

# 2010 tied for Earth's warmest year on record

By Doyle Rice, USA TODAY

Last year tied with 2005 as the world's warmest on record, according to data released Wednesday by the National Climatic Data Center. Records began in 1880.

It was also the wettest year on record globally as measured by average precipitation, according to the center. Heavy rain in Asia due to the monsoon (which led to disastrous floods in Pakistan) and tropical storms in Central America contributed to the extreme precipitation amounts.

The Earth's average temperature in 2010, as in 2005, was 58.12 degrees, which is 1.12 degrees above the 20th-century average of 57 degrees.

It was the 34th consecutive year that the global temperature was above average, according to the data center. The last below-average year was 1976.

"This warmth reinforces the notion that we're seeing climate change," says David Easterling, chief of scientific services at the data center in Asheville, N.C.

Not so fast, says Pat Michaels, a climatologist with the Cato Institute in Washington. "If you draw a trend line from the data, it's pretty flat from the 1990s. We don't see much of a warming trend over the past 12 years."

He says the gloom-and-doom projections on global warming are likely to be too hot. "The projections will have to come down," Michaels says.

The climate center reports that the global land surface temperatures for 2010 were the warmest on record, at 1.80 degrees above the 20th-century average. The global ocean surface temperature for 2010 tied with 2005 as the third-warmest on record, at 0.88 degrees above the 20th-century average.

Several exceptional heat waves occurred during 2010, the center reported, bringing record high temperatures and affecting tens of millions of people. Russia endured an unprecedented two-month heat wave last summer: On July 29, the Moscow Observatory recorded its highest-ever temperature of 100.8 degrees.

"Although we can't attribute any individual event to climate change," Easterling says, "the probability of these events does increase as the climate warms."

Center data show the global average surface temperature has risen more than 1 degree since the start of the 20th century. Much of the warmth occurred in the past three decades. Nine of the Earth's 10 warmest years on record have occurred since 2001, and all 12 of the warmest years have occurred since 1997.

In a separate global temperature report released last week, 2010 finished in a tie with 1998 for the warmest year in the 32-year satellite temperature record, according to John Christy, professor of atmospheric science and director of the Earth System Science Center at the University of Alabama-Huntsville (UAH).

Unlike the climate center's surface-based temperatures, UAH's data are based on instruments aboard satellites from NASA and the National Oceanic and Atmospheric Administration that measure the temperature of the atmosphere from the surface up to an altitude of about 5 miles above sea level.

The satellite data show that the globe continues to warm unevenly. Warming increases as you go north: The Arctic Ocean has warmed an average of almost 3 degrees in the past 32 years.

Another global surface temperature report released Wednesday — from NASA's Goddard Institute for Space Studies in New York — said 2010 tied 2005 as the warmest year.