

# Climate of 1997

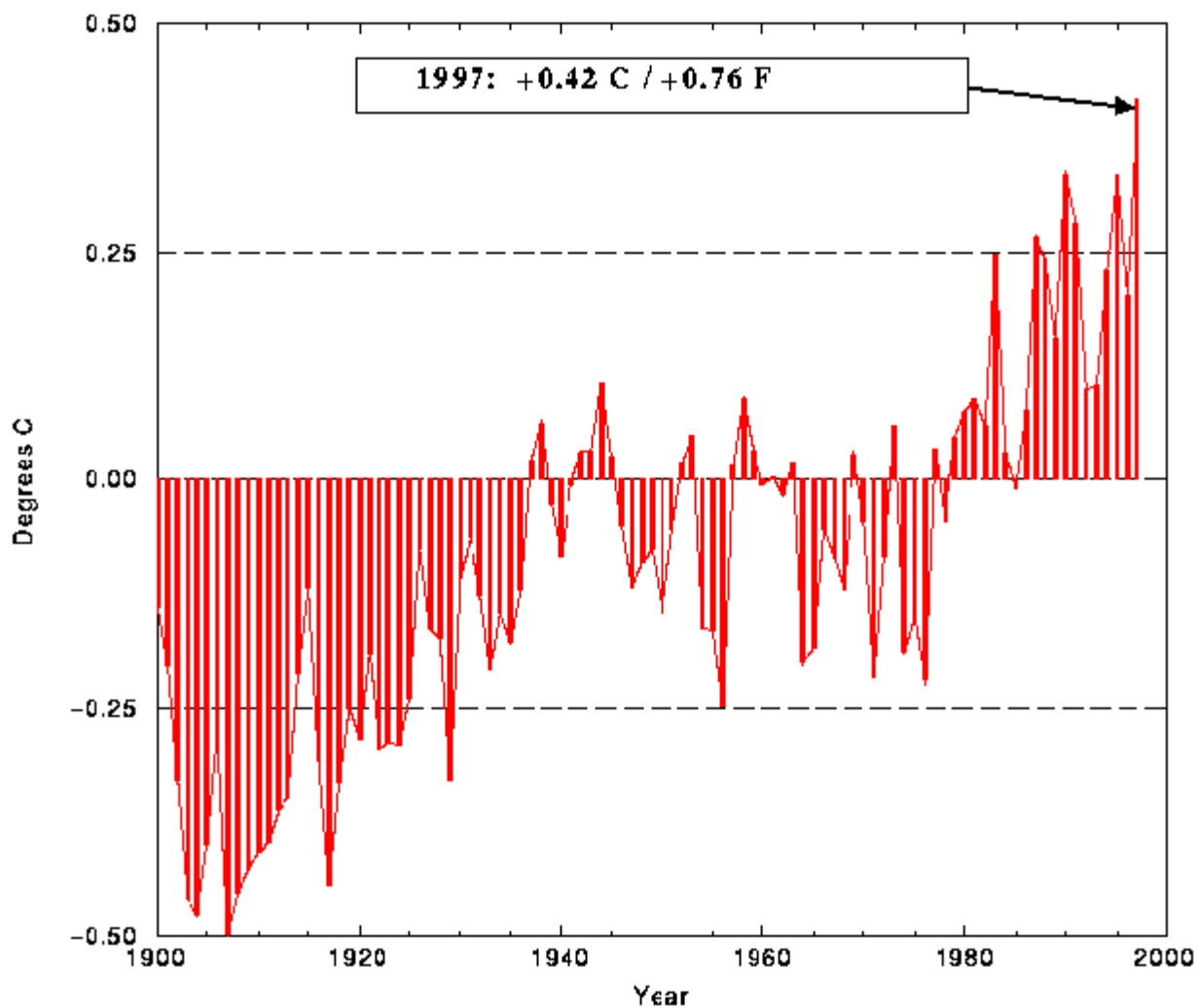
## Global Temperature Index: 1997 Warmest Year of Century

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January 12, 1998

## Global Temperature Index

National Climatic Data Center / NESDIS / NOAA

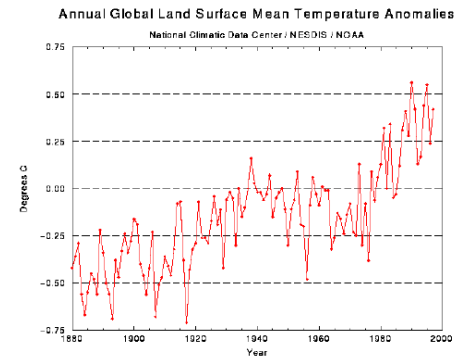


1997 was the warmest year of this century, based on land and ocean surface temperature data, reports a team of scientists from the National Oceanic and Atmospheric Administration's National Climatic Data Center in Asheville, NC.

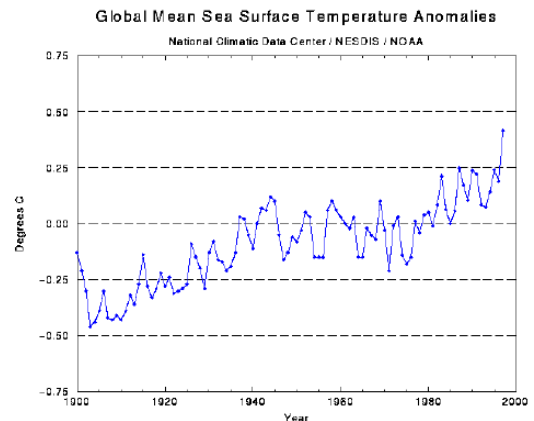
Led by the Center's Senior Scientist Tom Karl, the team analyzed temperatures from around the globe during the years 1900 to 1997 and back to 1880 for land areas. For 1997, land and ocean temperatures averaged three quarters of a degree Fahrenheit (F) (0.42 degrees Celsius (C)) above normal. (Normal is defined by the mean temperature, 61.7 degrees F (16.5 degrees C), for the 30 years 1961-90). The 1997 figure exceeds the previous warm year, 1990, by 0.15 degrees F (0.08 degrees C).

The record-breaking warm conditions of 1997 continues the pattern of very warm global temperatures. Nine of the past eleven years have been the warmest on record.

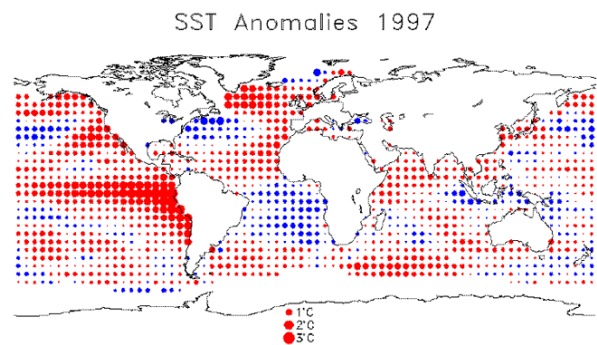
Land temperatures did not break the previous record set in 1990, but 1997 was one of the five warmest years since 1880. Including 1997, the top ten warmest years over the land have all occurred since 1981, and the warmest five years all since 1990. Land temperatures for 1997 averaged three quarters of a degree F (0.42 degrees C) above normal, falling short of the 1990 record by one quarter of a degree F (0.14 degrees C).



Ocean temperatures during 1997 also averaged three quarters of a degree F (0.42 degrees C) above normal, which makes it the warmest year on record, exceeding the previous warm years of 1987 and 1995 by 0.3 of a degree F (0.17 degrees C). The warm El Nino event (depicted as Sea Surface Temperature Anomalies) contributed to the record warmth of the oceans this year.



With the new data factored in, global temperature warming trends now exceed 1.0 degree F (0.55 degrees C) per 100 years, with land temperatures warming at a somewhat faster rate. ***"It is likely that the sustained trend toward increasingly warmer global temperatures is related to anthropogenic increases in greenhouse gases"***, Karl said.



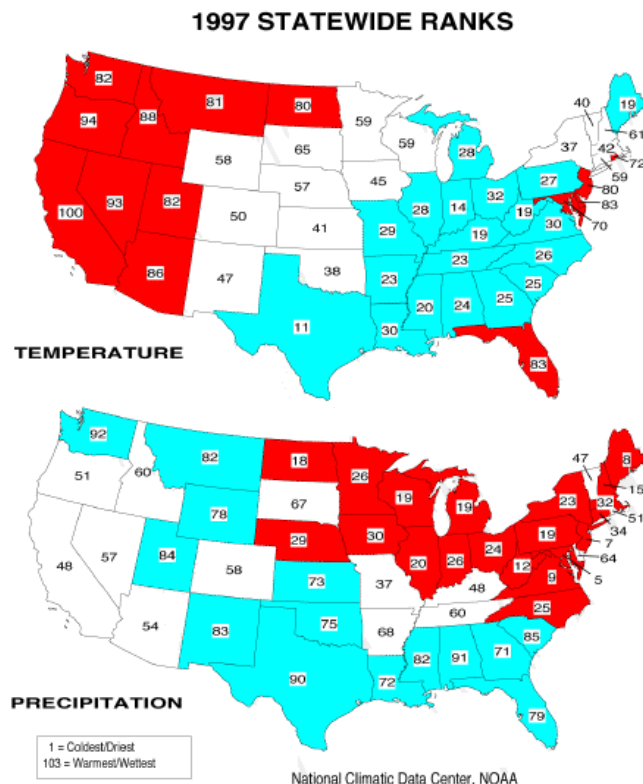
The analysis was based on separately examining land data using the [Global Historical Climatology Network](#), ocean data using the National Centers for Environmental Prediction

(NCEP) - [Reynolds Sea Surface Temperatures \(SST\)](#), blended with the United Kingdom Meteorological Office Long Term SST analysis and a global surface temperature index that combined the ocean and land data.

*See Also...*

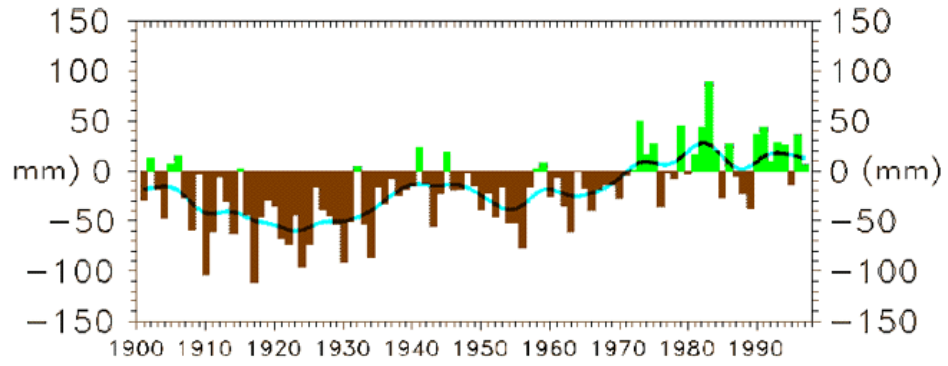
- [Anomaly Time Series \(Land, SST, and Index\)](#)
- [Lower Tropospheric and Lower Stratospheric Temperatures](#)

*Additional Graphics*

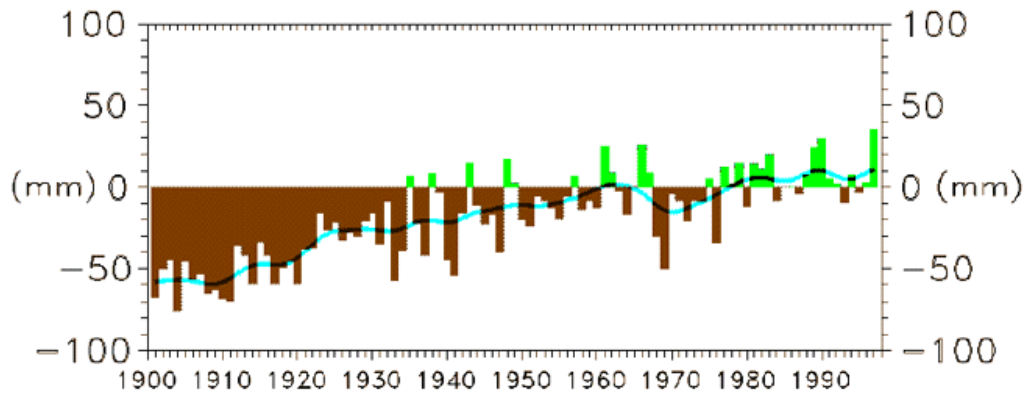


Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1997. States having a rank in the top-third coldest or driest (1-34) or top-third warmest or wettest (69-103) are shaded.

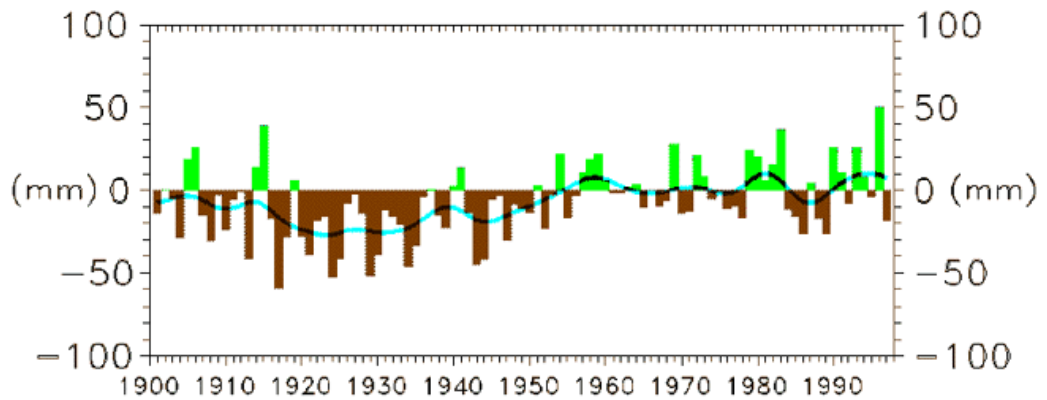
### North America

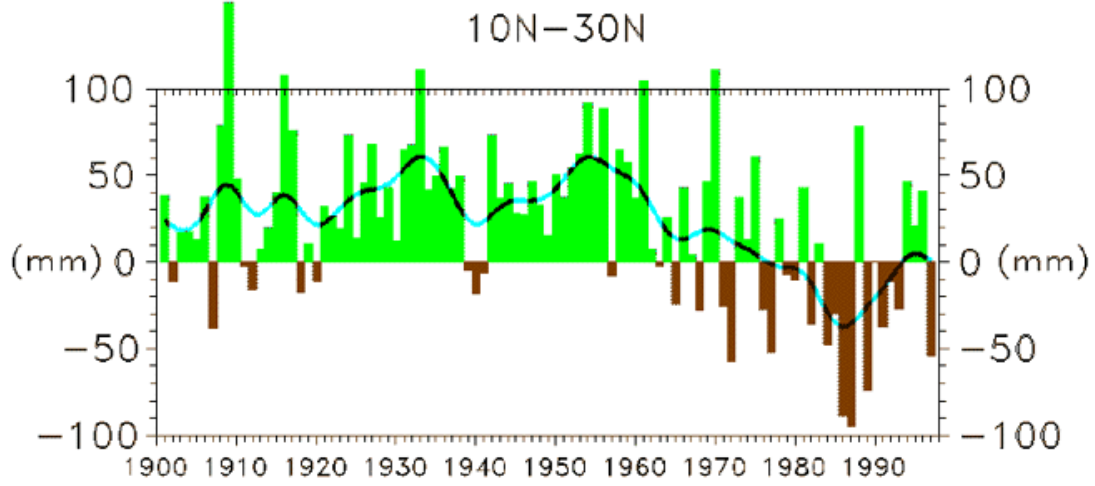


### 55N-85N



### 30N-55N





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Citing the Article

Quayle, Robert; Crowe, Mike; Peterson, Thomas;" Climate of 1997 Global Temperature Index: 1997 Warmest Year of Century"; 1998; NOAA's National Climatic Data Center, Asheville, NC