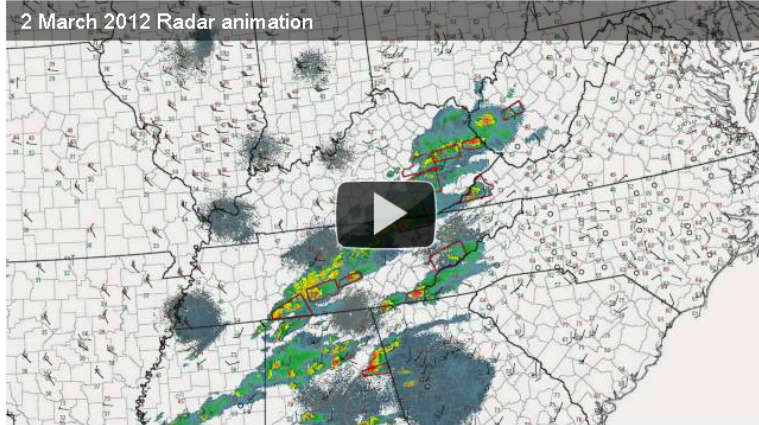


2012 Tornado Season Off to Explosive Start

On Friday, deadly tornadoes ripped through Indiana, Kentucky, Alabama, and many other states. How bad was the outbreak, historically, and is the U.S. about to endure an extreme tornado season? Tornado expert Victor Gensini explains.

BY VICTOR GENISINI

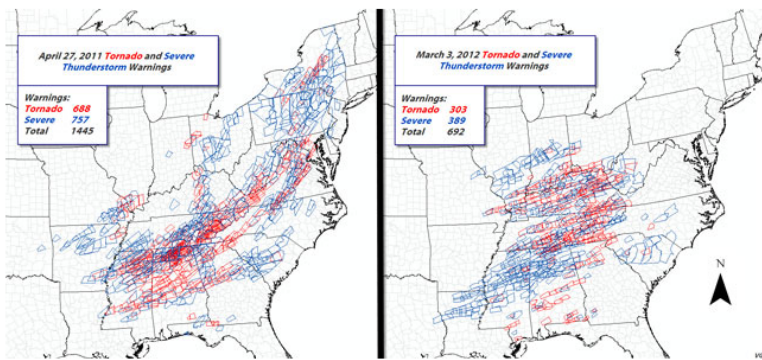


Less than a year after devastating tornadoes swept across portions of the southeast United States, families are again facing loss and, for some, lost loved ones, after Friday's outbreak of tornadoes across the Tennessee and Ohio River valleys. These tornadic supercells of March 2 were formed by the same kinds of ingredients—abundant moisture from the Gulf of Mexico, rapid jet-stream speed, and an advancing cold front—responsible for the [wild outbreak of twisters on April 27, 2011](#), when several hundred people were killed across the U.S.

This animation I created shows how widespread the tornado activity was on Friday. Using Doppler radar, meteorologists can detect supercell thunderstorms and issue life-saving early warnings when they feel the threat of severe weather is imminent—such as when they see possible rotation in a parent thunderstorm, with is often a precursor to tornado formation. Radar reflectivity and surface-weather observations are combined in this animation, and the red shapes that pop up on the map represent tornado warnings.

As the day progressed, several supercell thunderstorms formed over the region ahead of an advancing cold front from the west. Among these storms was an EF4 twister that leveled parts of Henryville, Ind., with winds up to 200 mph. These storms finally coalesced into a line of thunderstorms, known as a squall line, by the early morning hours of March 4 (see animation).

In terms of sheer magnitude, last Friday's outbreak of twisters was smaller than that crazy day from April 2011. Local National Weather Service offices issued 692 warnings for Friday's weather system, while they put out a whopping 1445 warnings during the April 27, 2011, outbreak. Most importantly, while the death toll stands at 39 after Friday's storm, that count is still far from the more than 300 people who died during the April 2011 outbreak.



Tornado and severe thunderstorm warnings from last April's severe outbreak (left) and this month's (right).

But while Friday's tornadoes were not as deadly as last year's worst day for such storms, they were terribly eerie. The small town of Harvest, Ala., was struck for the fourth time since modern tornado records began. Most residents in this town were still rebuilding after a violent tornado destroyed homes and businesses last April. The path of Friday's tornado was so similar to that of last year's storm that residents were undoubtedly left wondering if their town was some sort of tornado magnet.

In truth, though, while it may seem that tornadoes favor a certain path, there is no town that "attracts" tornadoes. The probability of these two heavy tornado days happening within a year of each other is low, but not zero. Statistically, it's incredibly unlikely that a town just hit by tornadoes, such as Harvest and Henryville, could be hit again this year, but it's not impossible. Besides being deadly, tornadoes can seem frustratingly arbitrary in their paths.

The question now for weather-watchers is whether, after this early-season barrage of storms, the U.S. is headed for another extreme tornado season. At the moment, that's impossible to predict, for several reasons that we noted after the April 2011 tornadoes: Scientists are unsure about how climate change will affect tornado frequency, the historical record of tornado frequency is uncertain because technology allows us to observe and record so many more twisters today, and so on.

Here's what we do know. The heavy tornado days of the past couple of years show that high-population densities in the path of a violent tornado can lead to disastrous outcomes. As cities continue to grow, the target on the dartboard essentially continues to get larger. Thus, we will be increasingly vulnerable to tornadoes as cities continue to expand.

And as of yesterday, the U.S. as a whole already stands at 163 tornadoes above the 2005–2011 national average for the current date, which is only 124.

Victor Gensini is a Ph.D. student in climatology at the University of Georgia. His primary research interests include severe storms, applied climatology and natural hazards. Check out [his academic website](#) and [his blog](#).