



Texas Tornadoes & United States Major Catastrophic Risk Maps

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Natural Catastrophic Perils

- Tropical Storms & Hurricanes
- Tornadoes
- Winter Storms
- Geologic Events (Earthquakes)
- Wind/Hail
- Fires

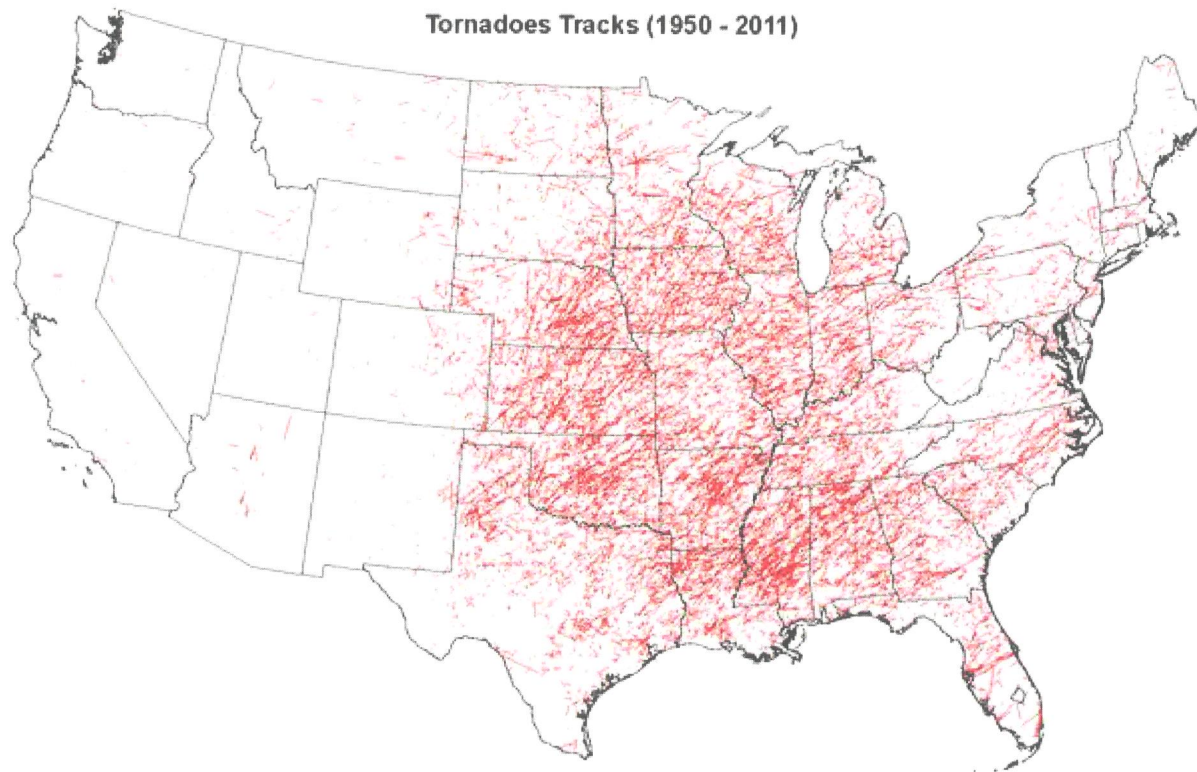
Tornado Recording Practice

NOAA

- **Historical Records and Trends**

- One of the main difficulties with tornado records is that a tornado, or evidence of a tornado **must have been observed**. Unlike rainfall or temperature, which may be measured by a fixed instrument, tornadoes are ephemeral and very unpredictable. If a tornado occurs in a place with few or no people, it is not likely to be documented. Unfortunately, much of what we know as tornado alley was very sparsely populated until the 20th century, and so it is possible that many significant tornadoes may never have made it into the historical record.
- Much early work on tornado climatology in the U.S. was done by John Park Finley in his book *Tornadoes*, published in 1887. While some of Finley's safety guidelines have since been refuted as dangerous practices, the book itself remains a seminal work in tornado research. The University of Oklahoma has created a pdf copy of the entire book and made it accessible at: [John Finley's 'Tornadoes'](#)
- Today, nearly all of the United States is reasonably well populated, or at least covered by NOAA's Doppler weather radars. Even if a tornado is not actually observed, modern damage assessments by NWS personnel can discern if a tornado caused the damage, and if so, how strong the tornado may have been. This disparity between tornado records of the past and current records contributes a great deal of uncertainty regarding questions about the long-term behavior or patterns of tornado occurrence. Improved tornado observation practices have led to an increase in the number of reported weaker tornadoes, and in recent years the number of [EF-0 and EF-1 tornadoes have become more prevalent in the total number of reported tornadoes](#). **In addition, even today many smaller tornadoes still may go undocumented in places with low populations or inconsistent communication facilities.**
- With increased national Doppler radar coverage, increasing population, and greater attention to tornado reporting, there has been an increase in the number of tornado reports over the past several decades. **This can create a misleading appearance of an increasing trend in tornado frequency. To better understand the true variability and trend in tornado frequency in the U.S., the total number of strong to violent tornadoes (EF3 to EF5 category on the Enhanced Fujita scale) can be analyzed. These are the tornadoes that would have likely been reported even during the decades before Doppler radar use became widespread and practices resulted in increasing tornado reports.** The bar chart below indicates there has been little trend in the frequency of the strongest tornadoes over the past 55 years.

Tornado Tracks



NOAA