

## North Pole temperature rise gets scientists in a sweat

'Scary' Arctic warming comes as 2016 is on track to be hottest year on record



Scientists are struggling to understand why a burst of “scary” warming at the North Pole has pushed Arctic temperatures nearly 20C higher than normal for this time of year.

Experts in the US and Europe say they have been shocked by the soaring temperatures recorded in November, when much of the region is plunged into freezing winter darkness. Temperatures this month have been as high as almost minus 5C when they are normally closer to minus 25C.

“We’ve been processing this data since 1958 and we haven’t really seen anything like this at this time of year,” said Rasmus Tonboe, a sea ice expert at the Danish Meteorological Institute. “We are watching the situation and trying to analyse what is going on but it’s very surprising.”

The unusual warmth has come as officials at the UN’s World Meteorological Organization said they were 95 per cent sure that 2016 would be the [hottest year](#) since records began in the 19th century. It would mean that 16 of the 17 warmest years on record have been this century.

The 17th year was in 1998 when there was a powerful El Niño weather event, as there was in 2015 and 2016.

But some scientists said [climate change](#) seemed to be more responsible for the unusual warming at the North Pole this month than the impact of the latest El Niño effect.

“I don’t think that’s a huge factor,” said Jennifer Francis, a Rutgers University climate scientist, explaining that a [near-record](#) fall in the extent of sea ice in the Arctic this summer had led to a warmer autumn.

This had reduced the temperature difference between the Arctic and more southerly regions, causing a “wavier” jet stream — a great river of fast-moving air about 10km above the earth that acts as a barrier separating the North Pole from warmer latitudes.

The changes in the jet stream had allowed more warm air to penetrate further north, which explained a lot of the “ridiculously” high Arctic temperatures, Ms Francis said.

“That is scary because it is showing us how rapidly the climate system is changing ... We expected for a long time to see the ice disappear and the Arctic warm up and perhaps the jet stream doing bizarre things, but it’s happening much faster than I think anyone expected.

“Hopefully some people who didn’t believe this was a problem before might look at this and say ‘Wow, this is really serious’.”

Donald Trump, the incoming US president, has frequently played down the dangers of climate change, which he once described as a hoax invented by China to damage US industry.

He has also threatened to “cancel” the Paris climate change accord that virtually every country in the world struck last December. The agreement aims to cut fossil fuel pollution enough to stop temperatures rising 2C from pre-industrial times, or 1.5C if possible.

Mr Trump failed to mention that vow in a [video](#) he released this week outlining the first executive actions he plans to take after he is sworn in on January 20.

Other countries, led by China, [united](#) in their determination to pursue the Paris agreement at UN climate talks in Marrakesh last week.

But another Arctic researcher, Jeremy Wilkinson of the UK’s British Antarctic Survey, said the latest bout of warming at the North Pole showed how urgently the world needed to stick to the Paris accord’s aims to cut greenhouse gas emissions.

“It really is a wake-up call that the earth is warming and it’s warming substantially in the Arctic. We really have to look at our emissions and look at ways to control emissions,” he said.

“It’s pretty serious because the Arctic is one of the drivers of the climate system. If it goes out of phase it starts to affect all sorts of weather around the planet.”