

## Hurricane Harvey Broke So Many Rainfall Records Even The State Climatologist Called It ‘Ridiculous’

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Hurricane Harvey broke nearly every rainfall record for U.S. multi-day storms, according to data from the state’s climatologist.

“Harvey is head and shoulders above all previous multi-day storms ever recorded in the continental United States,” said John Nielsen-Gammon, a Texas A&M professor and state climatologist, said in a [release](#) for his new research.

Harvey made landfall as a Category 4 hurricane in late August, dumping 50 inches of rain on the greater Houston area after it stalled over land. Nielsen-Gammon knew Harvey was a storm for the record books, but even he was amazed.

“I examined 18 different combinations of storm lengths and area sizes, from two days long to five days long, and standard areas from 1,000 square miles to 50,000 square miles,” Nielsen-Gammon said.

Nielsen-Gammon compared Harvey to all other major United States storms, along with smaller storms in the eastern U.S., going back to the 19th Century.

“According to the preliminary data, Harvey was the worst in all but one,” Nielsen-Gammon said, stressing his results were preliminary and likely conservative estimates.

Harvey brought heavy rainfall to southeastern Texas, forcing local officials to intentionally flood neighborhoods to make sure critical infrastructure wasn’t damaged.

Houston officials planned to release water from two reservoirs, a move that could keep 20,000 homes flooded for more than two weeks, [The Associated Press reported](#). But man-made flooding was only a portion of the widespread flooding throughout the area.

Cedar Bayou [got nearly 52 inches](#) of rain over Harvey’s life-cycle. Houston got about 43 inches and nearby Beaumont got more than 45 inches of rainfall from August 24 to 30. Thousands of homes were waterlogged and at least 60 people were killed.

Harvey averaged nearly 35 inches of rain for 5 days over a 10,000-square-mile area, according to Nielsen-Gammon, which beat out the previous rainfall record set in July 1899 by 62 percent. That’s an area about 16 times the size of Houston.

“For Harvey to average 34.72 inches over five days across that large an area is ridiculous,” Nielsen-Gammon says. “The previous all-time United States record, set in Texas back in 1899, was estimated at 21.39 inches. Harvey exceeded that record by 62 percent.”

Many critics blamed Houston's lack of zoning laws for the extreme flooding, saying the city needed to make sure there were more permeable surfaces to absorb rainfall.

Nielsen-Gammon smacked down this argument, saying "even the best urban preparations in the world would not have been designed for an event as extreme as Harvey."

Likewise, urban policy experts at the libertarian Cato Institute debunked claims Houston needed zoning laws to mitigate flooding.

"Urban planners want people to believe that their one-size-fits-all density solution will solve every problem, when in fact it creates more problems than it solves," said Randal O'Toole, a senior fellow at the libertarian Cato Institute.

"We went through a similar debate after Katrina," said O'Toole, an expert on urban planning and transportation issues.