

Online version of article [here](#).

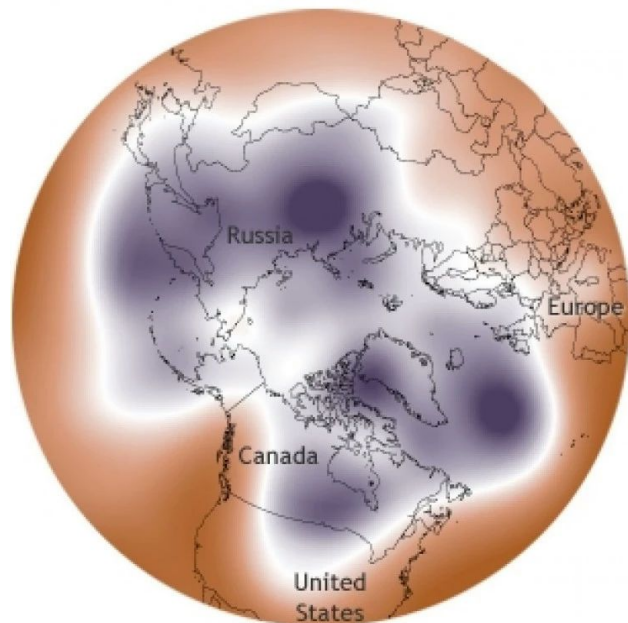
Scientists: Don't make "extreme cold" centerpiece of global warming argument

The Washington Post, February 20, 2014

By Jason Samenow

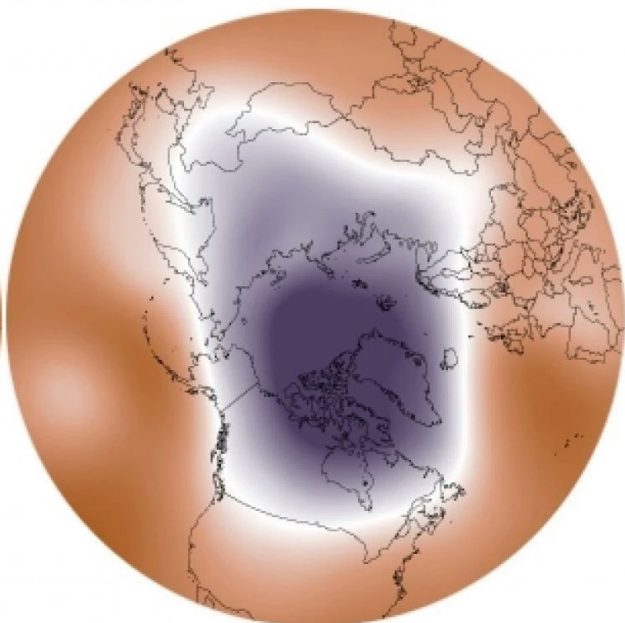
It's an intriguing theory – that recently has gotten legs: the melting Arctic – spurred by global warming – is causing the weather's steering flow, the jet stream, to become more extreme. This extreme jet stream – rather than zipping around the world in a straight circle (right below) – is more frequently meandering off course (left below) and getting stuck in place, sending bitter, prolonged blasts of cold southward and conversely, see-sawing strong heat domes northward. It's a fascinating paradox: global warming as the culprit for bone-chilling cold.

Wavy polar vortex configuration



January 5, 2014

More typical, compact configuration



November 14-16, 2013

500-mb geopotential height (meters)



But more and more scientists are expressing reservations about this hypothesis, [first proposed by Rutgers climate scientist Jennifer Francis and collaborators](#).

“It’s an interesting idea, but alternative observational analyses and simulations with climate models have not confirmed the hypothesis, and we do not view the theoretical arguments underlying it as compelling,” write five preeminent climate scientists (John Wallace, Isaac Held, David Thompson, Kevin Trenberth, and John Walsh) [in a recent letter published in Science Magazine](#).

Elizabeth Barnes, an atmospheric scientists from Colorado State University, [after an attempt to dismantle Francis’ theory last summer](#), published a second challenge in January.

“...the link between recent Arctic warming and increased Northern Hemisphere blocking is currently not supported by observations,” [Barnes’ study concludes](#).

Despite this pushback, numerous mainstream press outlets have written about the Francis theory uncritically, failing to present countervailing views.

For example, [from the BBC](#):

The main system that helps determine the weather over Northern Europe and North America may be changing, research suggests.

The study shows that the so-called jet stream has increasingly taken a longer, meandering path.

And [from NPR](#):

The wayward jet stream could account for the persistently severe winter weather this year in the U.S. and Britain, as well as California’s long drought.

Even the White House’s science advisor, John Holdren, expressed support for the theory with only subtle qualification.

“I believe the odds are that we can expect as a result of global warming to see more of this pattern of extreme cold in the mid-latitudes and some extreme warmth in the far north,” says Holdren in a YouTube video.

The truth is that cold extremes are in the midst of unmistakable decline in the U.S. As the Science magazine letter notes:

Cold air outbreaks even more severe than occurred this winter affected the United States in the early 1960s, the late 1970s (most notably 1977), and in 1983, back when the Arctic sea ice was thicker and more extensive than it is today... Over the longer time span of 50 to 100 years, it is well established that there has been a decrease in the rate at which low temperature records are being set relative to all-time high temperature records at stations across the United States.

Francis agrees cold extremes have faded and expects this trend to continue. [She told the NY Times' Andrew Revkin](#) her work has been presented incorrectly:

The media certainly had a field day with the “attack of the polar vortex” in early January, and in their hyping of the story, some misquoted me (and others) by saying that climate change caused the unusual cold spell. Of course this sort of event has happened before, and this one wasn't unprecedented.

I also agree that greenhouse-gas induced warming will reduce, not increase, the likelihood of breaking cold temperature records — the data already show this.

The misinterpretation and criticism of her work notwithstanding, Francis stands by her theory that, even as climate stays on a warming course, an erratic jet stream will bring greater weather variability. In her [remarks to Revkin](#), she uses this year's dramatic weather pattern as a case in point:

...the amazing persistence of this winter's highly amplified pattern is an example of this behavior, but of course it can't be blamed on any one factor. Even though the cold in the U.S. has not been unprecedented, the public perception is “extreme” because the cold in the central/eastern/southeastern U.S., drought in California, and the heat/heavy precipitation in Alaska has been so prolonged. This is exactly the type of “extreme” we refer to in our paper, not the record-breaking-temperature sort.

Her critics, meanwhile, stress that her theory deserves consideration by the science community, but that it should not be a focal point in public communication about climate change.

“The research linking summertime Arctic sea ice with wintertime climate over temperate latitudes deserves a fair hearing. But to make it the centerpiece of the public discourse on global warming is inappropriate and a distraction,” concludes the Science Magazine letter.