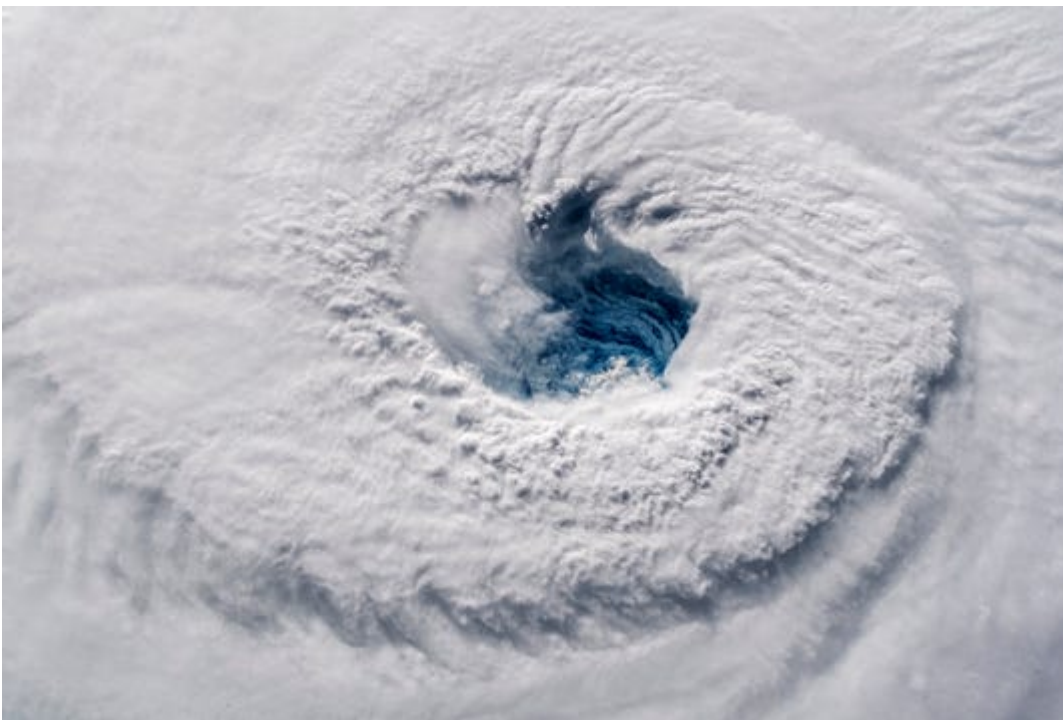


# Hurricane Florence is not climate change or global warming. It's just the weather.

Hurricane Florence is not the result of global warming. It's likely due to natural weather patterns, not climate change as some have already said.



(Photo: Alexander Gerst/ESA/NASA via AP)

Even before Hurricane Florence made landfall somewhere near the border of North and South Carolina, predicted damage from potentially catastrophic flooding from the storm was already being blamed on global warming.

Writing for NBC News, Kristina Dahl contended, “With each new storm, we are forced to question whether this is our new, climate change-fueled reality, and to ask ourselves what we can do to minimize the toll from supercharged storms.”

The theory is that tropical cyclones have slowed down in their speed by about 10 percent over the past 70 years due to a retreat of the jet stream farther north, depriving storms of steering currents and making them stall and keep raining in one location. This is what happened with Hurricane Harvey in Houston last year.

But like most claims regarding global warming, the real effect is small, probably temporary, and most likely due to natural weather patterns. Any changes in hurricanes over 70 years, even if real, can easily be part of natural cycles — or incomplete data. Coastal lake sediments along the Gulf of Mexico shoreline from 1,000 to 2,000 years ago suggest more frequent and intense hurricanes than occur today. Why? No one knows.

## **Unusual things happen in nature sometimes**

The Massachusetts Bay Colony in 1635 experienced a Category 3 or 4 storm, with up to a 20-foot storm surge. While such a storm does not happen in New England anymore, it happened again there in 1675, with elderly eyewitnesses comparing it to the 1635 storm.

Until 2017, the United States went 11 years without a major hurricane strike — something that is statistically very improbable. Nine years into that 11-year hurricane drought, a NASA scientist computed it as a 1-in-177-year event.

My point is that nature varies, and unusual things happen sometimes.

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Now it's fashionable to blame stalling hurricanes on global warming. In the case of Florence, the jet stream is indeed pushed farther north. But examination of a weather map of the atmospheric flow at an altitude of 18,000 feet shows the jet stream is pushed farther south over western North America. This kind of natural variation in atmospheric flow is called weather, not climate change. It's just a roll of the dice. Hurricane-steering currents are subject to whatever the weather happens to be when they arrive at the U.S. coast.

No one should dismiss or minimize the damage that Florence will likely do. Hurricanes can be deadly. I completely agree with Ms. Dahl's NBC News piece that "right now, our number one priority has to be ensuring the safety of those in

Florence's evolving path, as well as the first responders helping them."

## **The cost of storms has risen, not their severity**

But a major hurricane hits North Carolina on average once every 20 years or so. The last was Fran in 1996, which is 22 years ago. Coastal residents know they live under a yearly threat of hurricanes, and sometimes (though relatively rarely), one of those hurricanes will be very strong.

Well, aren't we being told these storms are getting stronger on average? The answer is no. The 30 most costly hurricanes in U.S. history (according to federal data from January) show no increase in intensity over time. The monetary cost of damages has increased dramatically in recent decades, but that is due to increasing population, wealth and the amount of vulnerable infrastructure. It's not due to stronger storms.

If humans have any influence on hurricanes at all, it probably won't be evident for many decades to come. Natural variability is simply too large. This should not be surprising given that humanity's greenhouse gas emissions have caused only a 1 percent change in the natural energy flows coursing through the climate system.

*Roy W. Spencer, a principal research scientist at the University of Alabama in Huntsville, is author of the Kindle e-books "Inevitable Disaster: Why Hurricanes Can't Be Blamed on Global Warming" and "Global Warming Skepticism for Busy People." Follow him on Twitter: @RoyWSpencer*

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