

# The Washington Post

## New study suggests future hurricanes will be slower and wetter as Earth warms

By: Angela Fritz



The hurricanes of the future will be more like Hurricane Harvey in 2017 — very slow and very rainy — according to a new study by scientists at the National Center for Atmospheric Research. You need not speak with anyone but the people of Southeast Texas and Southern Louisiana to understand why “slower and wetter” is particularly concerning.

Hurricane Harvey made landfall in Texas on Aug. 26, 2017, and lingered in the region for nearly a week. As much as 60 inches of rain fell in the storm, setting a U.S. rainfall record. More than 20 inches of rain fell across about 29,000 square miles. No storm rivals Harvey, said Shane Hubbard, a researcher at the University of

Wisconsin who made and mapped that calculation.

“In looking at many of these events [in the United States], I’ve never seen anything of this magnitude or size,” Hubbard said. “This is something that hasn’t happened in our modern era of observations.” In total, about 33 trillion gallons of rain fell during Hurricane Harvey.

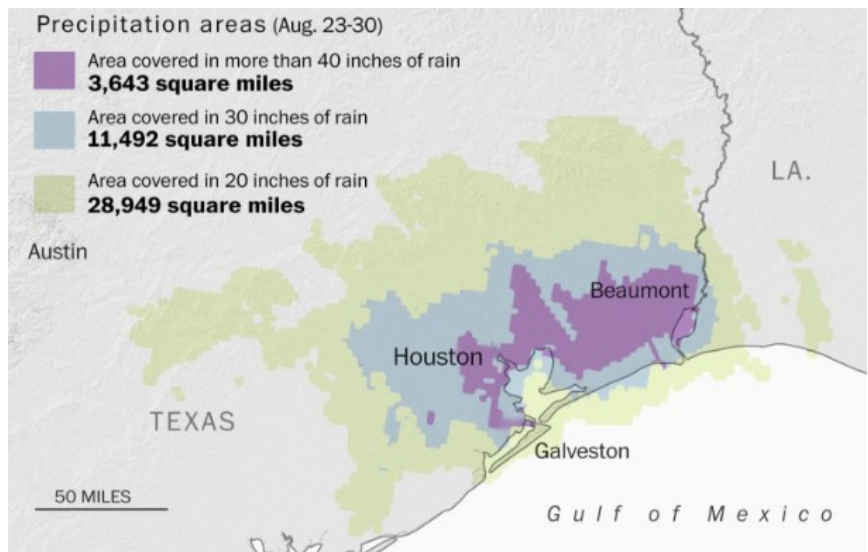
“Our research suggests that future hurricanes could drop significantly more rain,” said Ethan Gutmann, an NCAR scientist who led the study. “Hurricane Harvey demonstrated last year just how dangerous that can be.”

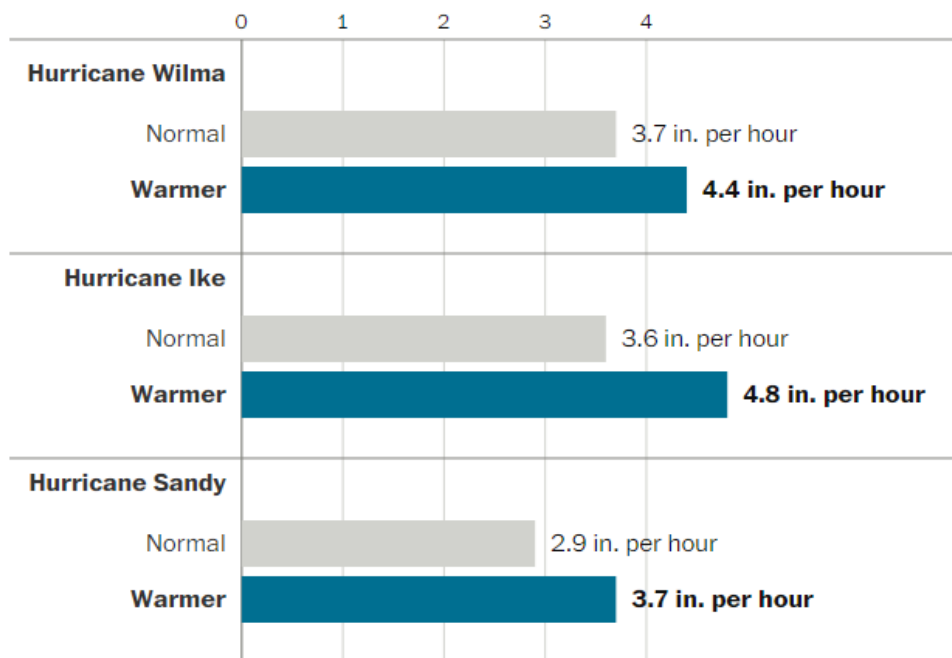
The extra rain can be explained by basic atmospheric principles — warmer air can “hold” more water vapor, which is converted to rain in storms. But the storms of the future also moved more slowly, which would lead to more rainfall.

### Hurricanes could be even wetter in the future

Researchers at the National Center for Atmospheric Research found several past hurricanes that would be different if they happened in a warmer future. There was one common theme among them -- they all produced more rain.

Figuring out how hurricanes will change as the planet warms has been difficult for researchers because climate change models aren’t high-resolution, and they can’t “see” hurricanes. So NCAR scientists used a research weather model and ran it to simulate 13 years of weather — twice. The first time they ran it with today’s conditions. The second time they added nine degrees to the background climate, which is what scientists expect by the end of the century if greenhouse gas emissions continue as is.





When they looked at the results, they found several hurricanes that would be different in a warmer environment — and they were all very different storms. But there was one common theme across all of the storms in the climate-change future: They all produced more rain.

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