Earth is getting hotter, scientists say, pointing to 2014's record warmth

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Beginning in 1880, scientists started carefully measuring temperatures across Earth. Last year, 2014, was the warmest year they have seen.

Since 1880, the Earth's average temperature has risen 1.4 degrees Fahrenheit. That may not seem like much, but it could have serious consequences, climate experts from NASA and the National Oceanic and Atmospheric Administration (NOAA) said.

Rising temperatures could cause flooding, serious storms, and global droughts, the experts said Friday. They also said that human activity, such as burning fossil fuels, played a part in the warming.
The climate scientists use data collected from around the world to study global weather patterns. There are 6,300 weather stations on land, ships and buoys floating in the world’s oceans, and research stations in Antarctica.

**Can't Blame El Nino**

Experts from NASA, the U.S. space agency, and NOAA agreed that average temperatures on Earth in 2014 were higher than in the 1900s.

Sometimes, high temperatures on Earth are caused by El Nino, a change in currents and temperatures in the Pacific Ocean. But in 2014, the Earth saw record-high temperatures without El Nino. This worried scientists.

NOAA reported that December 2014 was the warmest month ever recorded. May, June, August and September also set new records.

In a way, a warmer 2014 wasn’t surprising. Of the 10 warmest years ever recorded, 9 have come since 2002, NOAA said.

This shows a warming trend, the agency said. The Earth is getting hotter over time.

**Are Humans To Blame?**

To explain the warming trend, you must look at human activity, the scientists said. Humans burning fossil fuels like coal and oil release greenhouse gases into the atmosphere. These gases help to trap heat, making the Earth warmer.

Greenhouse gases are the cause of most of the warming that has been seen, said NASA scientist Gavin Schmidt. Since more gases are being released, scientists expect even higher temperatures in years to come, Schmidt added.

In 2014, temperatures on land were only the fourth warmest of all time. It was record-high temperatures in the oceans that moved the average up. Ocean water can retain, or keep, heat longer than land. As water warms, ice melts, causing sea levels to rise.

“This was very clearly the warmest year in the ocean records,” Schmidt said. “It wasn’t quite the warmest year in the land records, but combined, this did actually give the warmest year” since 1880.

Last year was the warmest ever recorded despite some serious cold in the winter, as a “polar vortex” brought low temperatures across the United States.

This cold weather was balanced out by hotter weather: blazing heat in the Western U.S., and hot spells in Europe and Australia.
**Warmer Way Up North**

Areas in the far north of the Earth saw warmer-than-average temperatures in 2014. Anchorage, Alaska, did not fall below zero degrees in 2014 for the first time ever.

In fact, temperatures in the far northern latitudes are rising twice as fast as areas closer to the equator. The rising temperatures in the north are melting snow. Less snow means the Earth can reflect less heat.

“A lot of additional heat is gained because there’s less snow to reflect the sunlight back to space,” said Tom Karl, a NASA climate scientist.

Ice in the Arctic melted more than usual due to higher summer temperatures, Schmidt said. The ice at Earth’s far north is at its sixth lowest level ever, he added.

Skeptics — those who don’t believe in global warming — often pointed to 1998. Temperatures were very high in that year. They say things have cooled since then. But NASA and NOAA scientists said that the new data showed that temperatures have been rising steadily since the 1970s.

“2014 is exactly where we would’ve expected,” Schmidt said. “There are going to be periods when short-term trends go up and go down. But there’s no evidence that the long-term trend is much different from what it has been.”

Until last year, the warmest years ever were 2005 and 2010. The global average for 2014 was higher than those years by 0.07 degree Fahrenheit, the scientists said.