

Climate at a Glance: U.S. Heatwaves

Bullet-Point Summary:

- Heatwaves during recent decades **remain far less frequent and severe than** was the case **during the 1930s** – nearly 100 years of global warming ago.
- **A majority of each state’s all-time high temperature records** were set **during the first half of the 20th century** – approximately 100 years of global warming ago.
- The most accurate nationwide temperature station network, implemented in 2005, shows **no sustained increase in daily high temperatures in the United States since at least 2005**.

Short Summary:

Heatwaves have always been a natural part of the American climate. Global warming will not put an end to heatwaves. However, global warming is not making heatwaves much worse, either, if at all. That is because the lion’s share of the Earth’s modest warming occurs during winter, at night, and closer to the poles.

Figure 1, below, shows there has been no sustained increase in daily high temperatures since at least 2005, when the National Oceanic and Atmospheric Administration’s most accurate temperature station network (The Climate Reference Network) became operational.

Figure 1: Contiguous U.S. Maximum Temperatures Since 2005

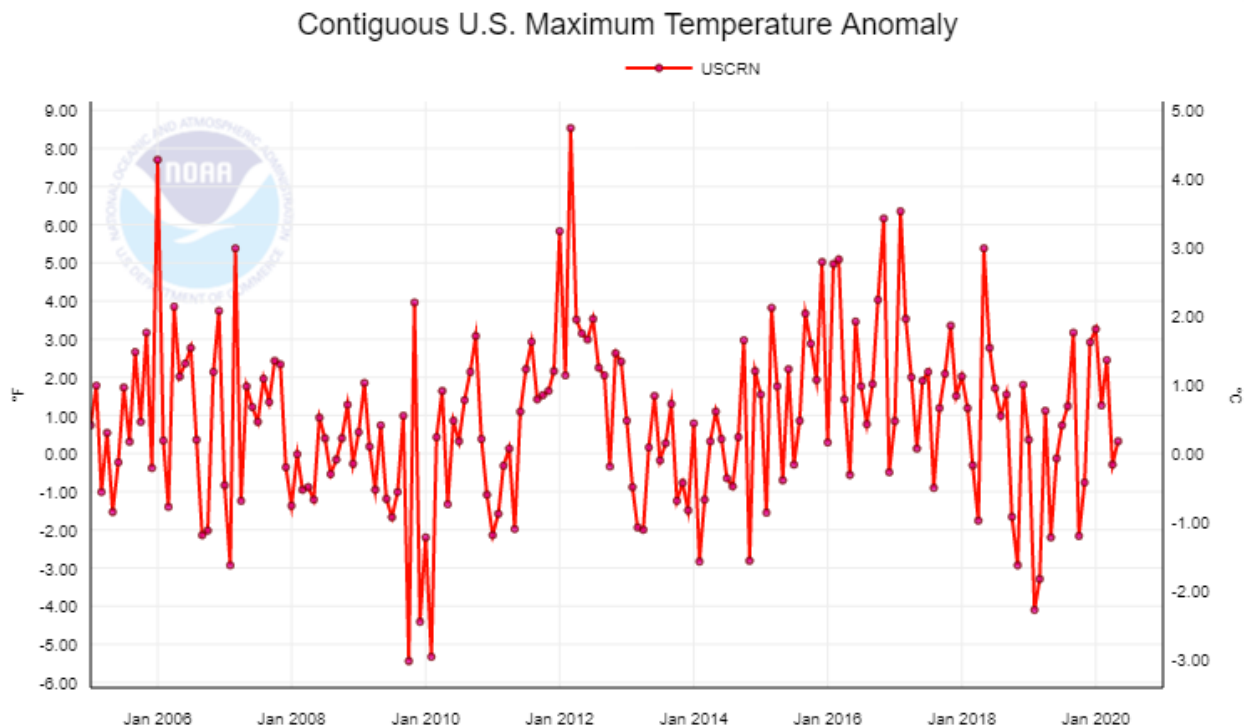


Figure 1, source: plot generated online [here](#), accessed June 2020. Data provided by U.S. Climate Reference Network, National Oceanic and Atmospheric Administration, <https://www.ncdc.noaa.gov/crn>.

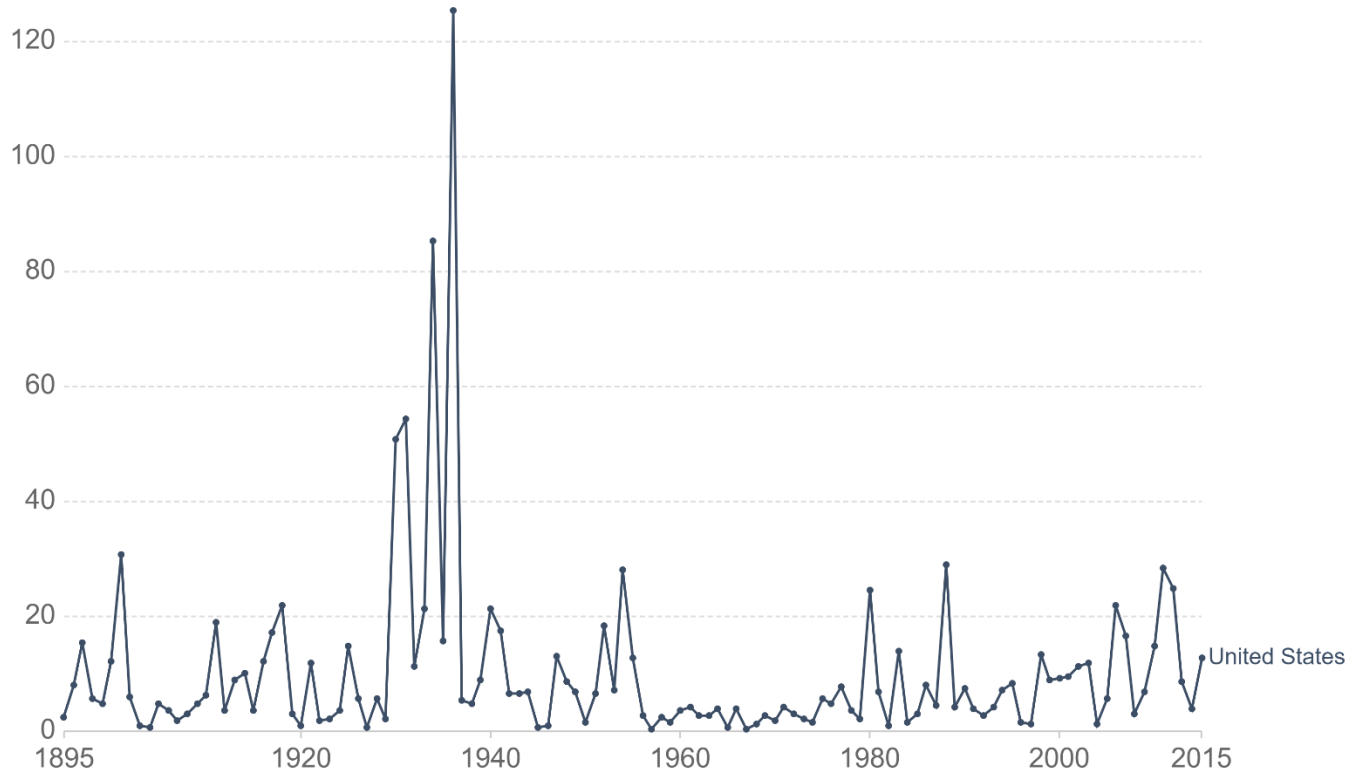
Figure 2, below, shows extended periods of very high temperatures were much more frequent in the 1930s – almost 100 years of global warming ago. Moreover, recent heatwave frequency and intensity remain within historically typical ranges.

Figure 2: Heat Index Data Shows No Increased Heat Wave Intensity or Frequency since the 1930's

Annual Heat Wave Index in the United States, 1895 to 2015



This index defines a heat wave as a period lasting at least four days with an average temperature that would only be expected to occur once every 10 years, based on the historical record. The index value for a given year depends on how often heat waves occur and how widespread they are.



Source: National Oceanic & Atmospheric Administration (NOAA) via the US EPA

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Figure 2, Heatwave Index for the contiguous United States, 1895-2015 (no later data is available). The U.S. Annual Heat Wave Index tracks the occurrence of heat wave conditions across the United States. This index defines a heat wave as a period lasting at least four days with an average temperature that would only be expected to occur once every 10 years, based on the historical record. The index value for a given year depends on how often heat waves occur and how widespread they are. Source: Our [World in Data](#), using data from NOAA.

Also, [a majority of each state's all-time high temperature records](#) were set during the first half of the 20th century – approximately 100 years of global warming ago.

Further Reading:

The U.S. Climate Reference Network, National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information. <https://www.ncdc.noaa.gov/crn/>

Newly found weather records show 1930's as being far worse than the present for extreme weather. *Dr. Patrick Michaels on World Climate Report* <https://wattsupwiththat.com/2012/07/14/newly-found-weather-records-show-1930s-as-being-far-worse-than-the-present-for-extreme-weather/>

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