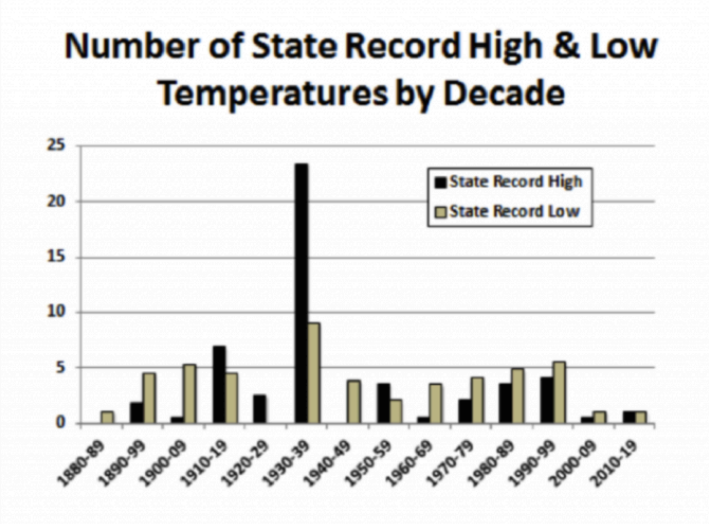
Claim: Heat Waves are increasing at an alarming rate and heat kills

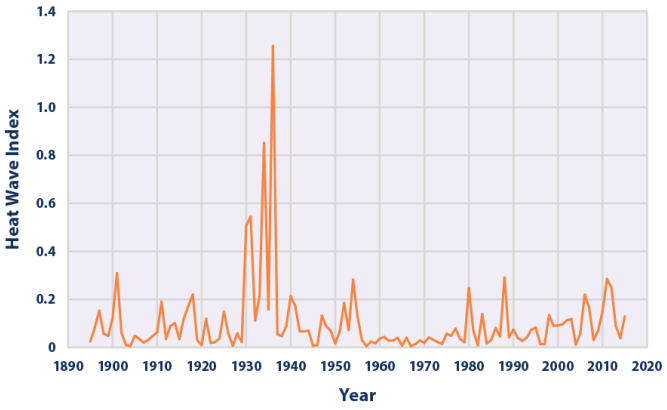
REBUTTAL

There has been no detectable long-term increase in heat waves in the United States or elsewhere in the world. Most all-time record highs here in the U.S. happened many years ago, long before mankind was using much fossil fuel. Thirty-eight states set their all-time record highs before 1960 (23 in the 1930s!).



Source: NOAA NCDC (graph from John Christy)

Here in the United States, the number of 100F, 95F and 90F days per year has been steadily declining since the 1930s. The Environmental Protection Agency Heat Wave Index confirms the 1930s as the hottest decade.



Source: EPA Heat Wave Index (Kunkel 2016)

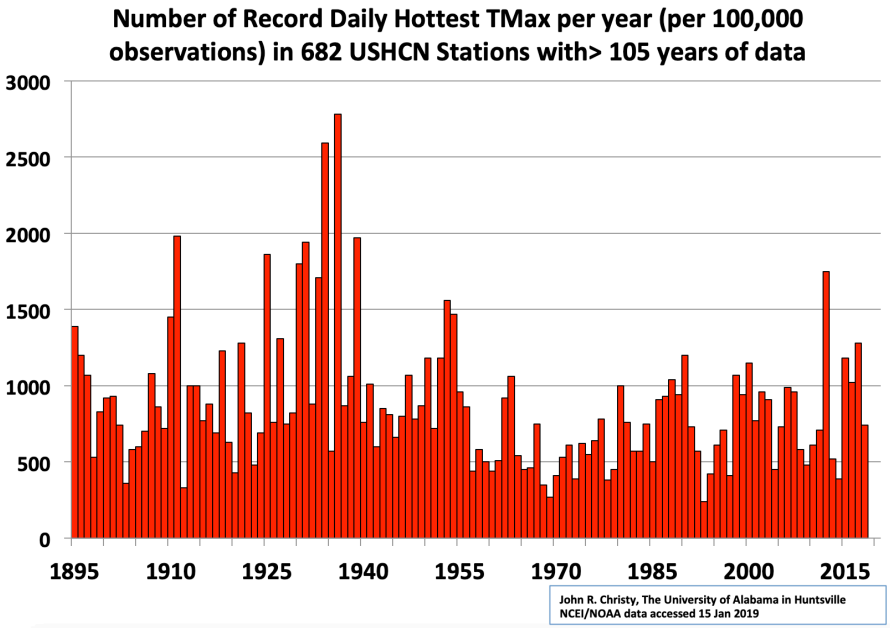
James Hansen while at NASA in 1999 said about the U.S. temperature record "In the U.S. the warmest decade was the 1930s and the warmest year was 1934".

When NASA was challenged on the declining heat records in the U.S, the reply was that the U.S. is just 2% of the world. However all 8 continents recorded their all-time record highs before 1980.

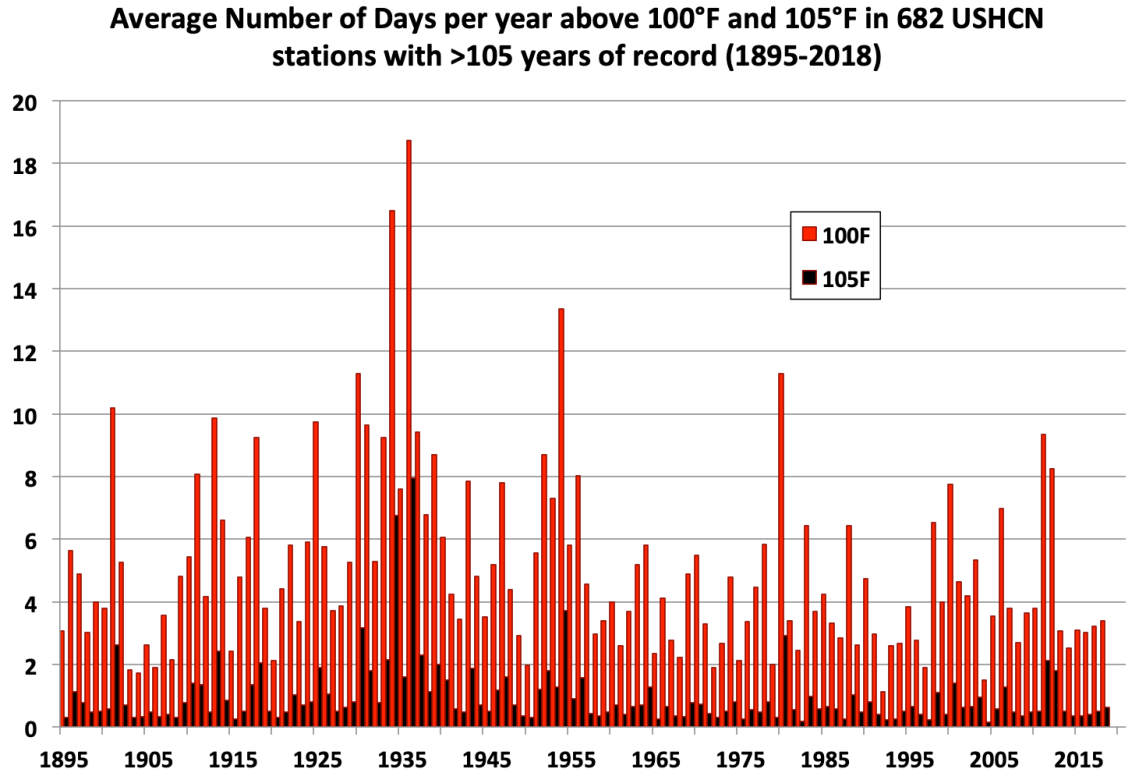
Interestingly while the media gives a great deal of coverage to even minor heat waves to support the case that man-made global warming is occurring, the media tends to ignore deadly cold waves. But in actual fact worldwide cold kills 20 times as many people as heat. This is documented in the "Excess Winter Mortality" which shows that the number of deaths in the 4 coldest winter months is much higher than the other 8 months of the year. The USA death rate in January and February is more than 1000 deaths per day greater than in it is July and August.

Clearly, there is no evidence for increased heat waves.

John Christy in written Senate Committee testimony:
"Much of the alarm related to increasing greenhouse gas concentrations shifted in the past decade from global temperature changes to changes in extreme events, i.e. those events which typically have a negative impact on the economy. In terms of heat waves, below is the number of 100 °F days observed in the U.S. from a controlled set of weather stations. It is not only clear that hot days have not increased, but it is interesting that in the most recent years there has been a relative dearth of them."

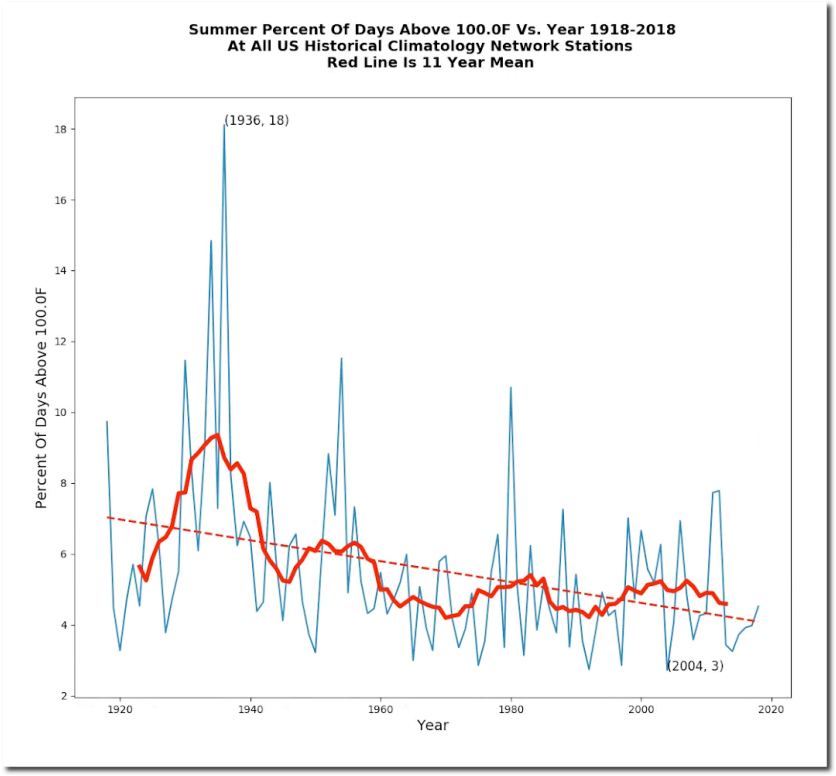


Above: Number of Record Daily Hottest TMax per year per 100,000 observations in 682 USHCN stations with >105 years of data (NOAA/NCEI, prepared by JRChristy).

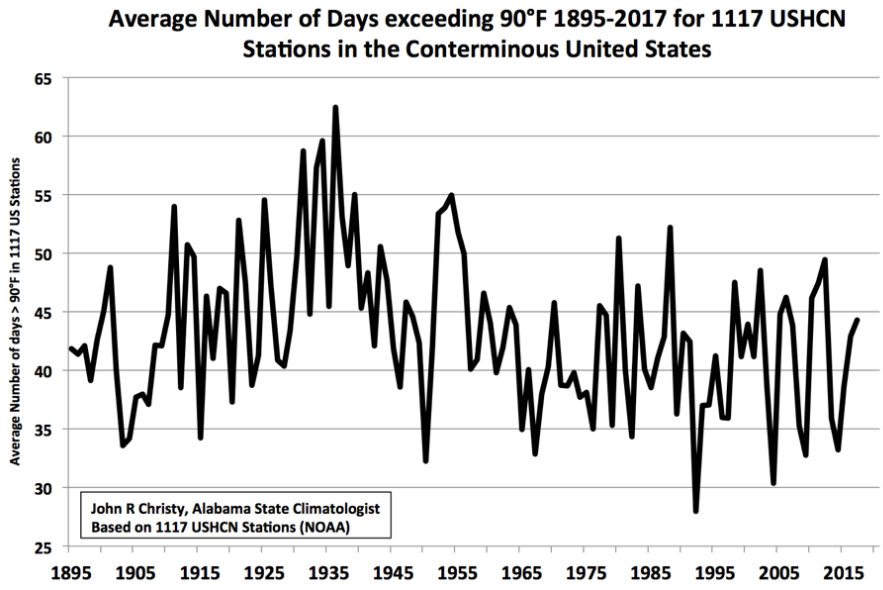


Above: Average number of days per year with temperatures >100F and >105F in 682 USHCN stations with >105 years of data (NOAA/NCEI, prepared by JRChristy).

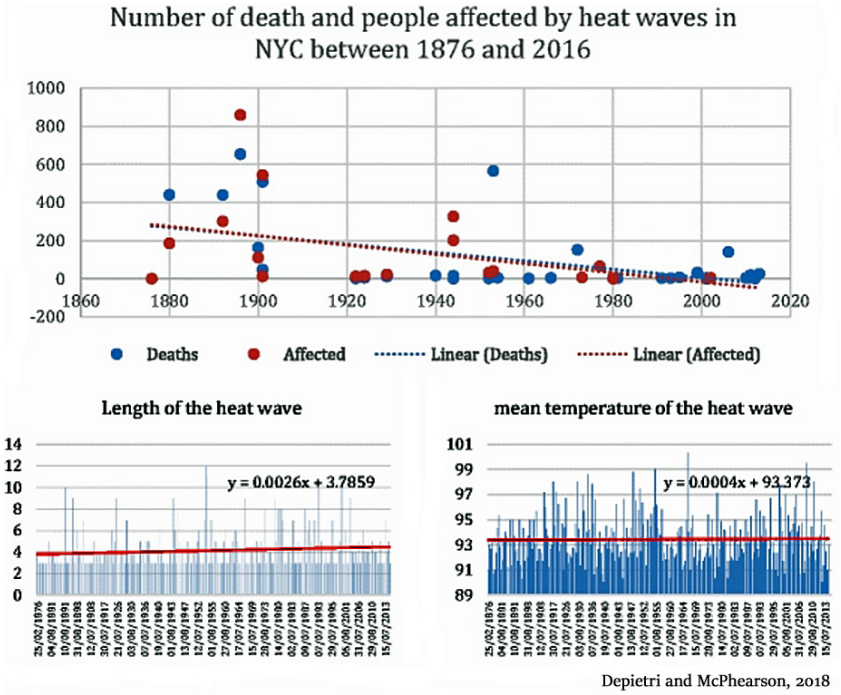
For 100F heat, most major cities show cyclical patterns but with the warmth greatest in the 1930s to 1950s.



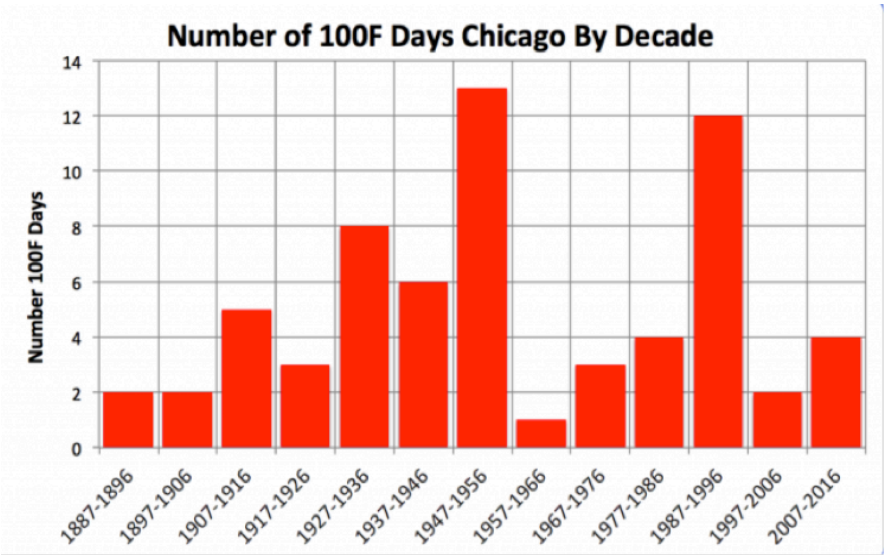
Indeed, NOAA USHCN stations showed no upward trend in 90F readings after the decline of the 1930s heat.



The number of people affected and death from heat has declined in New York City since 1876.

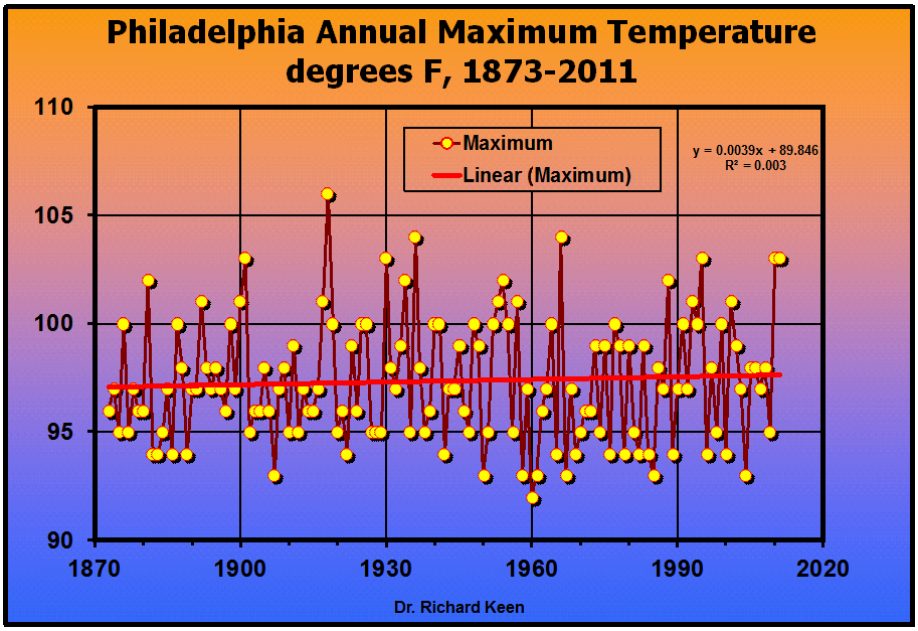


Cyclical behavior but no upward trend in 100F heat is seen in Chicago.

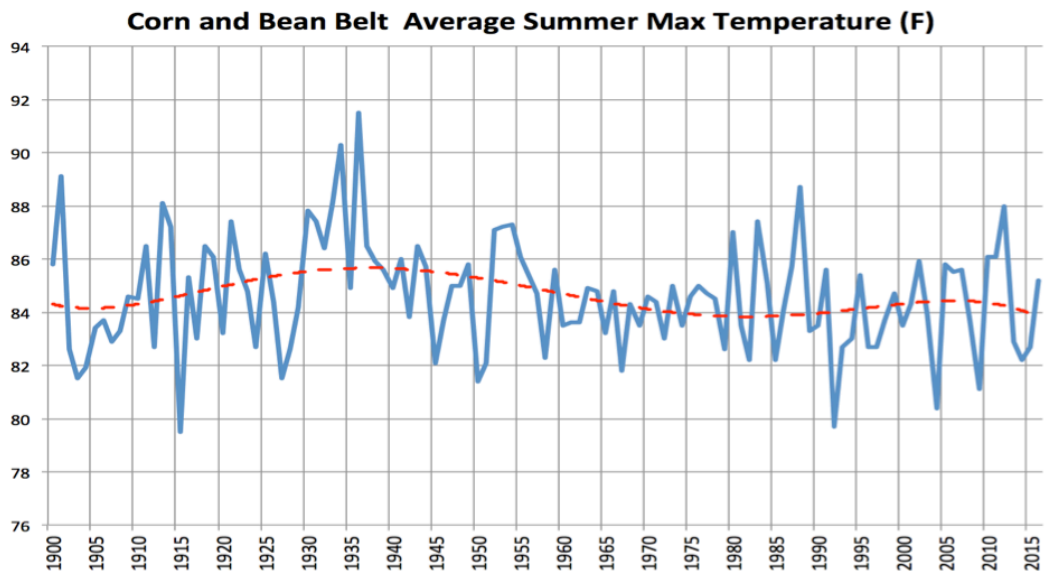


Source: NWS

There is no trend in annual maximum temperatures in Philadelphia.

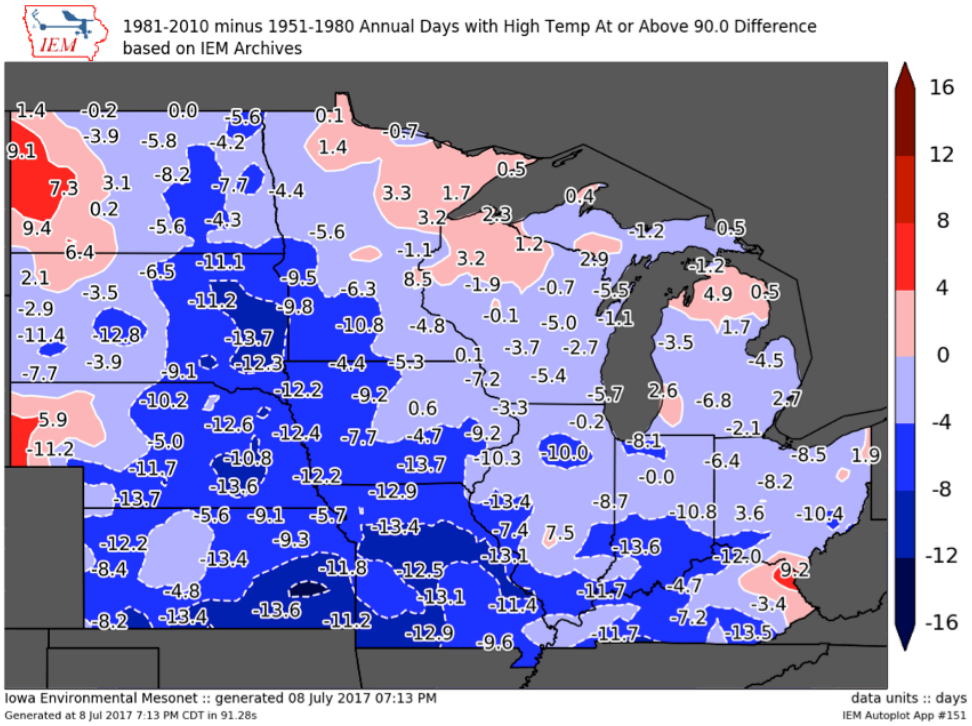


NOAA NCEI data show the average summer maximum temperatures in the Corn and Bean Belt peaked in the 1930s.

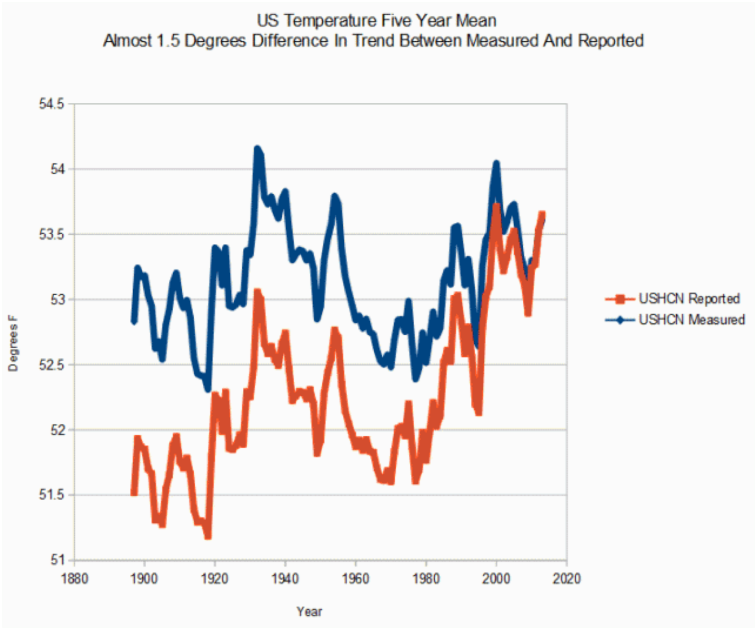


Source: NOAA Climate at a Glance

Iowa State University did a study of 90F days in the growing areas of the Midwest, comparing the three decades 1981 to 2010 to the prior three decades 1951 to 1980. They found in most areas of the heartland there was a decline, as many as 14 days.



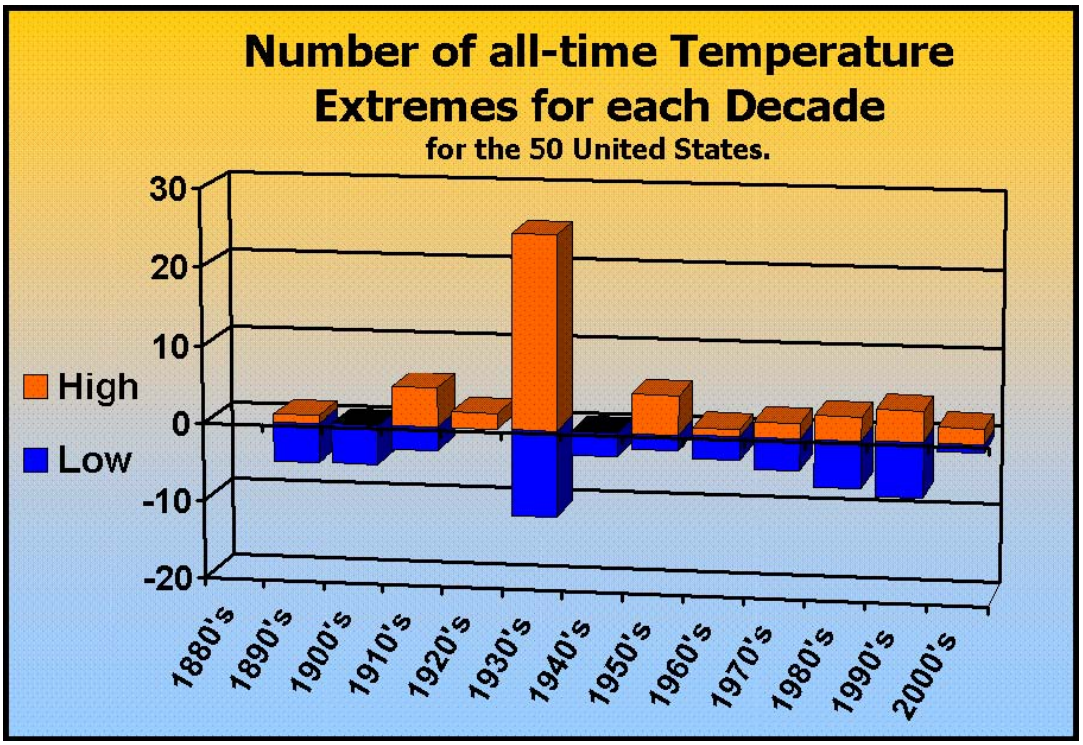
Most of the warming in daytime average readings is with nighttime lows and related to urbanization. In addition, adjustments to the data have cooled the past, producing a trend where only cycles appear and have increased the chance that months and years will routinely rank among the warmest in the 'record'.



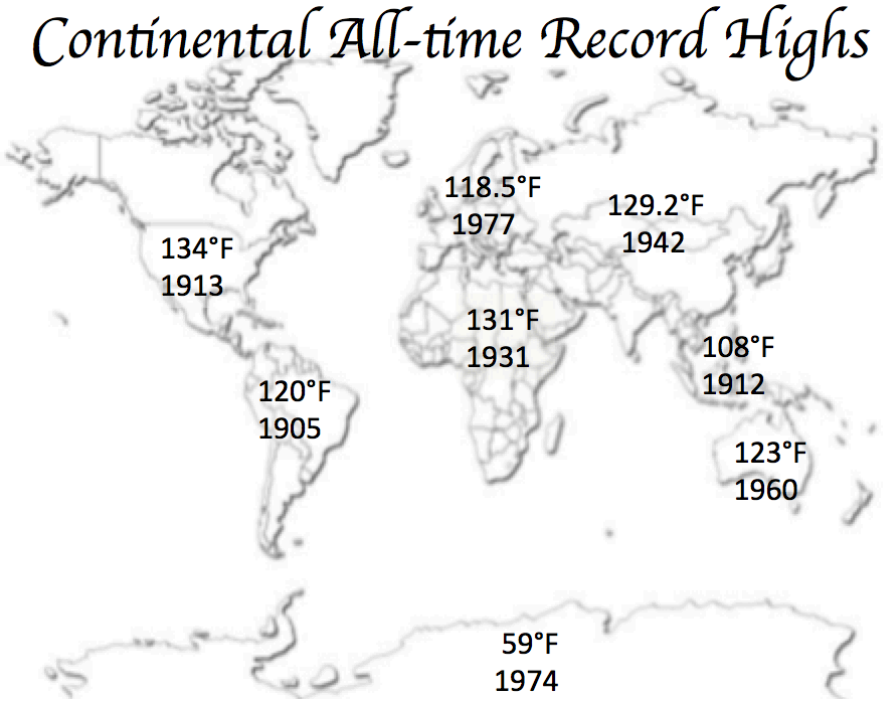
Source: NOAA USHCN

Further, alarmists deceive the world despite the declining maximum temperatures by playing blatant statistical misrepresentation by creating an index of the number of record highs to record lows. Though record highs are decreasing, record lows are decreasing faster due to urban nighttime warmth retention so the ratio of record highs to record lows appears to show increasing heat issues even as the number of heat records and hot days decline.

Dr. Keen did a count of all-time extremes by decades for the 50 states. There is clearly as the other data shows, no runaway warming.

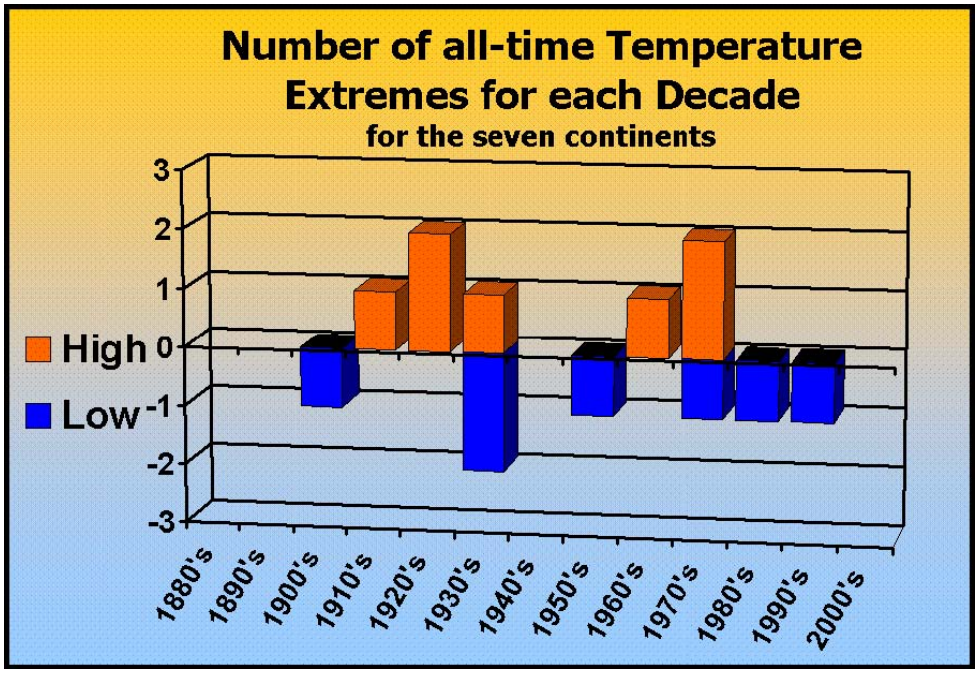


Globally, all 8 continents have all-time record highs before 1980 (WMO 2017).



Source: WMO

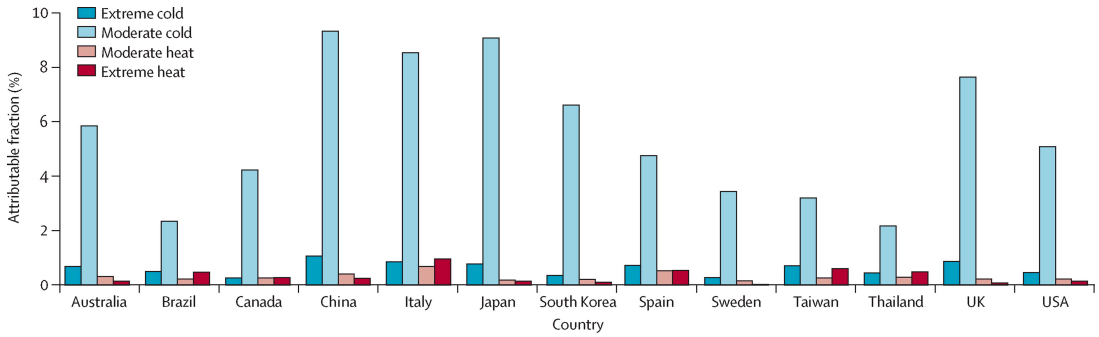
Dr. Keen did the same all time record count of highs lows for the 7 continents by decade, again showing multidecadal cycles but no upward trend.



Here compiled is a list of 81 graphs from 62 papers published in 2018 showing there has been no unprecedented warming in recent decades.

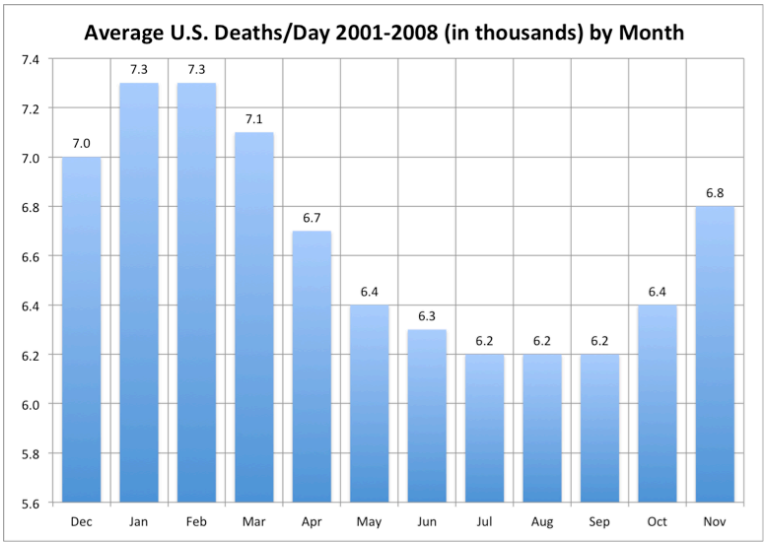
COLD KILLS 20 TIMES MORE THAN HEAT

The danger associated with this misdirection is that cold weather kills 20 times as many people as hot weather, according to an international study analyzing over 74 million deaths in 384 locations across 13 countries. The findings were published in The Lancet. *"It's often assumed that extreme weather causes the majority of deaths, with most previous research focusing on the effects of extreme heat waves,"* says lead author Dr. Antonio Gasparrini from the London School of Hygiene & Tropical Medicine in the UK.



Source: Gasparrini etal Lancet 2015

The USA death rate in January and February is more than 1000 deaths per day greater than in July and August. Indur M. Goklany wrote in 2009: "Data from the US National Center for Health Statistics for 2001-2008, shows that on average 7,200 Americans died each day during the months of December, January, February and March, compared to the average 6,400 who died daily during the rest of the year. In 2008, there were 108,500 'excess' deaths during the 122 days in the cold months (December to March).

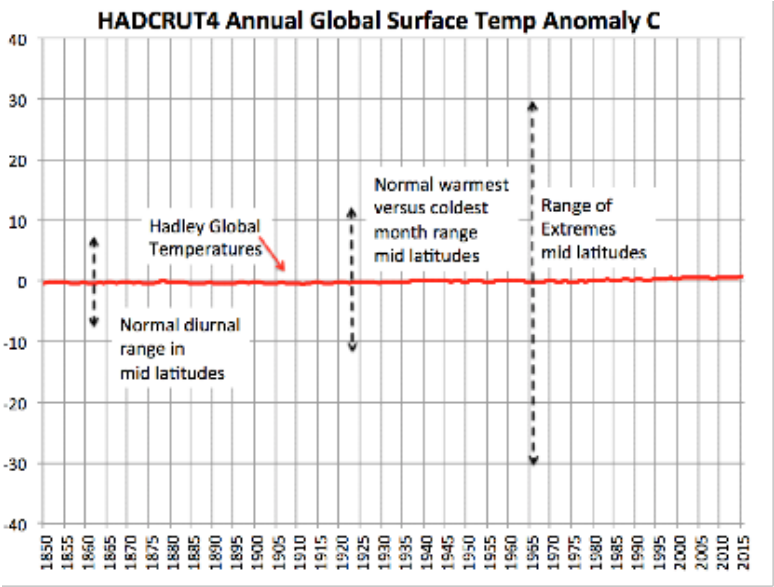


Source: National Center for Health Statistics

On the basis of all available UK Office of National Statistics data, between 1950-51 and 2011-12, there have been around 2,663,390 excess winter deaths in the UK. The majority of deaths occur with older people – specifically those aged 75 and above.

THE NATURAL AND MAN INFLUENCED CHANGES ARE IN THE 'NOISE'

The claimed changes in global temperatures is miniscule relative to the normal daily temperature change, the normal seasonal range and the range between all time highs and lows.



Warming and cooling cycles, which have been observed over different time scales produce changes that are in the 'noise' with regards to changes we observe on a daily or annual basis. Historically warmer periods have been what were called 'climate optima' as they supported better crops and living conditions. As we have shown there is no trend in heat and it is cold that kills.

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