

# Climate scientist proposes extremely cold 2014 winter link to global warming

May 23 2014, by Bob Yirka

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Credit: Larisa Koshkina/public domain

(Phys.org) —Tim Palmer, a climate scientist and professor at the University of Oxford in the U.K. has published a somewhat controversial Perspective piece in the journal *Science*. In it, he theorizes that heavy thunderstorms in the western tropical Pacific (due to global warming) this past winter caused changes to the flow pattern of the jet stream, which resulted in the "polar vortex" that chilled the northern part of

North America for the first four months of 2014.

The winter of 2014 was [cold](#) in the U.S., of that there was no doubt. Subzero temperatures became the norm and heating bills skyrocketed. At the time, very few who experienced it were blaming it on global warming, but that may very well have been the cause anyway, Palmer suggests—despite the fact that [global temperatures](#) haven't been rising lately.

The western Pacific ocean, he suggests, is pulling [heat](#) in and holding on to it—that's why global temperatures haven't been increasing. That heat in the ocean, he adds, resulted in the generation of more thunderstorms in the western Pacific, releasing heat into the atmosphere (and creating powerful typhoons). That infusion of heat, he continues, caused ripples to form in the jet stream, and it was those ripples that caused the [cold weather](#) in the northern U.S.

Meteorologists generally agree that the cold weather wasn't due to it just being colder, it was because parts of the jet stream plunged south carrying arctic temperatures with it—areas north of the jet stream are typically very cold, while those below it are warm. It was those same conditions that led to a very wet Europe as the jet stream wobbled back and forth, generating storms in the Atlantic, dropping massive amounts of water as the sea gave way to land.

Despite the cold winter, Palmer's theory doesn't suggest future cold winters will be the norm. Instead, he maintains, it was just a one-off—El Niño is due, and it will almost certainly lead to a release of a lot of the heat the ocean has been holding onto, which would mean warmer winters are coming, not colder.

Interestingly, Palmer's theory results in the same outcome as another recent theory presented by Jennifer Francis of Rutgers University—she

believes cold snaps like the one this past winter are due to melting Arctic ice, leaving less heat reflected back into the atmosphere and thinning the jet stream and at times causing it to wobble. Others suggest [global warming](#) had nothing to do with the chilly winter—it was just climate temperature variability, as happens now and then.

**More information:** Record-breaking winters and global climate change, *Science* 23 May 2014: Vol. 344 no. 6186 pp. 803-804. [DOI: 10.1126/science.1255147](#)

### **Abstract**

Just when it looked like spring was arriving this year, the U.S. Midwest slipped back into winter, and Detroit recorded its snowiest season ever (see the photo). Has global warming gone into reverse, or could human emissions of greenhouse gases actually be responsible for this particular record being broken? Although the chances of cold winters can in general be expected to decrease with global warming, climate change linked to the particular circulation patterns that have prevailed in the past decade or so could have played an important role in this record-breaking winter.

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