Major surface data issues argue the global warming hypothesis can't be validated

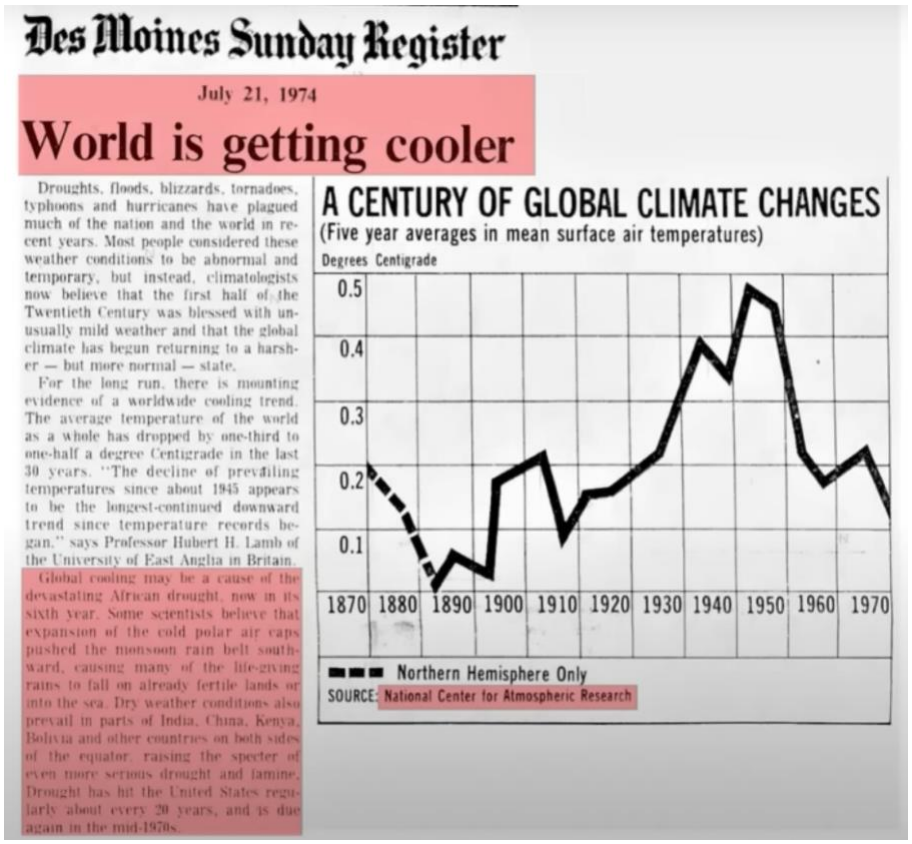
By Joseph D'Aleo, CCM, AMS Fellow

Temperature Measurement Timeline Highlights

Virtually every month and year we see stories in the once reliable media and from formerly unbiased data centers that proclaim the warmest such period in the entire record back to 1895 or earlier. The following suggests most of the period is model-based guesswork.

Early 1970s - When I was a producer for network weather shows and then taught college weather and climate in the 1970s and later was a co-founder of the cable TV Weather Channel in the 1980s, we accessed local climate data and used it to put into perspective current or forecast conditions and extremes. We referenced studies and stories in the Journals like Monthly Weather Review and monthly weather magazines like Weatherwise that documented monthly and seasonal weather and storms (hurricanes, tornadoes, droughts, floods and snowfall) as well as temperature extremes (sub-zero cold in winter and triple digit heat in summer). There was no attempt to do an official routine national or global analysis and look for trends. The idea of doing so with any precision was considered daunting as you will see through this timeline.

1974 – National Center Atmospheric Research displayed a **one-time temperature trend estimation** which was limited to the Northern Hemisphere land areas (reliable date on a larger scale and over the ocean was just not readily available or trustworthy). The estimation reported on in the Des Moines Register showed a dramatic warming from the 1800s to around 1940 then a reversal ending in a matching cooling by the late 1970s when even the CIA wrote that scientists thought we might be heading towards a dangerous new ice age. The cooling continued to the end of the 1970s roughly eliminating the nearly 60 years of warming. Warming followed.



Des Moines Sunday Register

July 21, 1974

World is getting cooler

Droughts, floods, blizzards, tornadoes, typhoons and hurricanes have plagued much of the nation and the world in recent years. Most people considered these weather conditions to be abnormal and temporary, but instead, climatologists now believe that the first half of the Twentieth Century was blessed with unusually mild weather and that the global climate has begun returning to a harsher — but more normal — state.

For the long run, there is mounting evidence of a worldwide cooling trend. The average temperature of the world as a whole has dropped by one-third to one-half a degree Centigrade in the last 30 years. "The decline of prevailing temperatures since about 1945 appears to be the longest-continued downward trend since temperature records began," says Professor Hubert H. Lamb of the University of East Anglia in Britain.

Global cooling may be a cause of the devastating African drought, now in its sixth year. Some scientists believe that expansion of the cold polar air caps pushed the monsoon rain belt southward, causing many of the life-giving rains to fall on already fertile lands or into the sea. Dry weather conditions also prevail in parts of India, China, Kenya, Bolivia and other countries on both sides of the equator, raising the specter of even more serious drought and famine. Drought has hit the United States regularly about every 20 years, and is due again in the mid-1970s.

A CENTURY OF GLOBAL CLIMATE CHANGES

(Five year averages in mean surface air temperatures)

Degrees Centigrade

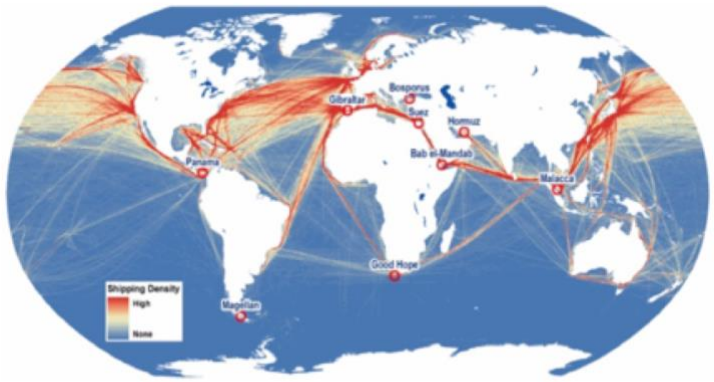
0.5
0.4
0.3
0.2
0.1

1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970

Northern Hemisphere Only

SOURCE: National Center for Atmospheric Research

1978 - New York Times reported there was too little temperature data from the Southern Hemisphere to draw any reliable conclusions. The report they references was prepared by German, Japanese and American specialists, and appeared in the Dec. 15 issue of Nature, the British journal. It stated that "*Data from the Southern Hemisphere, particularly south of latitude 30 south, are so meager that reliable conclusions are not possible*," the report says. "*Ships travel on well-established routes so that vast areas of ocean, are simply not traversed by ships at all, and even those that do, may not return weather data on route*."



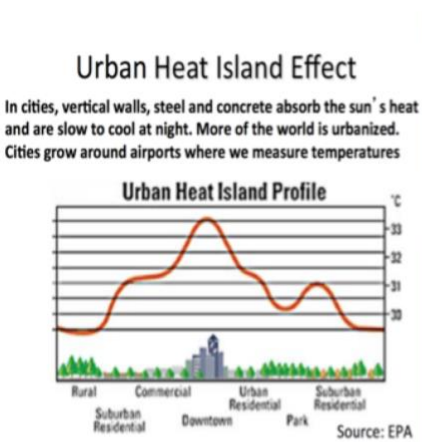
Globe is 71% ocean, 81% in the Southern Hemisphere.

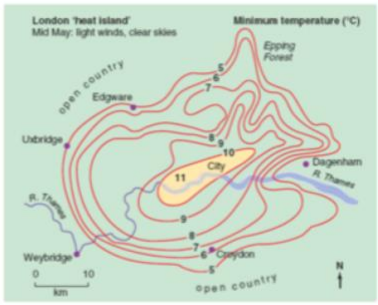
1979 – global satellite temperature measurement of the global atmosphere begins at UAH and RSS

1981 - NASA's James Hansen et al reported that "*Problems in obtaining a global temperature history are due to the uneven station distribution, with the Southern Hemisphere and ocean areas poorly represented*," (Science, 28 August 1981, Volume 213, Number 4511(link))

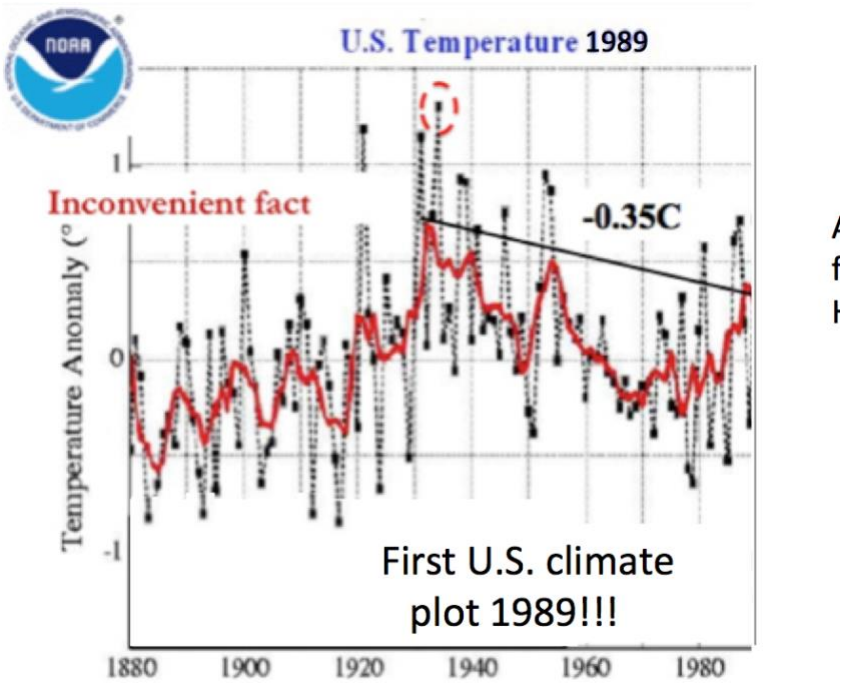
1989 - At that time, in response to the need for an accurate, unbiased, modern historical climate record for the United States, personnel at the Global Change Research Program of the U.S. Department of Energy and at NCEI defined a network of 1219 stations in the contiguous United States whose observation would comprise a key baseline dataset for monitoring U.S. climate. Since then, the USHCN dataset has been revised several times (e.g., Karl et al., 1990; Easterling et al., 1996; Menne et al. 2009). The three dataset releases described in Quinlan et al. 1987, Karl et al., 1990 and Easterling et al., 1996 are now referred to as the USHCN version 1 datasets.

The documented changes that were addressed include changes the time of observation (Karl et al. 1986), station moves, and instrument changes (Karl and Williams, 1987; Quayle et al., 1991). Apparent urbanization effects were also addressed in version 1 with a specific urban bias correction (Karl et al. 1988)





NOAA's first climate chief Tom Karl wrote with Kukla and Gavin in a 1986 paper on Urban Warming: *"MeteoSecular trends of surface air temperature computed predominantly from [urban] station data are likely to have a serious warm bias… The average difference between trends [urban siting vs. rural] amounts to an annual warming rate of 0.34°C/decade (3.4C/century) … The reason why the warming rate is considerably higher [may be] that the rate may have increased after the 1950s, commensurate with the large recent growth in and around airports. Our results and those of others show that the urban growth inhomogeneity is serious and must be taken into account when assessing the reliability of temperature records."*



1989 - The NY Times reported the US Data failed to show warming trend predicted by Hansen in 1980.

The New York Times

U.S.

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U.S. Data Since 1895 Fail To Show Warming Trend

By PHILIP SHABECOFF, Special to the New York Times
Published: January 26, 1989

Correction Appended

WASHINGTON, Jan. 25— After examining climate data extending back nearly 100 years, a team of Government scientists has concluded that there has been no significant change in average temperatures or rainfall in the United States over that entire period.

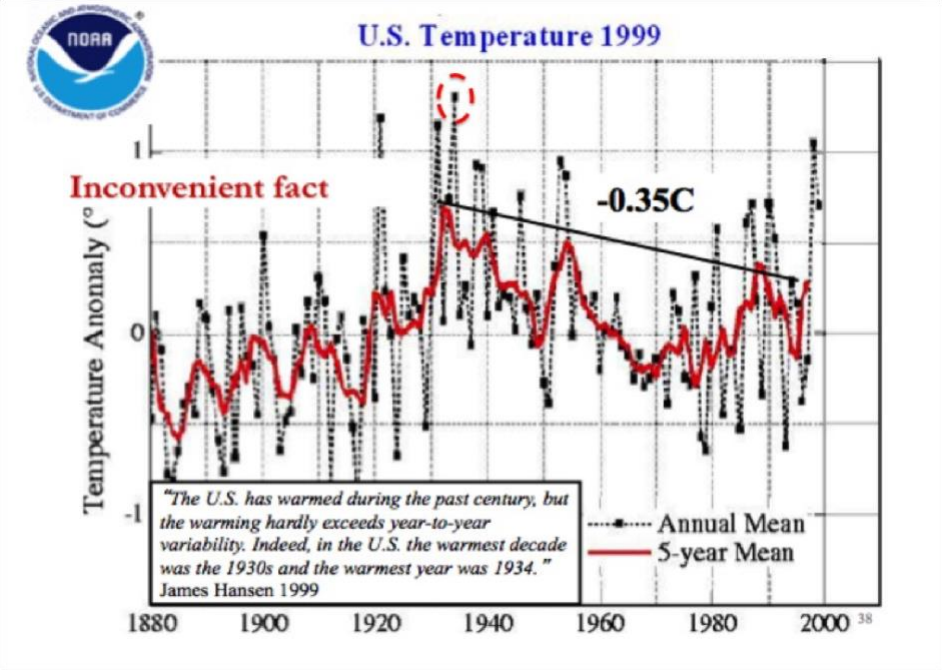
While the nation's weather in individual years or even for periods of years has been hotter or cooler and drier or wetter than in other periods, the new study shows that over the last century there has been no trend in one direction or another.

The study, made by scientists for the National Oceanic and Atmospheric Administration was published in the current issue of Geophysical Research Letters. It is based on temperature and precipitation readings taken at weather stations around the country from 1895 to 1987.

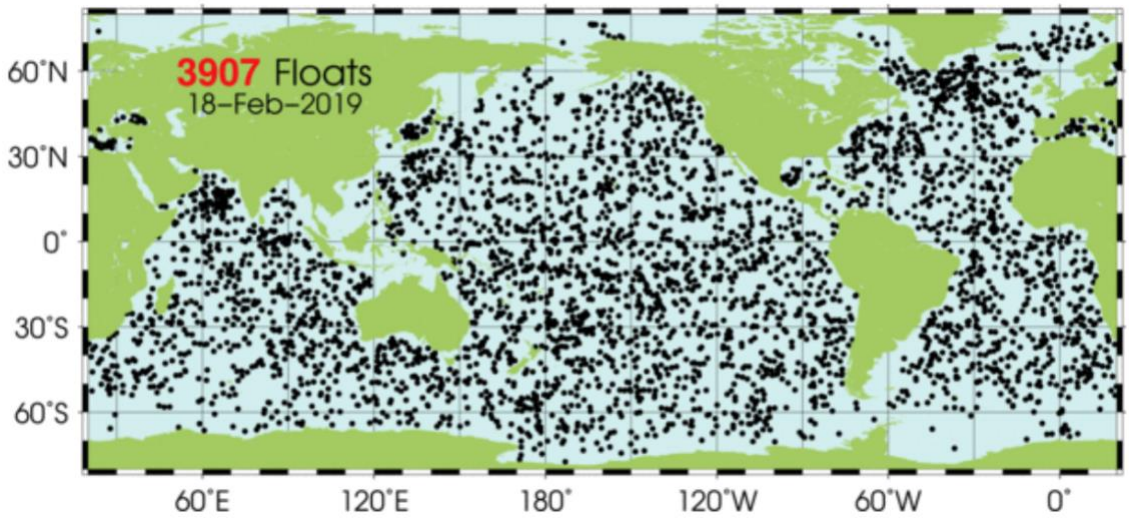
1992 – NOAA's first global monthly assessment began (GHCNm - Vose). Subsequent releases include version 2 in 1997 (Peterson and Vose, 1997), version 3 in 2011 (Lawrimore et al. 2011) and, most recently, version 4 (Menne et al. 2018). GHCNm v4 consisted of mean monthly temperature data only.

1992 - The National Weather Service (NWS) Automated Surface Observing System (ASOS), which serves as the primary data source for more than 900 airports nationwide and is utilized for climate data archiving was deployed in the early 1990's. Note the criteria specified a RMSE of 0.8F and max error of 1.9F. ASOS was designed to supply key information for aviation such as ceiling visibility, wind, indications of thunder and icing. It was not designed for assessing climate.

1999 - The USHCN temperature still trailed 1934 as it had a decade earlier - James Hansen noted *"The U.S. has warmed during the past century, but the warming hardly exceeds year-to-year variability. Indeed, in the U.S. the warmest decade was the 1930s and the warmest year 1934."* When asked why the discrepancy, Hansen said the US was less than 2% of the world and both could be right.



2000 – A network of nearly 4000 diving buoys (ARGO) were deployed world wide to provide the first real time monitoring of ocean temperatures and heat content.

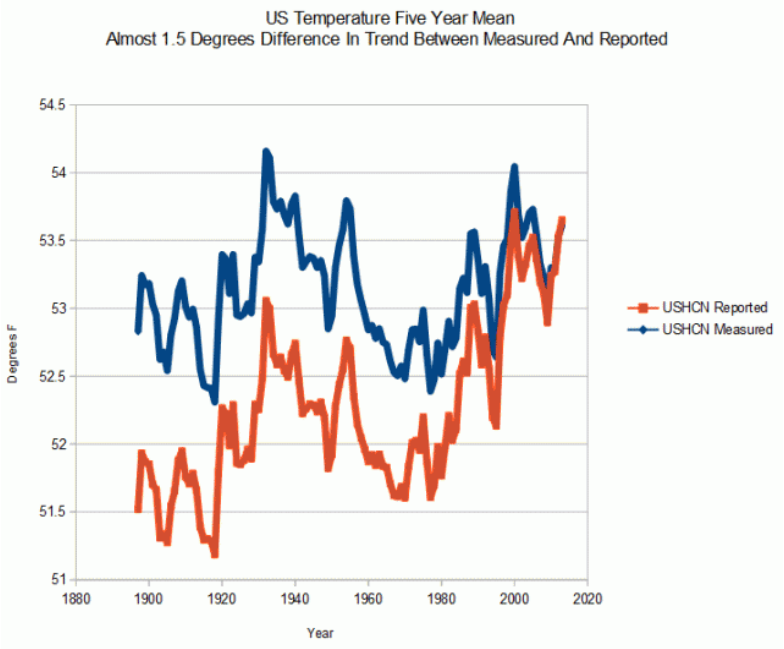


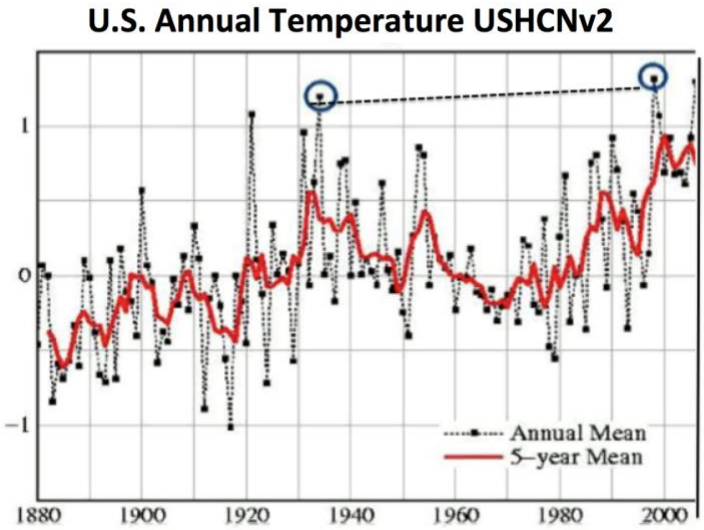
2001 -The IPCC in its third report (2001) conceded: "*In climate research and modelling, we should recognize that we are dealing with a coupled non-linear chaotic system, and therefore that the long-term prediction of future climate states is not possible*." (Chapter 14, Section 14.2.2.2.)

2004 – National Climate Reference Network was established with the help of John Christy of UAH to provide uncontaminated temperatures in the lower 48 states. The 114 stations met the specifications that kept them away from local heat sources.

2005 - Pielke and Davey (2005) found a majority of stations, including climate stations in eastern Colorado, did not meet requirements for proper siting. They extensively documented poor siting and land-use change issues in numerous peer-reviewed papers including *"Unresolved issues with the assessment of multi-decadal global land surface temperature trends"* (2007)

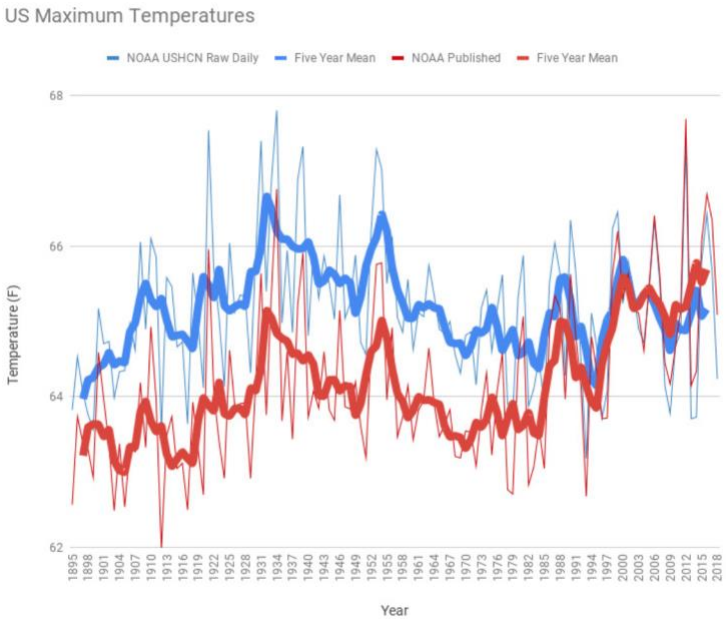
2007 – a new version, USHCNv2 replaced the urban adjustment with significant other adjustments including the removal of urban warming adjustments replaced by 'homogenization'. The trend reversed with 1998 now warmer than 1934 and the mean trend higher than the 1930s.





David Easterling, Chief Scientific Services Division for NOAA's Climate Center expressed concern in a letter to James Hansen at NASA "*One fly in the ointment, we have a new adjustment scheme for USHCNv2 that appears to adjust out some, if not all of the local trend that includes land use change and urban warming".* It reduced the "bothersome 1940 warm blip" that warmists wanted to be minimized.

See Tony Heller's plot of NOAA USHCN maximum temperature (5 year mean and annual) for the measured data(blue) and the 'reported' temperature (red).

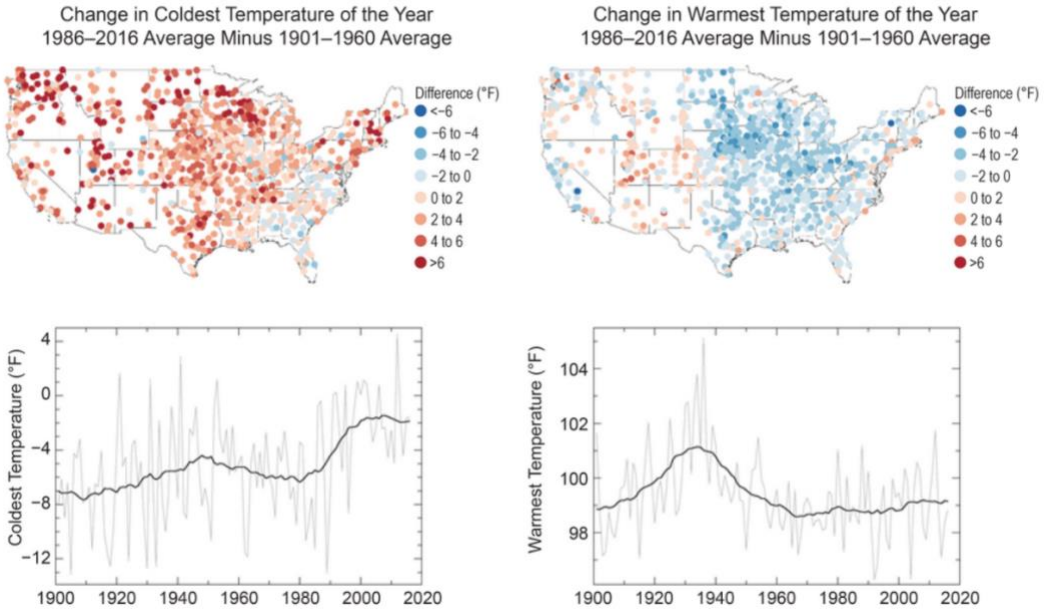


See Tony Heller's two part video series on the temperature shenanigans here and here.

The maximum temperature is a better measure for trends as it is not corrupted by the urban heat island which primarily elevated minima. NASA data changed in line with NOAA data. Between 2008 and 2018, NASA GISS added **0.24°C of trend-steepening warmth** to the 1910 to 2000 period. To accomplish this transformation, the pre-1950 temperatures were cooled, and the more recent temperatures were warmed up so as to create a more linear warming trend. Kenneth Richards in No TricksZone.' explained *"As there is considerable evidence that the integrity of the climate record has been compromised, it may be time to reconsider what the global temperature trends may look like when they are not "corrected" to fit the narrative preferred by data overseers".*

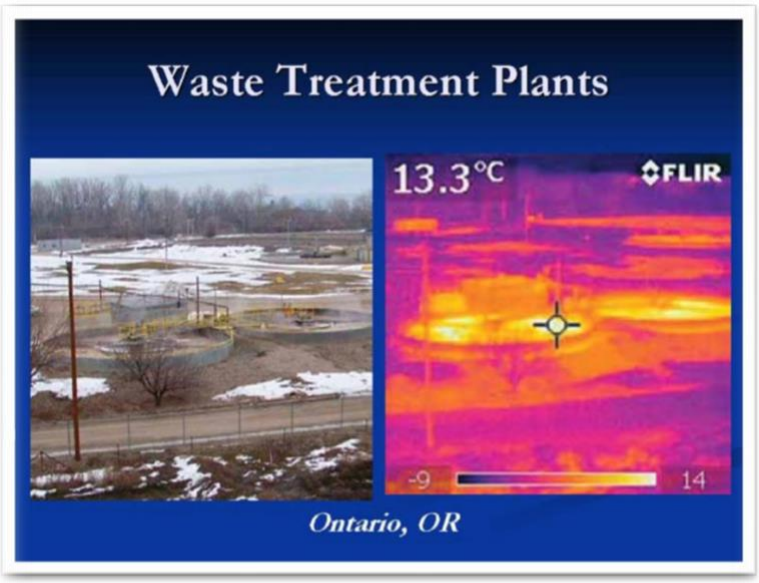
In the Fourth National Climate Assessment (NCA4), the U.S. Global Change Research Program (USGCRP), maximum and minimum temperatures 1986 to 2016 were compared long term (1901-1960) showed maximum temperature have cooled in the central to eastern US.

Minimums were warmer especially central, northwest and northeast.



2008 - In a volunteer survey project, Anthony Watts and his more than 650 volunteers at www.surfacestations.org found that over 900 of the first 1,067 stations surveyed in the 1,221 station U.S. climate network did not come close to the specifications as employed in Climate Reference Network (CRN) criteria. Only about 3% met the ideal specification for siting. They found stations located next to the exhaust fans of air conditioning units, surrounded by asphalt parking lots and roads, on blistering-hot rooftops, and near sidewalks and buildings that absorb and radiate heat.

They found 68 stations located at wastewater treatment plants, where the process of waste digestion causes temperatures to be higher than in surrounding areas. In fact, they found that 90% of the stations fail to meet the National Weather Service's own siting requirements that stations must be 30 m (about 100 feet) or more away from an artificial heating or reflecting source.



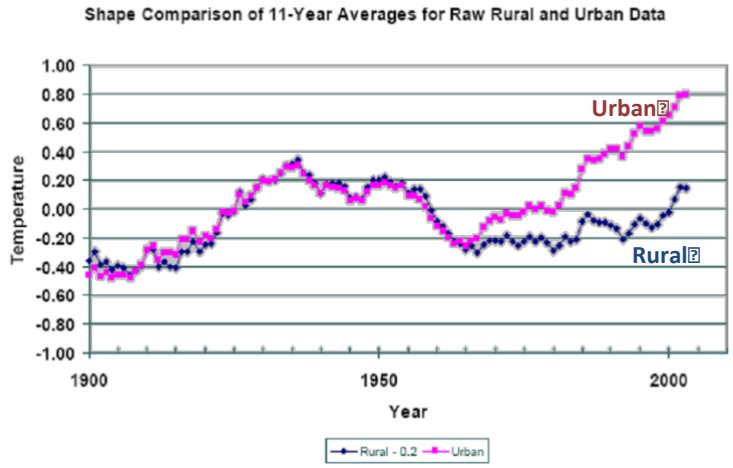
Numerous sensors are located at waste treatment plants. An infrared image of the scene shows the output of heat from the waste treatment beds right next to the sensor. (Photos by Anthony Watts, surfacestations.org.)

2009 -
From Climategate emails eye-opening comments on the bothersome 1940 warm blip and data not supporting models
From: Tom Wigley, Date: Sun, 27 Sep 2009
"So, if we could reduce the ocean blip by, say, 0.15 deg C, then this would be significant for the global mean – but we'd still have to explain the land blip. I've chosen 0.15 here deliberately. This still leaves an ocean blip, and i think one needs to have some form of ocean blip to explain the land blip (via either some common forcing, or ocean forcing land, or vice versa, or all of these)."
From: Tom Wigley, Date: Fri, 06 Nov 2009
"We probably need to say more about this. Land warming since 1980 has been twice the ocean warming — and skeptics might claim that this proves that urban warming is real and important."
From: Kevin Trenberth, before Wed, 14 Oct 2009
"The fact is that we can't account for the lack of warming at the moment and it is a travesty that we can't. The CERES data published in the August BAMS 09 supplement on 2008 shows there should be even more warming: but the data are surely wrong. Our observing system is inadequate."

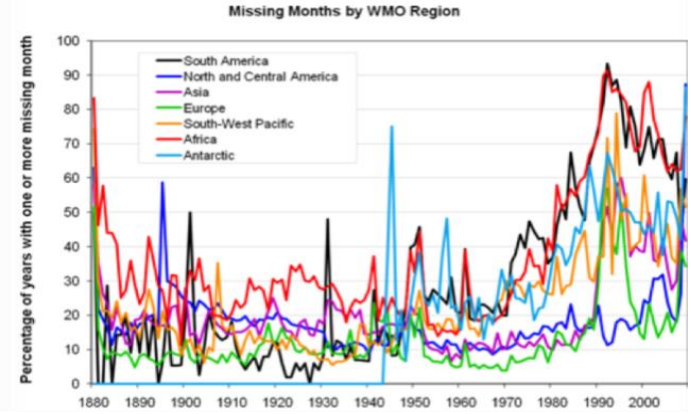
2009 - NASA's Dr. Edward R. Long in a 2009 analysis looked at the new version of the US data. Both raw and adjusted data from the NCDC (now NCEI) has been examined for a selected Contiguous U.S. set of rural and urban stations, 48 each or one per State. The raw data showed 0.13 and 0.79 C/century temperature increase for the rural and urban environments, consistent with urban factors. The adjusted data yielded 0.64 and 0.77 C/century respectively.

Comparison of the adjusted data for the rural set to that of the raw data shows a systematic treatment that causes the rural adjusted set's temperature rate of increase to be 5-fold more than that of the raw data. This suggests the consequence of the NCDC's protocol for adjusting the data is to cause historical data to take on the time-line characteristics of urban data. The consequence intended or not, is to report a false rate of temperature increase for the Contiguous U. S., consistent with modeling utilizing the Greenhouse theory.

NASA's Dr. Edward Long (2010) Study

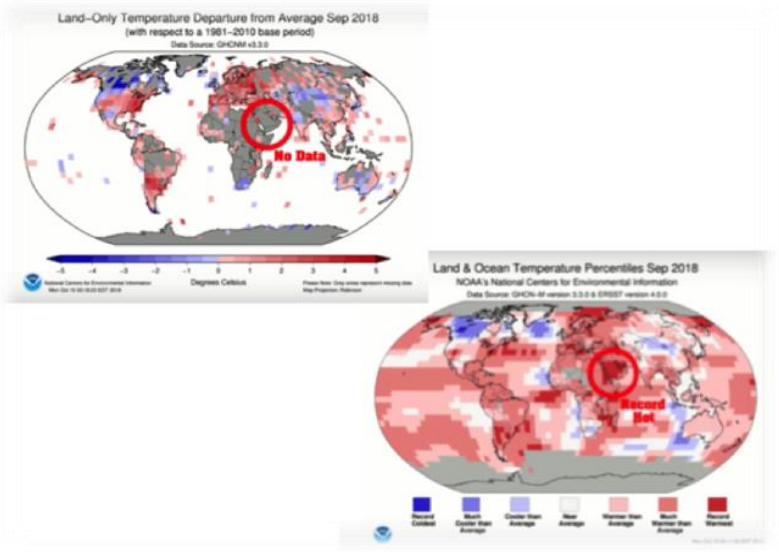


2010 – A 2009 review of temperature issues was published by a large group of climate scientists entitled Surface Temperature Records: A Policy Driven Deception. Many issues in the US and globally were discussed. Even as the stations incorporated in the global surface data sets increased in number and coverage, their reliability became a challenge, with many large continents having a large percentage of missing months in the station data. That required the data centers **to guess** the missing data to get a monthly and then annual average.



Analysis and graph: Verity Jones

Many may be surprised to see in the figure above that this missing data problem still exists today, in fact it appears worse with missing data estimated by using data from the nearest stations, sometime many hundreds of miles away. See the initial data regions in September 2018 that were filled in by algorithms. It includes filling in a large data void region with a **record warmth** assessment (Heller 2018).



2010 - A landmark study *Analysis of the impacts of station exposure on the U.S. Historical Climatology Network temperatures and temperature trends* followed, authored by Souleymane Fall, Anthony Watts, John Nielsen-Gammon, Evan Jones, Dev Niyogi, John R. Christy, Roger A. Pielke Sr represented years of work in studying the quality of the temperature measurement system of the United States.

2010 - In a review sparked by this finding, the GAO found "*42% of the active USHCN stations in 2010 clearly did not meet NOAA's siting standards. Whatsmore, just 24 of the 1,218 stations (about 2 percent) have complete data from the time they were established*."

2010 - The CRU scientist at the center of the Climategate scandal at East Anglia University, Phil Jones, made a candid admission on BBC (2010) that his *"surface temperature data are in such disarray they probably cannot be verified or replicated, that there has been no statistically significant global warming for the last 15 years and it has cooled 0.12C/decade trend from 2002-2009." See UK Mail story.*

2013 – NOAA responded to papers on siting and GAO admonition by removing and/or replacing the worst stations. Also in monthly press releases no satellite measurements are ever mentioned, although NOAA had told Karl that was the future of observations.

2015 – A pause in warming that started around 1997 was finally acknowledged in he journal Nature by IPCC Lead Author Kevin Trenberth and attributed to cyclical influences of natural factors like El Nino, ocean cycles on global climate. The AMS Annual Meeting in 2015 had 3 panels to address 'the pause'.

2015– NOAA under pressure put an end to the pause by altering the ocean temperatures from Argo buoys to better match ship intake temperatures that had become the dominant method in prior decades despite concerns over warm contamination from the ship engines. This resulted in the global surface data better fitting the theory of greenhouse warming. John Bates, data quality officer with NOAA detailed how Tom Karl in a paper in Science in June 2015, just a few months before world leaders were to meet in Paris to agree on a costly Paris Climate Accord, removed the inconvenient pause by altering ocean temperatures. Since the oceans cover 71% of the globe, even small adjustments have a major impact.

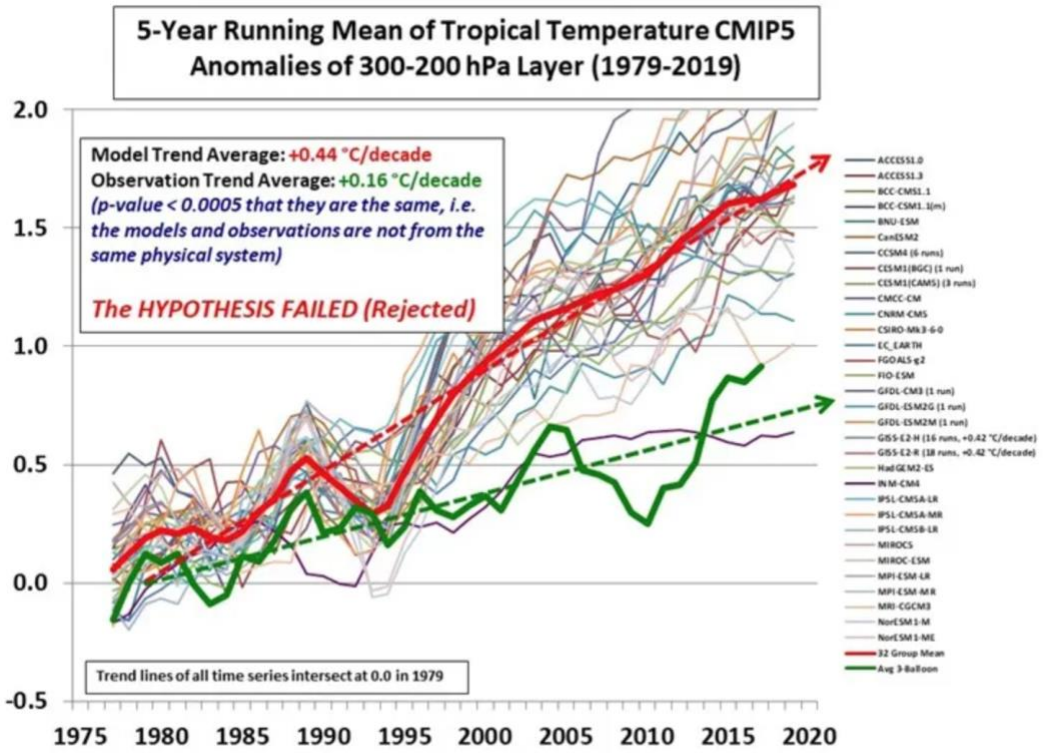
2017 – a new U.S. climate data set nClimDiv with climate division model reconstructions and statewide averages was gradually deployed and replaced USHCNv2. The result was NOAA gave 40 out of 48 states 'new' warming. The Drd964x decadal CONUS warming rate from 1895 to 2012 was 0.088F/decade. The new nClimDiv rate from 1895 to 2014 is 0.135F/decade, almost double.

2017 - In the ADDENDUM to the Research Report: On the Validity of NOAA, NASA and Hadley CRU Global Average Surface Temperature Data & The Validity of EPA's CO2 Endangerment Finding, Abridged Research Report, Dr. James P. Wallace III, Joseph S. D'Aleo, Dr. Craig D. Idso, June 2017 (here) provided ample evidence that the Global Average Surface Temperature (GAST) data was invalidated for use in climate modeling and for any other climate change policy analysis purpose.

"*The conclusive findings of this research are that the three GAST data sets are not a valid representation of reality. In fact, the magnitude of their historical data adjustments, that removed their cyclical temperature patterns, are totally inconsistent with published and credible U.S. and other temperature data. Thus, it is impossible to conclude from the three published GAST data sets that recent years have been the warmest ever – despite current claims of record setting warming.*"

2019 - Tony Thomas in Quadrant Online on Dr. Mototaka Nakamura who in a book on "the sorry state of climate science" titled "Confessions of a climate scientist: the global warming hypothesis is an unproven hypothesis" wrote "The supposed measuring of global average temperatures from 1890 has been based on thermometer readouts barely covering 5 per cent of the globe until the satellite era began 40-50 years ago." Further, he was contemptuous of claims about models being "validated", saying the modelers are merely "trying to construct narratives that justify the use of these models for climate predictions." And he concluded, *"With values of parameters that are supposed to represent many complex processes being held constant, many nonlinear processes in the real climate system are absent or grossly distorted in the models. It is a delusion to believe that simulation models that lack important nonlinear processes in the real climate system can predict (even) the sense or direction of the climate change correctly"*.

2019 – Greenhouse warming models predict that the warming in the higher tropical atmosphere would be greater than surface warming (called the tropical hotspot). Both UAH and RSS satellite data shows the warming in the high atmosphere is less than half that at the surface.

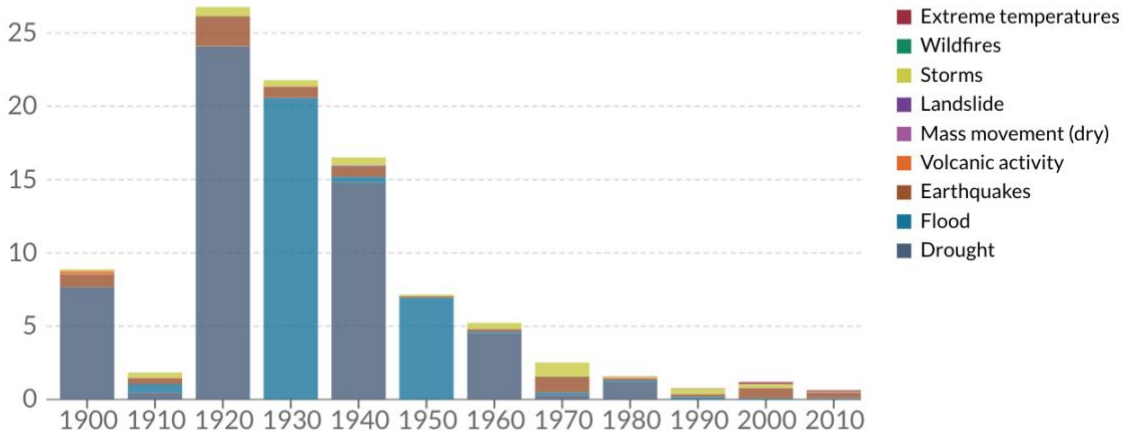


Decadal average: Death rates from natural disasters, World

Death rates are measured as the number of deaths per 100,000 people.

Our World in Data

Change country



Source: Calculated by Our World in Data based on EM-DAT, CRED / UCLouvain, Brussels, Belgium – (D. Guha-Sapir)
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