

Why the Texas floods were so severe

Before floodwaters turned deadly, four months of rainfall came down in only four hours.

Updated July 4, 2025 at 10:30 p.m. EDT

By [Ben Noll](#), [Scott Dance](#) and [Matthew Cappucci](#)

Heavy rain over Central Texas turned catastrophic in Friday's early hours, as months of rainfall came down swiftly. By Friday evening, [floodwaters had killed at least 24 people](#) and crews were searching for people missing after water levels surged to historic heights.

Flooding rains in and around Kerr County had brought a widespread 10 to 15 total inches by Friday morning, in an area west of Austin and northwest of San Antonio, a region that typically averages 28 to 32 inches of rain in a year. Instead, four months of rainfall came down in four hours.

Unlike a typical summer thunderstorm that blows by in a half hour, this one formed near the edges of a high pressure system, with weak winds that caused it to slow, then stall.

At least 1.8 trillion gallons of rain fell over Texas Hill Country and the Edwards Plateau on Friday morning.

"The flooding damage is catastrophic," Kerrville Police Officer Jonathan Lamb told The Washington Post. "It's the worst flood that we've ever seen."

And rain was still falling Friday evening, with some rain and thunderstorms still possible. The raging Guadalupe River bloated nearby waterways and submerged area roads. While a latest flash flood watch expired at 7 p.m. local time, the National Weather Service office in San Angelo warned that because so much had fallen between Thursday night and Friday, "any additional rainfall today will be very concerning, especially for areas near rivers." Another flash flood [warning](#) was in effect for nearby Spring Branch until midnight.

The rain had fallen in droves in the surrounding area: In Hext, 3.25 inches of rain were reported in the hour between 6 and 7 a.m.; Mason, got 2.63 inches of rain in the hour between 5:10 and 6:10 a.m., including 0.82 inches in 15 minutes; Brady Creek got 5.35 inches between 12:30 and 2:30 a.m.; Ranch got 2.35 inches in an hour.

All that water flowed into only a few rivers, causing extreme rises. The Guadalupe River surged from seven feet to 29 feet in only few hours in Hunt — its second-greatest height on record, according to the National Weather Service, and higher than levels reached when floodwaters rose in 1987.

On Thursday, there was some indication of a flooding risk across this region of central Texas through the overnight hours. But the severity of the rainfall was far from certain, and warnings did not suggest extraordinary rainfall was ahead, according to National Weather Service forecasts.

Meteorologists were watching a drifting low-pressure system for the potential for what are known as “training” storms, when downpours repeatedly regenerate over the same area.

“If this happens in this air mass [with precipitable water values soaring well above normal values] rainfall could be torrential and flash flooding would develop very quickly,” forecasters at the Weather Service office in San Angelo wrote Thursday afternoon. “Still, these features are so weak and the interaction so complicated, if and where this band develops remains uncertain.”

They issued the flood watch through early Friday acknowledging “the potential for a lower probability but much higher impact flood event overnight.”

A flood watch issued across the region through 7 a.m. Saturday cautioned 1 to 2 inches of widespread rainfall was likely, and that a narrow band of rainfall totaling 3 to 5 inches could develop, likely causing flooding.

But by 4 a.m., it became clear the rainfall was far more intense than that.

In a 4:26 a.m. Facebook post, the San Angelo meteorologists wrote: “**This is a life threatening situation** 6 to 10 inches of rain has fallen and an additional 3 to 4 inches is expected through daybreak. Expect rapid rises on creeks, rivers and arroyos.”

One rain gauge in Mason County reported more than 18 inches of rain within 24 hours, the Weather Service confirmed.

The storm that powered the recent rains was fueled in part by the remains of Tropical Storm Barry, which meandered northward after making landfall in southeastern Mexico earlier in the week.

The surprise flooding began around midnight, when a slow-moving thunderstorm complex began to stall over the area. Weather models struggle to simulate the evolution of summertime storm complexes in moisture-rich environments. The thunderstorms were also more intense and widespread than expected, a result of a weak swirl in the atmosphere left by earlier storms that have since decayed.

That helped pump extreme Gulf moisture northward. That, combined with moisture from the Pacific Ocean, led to a conveyor belt of humidity feeding storms.

Ocean temperatures in the Gulf of Mexico have meanwhile been above average for months, likely adding extra fuel — in the form of water vapor — to intensify this flooding disaster.

Total atmospheric moisture was in the top 0.5 percent of historical observations. Every column of atmosphere was holding 2.25 inches of moisture that could be squeezed out by downpours — but that air mass was continually fed into storms. It’s as if all the water from a sponge had been squeezed out, before the sponge was dipped back into the bucket of water again.

Every squeeze brought more rain.

The storm cluster was lingering over Central Texas Friday evening, just east of where the worst flooding happened earlier in the day. There was a dearth of winds strong enough to push it away entirely.

A moderate (Level 3 out of 4) risk for excessive rainfall continues in the region through early Saturday morning, with the potential for rain and thunderstorms to reintensify.

The devastation beared similarities to another flood along the Guadalupe River almost 40 years ago.

Ten teenagers were killed and 33 others were injured on July 16, 1987, when a bus and van leaving a church camp encountered floodwaters caused by 5 to 10 inches of rainfall in the upper headwaters of the Guadalupe River basin, according to the National Weather Service. A massive flood wave traveled through Ingram, Kerrville, and Comfort, driving the evacuation of hundreds of people along the river and its tributaries.

Janice Kai Chen, Arelis R. Hernández, Kyle Rempfer and Daniel Wu contributed to this report.
