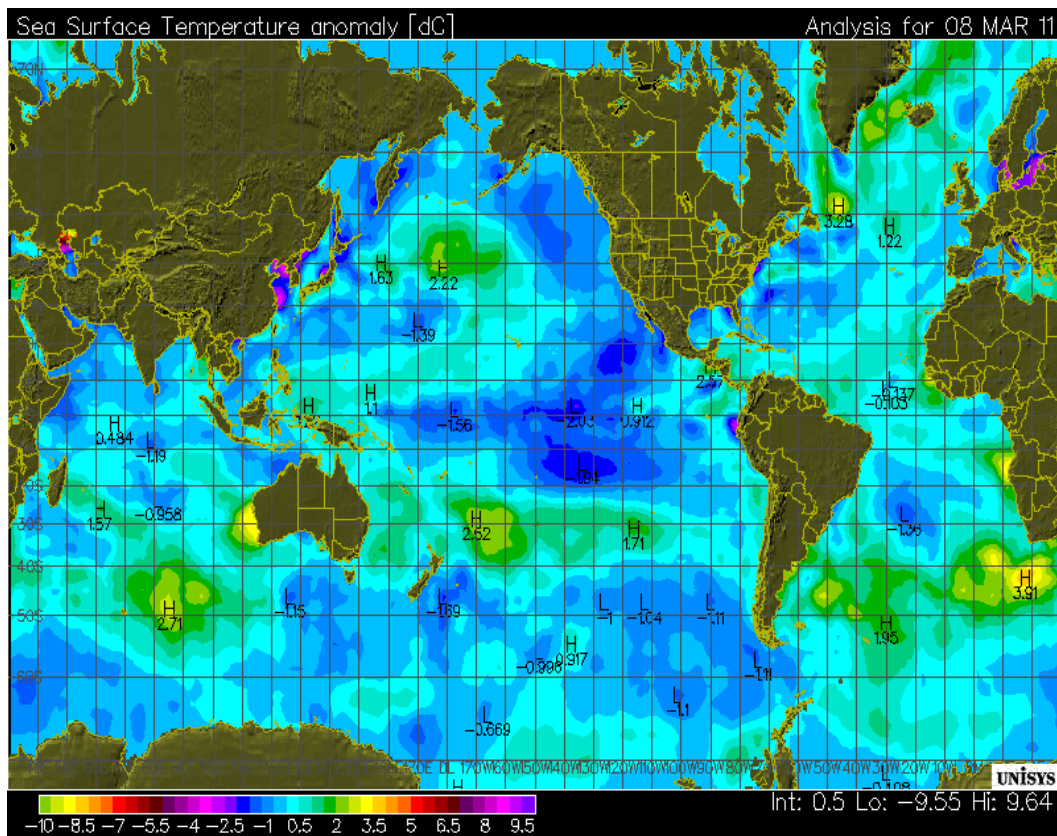
But, in fact global warming is supposed to have its greatest effects in colder locations thus reducing the contrast in temperatures with warmer air masses at lower latitudes which fuel winter storms. Big storms occur in years with the coldest air furthest south, as we saw in 1977/78, 2007/08, 2009/10 and 2010/11.

Global warming scientists and the media then took a contrary view focusing more on moisture content in the warm air which became the theme for this and last winter's big snows.

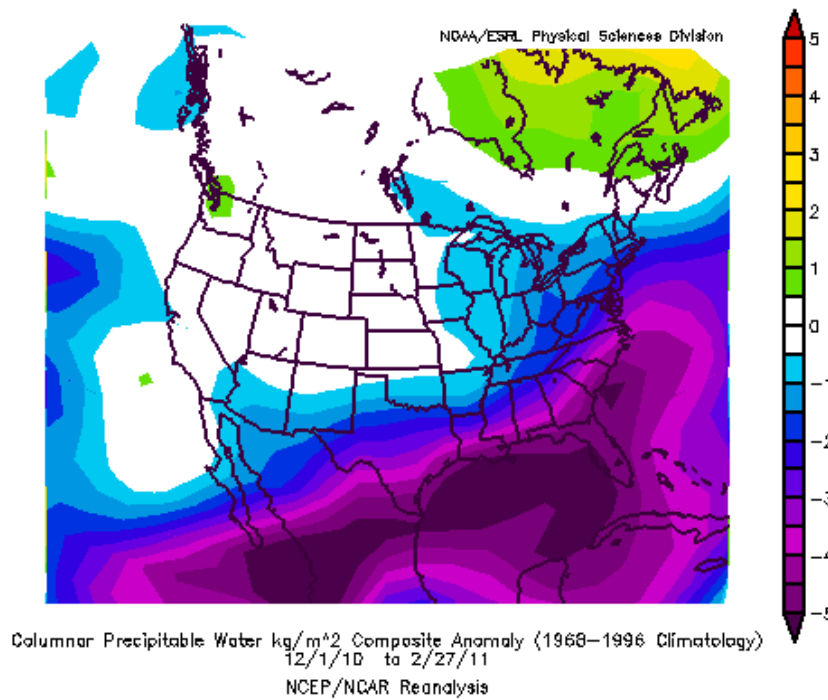
*“The old adage, ‘It’s too cold to snow,’ has some truth to it. A colder atmosphere holds less moisture, limiting the snowfall that can occur.” Heavy snowstorms are not inconsistent with a warming planet,” said scientist Jeff Masters. “In fact, as the Earth gets warmer and more moisture gets absorbed into the atmosphere, we are steadily loading the dice in favor of more extreme storms in all seasons, capable of causing greater impacts on society.”*

First of all, the last two winters were colder than normal not warmer as we have already seen.

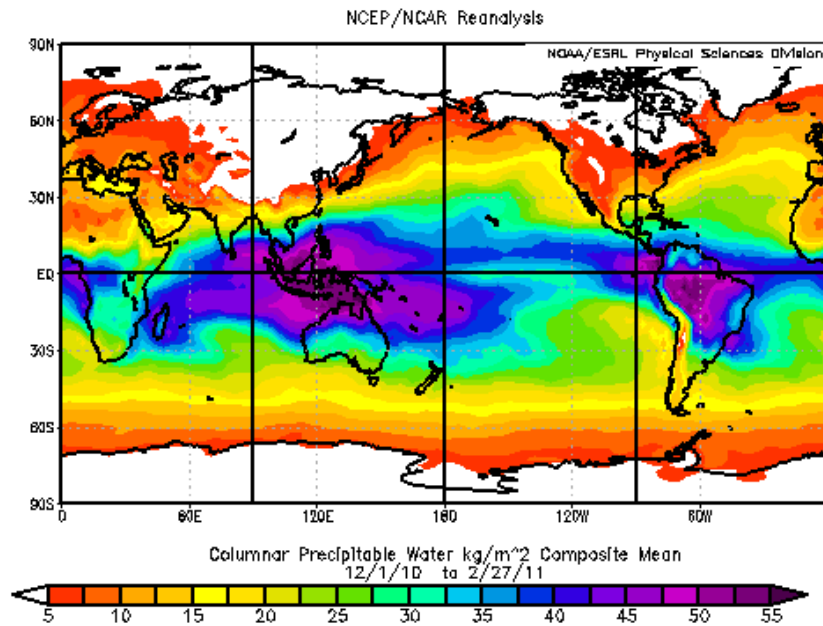
Second, the global oceans are colder than normal (blues), especially around the United States as seen from this UNISYS SST anomaly analysis.



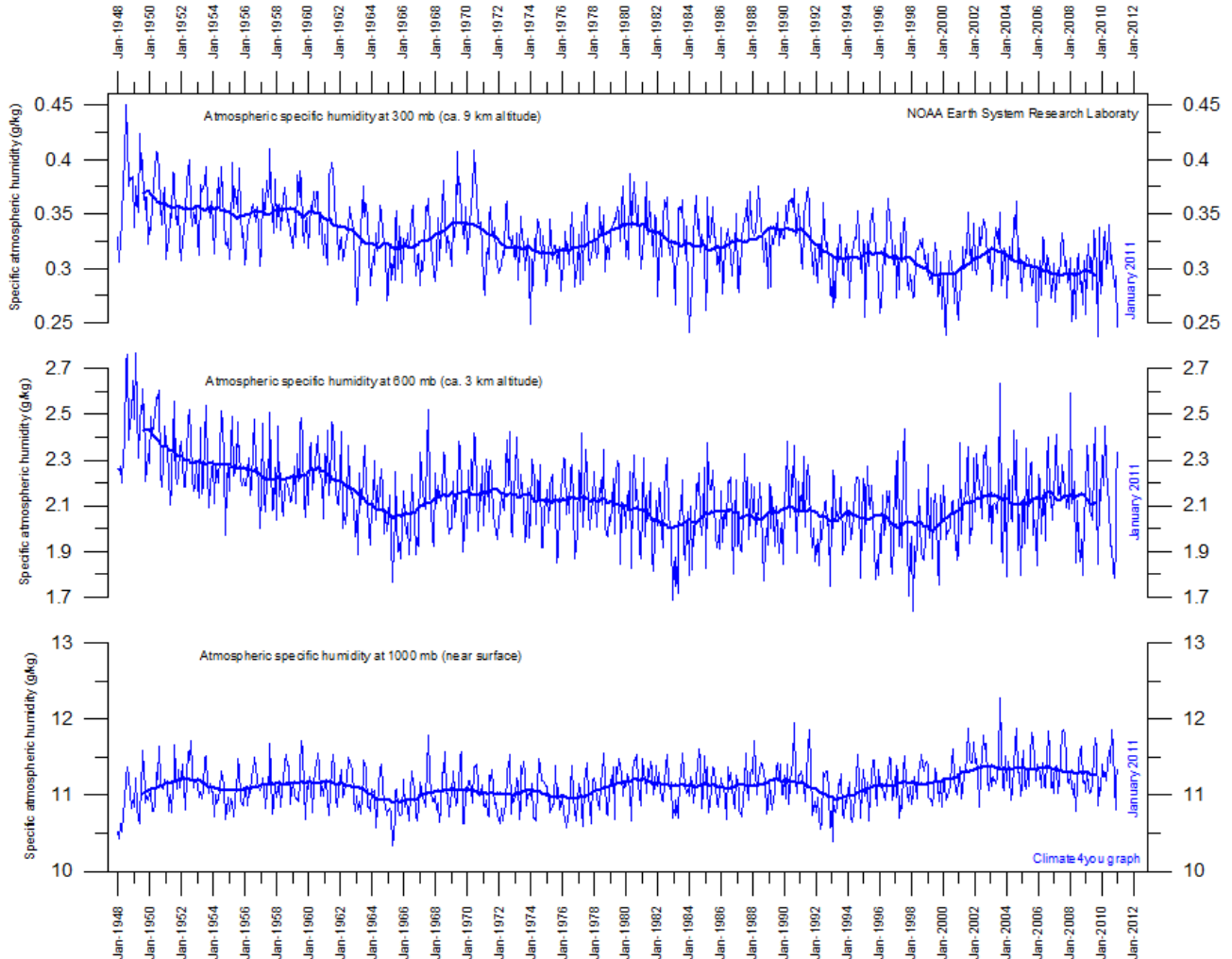
Third the amount of moisture in the air this winter was below normal (blues) in all the areas that had abnormal snow. The same was true last year.



The actual tropospheric precipitable water content from surface to 500mb shows most the tropical atmosphere has over ten times the water content of the polar and middle latitudes.



Also tropospheric relative and specific humidity has significantly declined since ‘safe CO<sub>2</sub> levels’ of 1948, 2) atmospheric water vapor has declined since satellite measurements began in 1983, 3) there has been no statistically significant global warming since 1995.

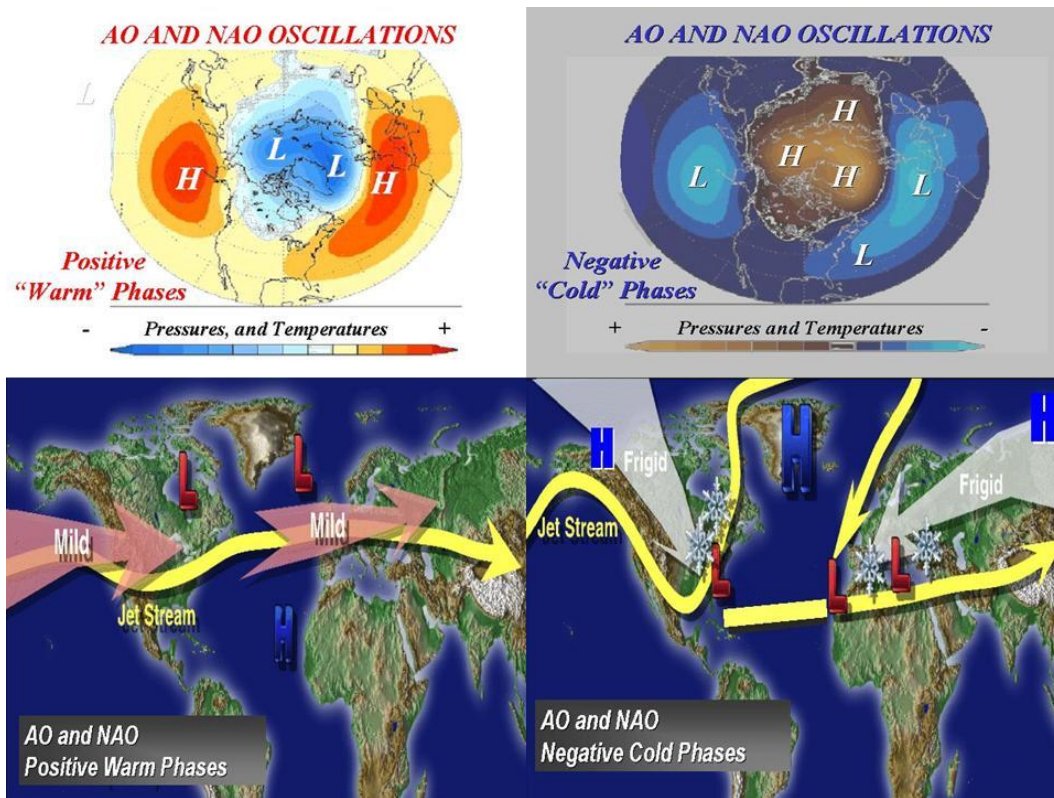


The snow resulted from a **rapid cooling** as we went from a strong El Niño to a strong La Niña and high latitude blocking consistent with a warm AMO mode and a still quiet sun (maybe some residual help from the high latitude volcanoes of recent years). Global temperature anomalies have plunged more than a whole degree (F) from their peak last summer and early fall. February 2011’s anomaly (UAH) came in as -0.018F relative to the 30 year average.

Global temperatures lag ENSO by about 7 months. Global teleconnections are most similar to the late 1950s, 1960s and 1970s when frequent snowy cold winters caused the world to increasingly think an ice age was coming.

## THE ARCTIC BLAMED

In Europe, the heavy snow was attributed to global warming induced reduction in arctic ice and warmer North Atlantic and arctic waters, which was said to produce the strongly negative arctic oscillation observed the last few winters. The Arctic Oscillation or AO (also known as the Northern Annular Mode or NAM) is a dominant oscillation in the hemisphere and has profound effects on winter weather – cold AND snow. The positive warm phase leads to the dominance of Pacific air and less snow in North America (exception, western Mountains) and more Atlantic air and less snow in Europe. The negative phase leads to colder temperatures, more snow with a suppressed storm track in the United States and cold and snow from Siberian air drawn west through Europe. The negative phase has dominated the last 4 years.

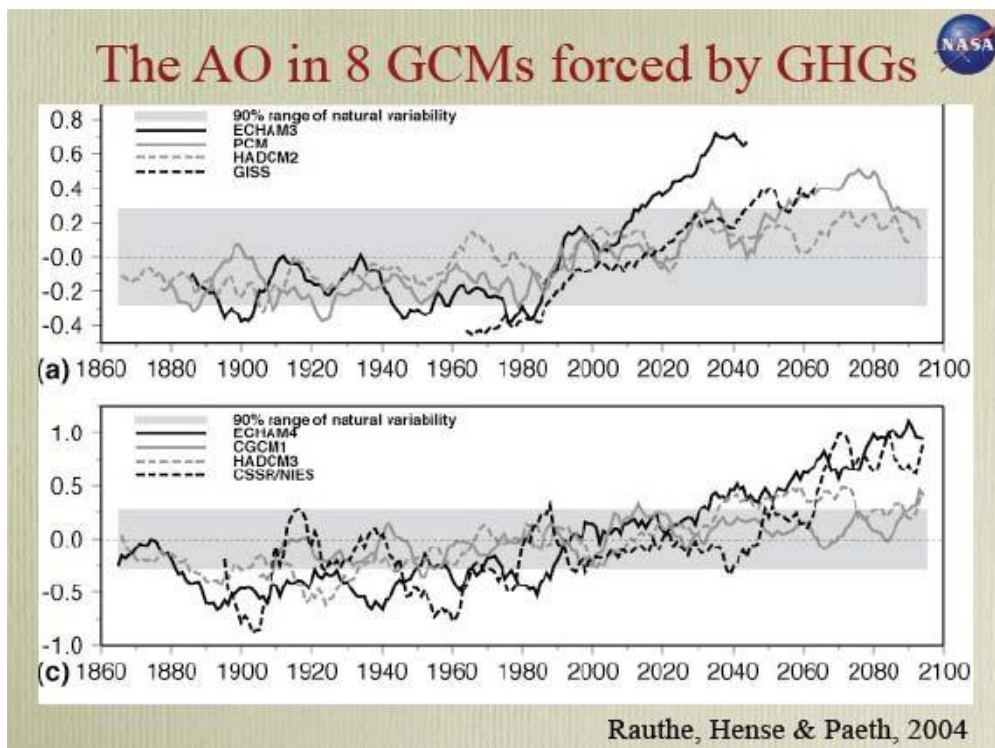


Although the arctic oscillation was indeed a factor, **the climate models had predicted that the arctic oscillation would be increasingly in the opposite warm positive phase due to greenhouse gases.**

### 5. Increasingly positive AO.

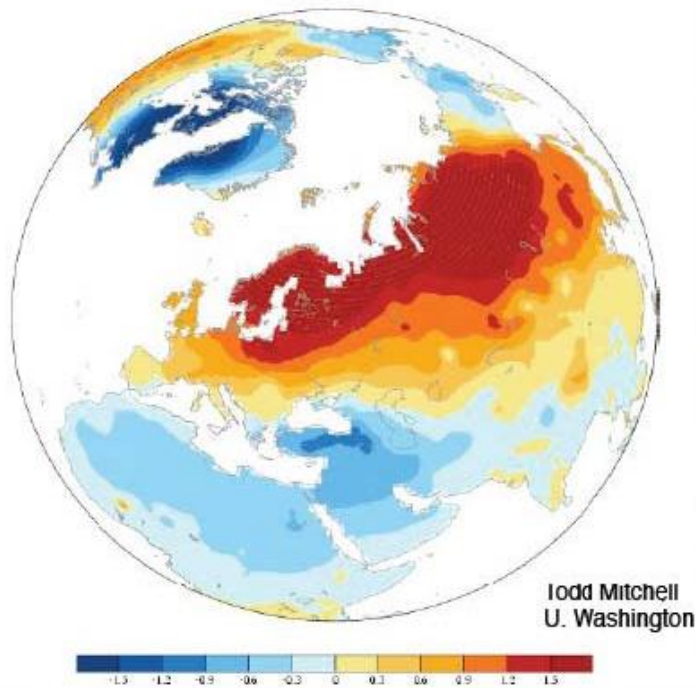
Climate models predicted uniformly that global warming would lead to a semi-permanent positive arctic oscillation state.



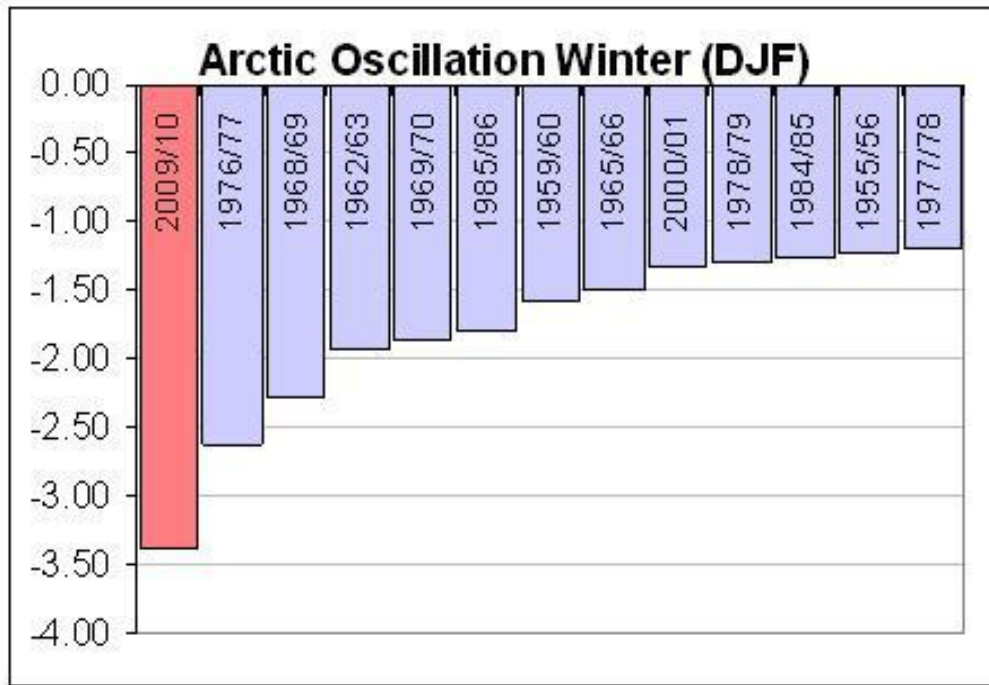


This was the predicted result with widespread warmth across Eurasia and North America with cold air trapped in polar regions (the arctic) and less snow.

Surface temperature correlation with Arctic Oscillation, 1950-96 (C)

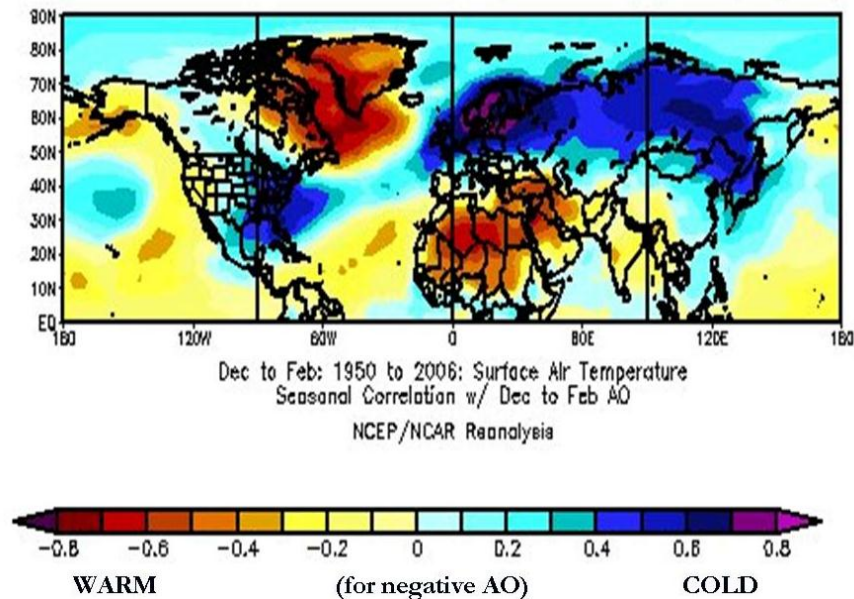


Instead the AO and NAO have been strongly negative. In fact in 2009/10 the AO was the most negative last winter of any year back to at least 1950. 2010/11 started strongly negative but a positive February took it just out of the top ten.

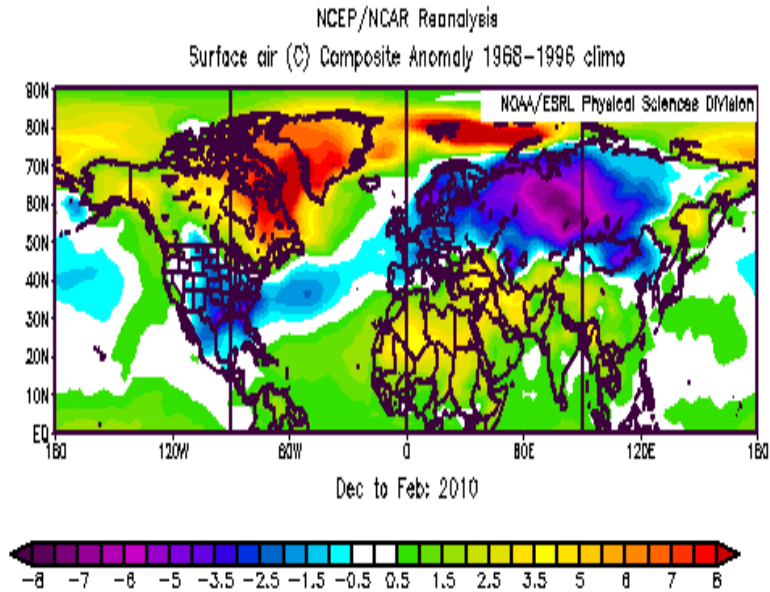


The negative AO and NAO favors the opposite pattern in winter from the predicted positive AO state.

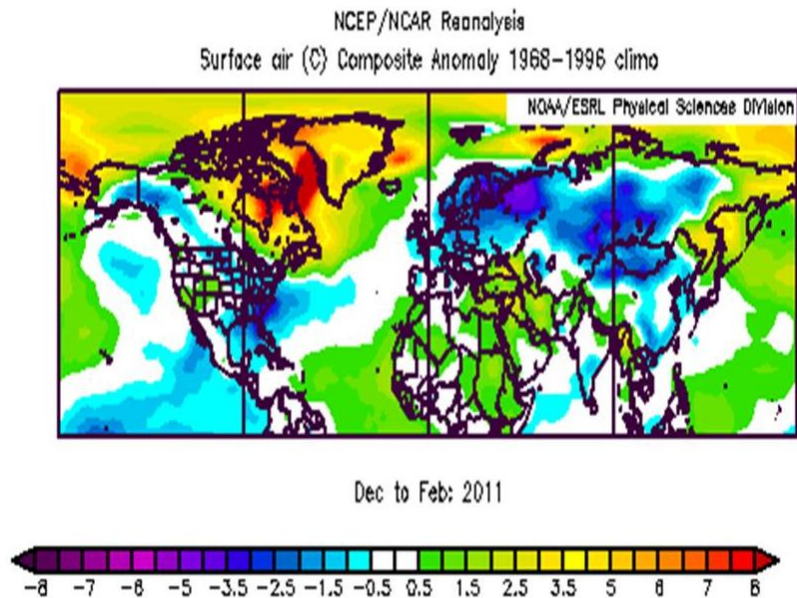
### AO and Surface Temperatures (DJF)



This explained 2009/2010 to a tee.



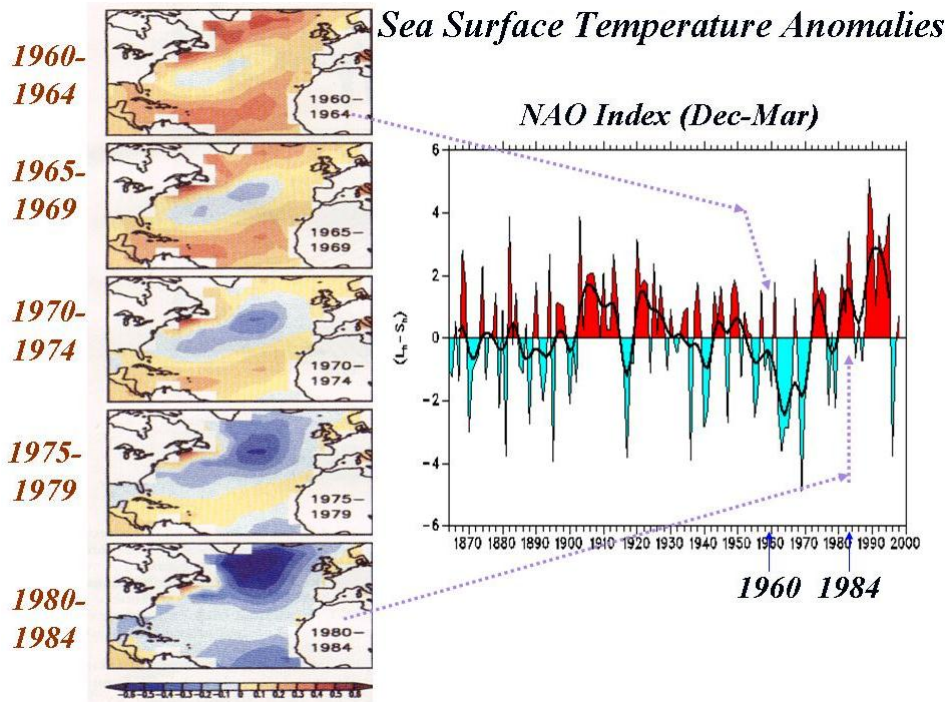
This winter was the virtual mirror image of 2009/10 for the Northern Hemisphere.



This similarity of the two winters was despite the fact that one was a strong El Niño and the second a strong La Niña winter.

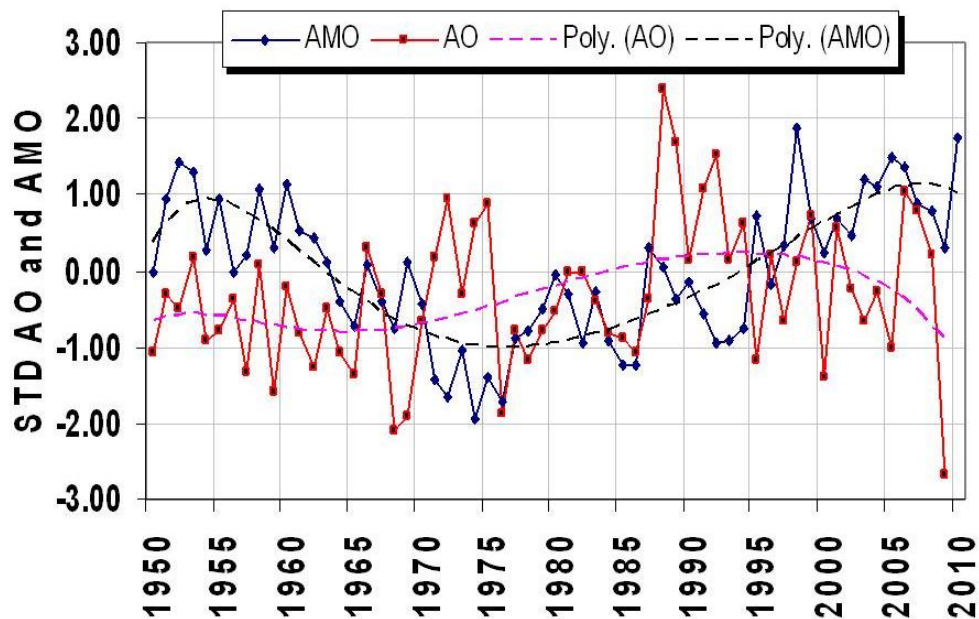
The high latitude blocking that keeps cold air trapped over North America and funnels cold Siberian air west through Europe is favored in the warm mode of the Atlantic Multidecadal Oscillation or AMO. The AMO is a pattern of ocean temperatures in the North Atlantic that relates to multidecadal changes in the thermohaline (temperature and salinity) driven ocean circulation on a 60-70 year cycle. The warm AMO mode tends to favor high latitude blocking and a negative AO as we saw in the late 1950s and 1960s.





Note the return to the warm AMO (blue) after 1995 and a gradual decline in the arctic oscillation in winters (red).

## AMO vs AO DJFM



This AMO and AO relationship is mentioned in the IPCC AR4. This 60-70 year AMO cycle has been observed back at least into the 19<sup>th</sup> century and is acknowledged to be a natural cycle.

## 6. Global warming may lead to a permanent or semi-permanent El Niño.

Our friends at the METSUL in Brazil reminded us that in 1997 - Gore and an atmospheric scientist from the Mauna Loa Observatory foresee a permanent El Niño in the near future ([here](#) and [here](#)) and the [BBC](#) announced scientists saw a future with a permanent El Niño.

This was based on the observance of increased El Niño and decreased La Niña frequency in the 1979-1998 time frame. Also though climate models could not resolve the short term ENSO oscillations they depicted increasingly warm tropical sea surface temperatures with global warming that would have suggested this outcome.

Based on the increased frequency and strength and length of El Niños in those decades, some scientists speculated that we might head into a permanent El Niño state like appears to have occurred in the [early Pliocene](#).

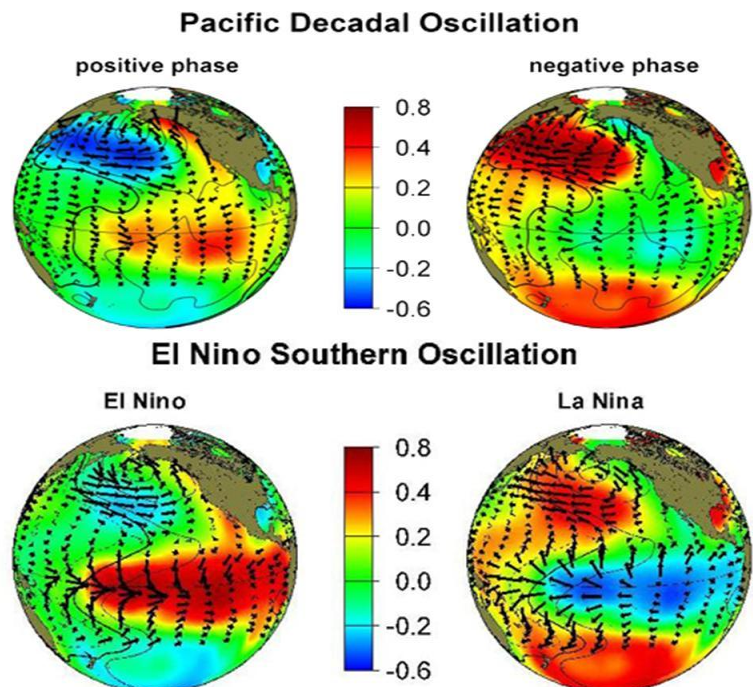
But now in 2011 - Global warming will not cause permanent El Niño ([here](#)).

Indeed forecasters and climate scientists who look at data rather than models see the tendency for clustering of El Niños and their cooler sisters La Niña due to large scale multidecadal scale, flip flops of ocean temperature patterns in the Pacific Basin, a pattern known as the Pacific decadal Oscillation.

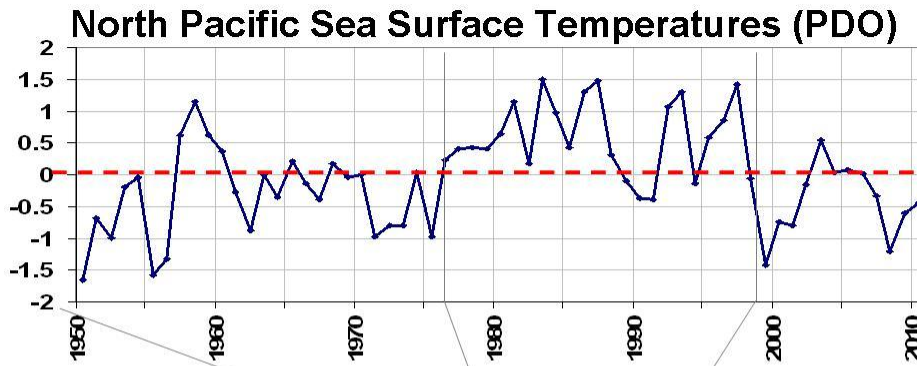
### PACIFIC DECADEAL OSCILLATION

Like the Atlantic Ocean temperature patterns tend to oscillate on a multi decadal scale in the Pacific, a phenomena known as the Pacific Decadal Oscillation or PDO.

Even though the IPCC AR4 chapter 3 did note the existence of a “decadal variability in the Pacific (the Pacific Decadal Oscillation or PDO)”, most global warming scientists ignore this because it opens up the possibility that natural variability could account for the warming from 1979-1998.



The PDO and ENSO frequency strength and duration go hand in hand. Warm modes are characterized by more frequent, stronger and longer lasting El Niños and cold modes by more frequent, stronger and long lasting La Niñas. Note the similarity in the mean of the ocean temperatures in the positive PDO and El Niño and negative PDO and La Niña.



<b><i>PDO</i></b>	<b>Cold</b>	<b>Warm</b>	<b>Cold</b>
<b>Period</b>	<b>1947-1977</b>	<b>1978-1998</b>	<b>1999-2010</b>
<b>El Nino</b>	<b>7</b>	<b>10</b>	<b>3</b>
<b>La Nina</b>	<b>14</b>	<b>3</b>	<b>6</b>

NOAA CDC

<b>ENSO Duration in Months</b>		
	<b>El Nino</b>	<b>La Nina</b>
<b>Positive PDO</b>	<b>21</b>	<b>12</b>
<b>Negative PDO</b>	<b>13</b>	<b>20</b>

The AR4 suggested changes in the Pacific ocean gyre for this multidecadal oscillation. This involves the strength and location of the subtropical high which increases or decreases upwelling of cold water off the entire coast of North and South America and the push westward of the coldwater by the tropical easterlies which are stronger in the cold mode La Niñas and weaker in the El Niños.

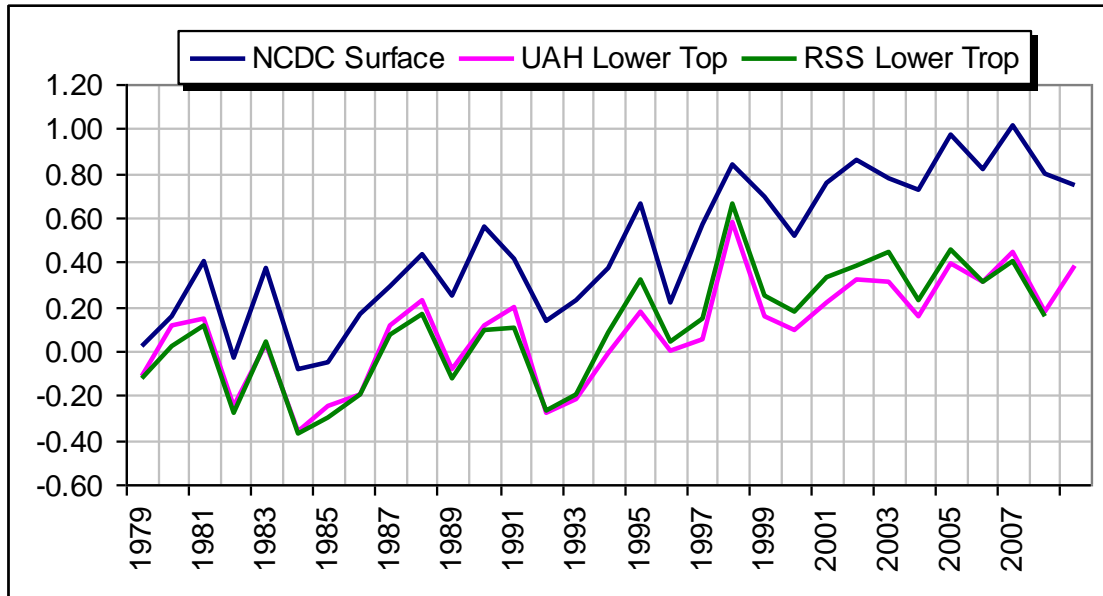
The gyre also influences the Kuroshio current, analogous to the Gulf Stream in the Atlantic. The result is a tendency for an enhanced Kuroshio current with warm water in the cold mode La Niñas and a cooler weaker current in the warm mode El Niño decades.

This 'tripole' in ocean temperatures is analogous to the AMO tripole in the Atlantic.

**7. Atmosphere will warm faster than surface (because that is where the heat trapping gases are).**

This shows up in all the IPCC models and was described by Santer (2005 and 2008).

Instead the surface as measured by NCDc land data has diverged from the atmospheric temperature as measured by the two satellite sources UAH and RSS in a positive way (surface difference has increased by 0.45C from 1979 to 2009).



The Klotzbach et al suggested the divergence between surface and lower-tropospheric trends is consistent with evidence of a **warm bias in the surface temperature record but not in the satellite data.**

Klotzbach et al described an 'amplification' factor for the lower troposphere as suggested by Santer et al (2005) and Santer et al (2008) due to greenhouse gas trapping relative to the warming at the surface. Santer refers to the effect as "tropospheric amplification of surface warming". This effect is a characteristic of all of the models used in the UNIPCC and the USGRCP "ensemble" of models by Karl, et.al. (2006) which was the source for Karl et al (2009) which in turn was relied upon by EPA in its recent Endangerment Finding.( Federal Register / Vol. 74, No. 239 / Tuesday, December 15, 2009 / Rules and Regulations at 66510 )

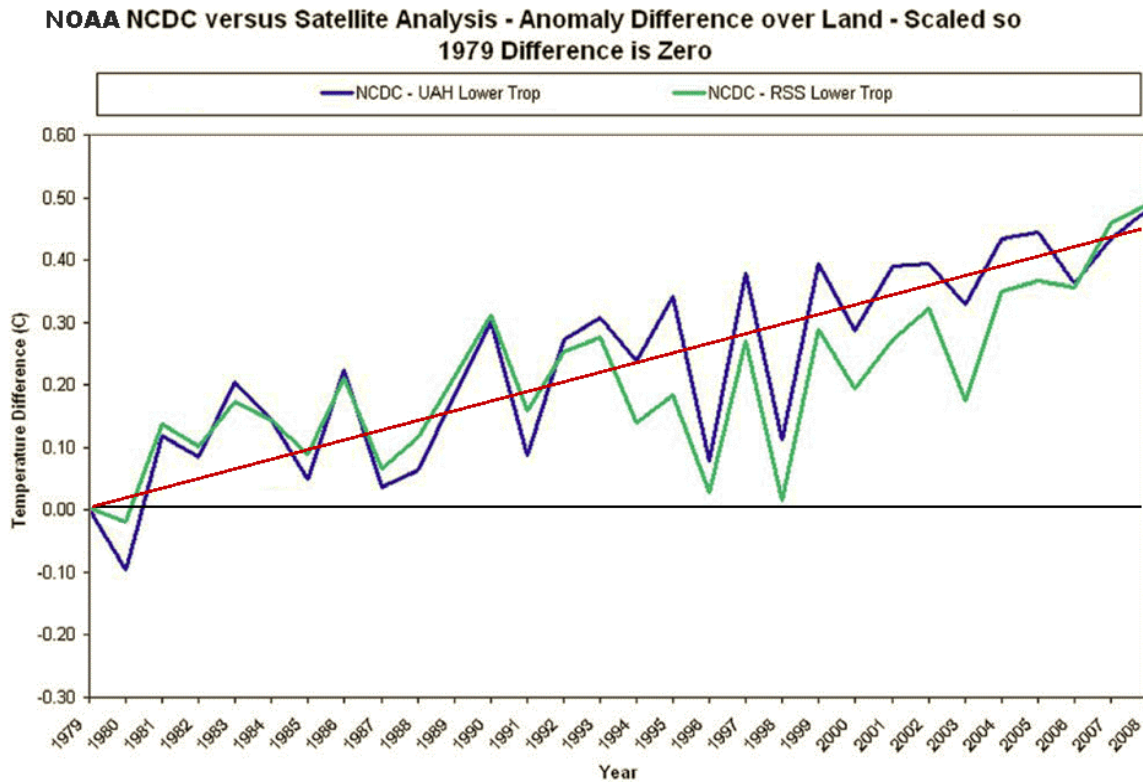
The amplification factor was calculated from the mean and median of the 19 GCMs that were in the CCSP SAP 1.1 report (Karl et al, 2006).

As John Christy describes it "The amplification factor is a direct calculation from model simulations that show over 30 year periods that the upper air warms at a faster rate than the surface - generally 1.2 times faster for global averages. This is the so-called "lapse rate

feedback” in which the lapse rate seeks to move toward the moist adiabat as the surface temperature rises. In models, the convective adjustment is quite rigid, so this vertical response in models is forced to happen. The real world is much less rigid and has ways to allow heat to escape rather than be retained as models show.” This latter effect has been documented by Chou and Lindzen (2005) and Lindzen and Choi (2009).

The amplification factor was calculated from the mean and median of the 19 GCMs that were in the CCSP SAP 1.1 report (Karl et al, 2006).

The divergence can be seen in this graph from Klotzbach (et al. 2009).



Klotzbach *et al.* (2009)

NOAA surface temperature data has been increasing faster than satellite lower troposphere temperatures since 1979. In 2009 the difference had grown to over 0.45 C.

However, greenhouse theory and IPCC models predict the lower troposphere should be warming 1.2 times faster than surface, not slower. This data suggests that either greenhouse theory is incorrect and/or that NOAA’s surface temperature data has been contaminated – e.g. by its treatment of factors like land use changes or urbanization.

We believe both are true.

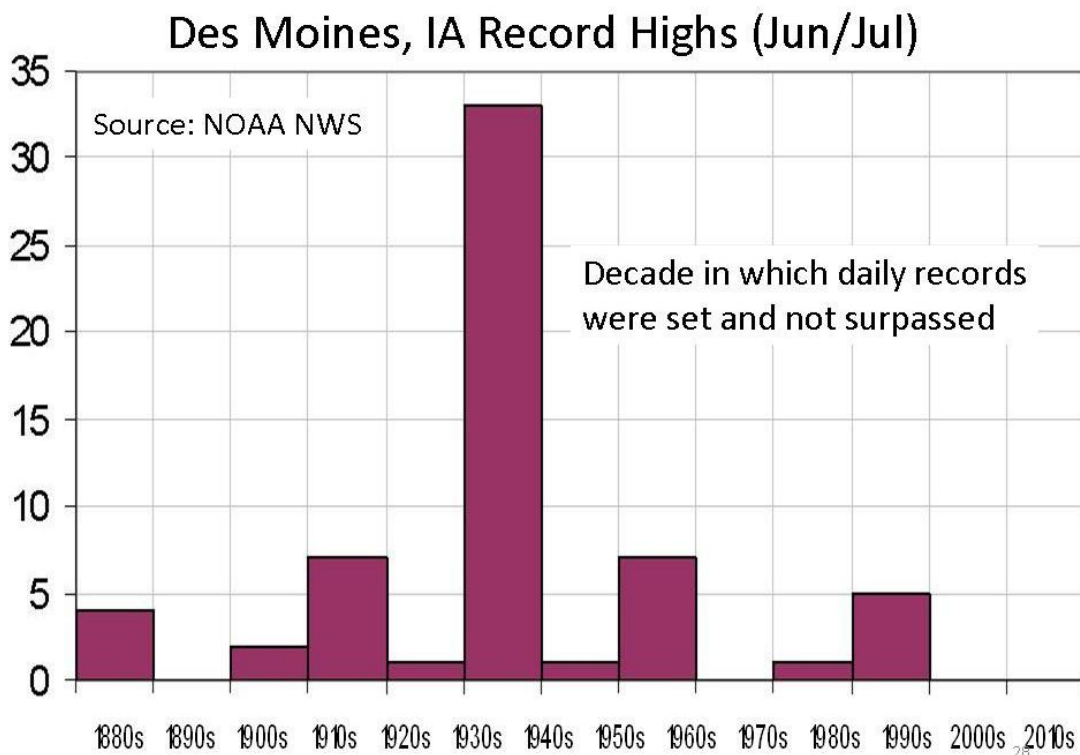


## 8. Record highs and heat waves are increasing.

In congressional Energy and commerce hearings, Dr Somerville, Dr. Zwiers and Dr Field indicated heat extremes are occurring more rapidly and Dr Field even linked it to potential reduction in yield improvements because of temperatures exceeding the threshold for crops. He made no mention of CO<sub>2</sub> benefits for plant growth.

Dr. Christy correctly pointed out that corn was grown from Minnesota to Alabama and temperatures varied considerably over those areas with little impact on corn.

Temperatures in places like Des Moines are not showing extremes as the models and the testifiers claimed. In fact since 1988, no record highs were set in Des Moines during the critical months of June and July.



Dr Field suggested a loss of \$5 billion/year. Yale professor Robert Mendehlson testified to congress in 2000, climate change as projected then by IPCC would result in benefits of up to \$23B/year to agriculture and forestry.

The alarmists have linked future heat waves to increased health risks and mortality. Historical analyses show cold kills more than heat. We have written on the health issues [here](#) citing work by Dr. Goklany.

## MODELS SHOW MORE HEAT, DATA DOESN'T.

The EPA, NOAA CCSP, IPCC and NCAR have all stated that with an overall warming of the Earth's climate, heat waves are said to becoming more frequent, longer, and more intense in places where they already occurred.

For one example from EPA and NOAA see The EPA "Climate Change Indicators in the United States" from the NOAA CCSP U.S. Climate Change Science Program. 2009. (Updated version of the U.S. Climate Change Science Program's 2008 report: Synthesis and Assessment Product 3.3: [Weather and climate extremes in a changing climate](#)), page 24 . Also Meehl, G.A., Byun, H.R., Tebaldi, C., Walton, G., Easterling, T., McDaniel, L., 2009, The relative increase of record high maximum temperatures compared to record low minimum temperatures in the U.S., *Geophysical Research Letters*, 36, L23701, doi:10.1029/2009GL040736

Meehl et al. opined based on models "Spurred by a warming climate, daily record high temperatures occurred twice as often as record lows over the last decade across the continental United States, new research shows. The ratio of record highs to lows is likely to increase dramatically in coming decades if emissions of greenhouse gases continue to climb."

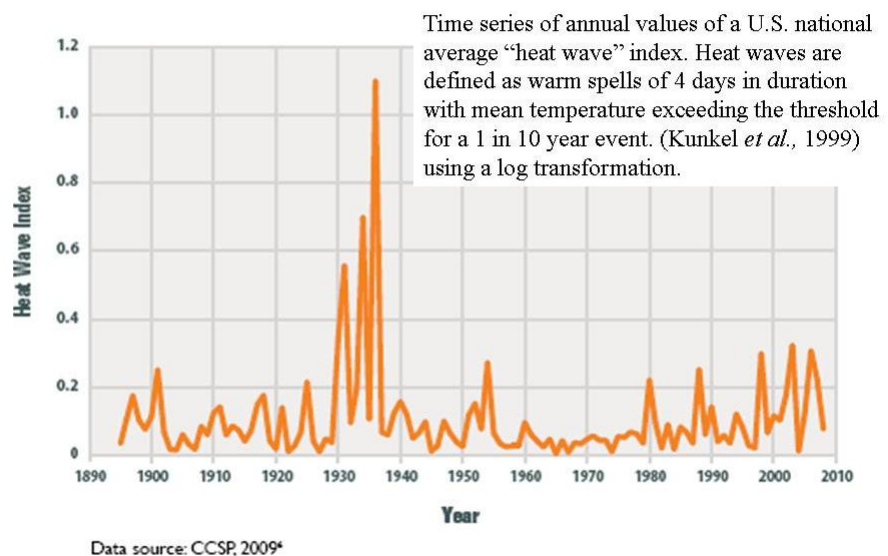
The CCSP devised a Heat Wave Indicator Index to measure the changes since 1895 for the United States. The data for this indicator were provided by the National Oceanic and Atmospheric Administration's National Climatic Data Center. Surface temperature anomalies were calculated based on monthly values from a network of long-term monitoring stations. Satellite data were analyzed by two independent groups, resulting in the slightly different "UAH" and "RSS" trend lines.

The indicator showed very clearly that heat waves occurred with high frequency in the 1930s, and these remain the most severe heat waves in the U.S. historical record (see Figure 1).

NOAA notes "Many years of intense drought (the "Dust Bowl") contributed to these heat waves by depleting soil moisture and reducing the moderating effects of evaporation. There is no clear trend over the entire period tracked

### Figure 1. U.S. Annual Heat Wave Index, 1895–2008

This figure shows the annual values of the U.S. Heat Wave Index from 1895 to 2008. These data cover the lower 48 states.





by the index. Although it is hard to see in Figure 1 (because of the extreme events of the 1930s), heat wave frequency decreased in the 1960s and 1970s but has risen since then.”

These results in figure 1 were generally consistent with an analysis of monthly record highs and lows for the states since 1895 (source Bruce Hall from NOAA NCDC) although the 2000s was unusually benign with fewer state records than any decade since the 1880s.

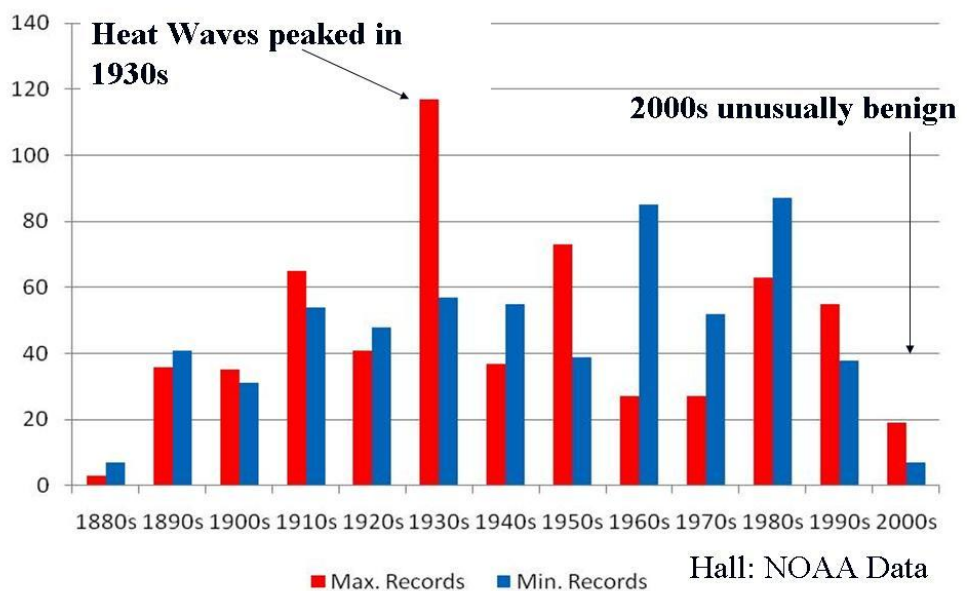
Hall showed using NCAR historical data for state record highs and lows the 1930s peak and a second minor peak in the 1990s but a decline in heat records after. It also shows record lows peaking in the 1960s and 1980s with a decline after.

We should note with increased urbanization, we would expect fewer overnight low records since nighttime temperatures are most affected by urban heat island.

Dr. John Christy in his testimony to congress March 8 noted *“For each of the 50 states, there are records kept for the extreme high and low temperatures back to the late 19th century. In examining the years in which these extremes occurred (and depending on how one deals with “repeats” of events) we find about 80 percent of the states recorded their hottest temperature prior to 1955. And, about 60 percent of the states experienced their record cold temperatures prior to that date too. One could conclude, if they were so inclined, that the climate of the US is becoming less extreme because the occurrence of state extremes of hot and cold has diminished dramatically since 1955...*

*Then, one might look at the more recent record of extremes and learn that no state has achieved a record high temperature in the last 15 years (though one state has tied theirs.) However, five states have observed their all-time record low temperature in these past 15 years (plus one tie.) This includes last month’s record low of 31F below zero in Oklahoma, breaking their previous record by a rather*

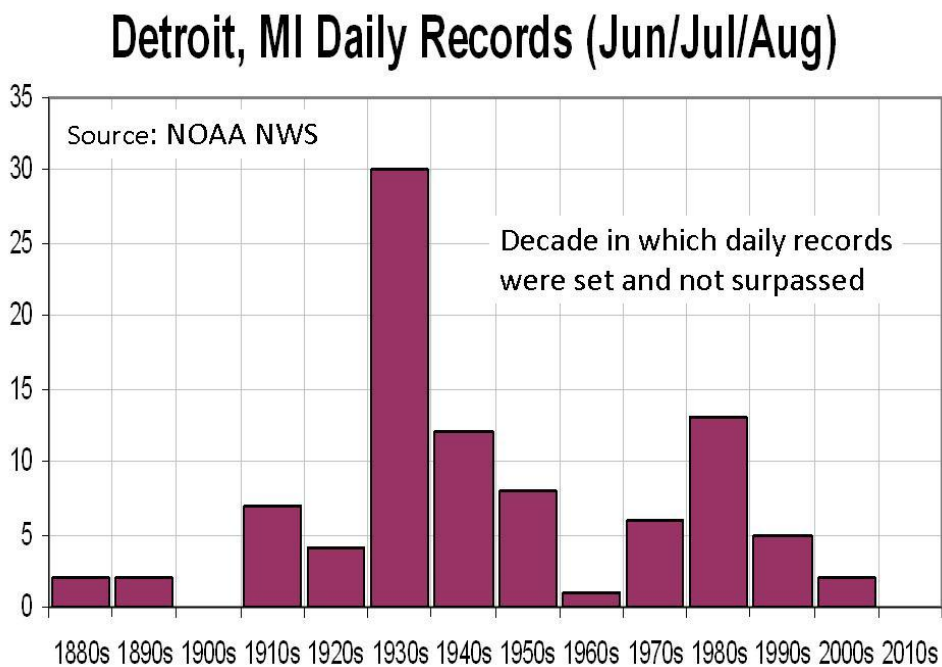
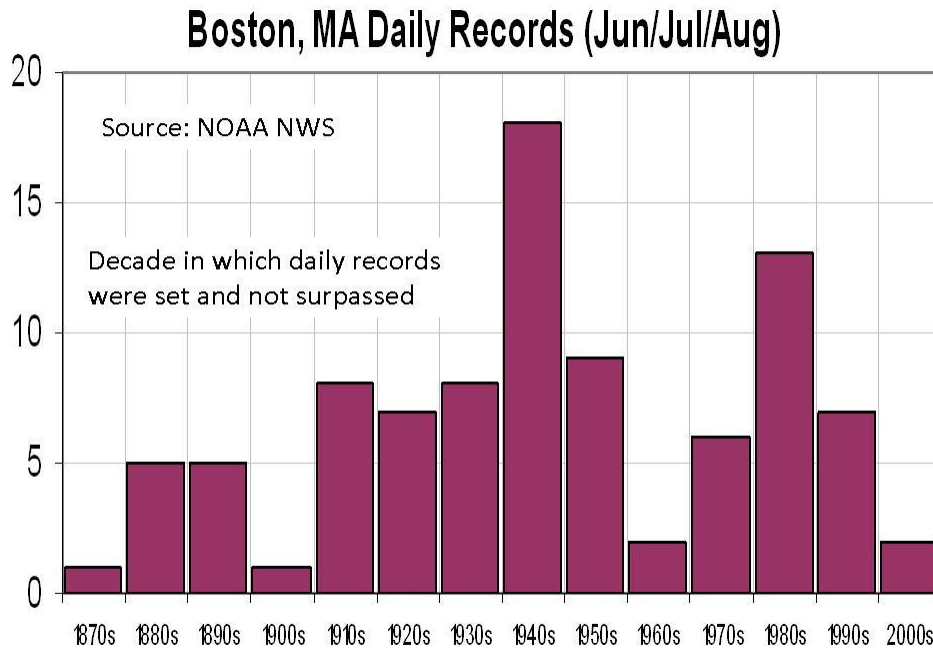
## U.S. State Maximum and Minimum Monthly Records by Decade



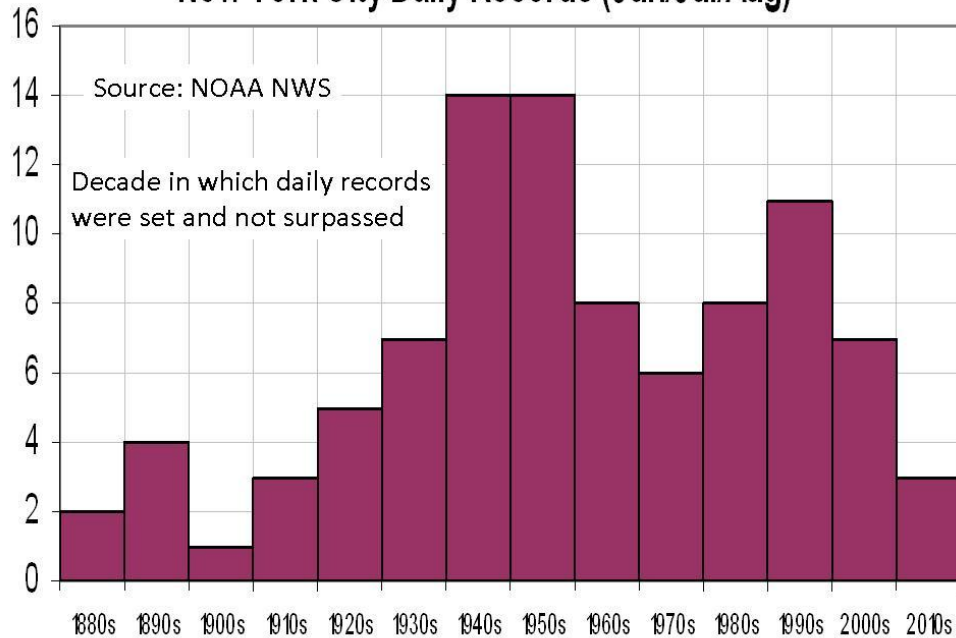
State Monthly heat and cold records 1895-2010. Note when new records are set, the count is adjusted down accordingly in the prior record decade.

remarkable 4F. If one were so inclined, one could conclude that the weather that people worry about (extreme cold) is getting worse in the US. (Note: this lowering of absolute cold temperature records is nowhere forecast in climate model projections, nor is a significant drop in the occurrence of extreme high temperature records.)

The same heat wave pattern can be seen in city decadal records all over the country as shown from NOAA city records below.

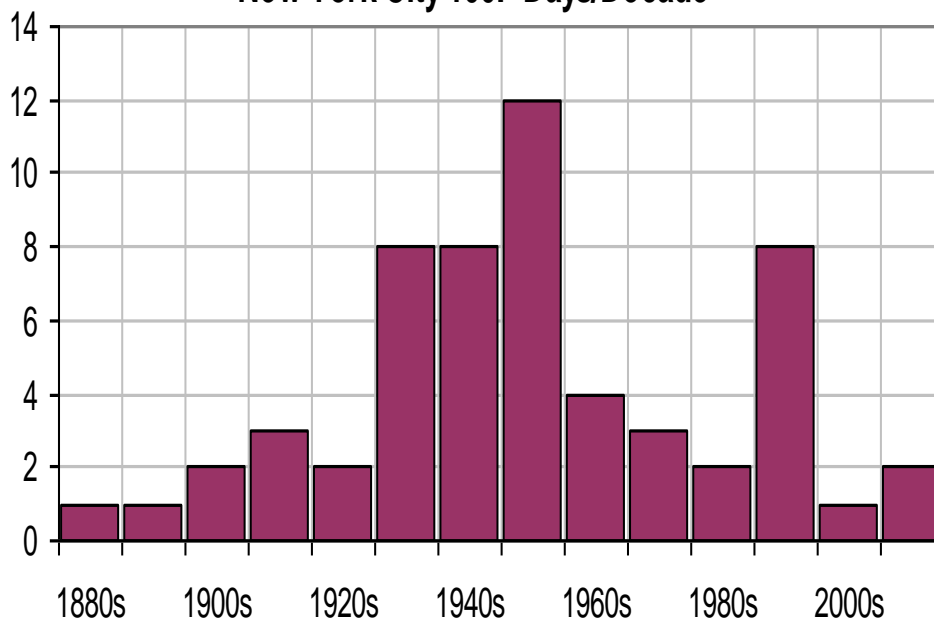


## New York City Daily Records (Jun/Jul/Aug)

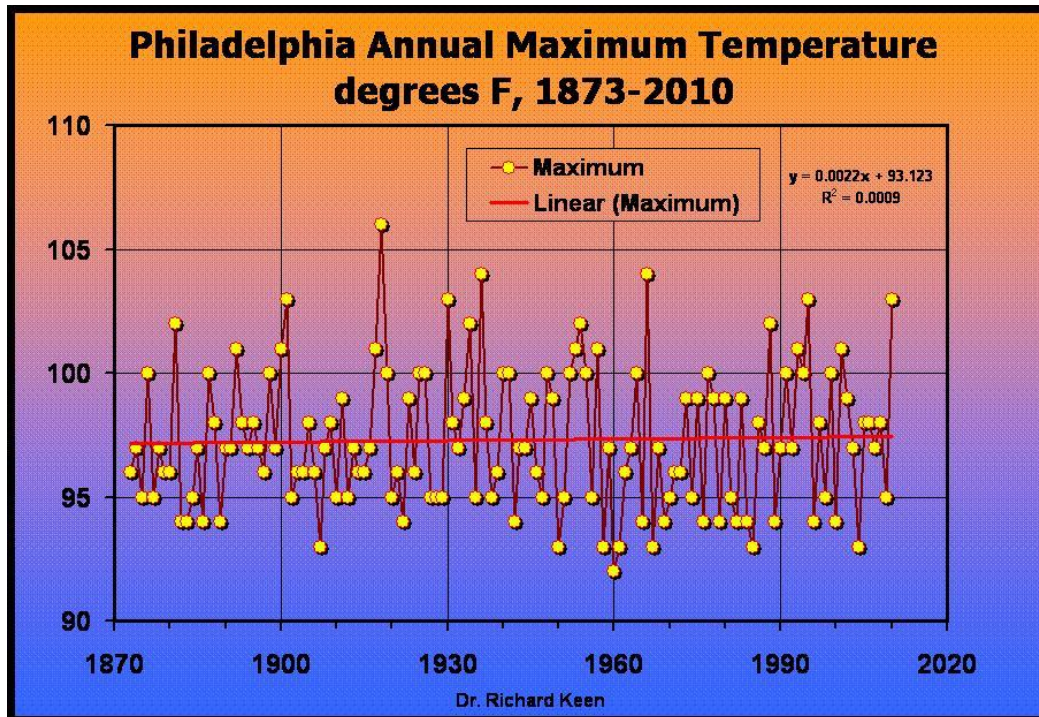


New York City experienced two 100F days this past summer, a year after June and July averaged the third coldest in the entire record. There was only 1 such day in the 2000s. In a similar sine wave like oscillation, one can see the 1930s to 1950s peak with a second peak in the hot days of two 1980 summers. The frequency the last two decades is the lowest since the early record in the 1880s through the 1920s.

## New York City 100F Days/Decade



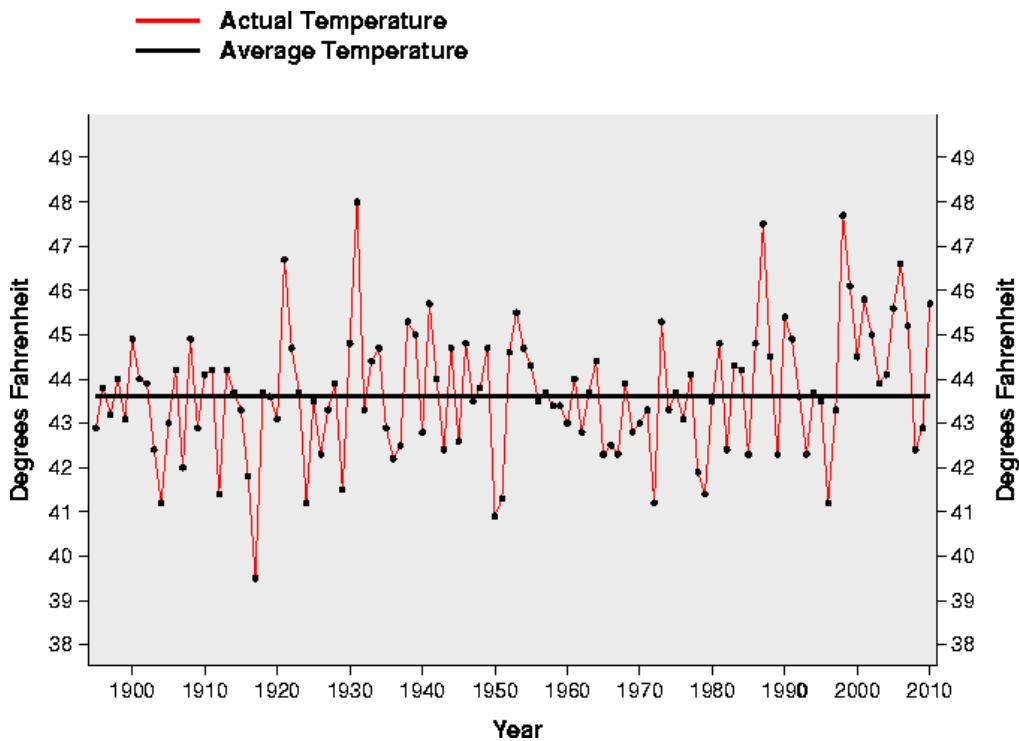
For Philadelphia, before 1942, the mid-point of the data, there were 9 years in which the maximum temperature exceeded 100 degrees. For the second half of the record, since 1942, there were, well, 9 years. Not much of an increase. If that trend continues, I would expect another 9 years with 100+ degree temperatures by 2060.



In viewing the data above, it is clear that any increases in heat records are unremarkable compared to the early 20th century, most notably the 1930s. The changes in the heat to cold record ratios computed by Meehl et al was more due to the diminished cold record the last two decades, consistent with the urban heat island expansion. The number of records, both low and high have diminished in recent years. Indeed the last decade was unusually benign and by this measure certainly not increasingly extreme.

One must conclude from the data that heat waves are not increasing at an alarming rate as reported by the IPCC, NOAA, NASA, and NCAR and Drs. Somerville, Zwiers and Field. Indeed, elevated nighttime temperatures which show up in the data are actually better correlated with urban heat island contamination. Greenhouse warming should result in elevated daytime and nighttime temperature and logically more record highs.

Knute NadelHoffer in his testimony discussed the warming of the last 30 years in Michigan including Lake Superior. NCDC's Temperature for the upper Midwest and Great Lakes region (MI, WI, IA, MN) show cyclical trends that show that warming is just one leg of a multidecadal cycle of temperatures and not a catastrophic warming as NadelHoffer suggested. Indeed for the annual temperatures, no long term trend was seen.



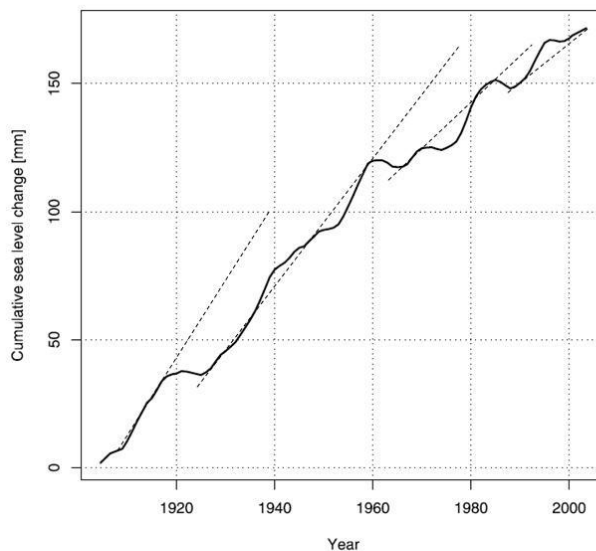
**9. Sea levels are rising at an increasing rate.**

We heard claims in the meeting about the perils of sea level rises which were said to be increasing at an alarming rate, at or above the highest rate claimed by the IPCC. This is patently false.

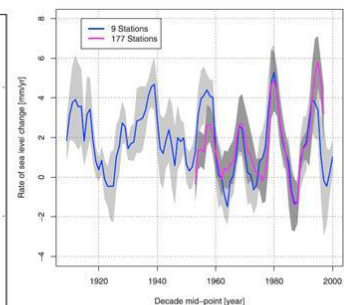
The ‘scientists’ who make that claim live in a virtual world within computer models.

Holgate (2007) has shown a deceleration below the lowest rate of the range specified by the IPCC.

The islands of the Pacific are claimed to be the most threatened by the IPCC.



**Figure 4.** The mean sea level record from the nine tide gauges over the period 1904–2003 based on the decadal trend values for 1907–1999. The sea level curve here is the integral of the rates presented in Figure 2.



**Figure 2.** Comparison of the global mean decadal rates of sea level change based on the nine records with the rates from the 177 stations used in HW04. All rates are corrected for glacial isostatic adjustment and inverse barometer effects. The shaded region indicates  $\pm 1$  standard error.

**20<sup>th</sup> Century  
Sea Level Rise**

**174 mm  
(6.85 inches)**

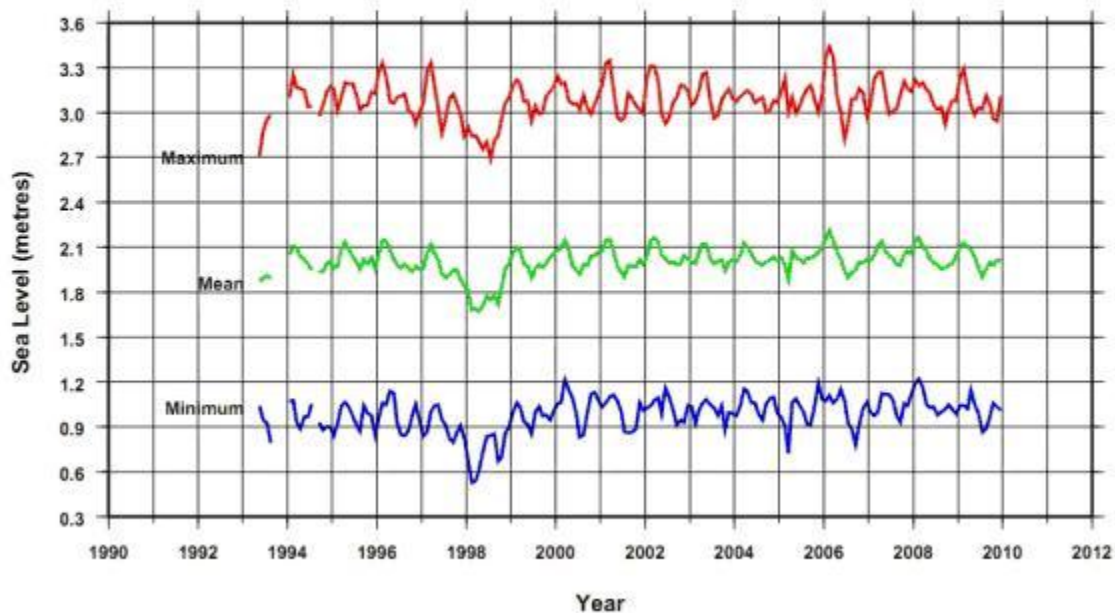
SJ Holgate (2007)



Dr. [Cliff Ollier](#) reviews sea level rise for “Tuvalu, the favourite island to be doomed by sea level rise driven by global warming, allegedly caused by anthropogenic carbon dioxide. If you look up Tuvalu on the internet you are inundated with articles about its impending fate. Tuvalu has become the touchstone for alarm about global warming and rising sea level. He shows the data from the Australian BOM shows no changes for 20 years.”

Figure 15

Monthly sea level at Funafuti, Tuvalu  
SEAFRAME gauge



More generally, Dr. Vincent Gray in [this analysis](#) wrote:

“The SEAFRAME sea-level study on 12 Pacific Islands is the most comprehensive study of sea level and local climate ever carried out there. The sea level records obtained have all been assessed by the anonymous authors of the official reports as indicating positive trends in sea level over all 12 Pacific Islands involved since the study began in 1993 until the latest report in June 2010. In almost all cases the positive upward trends depend almost exclusively on the depression of the ocean in 1997 and 1998 caused by two tropical cyclones. If these and other similar disturbances are ignored, almost all of the islands have shown negligible change in sea level from 1993 to 2010, particularly after the installation of GPS leveling equipment in 2000.”

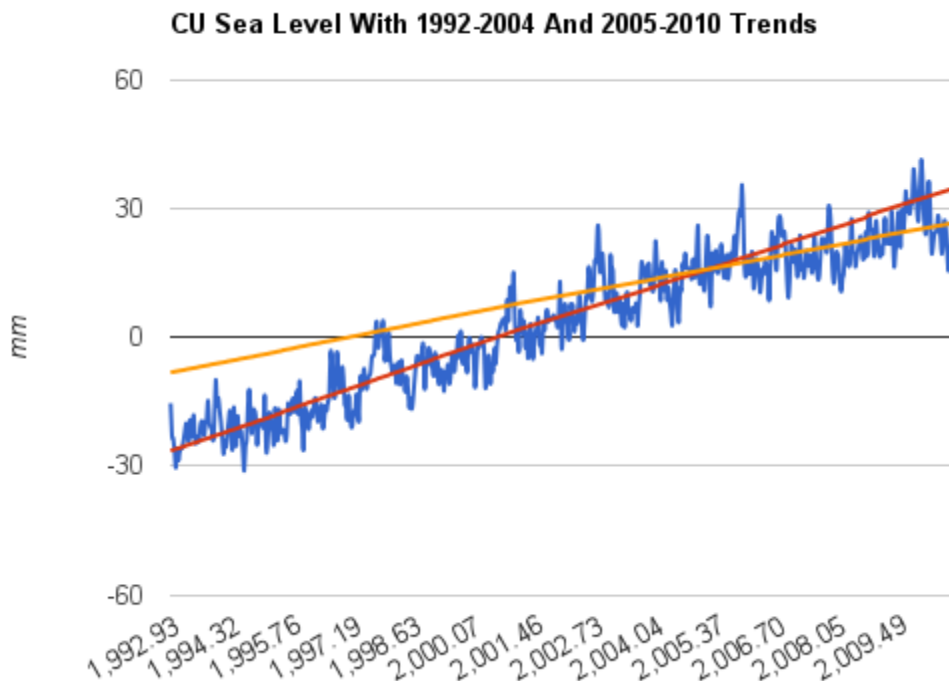
Gray notes that the claimed trends of 3.7 to 9.2 mm/year do not match the measured trends which are zero for up to 18 years.

### Summary of This Assessment

Island State	Claimed Sea-level Trend	Years with Zero Trend
Cook Islands	+4.9 mm yr <sup>-1</sup>	1999-2006
Micronesia		2003-2007
Fiji	+5.4 mm yr <sup>-1</sup>	2000-2007
Kiribati	+3.8 mm yr <sup>-1</sup>	2000-2009
Marshall Islands	+3.8 mm yr <sup>-1</sup>	1999-2010
Nauru	+4.5 mm yr <sup>-1</sup>	2002-2010
Papua New Guinea	+6.3 mm yr <sup>-1</sup>	2000-2010
Samoa	+5.1 mm yr <sup>-1</sup>	2000-2010
Solomon Islands	+5.7 mm yr <sup>-1</sup>	1999-2010
Tonga	+9.2 mm yr <sup>-1</sup>	1999-2007
Tuvalu	+3.7 mm yr <sup>-1</sup>	1993-2010
Vanuatu	+6.4 mm yr <sup>-1</sup>	2000-2008

NASA JPL team led by Eric Rignot has also again with models has again made the claim that increasing polar ice melt was resulting in rising sea levels ([see](#)). Of course polar ice is floating and could all melt with no rise in sea level. Somerville extended this to include Greenland and global glaciers but the science is mixed on the Greenland ice melt and many glaciers have actually slowed or reversed the last few years with more snow in winter and colder summers.

See how sea level rises have actually slowed in recent years as this has taken place and as oceans cooled and contracted. (source [NOAA](#) lab at UCO) with a only a brief pop with the El Niño of 2009/10).



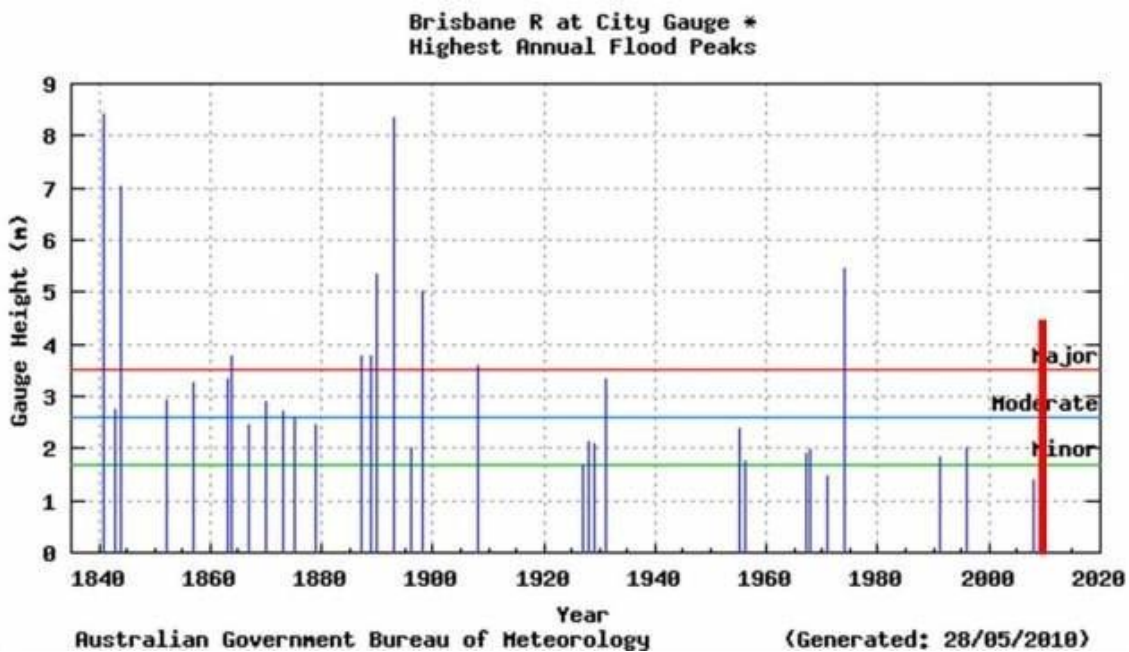


Somerville and committee mentioned the thawing of the permafrost in polar areas when inhabited. Any engineer will tell you putting a structure on the ground will transfer heat into the ground and melt ice. The last two winters have been brutally cold in Russia, the prior two in Canada. Even where winter have been above normal due to the arctic oscillation, above normal is still below zero F in most areas.

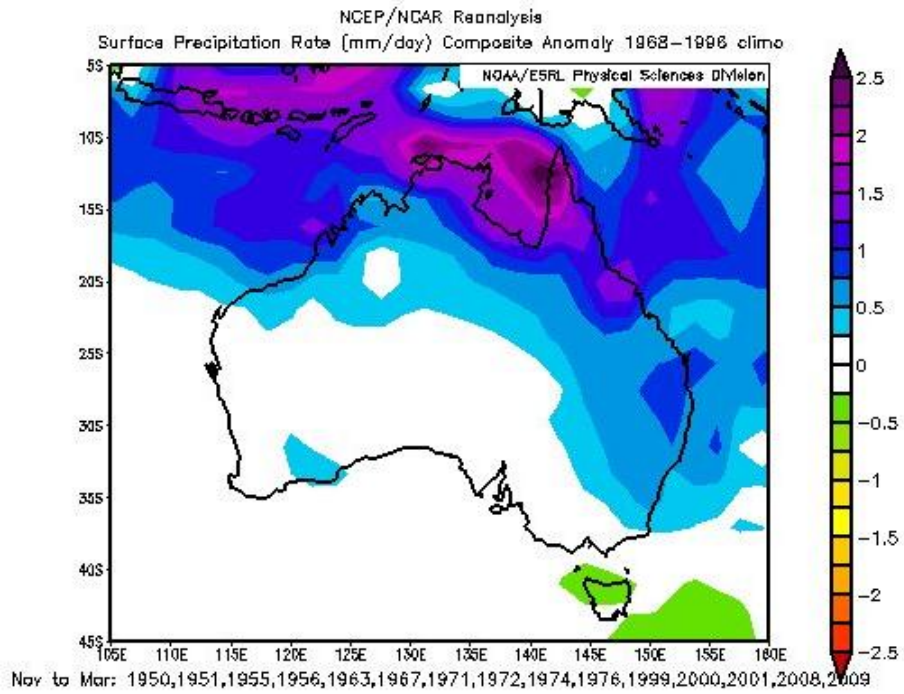
### **10. Droughts and floods will worsen in places like Australia.**

Dr. Somerville and others mentioned the Australian flooding as evidence of increasing extremes they attributed to global warming. John Christy correctly put on the record the flooding there was not unprecedented and could be explained by a change in the Pacific PDO and La Niña. The droughts in recent years were due to the dominance of El Niños in the warm PDO phase.

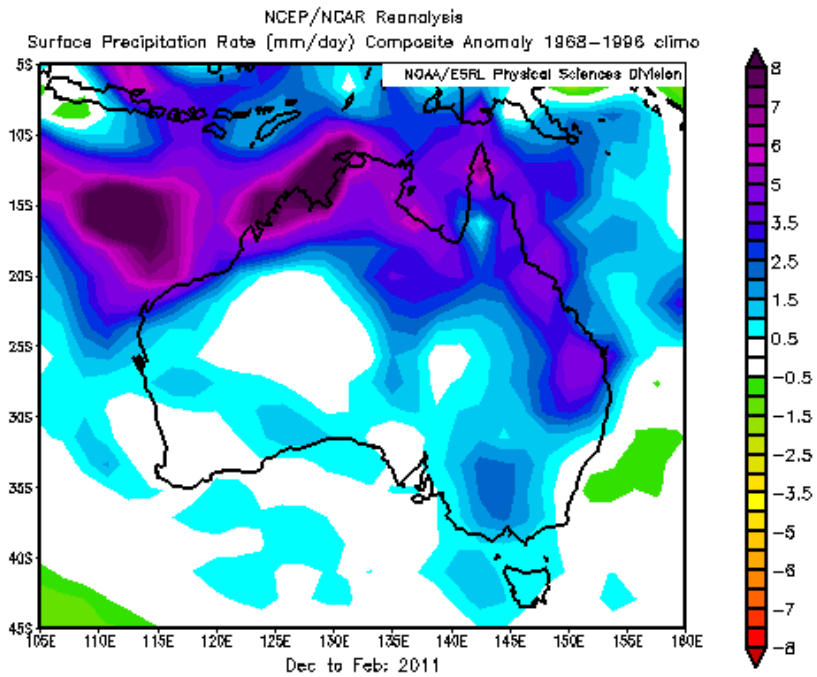
Heavy rains and floods this summer in eastern Australia followed many years of warnings of worsening, semi-permanent drought from global warming. Verdon et al. (2004) demonstrated that the flooding is tied to La Niña events especially during the cold PDO (negative IPO) multidecadal periods, both of which conditions existed this year much as they did in 1974, when the last great flooding took place.



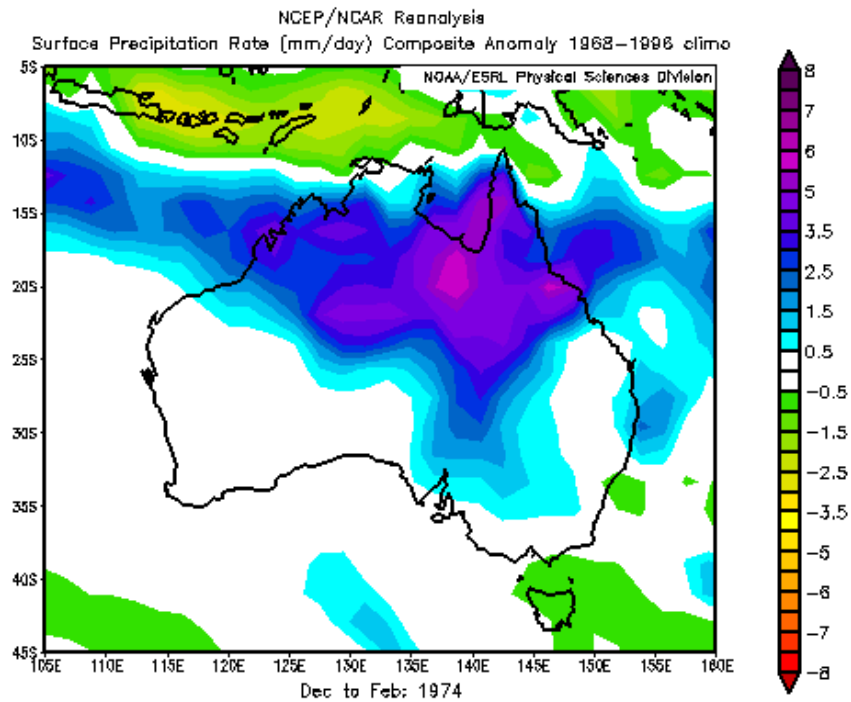
In fact, taking all cold PDO and IPO years with La Niña, and we find a signal for a wet Queensland (top right).



This was the case in 2010/11.

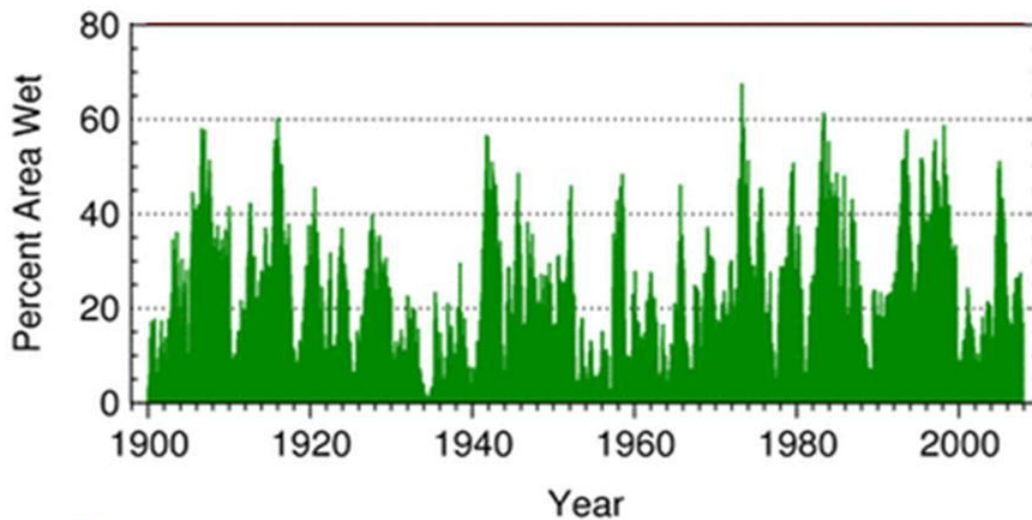


As in 1973/74.



Heavy rain and drought frequency in the United States shows cyclical patterns but no trends.

## Percentage of the United States in Moderate or Extreme Wetness

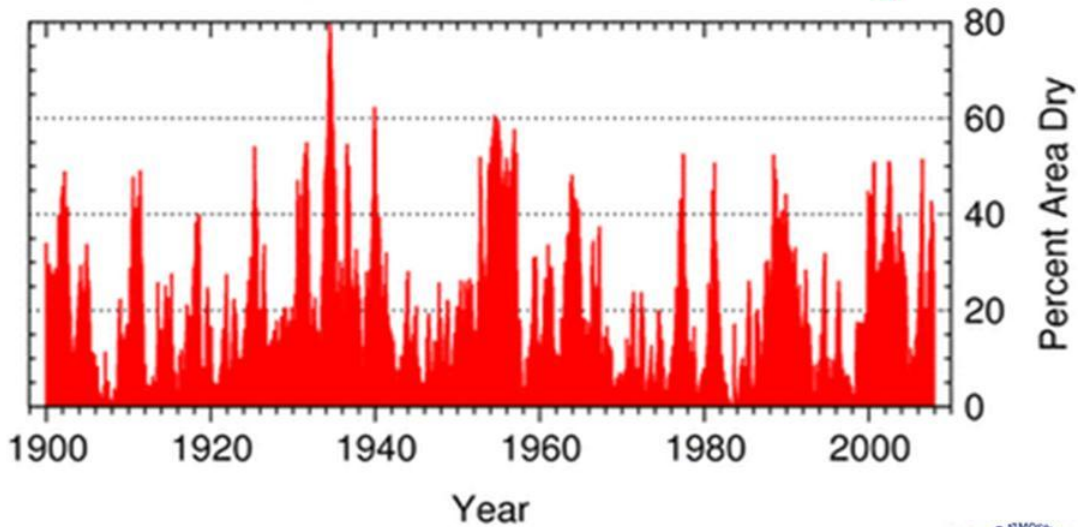


National Climatic Data Center / NESDIS / NOAA

**Variability, but NO trend!**

Drought frequency in the United States shows cyclical patterns but no trends.

## Percentage of the United States in Moderate or Extreme Drought



National Climatic Data Center / NESDIS / NOAA

**Variability, but NO trend!**



Cover photo of heavy fog in the Netherlands uploaded  
byhenkhoekstra at [wunderground.com](http://wunderground.com).



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