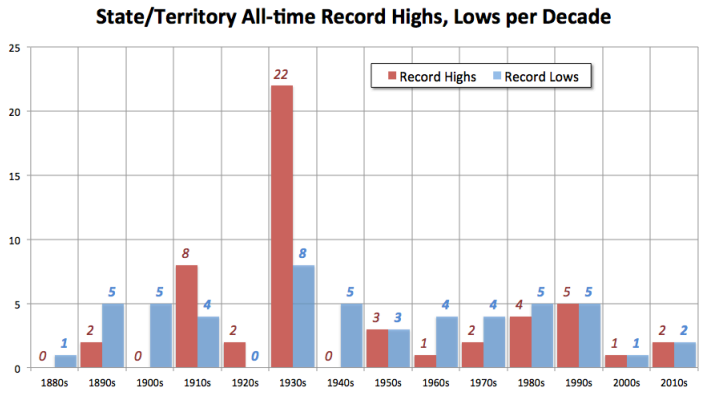
Claim: Heat Waves are increasing at an alarming rate and heat kills

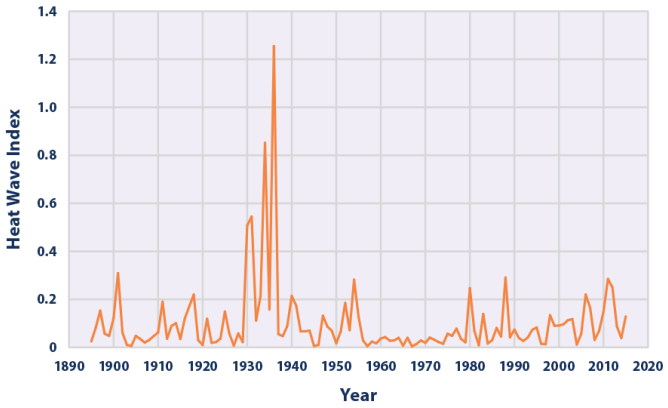
REBUTTAL

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-seven states set their all-time record highs before 1960 (22 in the 1930s!). The peak decade for record cold was also the 1930s reflecting the widespread drought, which favors more extremes of heat and cold.



Source: NOAA NCDC

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)

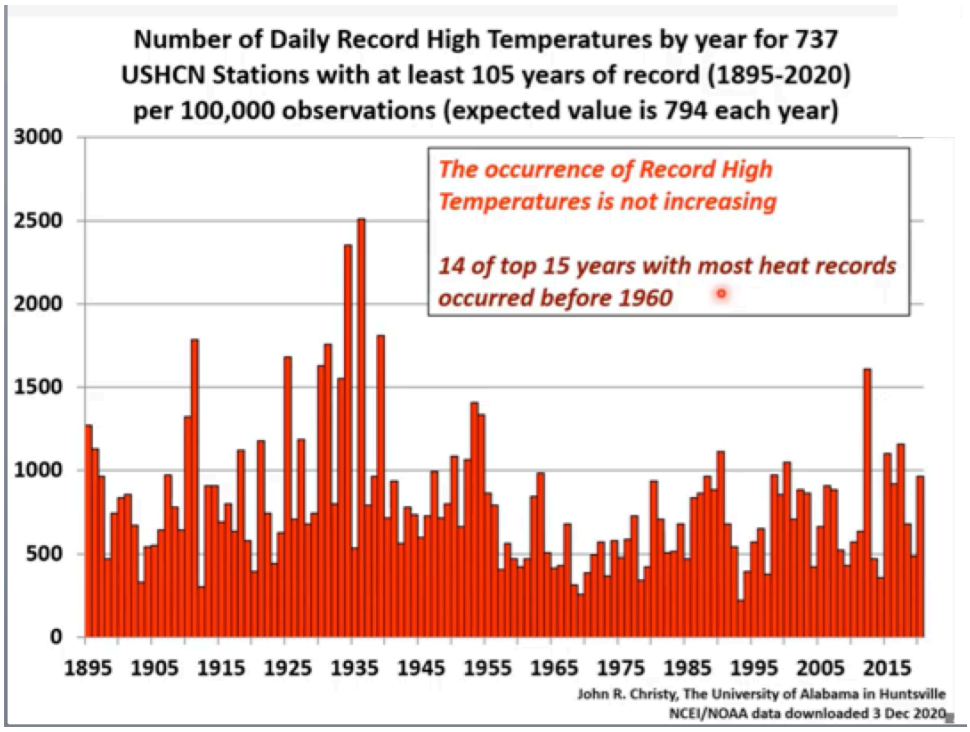
James Hansen while at NASA in 1999 said about the U.S. temperature record "In the U.S. the warmest decade was the 1930s and the warmest year was 1934".

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.

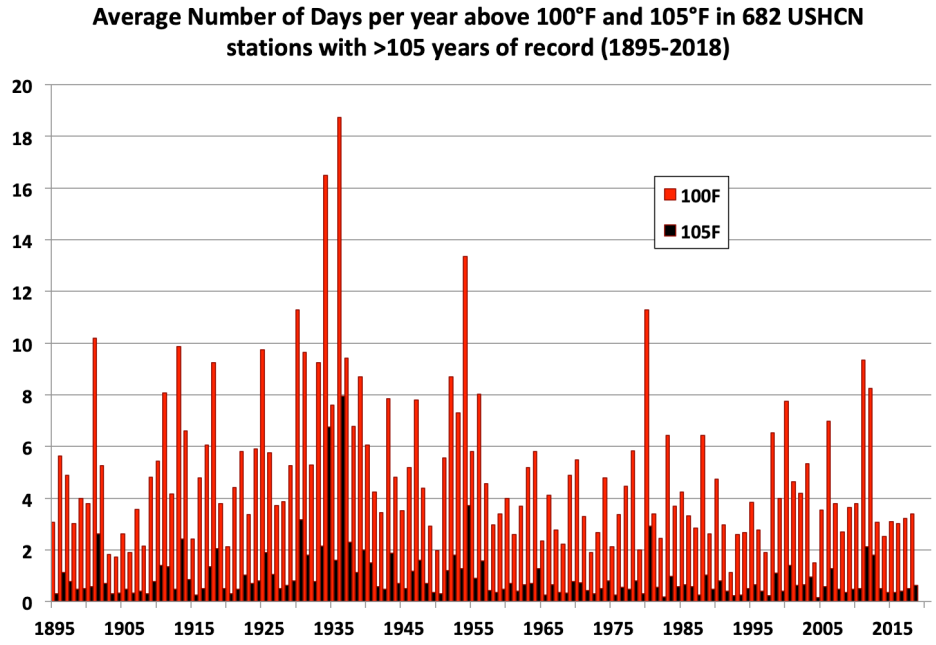
Interestingly while the media gives a great deal of coverage to even minor heat waves to support the case that man-made global warming is occurring, the media tends to ignore deadly cold waves. But in actual fact worldwide cold kills 20 times as many people as heat. This is documented in the "Excess 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."

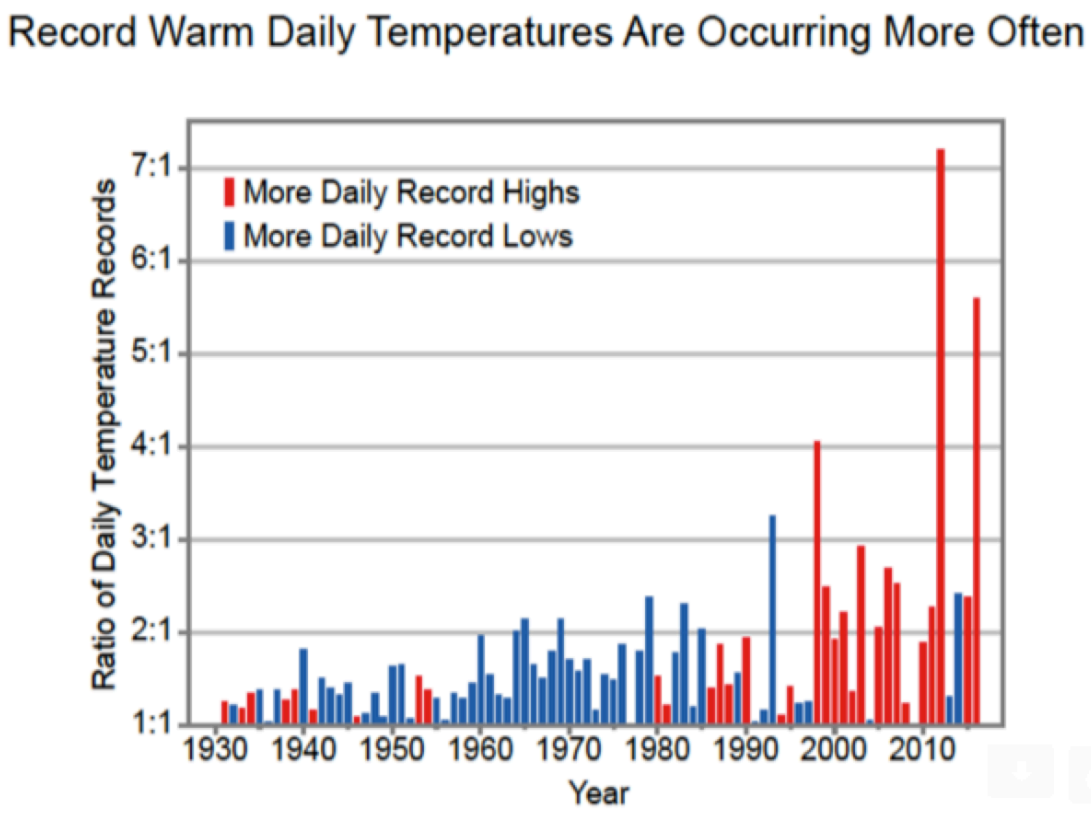


Above: Number of Record Daily High Temperatures per year for 737 USHCN stations with >105 years of data (NOAA/NCEI, prepared by JRChristy).



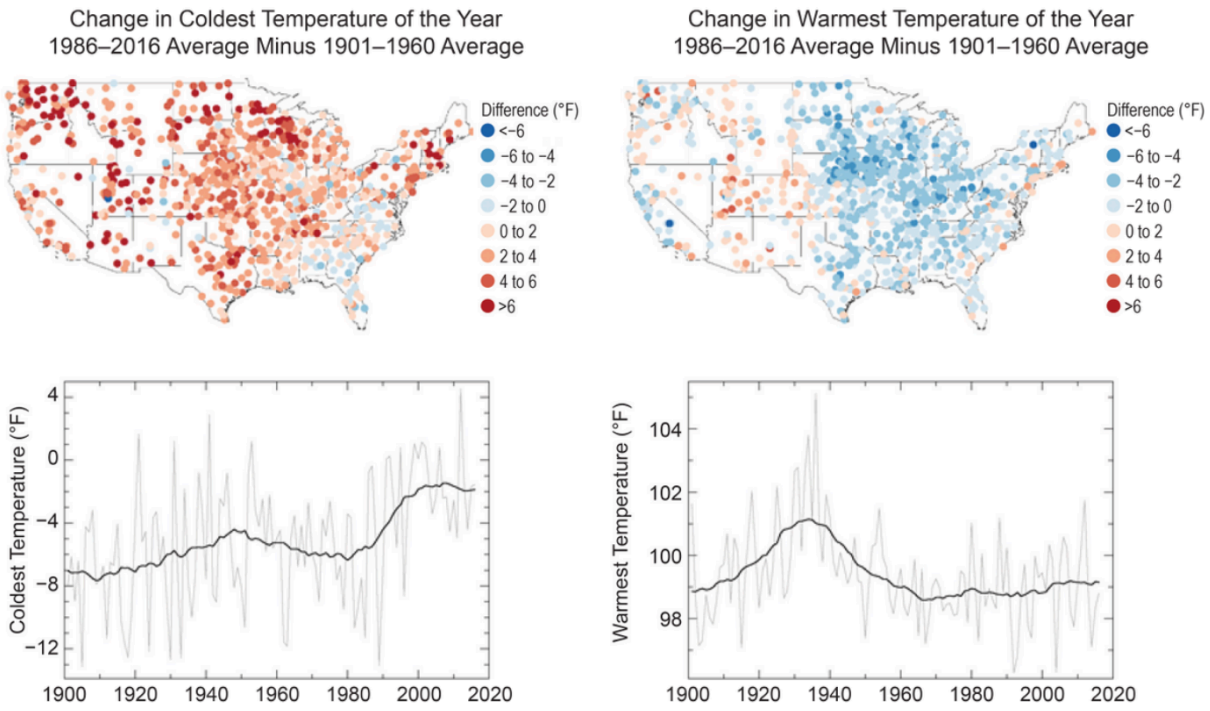
Above: Average number of days per year with temperatures >100F and >105F in 682 USHCN stations with >105 years of data (NOAA/NCEI, prepared by JRChristy).

The alarmists in National Climate Assessment finessed the issue by creating a ratio of record highs to record lows. Both have been declining since the 1930s but record lows are declining faster thanks to urban heat island nighttime temperature contamination. Colors were appropriately chosen to give the illusion heat records are rising rapidly although as we have shown they are declining.

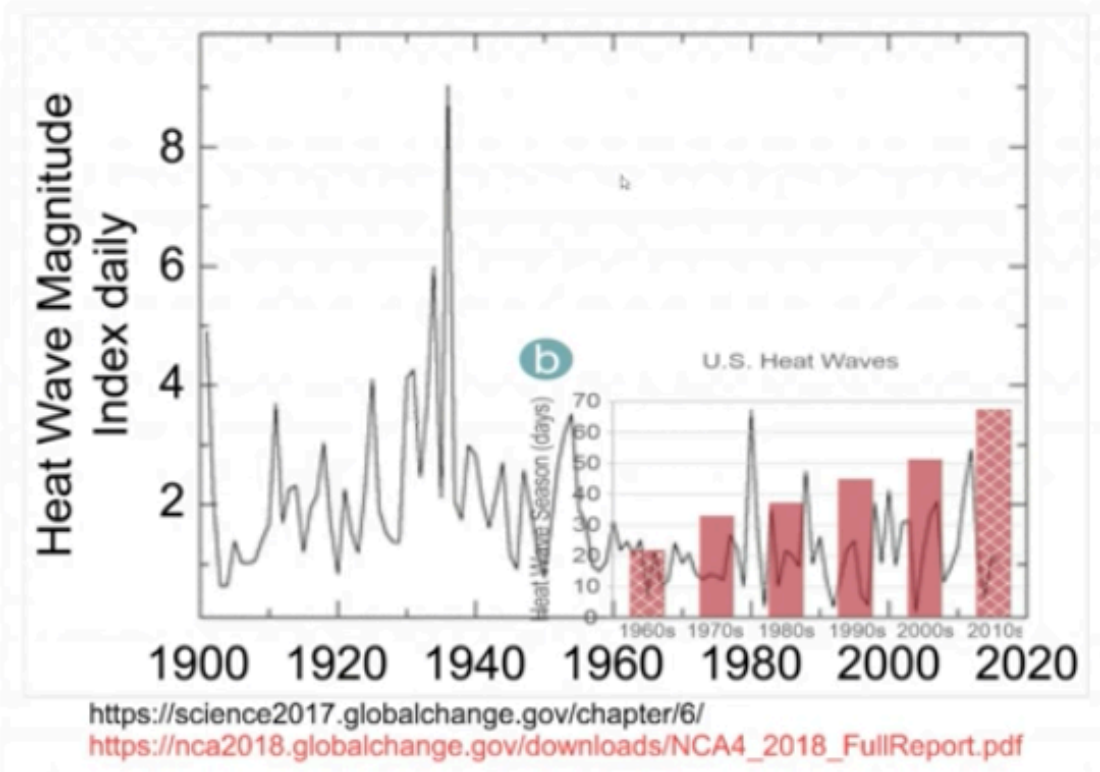


National Climate Assessment

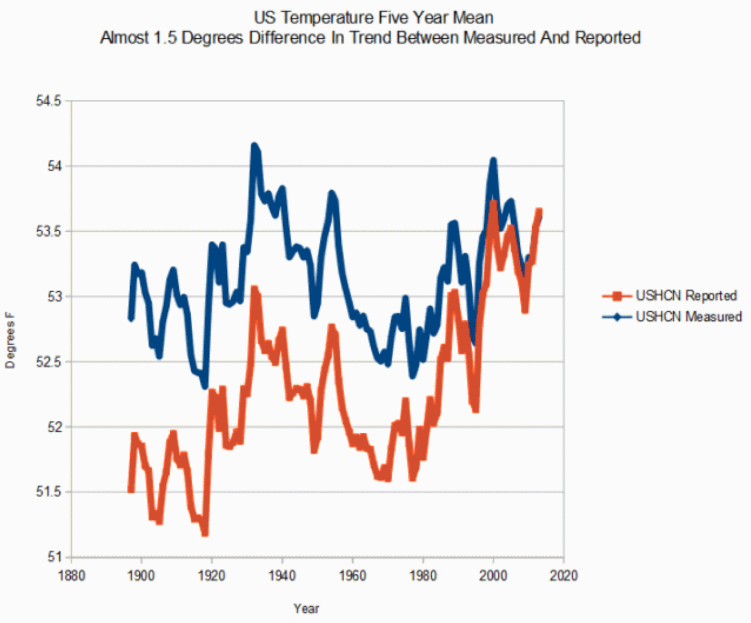
Most of the warming in daytime average readings is with nighttime lows and related to urbanization. This is supported by CSSR report analysis of the change of annual maximum temperatures over the period of record. It shows the 1930s peak in US warmth reflected in the record highs.



Tony Heller showed hour the time interval in the National Climate Assessment version of the decadal heat wave graph was also chosen to avoid the true facts. The graph used started in the 1960s (red bars).



Importantly, adjustments to the data have cooled the past, producing an upward linear trend where the measured data trend would be basically flat. This modification of the data increases the chance that subsequent months and years will routinely rank among the warmest in the 'record'.

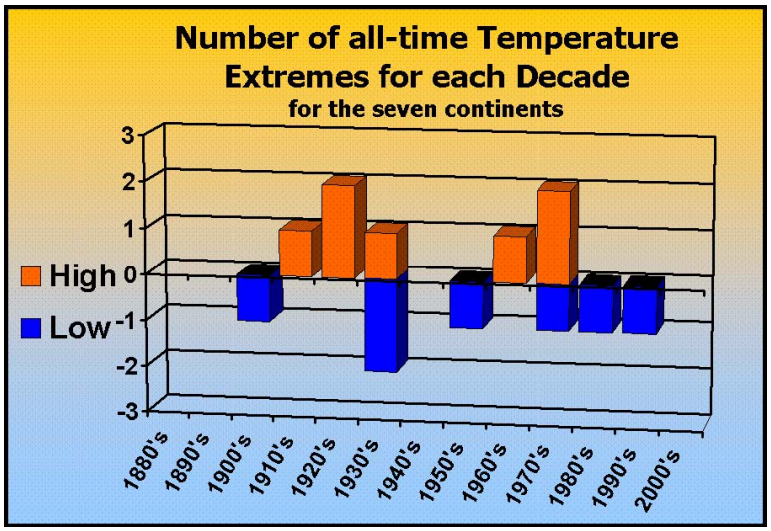


Source: NOAA USHCN

Most all continental all-time records were long ago (source WMO). Europe's all-time heat record was in 1977 (also very hot in the summer in the US but surrounded by two brutal winters that had the media talking ice age).

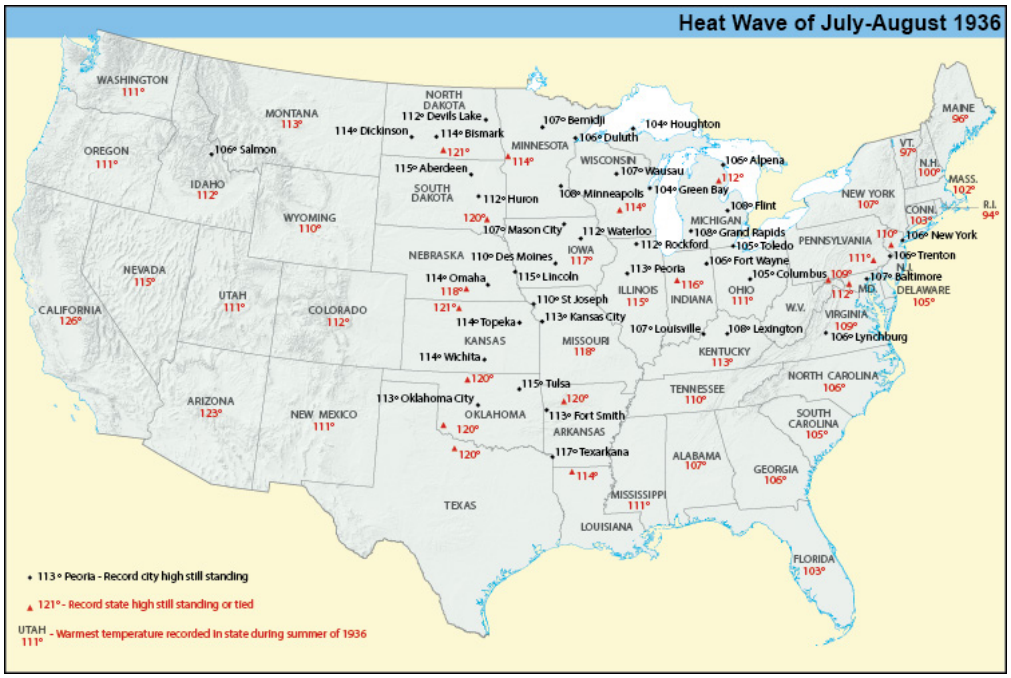
The heat wave of 2003 in Europe had a similar jet stream scenario. Though proclaimed to be the new climate norm, they had to wait 16 years to see it repeat.

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.

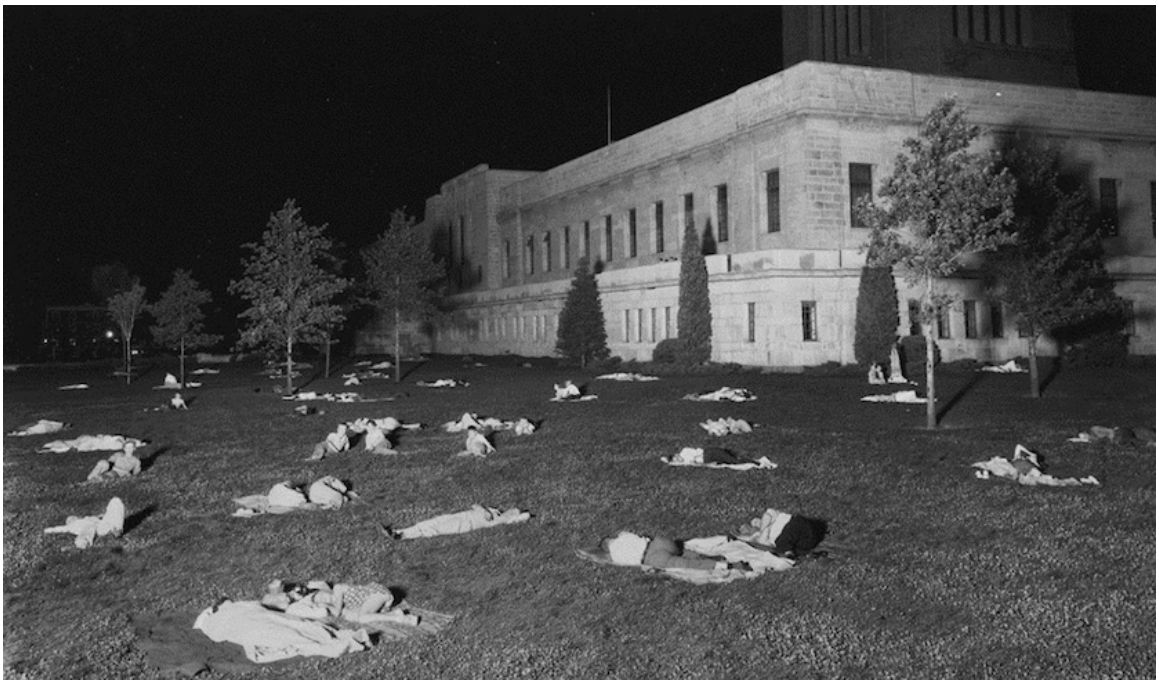


Here compiled is a list of 81 graphs from 62 papers published in 2018 showing there has been no unprecedented warming in recent decades. See also this response to the latest environmental advocacy group Union of Concerned Scientists claims.

The mid 1930s were extremely hot (and also very cold in winter). Dryness accentuates both heat and cold. The summer of 1936 produced triple digit heat in 45 of the CONUS, most records that are still standing. 8 states saw highs over 120F!



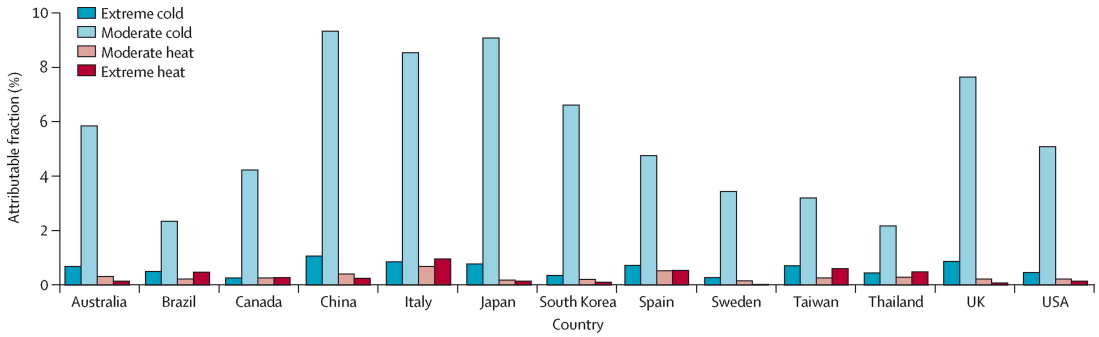
Many families resorted to sleeping in grassy fields or parks. Although we have air conditioning today, blackouts will become more likely in extremes because of the unwise push to unreliable wind and solar.



In search of sleep - Lincoln, Nebraska state capital on July 25, 1936.

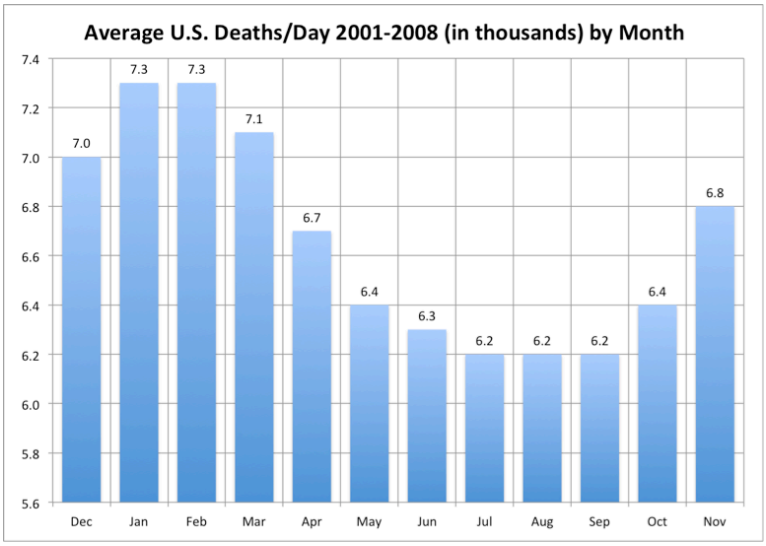
COLD KILLS 20 TIMES MORE THAN HEAT

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).

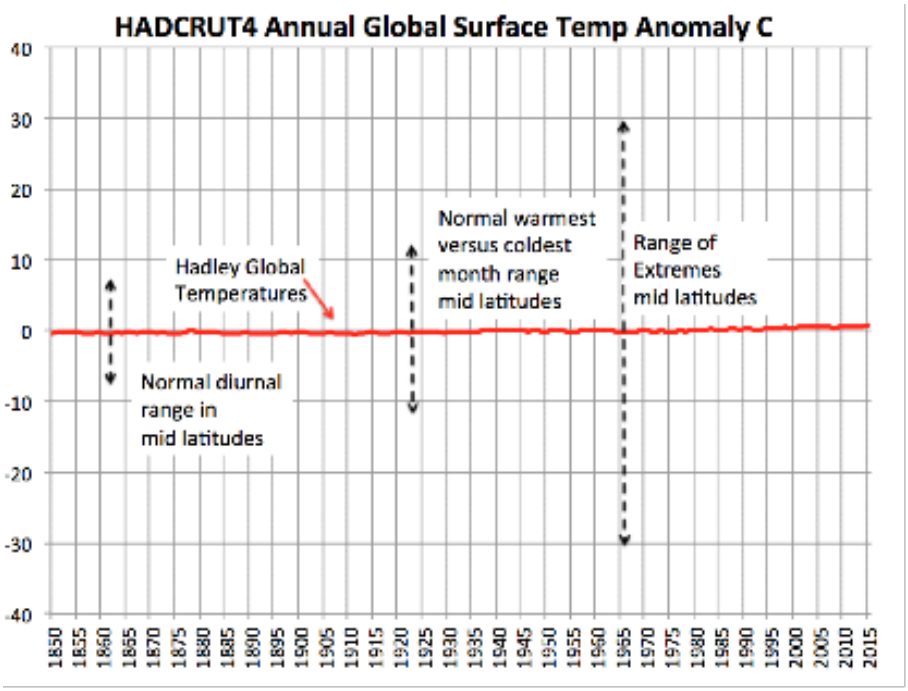


Source: National Center for Health Statistics

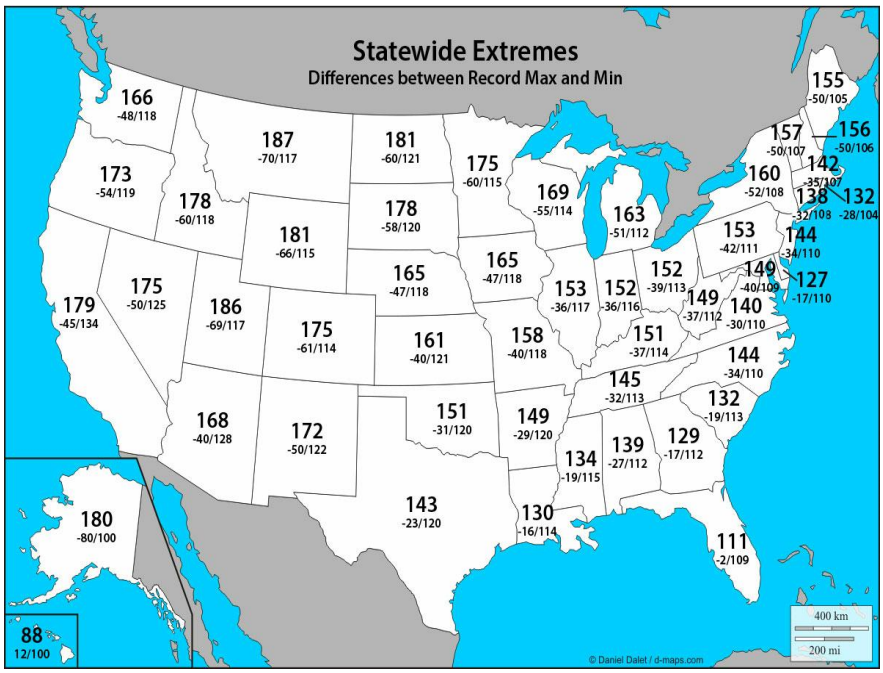
On the basis of all available UK Office of National Statistics data, between 1950-51 and 2011-12, there have been around 2,663,390 excess winter deaths in the UK. The majority of deaths occur with older people – specifically those aged 75 and above.

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

The claimed changes in global temperatures (1^0F) is miniscule relative to the normal mid latitude daily temperature change (30^0F) , the normal seasonal range (50^0F) and the range between all time highs and lows (over 100^0F as high as 187^0F)



Global Temperatures (Hadley) on the scale that shows the normal mid-latitude diurnal range, difference from warmest to coldest month and all time record highs versus record lows.



State-by-state difference between all-time record highs and lows (^0F)

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 less climatic stress, better crops and living conditions and civilization advancements. This recent warming has been modest and allowed for that on a global scale. As we have shown there is no alarming trend in heat and it is cold that kills.

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