NOAA, NASA Declare 2014 The Warmest On Record By Four-Hundredths Of A Degree

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Climate scientists with NASA and the National Oceanic and Atmospheric Administration have declared 2014 was the warmest year on record, but only by four-hundredths of a degree Celsius.

NOAA scientists said the average global surface temperature was 0.69 degrees Celsius above the 20th century average — only 0.04 degrees Celsius higher than previous records set in 2005 and 2010. NASA found 2014 was 0.68 degrees Celsius warmer than the 20th century average.

"This is the latest in a series of warm years, in a series of warm decades," said Gavin Schmidt, director of NASA's Goddard Institute for Space Studies. "While the ranking of individual years can be affected by chaotic weather patterns, the long-term trends are attributable to drivers of climate change that right now are dominated by human emissions of greenhouse gases."

Global land surface temperatures were only the 3rd warmest on record, while ocean surface temperatures were the warmest on record, according to scientists.

The joint NASA-NOAA announcement comes after the Japan Meteorological Agency declared earlier this month that 2014 was the hottest on record by just 0.05 degrees Celsius based on surface temperature readings. But satellite data, which measures the lower atmosphere, shows 2014 was not the warmest on record.

Climate scientists John Christy and Roy Spencer with the University of Alabama, Huntsville said, "2014 was third-warmest, but barely." Christy and Spencer administer the UAH satellite dataset — one of two major datasets used to measure global temperatures.

Christy said, "2014 was warm, but not special. The 0.01 degree Celsius difference between 2014 and 2005, or the 0.02 difference with 2013 are not statistically different from zero. That might not be a very satisfying conclusion, but it is at least accurate."

Remote Sensing System satellite data shows that 2014 was only the 6th warmest year on record. Both RSS and UAH satellite data, however, show there has been a prolonged pause in global

warming since the late 1990s — RSS shows there has been no warming trend for 18 years and 3 months.

But climate scientists and environmentalists argue that 2014's status as the warmest on record means the so-called "pause" in warming is over. Skeptics of global warming counter that while 2014 was hot, there has been nowhere near as much warming as scientists predicted.

"A quarter-century after 1990, the global-warming outturn to date… is 0.34 Cº, equivalent to just 1.4 Cº/century, or a little below half of the central estimate in IPCC (1990) and well below even the least estimate," wrote Christopher Monckton, the 3rd Viscount of Brenchley and a renowned skeptic of global warming.

Recent studies have found that the climate is much less sensitive to increases in carbon dioxide emissions than previously thought. An analysis by the libertarian Cato Institute found that "the best estimate of the climate sensitivity is considerably lower than the climate model ensemble average."

"From the recent literature, the central estimate of the equilibrium climate sensitivity is ~2°C, while the climate model average is ~3.2°C, or an equilibrium climate sensitivity that is some 40% lower than the model average," wrote Cato scientists Patrick Michaels and Chip Knappenberger.