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El Niño southern oscillation

Temperature-boosting El Niño set for early return this year

The climate event that helped supercharge global warming to record levels in 2015 and 2016 is 50-60% likely in 2017, says World Meteorological Organization



Damage caused by El Niño-fuelled flash floods and landslides in Huachipa district, east of Lima, Peru. Photograph: Ernesto Benavides/AFP/Getty Images

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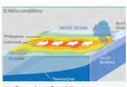


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The El Niño climate event that helped supercharge global warming to record levels in 2015 and 2016 is set for an early return, according to a forecast from the World Meteorological Organization.



What is El Niño?

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El Niño events are prompted by natural fluctuation in ocean temperatures in the Pacific but have a global impact, leading to flooding, droughts and heatwaves. They also exacerbate the increased extreme weather events occurring due to the continued heating of the world as a result of human-caused climate change.

The World Meteorological Organization (WMO) said on Friday that a new El Niño was 50-60% likely before the end of 2017. "Memories are still fresh of the powerful 2015-2016 El Niño which was associated with droughts, flooding and coral bleaching in different parts of the world and which, combined with long-term climate change, led to the increase of global temperatures to new record highs in both 2015 and 2016," said Maxx Dilley, director of WMO's climate prediction and adaptation division.

It is unusual for El Niño conditions to return so swiftly, said Tim Stockdale, principal scientist at the European Centre for Medium-range Weather Forecasts (ECMWF), one of the leading prediction centres around the world and which contributed to the WMO forecast. "Normally we would expect a longer interval before another warming. But, having said that, El Niño variability is really rather irregular."

Friday's forecast is a early one, based on observations, climate models and historical trends. At present the likelihood is that any El Niño event will be a moderate one. "It will become clearer in the next couple of months," said Stockdale.

However, regional warming associated with El Niño has already caused very heavy rains and floods in Peru and Ecuador, after the sea surface temperatures in the far eastern tropical Pacific ocean rose to 2C or more above average during February and March. This phenomenon has in the past sometimes been followed by a global El Niño.

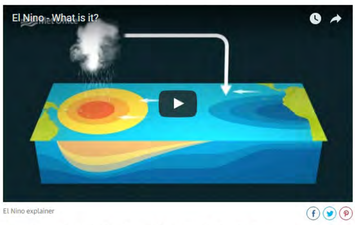


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Another concern is that the variation in El Niño over decades may be switching to a new, hotter phase. "For the last decade, the tropical Pacific has tended to be on the cold side, and that has helped keep global temperatures down. With this warming coming back so soon, it makes you wonder if the decadal trend is a bit more on to the positive side," said Stockdale. "Obviously if that were sustained over the next five to 10 years, it would make the global warming signal stand out more strongly than it has done over the past decade."

The impacts of El Niño events vary but often lead to hot, dry conditions in south and eastern Australia, as well as in Indonesia, the Philippines and south-eastern Africa. The Indian monsoon rainfall, upon which millions depend, also tends to be lower than normal. Wetter than usual conditions are typically seen along the Gulf coast of the US, and the west coast of tropical South America.



El Nino explainer

It remains unclear whether climate change is affecting the frequency or severity of El Niño events, partly because with complex phenomena many years of data are needed to distinguish the human-caused and natural influences.

The ability to forecast El Niño events has improved in recent years, enabling authorities to make preparations. "Accurate predictions of the most recent El Niño saved untold lives. These [are] essential for the agricultural and food security sectors, for management of water resources and public health, as well as for disaster risk reduction," said Dilley.

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