



TORNADO OUTBREAK DECEMBER 10–11, 2021

Location: USA

Issued by Skytek: at 12:00 GMT on 12 December 2021

SUMMARY

On the night of December 10-11, 2021, an outbreak of powerful tornadoes tore through parts of Arkansas, Mississippi, Missouri, Kentucky, Tennessee, and Illinois, killing dozens of people and leaving wreckage over hundreds of miles.

The Kentucky region was most affected, with more than 80 confirmed dead. Extensive property damage has been reported, possibly making the storm the deadliest since 1890, when 79 people lost their lives in an area around Louisville.

The report shows that one tornado travelled 240 miles across four states, giving the tornado the nickname “Quad-State Tornado”.

As of 12 December, at least four EF-3 and five EF-2 tornadoes have been confirmed. EF-2 and EF-3 tornadoes are considered strong, with 111-135 mph and 136-165 mph wind speeds, respectively (see table).

Scale	Wind speed estimate		Frequency	Potential damage
	mph	km/h		
EFU	N/A	N/A	3.11%	No surveyable damage Intensity cannot be determined due to a lack of information. This rating applies to tornadoes that traverse areas with no damage indicators, cause damage in an area that cannot be accessed by a survey, or cause damage which cannot be differentiated from that of another tornado.
EF0	65–85	105–137	52.82%	Minor damage Small trees are blown down and bushes are uprooted. Shingles are ripped off roofs, windows in cars and buildings are blown out, medium to large branches snapped off large trees, sheds are majorly damaged, and loose small items are tossed and blown away (i.e., lawn chairs, plastic tables, sports equipment, mattresses). Barns are damaged.
EF1	86–110	138–177	32.98%	Moderate damage Roofs stripped from shingles or planting. Small areas of roof may be blown off house. Doors and garage doors blown in, siding ripped off houses, mobile homes flipped or rolled onto their sides, small trees uprooted, large trees snapped or blown down, telephone poles snapped, outhouses and sheds blown away. Cars occasionally flipped or blown over, and moderate roof and side damage to barns. Corn stalks slightly bent and stripped of leaves.
EF2	111–135	178–217	8.41%	Considerable damage Whole roofs ripped off frame houses, interiors of frame homes damaged, small and medium trees uprooted.
EF3	136–165	218–266	2.18%	Severe damage Roofs and numerous outside walls blown away from frame homes, all trees in its path uprooted and/or lofted. 2-story homes have their second floor destroyed, high rises have many windows blown out, radio towers blown down, metal buildings (i.e., factories, power plants, and construction sites) are heavily damaged, sometimes destroyed. Barns completely collapse, and large vehicles such as tractors, buses, and forklifts are blown from their original positions.
EF4	166–200	267–322	0.46%	Devastating damage Trees partially debarked, cars are mangled and thrown in the air, frame homes are destroyed, and some may be swept away, moving trains blown off railroad tracks, and barns are levelled.
EF5	>200	>322	0.05%	Incredible damage Cars are mangled and thrown hundreds, possibly thousands of yards away. Frame homes, brick homes, small businesses, and barns are swept away, trees debarked, corn stalks flattened or ripped out of the ground, skyscrapers sustain major structural damage, grass ripped out of the ground. Wood and any small solid material become dangerous projectiles.

Figure 1 - The Enhanced Fujita Scale (EF Table)

The Storm Prediction Center (STC) of the National Oceanic and Atmospheric Administration (NOAA) has released a map showing more than 38 tornadoes being active during the night of 10 to 11 December 2021.

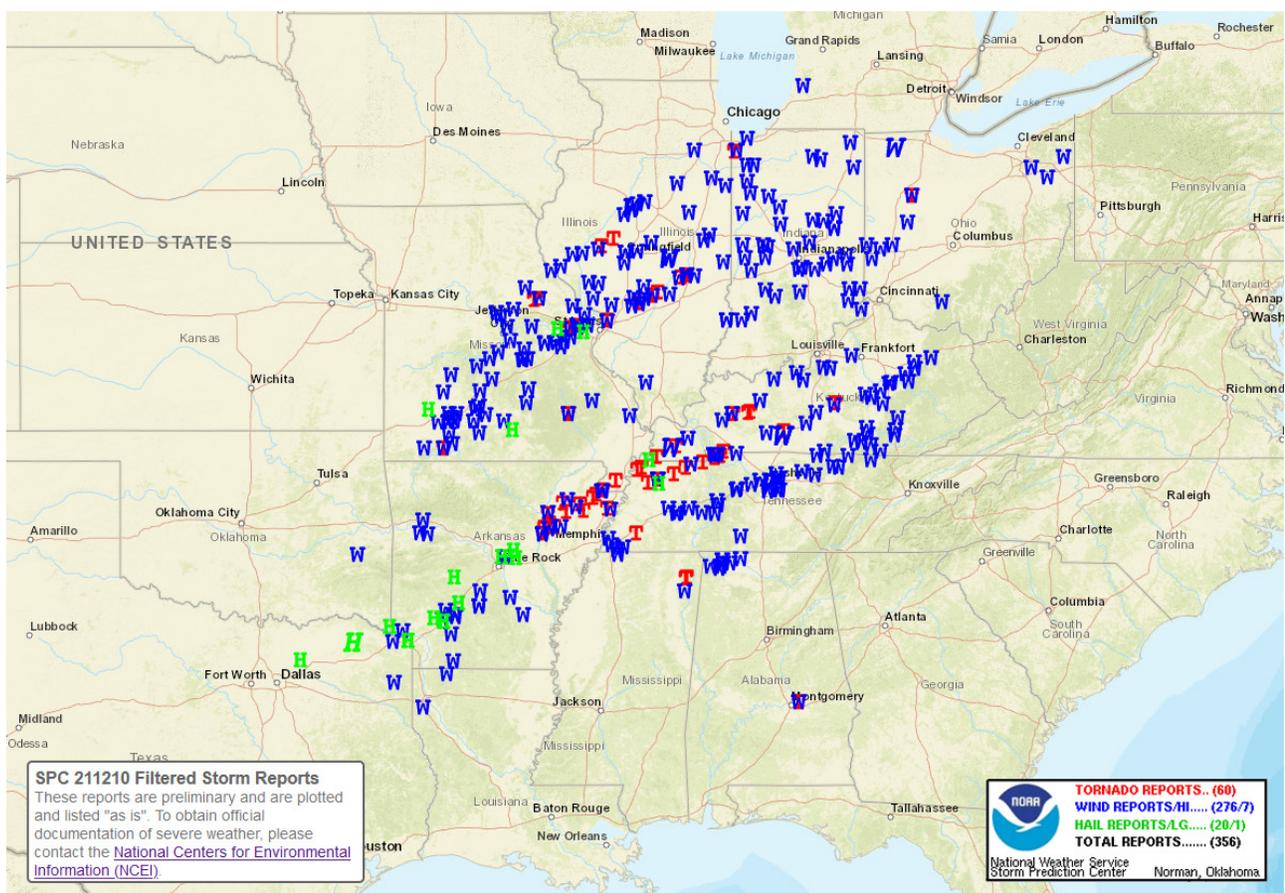


Figure 2 - NOAA's Storm Prediction Center reports for 11th December 2021

Skytek has used pre and post-event satellite imagery to highlight the damages after the passing of the tornados in the affected areas, as shown by the images below:



Figure 3 - Mayfield Candle Factory on 27th September 2021



Figure 4 - Mayfield Candle Factory on 12th December 2021. Includes material © 2021 Planet Labs

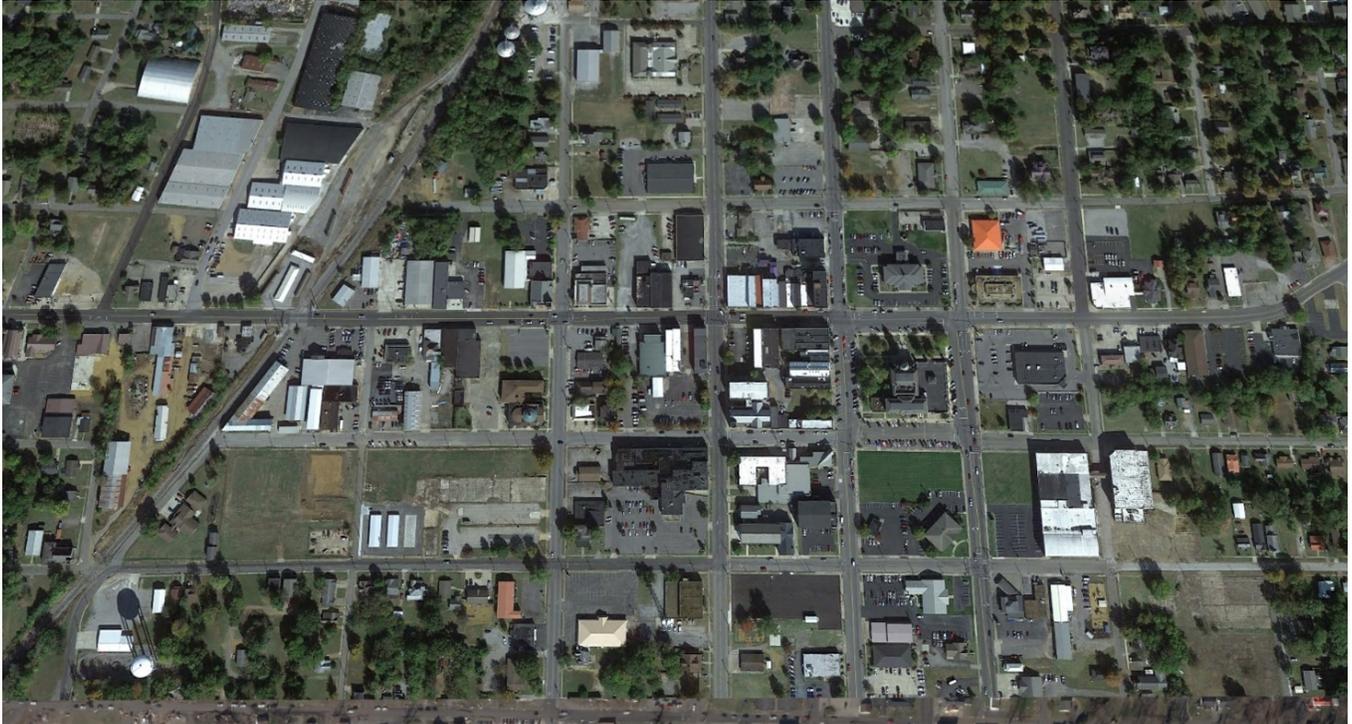


Figure 5 - Amazon Fulfillment Center on 27th September 2021



Figure 6 - Amazon Fulfillment Center on 12th December 2021. Includes material © 2021 Planet Labs



Figure 7 – Drone image of Cambridge Shores, Kentucky on 27th September 2021



Figure 8 – Drone image of Cambridge Shores, Kentucky on 12th December 2021



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