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'New normal:' increased tornado activity seen regionally

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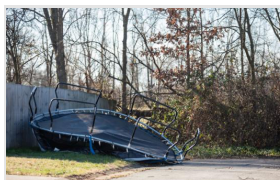
Apr 6, 2024



Amber Tucker (top left) and her mother, Jennifer Locke (bottom right), sort through damage to their home in the neighborhood off Creekwood Avenue after an EF-2 tornado with estimated 120 mph wind speeds tore through the city on Dec. 11, 2021.

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MORE INFORMATION



Experts discuss December tornado trend

A new study indicates Bowling Green has seen an increase in high-intensity tornadoes in the last 20 years, numbers that are part of a regional trend.

Shifts could bring more severe weather to area

The study by Captain Experiences, an online outdoor sports guide, examined locations in the U.S. with the largest increase in “high-intensity” tornadoes over the last 20 years. The study defines “high intensity” as tornadoes ranked EF2 or higher.

The Bowling Green area saw a total of seven high intensity tornadoes from 2004 to 2023, according to the study – three more than the previous 20-year span.

The recent tornadoes resulted in 21 deaths and 75 injuries.

Kentucky saw an increase of 67 tornado occurrences during the 20-year period, according to the study.

Mike Kochasic, a meteorologist with the National Weather Service in Louisville, said “Tornado Alley,” the traditional area of the United States where tornadoes are more commonly formed, has had a “clear shift” eastward.

“When you look at the environment tornadoes form in and tornado reports themselves, it’s definitely shifting away from traditional ‘Tornado Alley,’ ” Kochasic said. “The Mississippi Valley is now kind of the new ‘Tornado Alley.’ ”

In 2021, Bowling Green was hammered with four tornadoes in December. Nearly two years to the day later, another tornado swept along the Kentucky-Tennessee border and through southern Bowling Green.

Kochasic said studies like the recent one are tricky, since data can be “skewed” by storms like the Dec. 11, 2021, tornadoes which happened late in the 20-year cycle and accounted for 17 deaths.

He said annual climate events such as El Niño and La Niña are not suspected as a cause for tornadoes. Instead, the increase in tornado frequency is happening due to several different factors.

“All the research and the science suggests that we’re getting wetter and warmer,” Kochasic said. “That’s just becoming a fact across the state.”

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Kochasic also cited increases in rural population and improvements in meteorological technology as leading to the increase in tornado reports, especially the accessibility of weather radar technology.

“There’s more eyes to spot it and there’s better ways to report it,” Kochasic said. “People have radar on their phones now so they can kind of identify areas where tornadoes are likely. It’s more than just the climate that’s a contributing factor to it. I think socio-economic factors are also on the table too.”

Kochasic said he believes the southeastern United States is approaching a “new normal” when it comes to severe weather.

“It’s becoming less shocking to see big tornadoes occur in the winter months,” Kochasic said. “So they’re becoming more frequent and it probably is the new normal for Kentuckians, and that’s why it’s so important to have a plan in place.”

Jerald Brotzge is a professor of meteorology at Western Kentucky University, director of the Kentucky Mesonet and the Kentucky State Climatologist. He said improvements in technology and population growth have allowed for more tornadoes to be reported.

“In the Southeast, (which is) growing so rapidly, you have a much denser population,” Brotzge said. “That corresponds really one to one with an increase in tornado observations.”

He said there has been a “very slight increase” in the number of tornadoes per year that are ranked EF1 – a tornado with wind speeds 86 to 110 mph – or higher. From 2000 to 2023, there were around 20 EF1-or-higher tornadoes per year, although the numbers can be skewed by years with increased activity, like 2021.

Tornadoes are ranked on the EF scale according to the damage they inflict. Brotzge said the increase has happened because “there’s simply more things for tornadoes to hit.”

“If a large tornado just hits corn, that makes it really difficult to estimate that true rating scale,” he said.

“However, the more that you build, you’re increasing the chances that that tornado would hit something that we can then go out and (use to) verify that tornado rating.

While the number of EF1 or greater tornadoes has increased, the number of EF3 or greater tornadoes has decreased. EF3 tornadoes are defined as having wind speeds of 136 to 165 mph.

“Fortunately, big tornado events are still rare,” Brotzge said. “What we see in the record is usually we’ll go five, even 10 years without a major tornado or event, and then we’ll have a major event.”

JackDobbs