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Weather fluctuates. Hot July in 2012 doesn't show climate change is a hoax | Fact check



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The claim: US July temperatures show climate change is a hoax

An Aug. 3 Instagram post ([direct link](#), [archive link](#)) shows a screenshot of U.S. temperature maps originally posted on X, formerly Twitter, by Steve Milloy, a skeptic of human-driven climate change.

"12 years of emissions down the drain: July 2024 cooler than July 2012 in the US by average and max temperatures," reads text above the temperature maps. "As a climate hoaxer to 'splain that."

The Instagram post, which garnered more than 400 likes in a few days, included a caption that also called climate change a "hoax."

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Our rating: False

Multiple lines of evidence show Earth's average temperatures are warming. National Oceanic and Atmospheric Administration data shows average and maximum temperatures were cooler in the U.S. in July 2024 than in 2012, but that is due to weather fluctuation, not a lack of overall global warming.

Climate change doesn't mean every July will be hotter than the previous July

The maps in the post were created by meteorology company WeatherBELLAnalytics using data from the PRISM Climate Group, according to Christopher Dickson, a meteorologist at WeatherBELL. Chris Daly, an Oregon State University professor who founded the PRISM Climate Group, told USA TODAY the group's preliminary data does show July 2024 was cooler than July 2012.

He said the preliminary July data needs more quality control work and significantly more data would be added to it in the coming months. He also said PRISM data should not be used to analyze climate trends because it is not adjusted to account for "temporal changes in station data availability, observation time, equipment and sighting, etc., all of which can bias the results."

NOAA data, which accounts for these issues, also reports maximum and average temperatures in July 2012 were warmer than July 2024. But this doesn't show global warming is a "hoax."

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Milloy, in a video he sent to USA TODAY, argued that if greenhouse gas emissions from human activity are causing Earth to warm, and humans have continued to produce

greenhouse gases since 2012, then July 2024 should be warmer than July 2012. But this reasoning is flawed.

This is because Earth's temperature patterns are influenced by both accumulating greenhouse gases and natural variability – such as weather and cyclical climate patterns like the El Niño-Southern Oscillation. This variability means a modern July won't necessarily be hotter than every previous July even though the planet is warming overall.

"Global warming is a long-term trend, but that does not mean that every year will be warmer than the previous one," The Royal Society reports.

While July 2024 was cooler than July 2012, it was still the 11th-warmest July in NOAA's 130-year record. NOAA data also shows a clear long-term warming trend for the month of July in the U.S. and for annual temperatures in the U.S. and globally.

Long-term trends, typically involving decades of data collection, are what scientists are referencing when they talk about climate, according to NOAA.

The post's "comparison between July 2012 and 2024 is not sufficient to draw conclusions about climate trends in the United States nor globally," Dickson said.

Multiple lines of evidence show Earth's climate is changing due to human activity

There are many ways scientists know Earth's climate is changing and that the change is driven by greenhouse gas emissions from human activity. In the mid-1800s, researchers demonstrated that CO₂ is a greenhouse gas – a substance that warms the planet by absorbing and redirecting radiation otherwise destined for space.

Researchers have been documenting rising CO₂ levels for decades. They can tell the CO₂ is from human activity because a disproportionate amount of it contains the kind of carbon

found in fossil fuels and because the excess matches the amount humans have put into the atmosphere once natural processes are accounted for.

Researchers have also been documenting the simultaneous rise in global temperatures and have found "the amount of warming we see matches what we expect based on the increased CO₂ we've added," Josh Willis, a NASA climate scientist, previously told USA TODAY. Additionally, "the timing of the warming matches the timing of the CO₂ increase caused by people."

Scientists have also documented the consequences of this warming in the U.S. and globally. These include:

- Arctic sea ice loss

- Ice sheet melting in Antarctica and Greenland

- Earlier ice breakup dates in Alaskan river systems

- Changes in the ranges of various marine species

- An increase in the frequency of heat waves

- Shrinking snowpack in the western U.S.

- Changing time frames for the emergence of leaves and flowers in the spring

- Changes in the winter ranges of certain bird species

- Melting glaciers

- An increase in flooding events due to sea level rise

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The Instagram user who shared the post did not provide evidence to support the claim.

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