

# Killer twisters likely among largest, strongest

29 April 2011, By RANDOLPH E. SCHMID and KRISTI EATON , Associated Press



A tornado moves through Tuscaloosa, Ala. Wednesday, April 27, 2011. A wave of severe storms laced with tornadoes strafed the South on Wednesday, killing at least 16 people around the region and splintering buildings across swaths of an Alabama university town. (AP Photo/The Tuscaloosa News, Dusty Compton)

Some of the killer tornadoes that ripped across the South may have been among the largest and most powerful ever recorded, experts suggested, leaving a death toll that is approaching that of a tragic "super outbreak" of storms almost 40 years ago.

"There's a pretty good chance some of these were a mile wide, on the ground for tens of miles and had wind speeds over 200 mph," said Harold Brooks of the National Severe Storms Laboratory in Norman, Okla.

It may have been a single long-ranging twister that battered Tuscaloosa, Ala., and then covered the 60 miles to Birmingham, Brooks said.

Only 1 percent of twisters reach the most powerful readings, but Brooks thinks several of those that left death and destruction in Alabama and five other states Wednesday fall into that category.

That speculation hasn't been confirmed yet, but if it is, it's no wonder so many homes were flattened and scores were killed.

Most tornadoes are weak, so most reasonably built structures survive them. The typical tornado is on the ground for a couple of miles and is a couple hundred yards wide with half the [wind speed](#) of the storms that barreled through the region on Wednesday.

It was the deadliest day for tornadoes since a series of twisters killed more than 300 people in 11 states in 1974, Brooks added. The death toll from Wednesday has surpassed 250 and is rising. The worst day in recorded history for storm fatalities is March 18, 1925, with 747 deaths.

"A big question is - the tornado in Tuscaloosa and Birmingham, is it the same one? I think they are the same," he said.

Chris Weiss, a tornado expert at Texas Tech University, said the storm that spawned that tornado formed in Mississippi and "lasted over 300 miles, and even for a super cell that's pretty long."

Tornado outbreaks happen just about every year somewhere in the country. But this time conditions were just about perfect for the series of powerful storms, explained Jerry Brotzge, a senior research scientist at the Center for Analysis and Prediction of Storms at the University of Oklahoma. He noted that a deadly tornado in Oklahoma in 1999 also was almost a mile wide.

Brooks noted there was a trough in the mid-levels of the atmosphere over the western U.S., with a strong jet stream coming across the southern U.S. A trough to the west means winds blowing to the south, turning and then moving back north at the same time a powerful jet of wind blows from the west above.

And that, explained Brotzge, results in an area "to the east of the trough where you have warm, moist southeast winds at the surface and strong dry winds from the west above ... that creates the perfect scenario for strong thunderstorms" and tornadoes.

Why was there such an active weather pattern?

"Causes are always difficult to assign," Brooks said. "A little bit has probably been the weakening La Nina in the Pacific, but not all weakening La Ninas are associated with lots of tornadoes, and we get lots of tornadoes in other situations as well."

La Nina is an unusual cooling of the water in the tropical Pacific Ocean that can change weather patterns around the world. The federal Climate Prediction Center said last month that La Nina conditions were weakening but could continue to affect weather for months.

Weiss said there is no scientific consensus on whether climate change played a role in this series of powerful storms. "The problem is trying to relate a climate signal to a specific weather event is always dangerous," he said.

Deaths from twisters have been declining in recent years because of improved forecasts and increased awareness of them by people living in tornado-prone areas, especially in smaller and rural communities.

While most Americans live in cities, urban areas actually cover only a relatively small percentage of the country. The result is that tornadoes occur more often in rural, sparsely populated areas.

That's led some people to believe twisters don't strike cities. But the National Climatic Data Center in Asheville, N.C., calls that a myth: "Tornadoes have hit several large cities including Dallas, Oklahoma City, Wichita Falls, St. Louis, Miami and Salt Lake City. In fact an urban tornado will have a lot more debris to toss around than a rural twister."

While May is historically the busiest month for tornadoes, they surge sharply upward in April as warm weather begins setting in and dry western air

collides with warm moist conditions moving north from the Gulf of Mexico.

Indeed, the biggest tornado outbreak on record occurred April 3-4, 1974 when 147 confirmed twisters touched down in 13 states, claiming more than 300 lives in the United States and Canada.

However, April 1957 was more like this year, recording several days with large numbers of deadly twisters, said Brooks. By contrast April 1974 was a relatively average month, he said, with one "ridiculous" day.

The extraordinary swarm of tornadoes battering the country this month seems bent on proving Mississippi State University professor Grady Dixon's point - Tornado Alley is a lot bigger than people thought.

While that's traditionally seen as a north-south swath of the nation from the Dakotas to Texas with a second twister center - Dixie Alley - extending across the South from Arkansas to Georgia, Dixon argues they are really one big tornado risk area.

"Our goal is to show that there really are no separate regions, it's all one large risk area that's connected," Dixon said, describing a study scheduled to be published in the Bulletin of the American Meteorological Society.

And the near record number of [tornadoes](#) reported this month has obligingly swept across both "alleys."

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APA citation: Killer twisters likely among largest, strongest (2011, April 29) retrieved 19 October 2021 from <https://phys.org/news/2011-04-killer-twisters-largest-strongest.html>

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