

2007 was tied as Earth's second warmest year

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Climatologists at the NASA Goddard Institute for Space Studies (GISS) in New York City have found that 2007 tied with 1998 for Earth's second warmest year in a century.

Goddard Institute researchers used temperature data from weather stations on land, satellite measurements of sea ice temperature since 1982 and data from ships for earlier years.

The greatest warming in 2007 occurred in the Arctic, and neighboring high latitude regions. Global warming has a larger affect in polar areas, as the loss of snow and ice leads to more open water, which absorbs more sunlight and warmth. Snow and ice reflect sunlight; when they disappear, so too does their ability to deflect warming rays. The large Arctic warm anomaly of 2007 is consistent with observations of record low geographic extent of Arctic sea ice in September 2007.

"As we predicted last year, 2007 was warmer than 2006, continuing the strong warming trend of the past 30 years that has been confidently attributed to the effect of increasing human-made greenhouse gases," said James Hansen, director of NASA GISS.

"It is unlikely that 2008 will be a year with truly exceptional global mean temperature," said Hansen. "Barring a large volcanic eruption, a record global temperature clearly exceeding that of 2005 can be expected within the next few years, at the time of the next El Nino, because of the background warming trend attributable to continuing increases of greenhouse gases."

The eight warmest years in the GISS record have all occurred since 1998, and the 14 warmest years in the record have all occurred since 1990.

A minor data processing error found in the GISS temperature analysis in early 2007 does not affect the present analysis. The data processing flaw was failure to apply NOAA adjustments to United States Historical Climatology Network stations in 2000-2006, as the records for those years were taken from a different data base (Global Historical Climatology Network). This flaw affected only 1.6% of the Earth's surface (contiguous 48 states) and only the several years in the 21st century.

The data processing flaw did not alter the ordering of the warmest years on record and the global ranks were unaffected. In the contiguous 48 states, the statistical tie among 1934, 1998 and 2005 as the warmest year(s) was unchanged. In the current analysis, in the flawed analysis, and in the published GISS analysis, 1934 is the warmest year in the contiguous states (but not globally) by an amount (magnitude of the order of 0.01°C) that is an order of magnitude smaller than the certainty.

Source: Goddard Space Flight Center

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