"Terrible Tuesday"

The 30 Year Anniversary of the Red River Outbreak and Wichita Falls Tornado of April 10, 1979

Photo Credit: *NOAA Photo Library*

Pictured above: A large tornado tracks through the city of Wichita Falls, Texas on April 10, 1979 around 6:00 PM. This tornado was part of a larger severe weather outbreak across the Southern Plains that day. Nearly 30 tornadoes resulted from the outbreak, including some that caused significant and severe damage.

Informational brochure produced by the National Weather Service Forecast Office in Norman.

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Quick Facts

- There were three significant tornadoes during the outbreak. All of them were strong, had damage paths that were at least 35 miles long, and were over a mile wide at their widest point.

- There were almost 30 tornadoes on April 10, 1979, with many more hail and damaging wind reports received by the NWS.

- Two F4 tornadoes occurred on this date. The most notable one was the tornado that struck Wichita Falls, Texas. However, another tornado struck the south side of Vernon, Texas earlier in the day. It was also rated an F4.

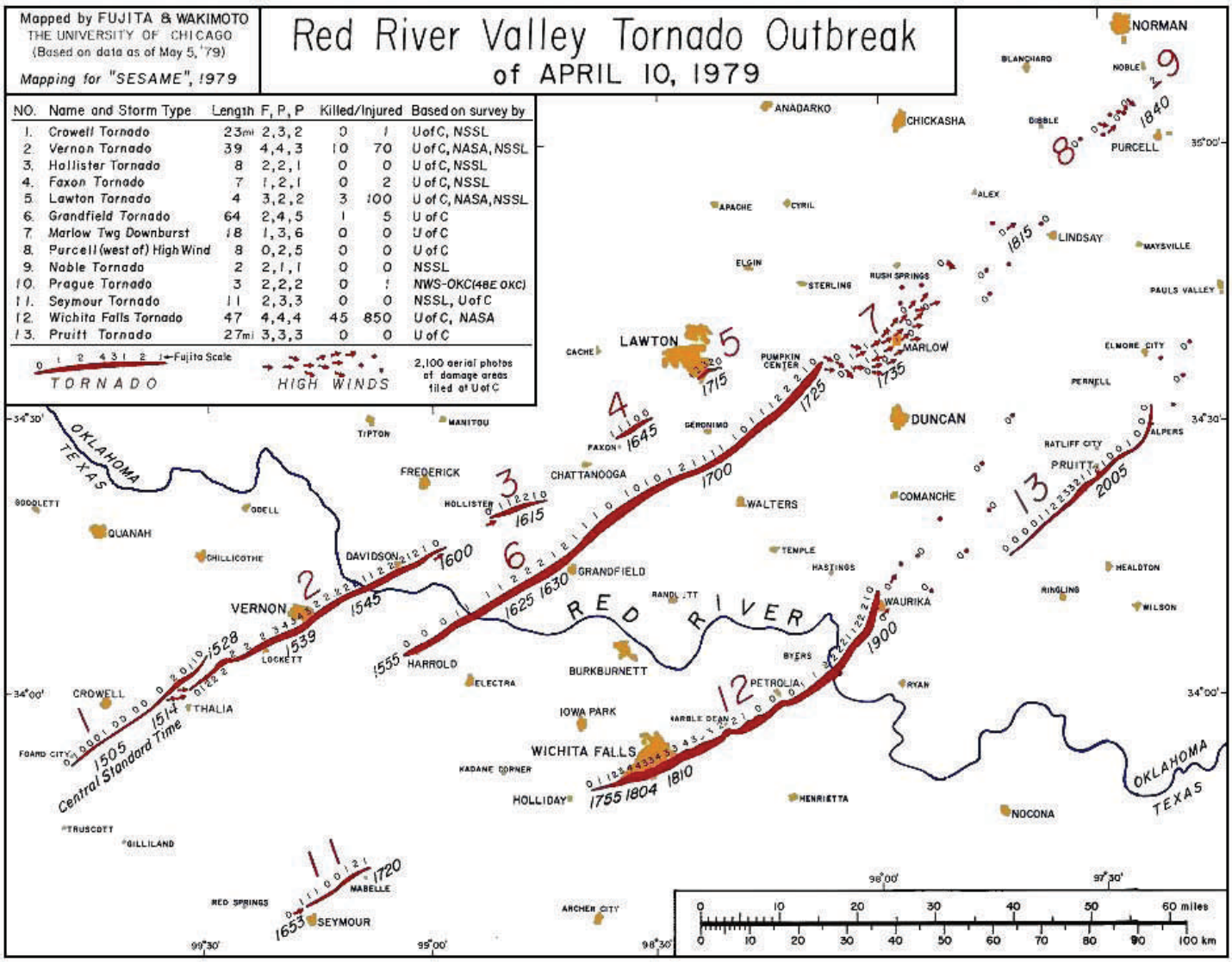
- The same storm that hit Vernon, struck Lawton, Oklahoma, producing an F3 tornado there.

- Dr. Tetsuya Fujita, a noted tornado researcher for whom the Fujita Scale is named, surveyed the damage in the Southern Plains. He remarked that the damage path of the Wichita Falls tornado was among the widest that he had ever seen.

- Over 7700 families suffered some property loss during this severe weather outbreak.

- There were 56 fatalities and over 1700 injuries. The majority of those occurred in Wichita Falls with the violent tornado.

- Total property damage in Wichita Falls, TX was estimated at $400,000,000 in 1979 dollars. It was estimated that about 10% to 20% of the population of the city was displaced by the tornado.

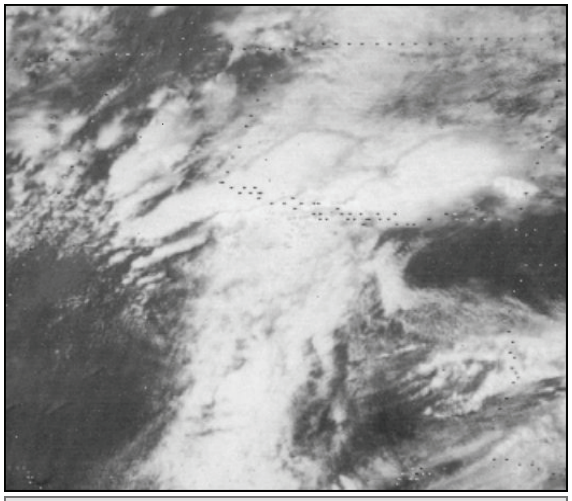


How It Happened

A meteorological summary of the events on April 10, 1979

The day started off cloudy and cool across Oklahoma and Western North Texas, but the clouds thinned and the temperatures warmed as a warm front surged north during the morning hours. By noon, an area of low pressure had developed around Lubbock, Texas. The low drew warm, moist air north across Texas, and very dry air from New Mexico into West Texas. As a result, a warm front extended east-southeast from near Lubbock to near Waco, Texas, and a dryline extended south to the Rio Grande.

Shortly after noon, thunderstorms began developing (*pictured below*) along the strengthening dryline in the rolling plains of West Texas and along the warm front in North Texas. Behind the dryline, it was windy and dry. Widespread wind gusts of 60 mph or more caused blowing dust across most of West Texas from Lubbock, to Midland, to El Paso. Visibilities in the blowing dust were reduced to as low as a mile and a half. An anemometer at Guadalupe Mountain National Park in New Mexico measured a 93 mph wind gust during the afternoon.



Thunderstorms developing at 1 PM on April 10, 1979. The moisture axis ahead of the dryline featured relatively thick cloud cover.

The very dry air mass converging with the very humid and unstable air mass over Central and North-Central Texas became the focus for rapid thunderstorm development in the early afternoon.

In the upper reaches of the atmosphere, winds exceeded 100 mph. The strong winds aloft, combined with comparatively weak winds close to the surface, produced strong *wind shear*. Wind shear is a change in wind speed or direction with height, and it is a prime ingredient for the development of supercell thunderstorms, massive rotating storms.

Three significant supercell thunderstorms formed that afternoon, all of them producing multiple tornadoes and tracking from North Texas into Oklahoma. They all formed in the rolling hills between Childress and Abilene. The first one tracked in a stretch from roughly Foard County, Texas to near Lawton, Oklahoma. It produced at least 5 tornadoes along its path, and all but one of them were strong or violent (rated F2 or higher). The most significant tornado was the one that hit Vernon, Texas. It was rated an F4 on the Fujita Scale, the second highest rating possible.

The second supercell tracked from Wilbarger County, Texas to the east of Oklahoma City. This long lived supercell produced at least 3 tornadoes, including one 64-mile long F2 tornado that stretched from near Harrold, Texas to the northeast. Fortunately, this supercell mainly traversed rural areas.

The third supercell produced at least 3 tornadoes, all of them were strong (rated F2 or higher). The first tornado tracked near Seymour, Texas, was rated F2, and occurred around 5 PM. Nearly an hour later, the supercell set down the most famous tornado of the outbreak, a mile wide wedge tornado that struck the city of Wichita Falls, Texas around 6 PM. Of course, this tornado is known for what transpired in Wichita Falls, but it continued on a 47 mile track to the northeast, passing very near Petrolia, Texas and eventually lifting somewhere near Waurika, Oklahoma. The third tornado was another long track tornado (27 miles) that passed near Pruitt, Oklahoma. That tornado was rated an F3.

When all was said and done, the outbreak produced large hail, damaging winds and tornadoes across a large swath of the Southern Plains, especially Oklahoma and the northern half of Texas. The hardest hit area was bounded by the cities of Lawton, Waurika, Seymour and Crowell, where 7 strong tornadoes occurred, 4 of which had damage paths longer than 20 miles.

The Wichita Falls Tornado

Some information about the tornado that struck Wichita Falls, Texas. A few portions are adapted from the Don Burgess summary on the NWS Norman website.

Cars Offer Poor Protection From A Tornado

Pictured to the left are some flipped cars on the south side of the Sikes Center Shopping Mall. **The majority of the fatalities in this tornado occurred in cars.**

A picture of the tornado moving through the city limits.

First Damage To Memorial Stadium and McNiel Junior High School

As the tornado entered Wichita Falls, it did some of its first damage to the stadium and a junior high school. The junior high school was damaged extensively (pictured to the left), and was one of the two locations rated on the upper end of the F4 range of the Fujita Scale. Fortunately, school was not in session, as it was spring vacation that week.

Thousands of Structures Destroyed

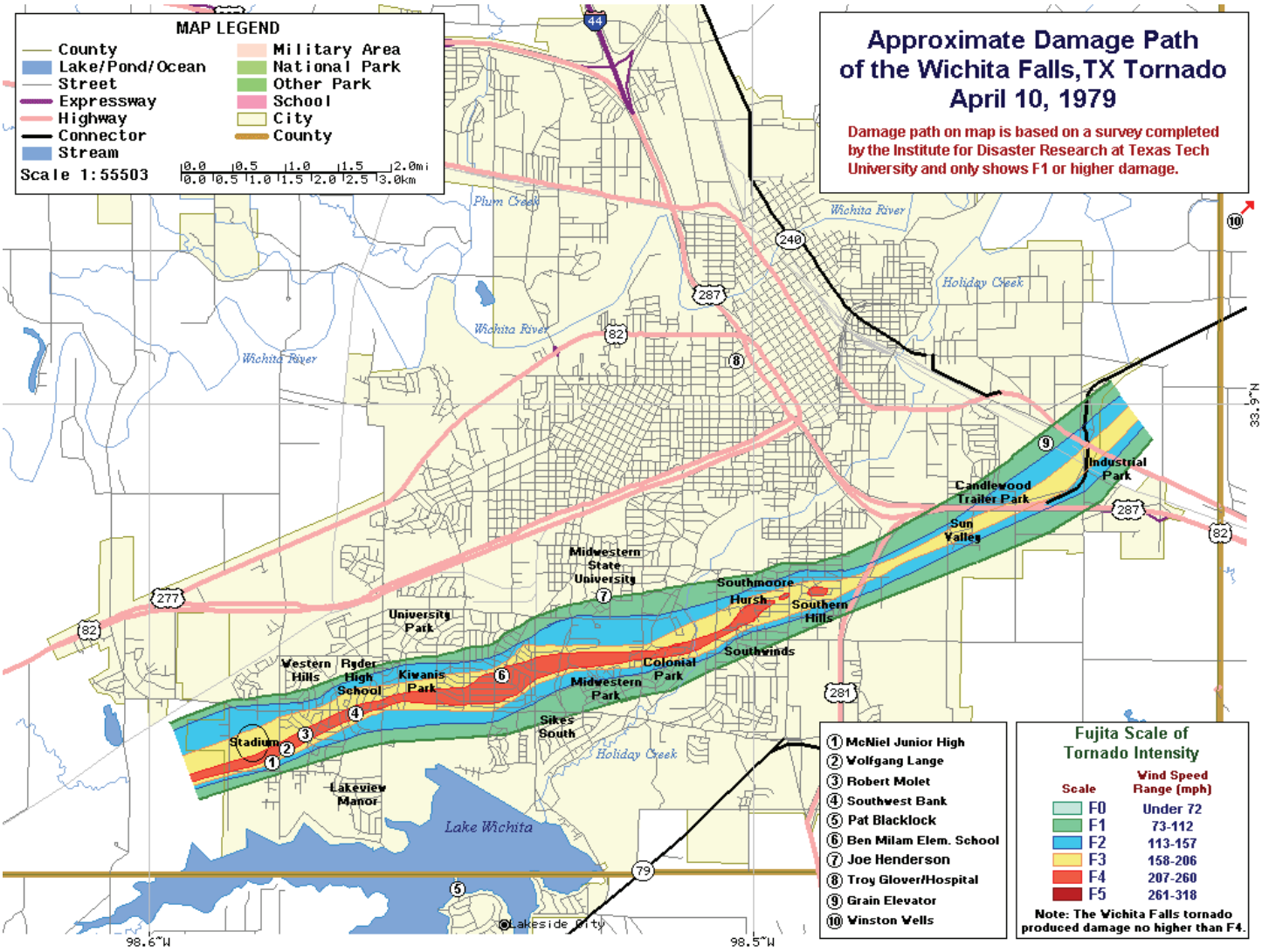
An aerial photograph is shown to the left of damage to homes near Southwest Parkway and McNiel Avenue, just to the east of Kiwanis Park.

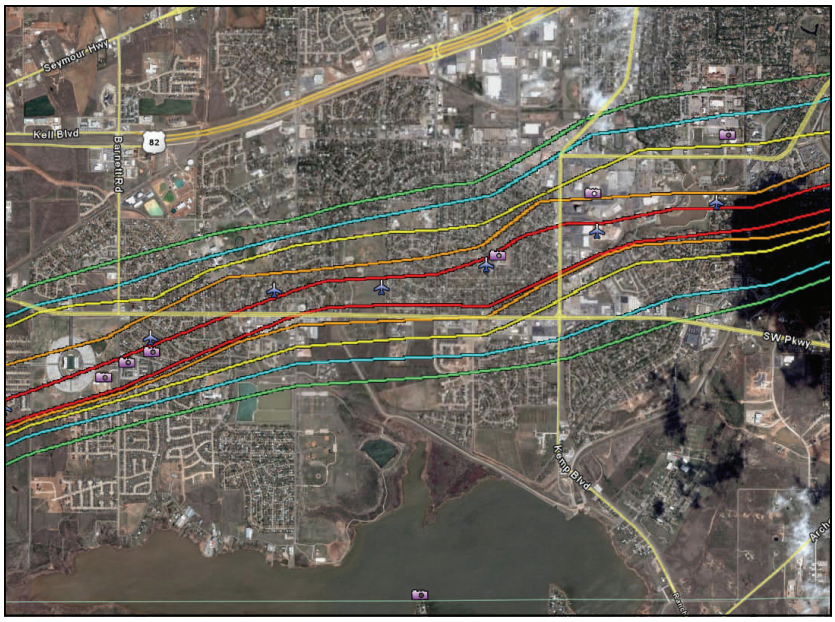
Many homes and businesses were destroyed in this tornado. Total damage in the city was estimated at $400 million. Thousands of homes, apartment units and condominiums were destroyed. Over 10% of the population of the city was displaced by this tornado. The 8-mile long, 1-mile wide swath of damage cut through a major metropolitan area is something that is almost unparalleled through U.S. history. That makes this tornado one of the most significant tornadoes in the record books, even today.

> **"The damage path was one of the widest I have ever seen, and its intensity was almost equal to that of the giant storm that leveled Xenia, Ohio.**
>
> —Dr. Ted Fujita

The Wichita Falls Tornado Path

A map of the path the tornado took through Wichita Falls





Interactive Google Map Available On Our Web Page

This map was created in Google Earth, so you can open the file on our website in Google Earth and pan, zoom, and click on icons to see photographs of damage or the tornado itself.

Google Earth is a free software application that you can download online.

Tornado Photos

A collection of photographs of the different tornadoes on April 10, 1979

A: Tornado, looking west from a point about 3-4 miles east of Harrold, Texas. Photo by Wayne Collamore.
B: Tornado near Seymour, Texas. Photo by National Severe Storms Laboratory storm chasers.
C: Tornado near Mabelle, Texas. Photo by Gene Moore.
D: Near Vernon, Texas as the tornado forms by the “Five-In-One Community”. Photo by Dennis Lignau.
E: Wichita Falls tornado with multiple vortices. Photo by Winston Wells.
F: Wichita Falls tornado passing north of Lake Wichita. Photo by Pat Blacklock.

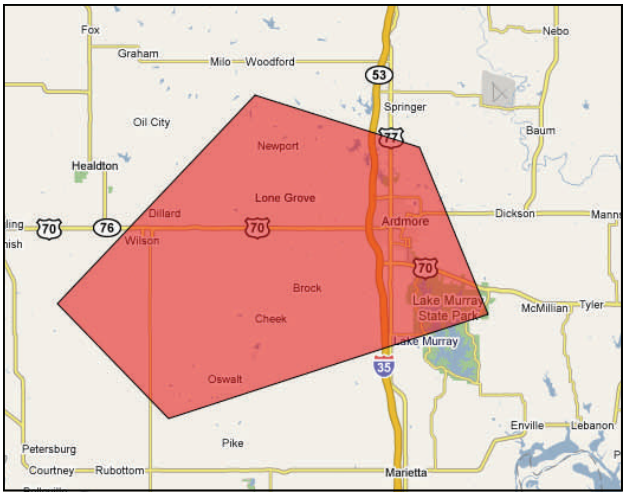
Summary and Lessons

Fleeing A Tornado In A Vehicle Can Be More Dangerous Than Sheltering In Place

Excerpt from the NWS Norman website: Vehicles (cars, pickups, and trucks) are poor protection and should be avoided during tornado situations in larger cities where travel is congested and tornado escape routes are not readily available and open for use. The majority of the fatalities were in vehicles, and a number of those victims left homes that were undamaged by the tornado only to be caught in its deadly path as they tried to flee.

Living In A Major City Does Not Diminish The Risk Of A Tornado

The Wichita Falls tornado was an example of a large tornado that impacted a major metropolitan area. This F4 tornado hit the southern portions of the city, leaving a wide damage path. There is a common myth that tornadoes cannot strike major cities. However, this tornado is one of many examples that dispel that myth.



Tornado Warnings Are Extremely Valuable

From the NOAA Disaster Report on the event: "When the giant tornado struck Wichita Falls just before 6:00 p.m., most people were not surprised. Severe weather warnings had been in effect for Wichita County and Wichita Falls for almost an hour. The warnings were being broadcast repeatedly by two local TV stations and three local radio stations which were receiving continuously updated information over the emergency hotline…" Although the tornado was severe, the well broadcast Tornado Warning probably saved a countless number of lives in Wichita Falls.

The Wichita Falls Tornado Is Still One Of The Costliest Tornadoes In US History

The Wichita Falls Tornado caused in excess of $250 million in damage. This easily puts it in the top 10 costliest tornadoes in US history, despite other significant tornado outbreaks since. This figure is likely due to the tornado striking about an 8-mile long and 1-mile wide stretch of the southern parts of Wichita Falls. Such a long and wide path of tornado damage, especially at F4 intensity, is extremely rare in a major metropolitan area.

Photo source: NOAA Photo Library.