

Damage Survey Report

Central and Southern Oklahoma Tornadoes of 11 April 2001

1. Event summary

During the late night and early morning hours of 11 April 2001, a quasi-linear complex of severe thunderstorms, with several embedded mesocyclones, moved across portions of central, south central and southeast Oklahoma. This complex of severe thunderstorms produced several tornadoes and other non-tornadic wind damage in portions of Atoka, Coal, Johnston, Love, Marshall, and Pottawatomie Counties between approximately 1 AM and 6 AM CDT (0700-1100 UTC). Many reports of damage, along with two injuries and one death related to the storms, were received by the National Weather Service Forecast Office (NWSFO) in Norman, OK, between 6 AM and 8 AM CDT (1100-1300 UTC) 11 April. On the basis of these reports, the decision to conduct a damage survey of the affected areas was made. NWSFO Norman and National Severe Storms Laboratory (NSSL) personnel conducted ground and aerial damage surveys of the storm-affected areas from 11-17 April 2001. The survey revealed the paths of five tornadoes, and other instances of wind damage. The five tornadoes are briefly summarized here:

Tornado 1: Began 4 miles northwest of Maud, OK. Dissipated 1.5 miles north-northwest of Harjo, OK.

Path Length: 5 miles
Path Width: 50 yards
Began: approximately 200 AM CDT (0800 UTC)
Dissipated: approximately 206 AM CDT (0806 UTC)
Fujita Scale Rating: F1

Tornado 2: Began 2.5 miles west-southwest of Jesse, OK. Dissipated 2 miles north-northeast of Lula, OK.

Path Length: 15 miles
Path Width: 300-400 yards
Began: approximately 440 AM CDT (0940 UTC)
Dissipated: approximately 505 AM CDT (1005 UTC)
Fujita Scale Rating: F2

Tornado 3: Began in extreme northern Cooke County, TX, 4 miles northwest of Gainesville, TX. Dissipated 10 miles east-southeast of Marietta, OK, also in extreme northern Cooke County, TX. This tornado crossed the Oklahoma/Texas state line six times.

Path Length: 18 miles
Path Width: 100-200 yards
Began: approximately 355 AM CDT (0855 UTC)
Dissipated: approximately 415 AM CDT (0915 UTC)
Fujita Scale Rating: F1

Tornado 4: Began over the far northern extension of Lake Texoma, 6 miles southeast of Tishomingo, OK. Dissipated 3 miles east-northeast of Wapanucka, OK.

Path Length: 19 miles

Path Width: 200-300 yards (500 yards maximum)

Began: approximately 445 AM CDT (0945 UTC)

Dissipated: approximately 510 AM CDT (1010 UTC)

Fujita Scale Rating: F2

Tornado 5: Began 3 miles southeast of Coalgate, OK. Dissipated 1 mile northwest of Wardville, OK.

Path Length: 13 miles

Path Width: 200 yards

Began: approximately 525 AM CDT (1025 UTC)

Dissipated: approximately 540 AM CDT (1040 UTC)

Fujita Scale Rating: F2

For details about these tornadoes, please refer to section 3 of this report. Other, non-tornadic wind damage occurred in Johnston County at locations 2 miles southeast of Lebanon, 3 miles east of Madill, and 5 miles east-northeast of Madill. Non-tornadic wind damage also occurred in extreme southern Pontotoc County, 1.5 miles north of Pontotoc, and in Pottawatomie County, 3 miles east of Macomb. A general map of the tornado paths, and non-tornadic wind damage locations is illustrated in Figure 1.

2. Survey Team

Dan Miller (NWSFO Norman) - ground survey - Love/Marshall/Johnston/Coal/Atoka Counties
11-12 April 2001. **Also:** survey report author.

Doug Speheger (NWSFO Norman) - aerial survey - Love/Marshall/Johnston/Coal/Atoka Counties
13 April 2001.

Greg Stumpf and **Christina Hannon** (NSSL) - ground survey - Pottawatomie County - 11 and 13 April

Don Burgess (NSSL) - ground survey - Johnston/Pontotoc/Coal Counties - 17 April

Note: NSSL personnel surveyed Tornadoes 1 and 2. The accounts of those tornadoes contained in this report reflect their assessment of the damage in those locations. Photographs of the damage caused by Tornadoes 1 and 2 were not available for this report. NWSFO personnel surveyed Tornadoes 3, 4, and 5.

3. Damage Assessment

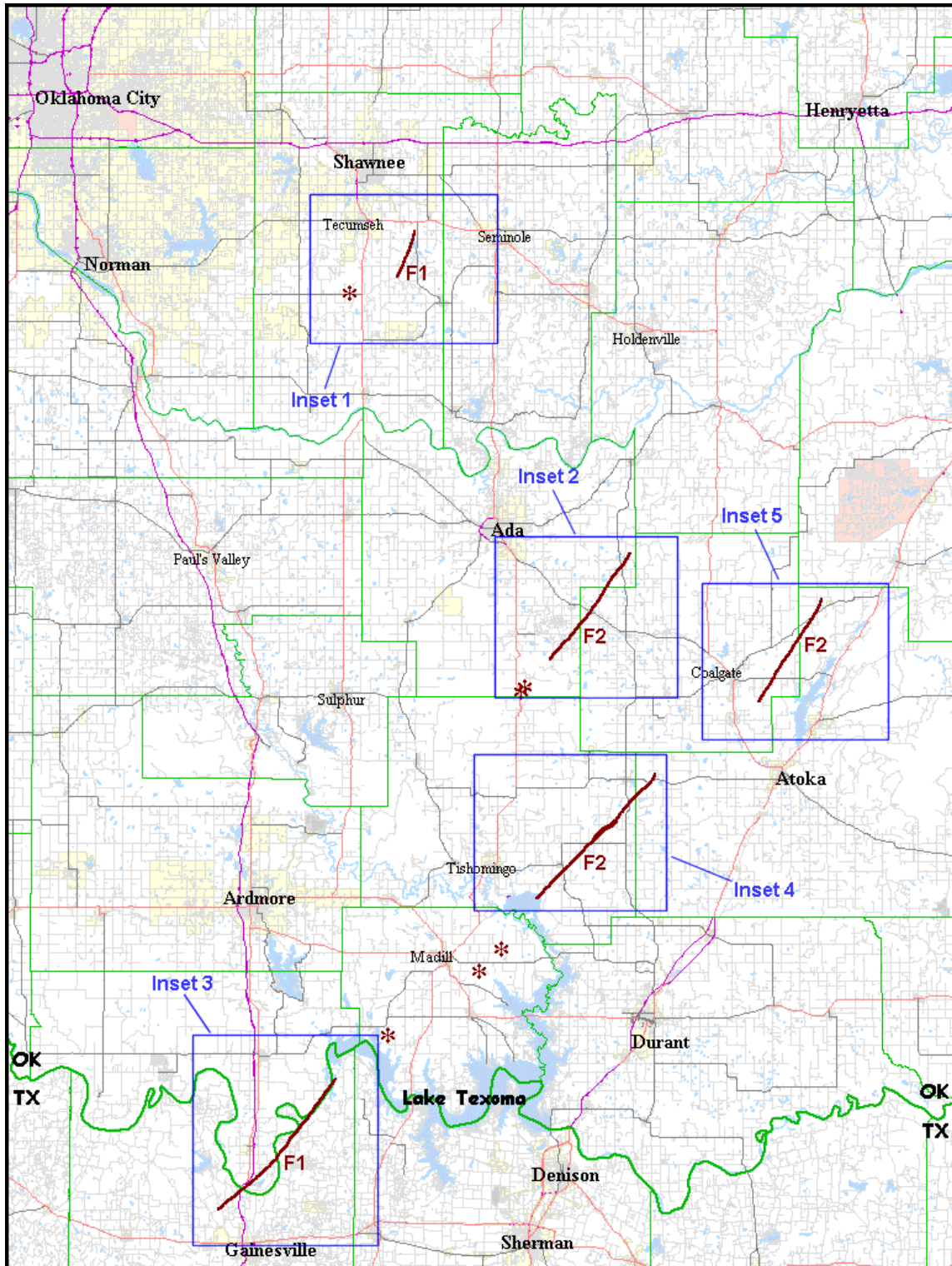


Figure 1. General damage map. Dark maroon colored lines and text indicate tornado paths and Fujita Scale rating. The large maroon asterisks indicate locations of non-tornadic wind damage. The blue rectangles indicate insets of more detailed maps that follow in this report.

Tornado 1: Began 4 miles northwest of Maud, OK, at approximately 200 AM CDT (0800 UTC). Dissipated 1.5 miles north-northwest of Harjo, OK, at approximately 206 AM CDT (0806 UTC). A detailed path map of Tornado 1 can be seen in Figure 2. This tornado caused structural damage to oil pumping and storage equipment approximately 2 miles southwest of Harjo, and caused structural damage to trailer homes 1 mile west of Harjo. Damage to the oil pumping and storage equipment justifies an F1 rating.

Path Length: 5 miles

Path Width: 50 yards

Began: approximately 200 AM CDT (0800 UTC)

Dissipated: approximately 206 AM CDT (0806 UTC)

Fujita Scale Rating: F1

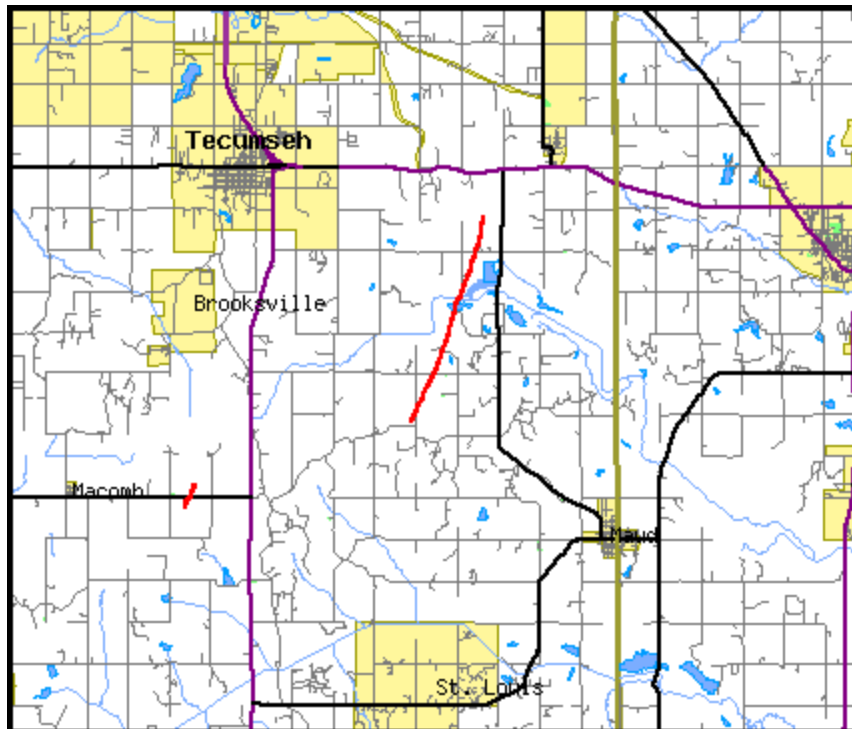


Figure 2: Detailed path map of Tornado 1, Pottawatomie County, OK (Inset 1 from Figure 1). The red line indicates path of the tornado. The red slash 3 miles east of Macomb indicates the location of non-tornadic wind damage. No photographs of the damage were available for this report.

Tornado 2: Began 2.5 miles west-southwest of Jesse, OK, at approximately 440 AM CDT (0940 UTC). Dissipated 2 miles north-northeast of Lula, OK, at approximately 505 AM CDT (1005 UTC) after moving across the extreme northwest part of Coal County, and then back into extreme southeast Pontotoc County. A detailed path map of Tornado 2 can be seen in Figure 3. This tornado may have been the strongest tornado of the event. The most impressive damage occurred from just west of Jesse, northeastward across far northwest Coal County, to just southwest of Lula, once again in Pontotoc County. 1.5 miles west of Jesse, a mobile home and barn were destroyed and power poles downed. The mobile home was picked up, thrown northward over a fence, and completely broken apart with contents spread over a half-mile area. 1 mile west and 3/4 mile north of Jesse, a barn was destroyed, two oil storage tanks were overturned and smashed, power poles were downed, fences were downed, and extreme tree damage occurred. 3/4 mile west and 1 mile north of Jesse, oil storage tanks were overturned, an oil pumping unit was overturned and torn apart, power poles were downed, severe tree damage and grass scouring occurred. In Coal County, 1.5 miles south and 1 mile east of Stonewall, three power transmission towers for major trunk power lines were downed. 3 miles east and approximately 1 mile north of Stonewall, a one-mile section of transmission towers (16 towers) were downed. According to power company repair crews, the towers were engineered to withstand 125 mph wind speeds. Additional power transmission towers were downed, and substantial damage to a power substation occurred about 1 mile southwest of Lula, back in Pontotoc County once again. The magnitude of the damage to the power transmission towers, power substation, and oil drilling and storage equipment in these areas justifies a solid F2 rating.

Path Length: 15 miles

Path Width: 300-400 yards

Began: approximately 440 AM CDT (0940 UTC)

Dissipated: approximately 505 AM CDT (1005 UTC)

Fujita Scale Rating: F2

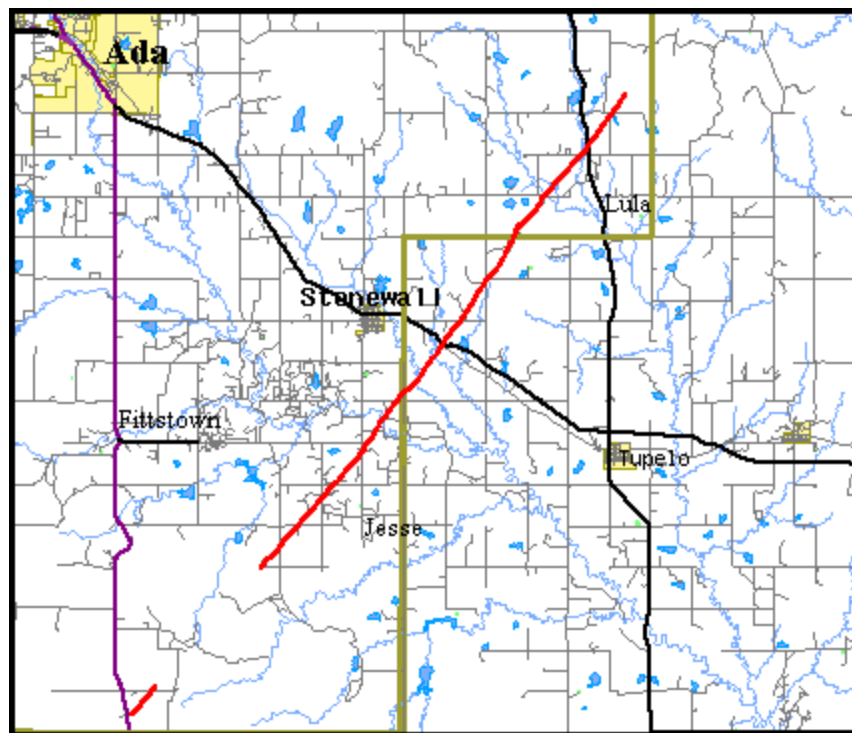


Figure 3: Same as Figure 2, except for Tornado 2, Pontotoc County/Coal County, OK. (Inset 2 from Figure 1). The long red slash 6.5 miles south of Fittstown indicates the location of non-tornadic wind damage.

Tornado 3: Began in extreme northern Cooke County, TX, 4 miles northwest of Gainesville at approximately 355 AM CDT (0855 UTC). Dissipated 10 miles east-southeast of Marietta, OK, also in extreme northern Cooke County, TX, at approximately 415 AM CDT (0915 UTC) after crossing the Oklahoma/Texas state line six times. A detailed path map of Tornado 3 can be seen in Figure 4. The destroyed barn (see Picture 1), and heavily damaged mobile home near the same location (not shown), justifies a weak F1 intensity rating.

Path Length: 18 miles

Path Width: 100-200 yards

Began: approximately 355 AM CDT (0855 UTC)

Dissipated: approximately 415 AM CDT (0915 UTC)

Fujita Scale Rating: F1

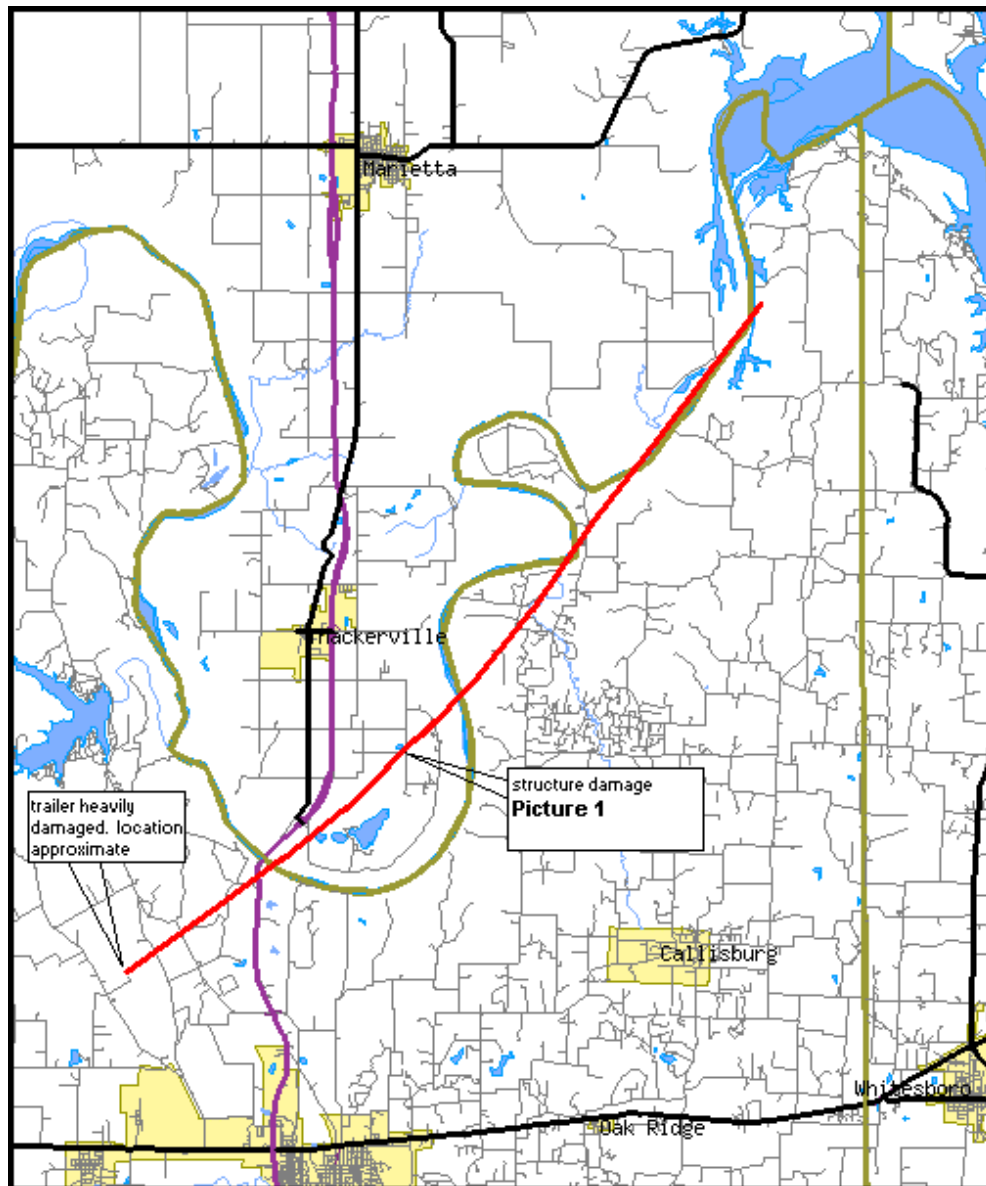


Figure 4. Same as Figure 2, except for Tornado 3, Cooke County, TX/Love County, OK (Inset 3 from Figure 1). Annotation indicates the location of Picture 1.



Picture 1: Looking southwest. A barn was destroyed. Just northeast of this location, a mobile home was severely damaged. Debris was scattered about 2 miles downstream to the Red River. (See Figure 4 for location of picture).

Tornado 4: Began over the far northern extension of Lake Texoma, 6 miles southeast of Tishomingo, OK at approximately 445 AM CDT (0945 UTC). Dissipated 3 miles east-northeast of Wapanucka, OK, at approximately 510 AM CDT (1010 UTC). A detailed path map of Tornado 4 can be seen in Figure 5. The damage path of this tornado broadened, and damage intensity weakened, over southeast Johnston County about 6 miles southwest of Wapanucka for a distance of approximately 3 miles before the tornado re-intensified and the path width narrowed again, just to the west of Highway 48 south of Wapanucka. This evidence suggests that it is possible that the storm made an attempt at cyclic tornadogenesis during this time. However, since there was no obvious break in the damage seen through this part of the path from either the ground or aerial survey, this event is classified as one continuous tornado. Two injuries, both requiring hospital care, occurred when a mobile home was flipped over and destroyed about 5 miles east of Tishomingo (see Pictures 2 and 3). According to information from Johnston County Emergency Management as of this writing, Tornado 4 destroyed 4 mobile homes and damaged or destroyed 21 other structures within Johnston County, including one business (see Pictures 6 and 7) and two churches. Total damage was estimated at \$2.5 million. Most of the damage was to manufactured, or sheet metal buildings, and thus generally of F1 intensity. However, damage to one home just east of Milburn (see Pictures 4 and 5) justifies an F2 rating.

Path Length: 19 miles

Path Width: 200-300 yards (500 yards maximum)

Began: approximately 445 AM CDT (0945 UTC)

Dissipated: approximately 510 AM CDT (1010 UTC)

Fujita Scale Rating: F2

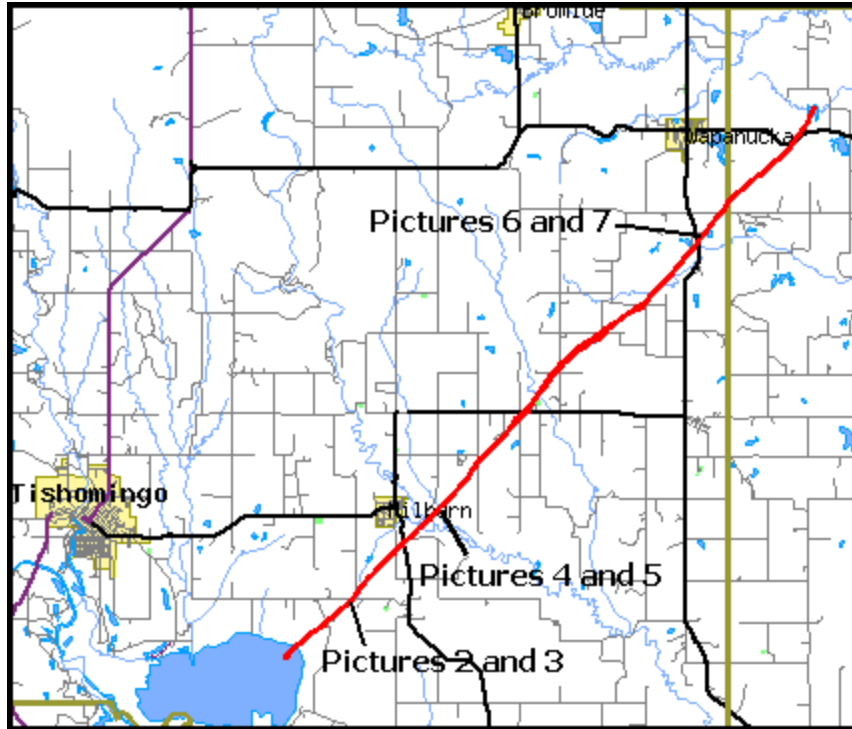


Figure 5. Same as Figure 2, except for Tornado 4, Johnston County/Atoka County, OK (Inset 4 from Figure 1). Annotation indicates the locations for Pictures 2, 3, 4, 5, 6 and 7.



Picture 2: Looking north-northwest. A mobile home was lofted and deposited upside-down about 40 yards from its original location on the blocks just to the left of the automobile. Two injuries requiring hospitalization occurred at this location. Note the vehicle was not moved. (See Figure 5 for location of picture).



Picture 3: Close up view of the destroyed mobile home above in Picture 2. Looking south. (See Figure 5 for location of picture).



Picture 4: Looking northeast. A frame home was severely damaged 1 mile east of Milburn. The roof was completely removed, and portions of the front and rear walls of the structure were blown out. (See Figure 5 for location of picture).



Picture 5: Another view of the same home as in Picture 4. Looking southwest. (See Figure 5 for location of picture).



Picture 6: Looking northeast. Severely damaged business 2.5 miles south of Wapanucka. (See Figure 5 for location of picture).



Picture 7: Another view of the same structure as in Picture 6. Looking east. Debris from this building was scattered for several miles to the northeast. (See Figure 5 for location of picture).

Tornado 5: Began 3 miles southeast of Coalgate, OK, at approximately 525 AM CDT (1025 UTC). Dissipated 1 mile northwest of Wardville, OK, at approximately 540 AM CDT (1040 UTC). A detailed path map of Tornado 5 can be seen in Figure 6. This tornado developed from a different circulation within the complex of thunderstorms than Tornado 2. The parent circulation exhibited a rapid intensification in radial velocity data from the Twin Lakes (KTLX) WSR-88D Doppler radar between 500 AM and 515 AM CDT (1000-1015 UTC). One fatality, and injuries to another person, occurred when a mobile home was destroyed 4 miles east of Coalgate (see Pictures 8 and 9). The mobile home was thrown approximately 200 yards and disintegrated. The only part of the mobile home still recognizable was the steel frame. A well-constructed frame home suffered severe roof and exterior wall damage in extreme eastern Coal County (see Picture 10). Damage to these two structures justifies an F2 rating.

Path Length: 13 miles

Path Width: 200 yards

Began: approximately 525 AM CDT (1025 UTC)

Dissipated: approximately 540 AM CDT (1040 UTC)

Fujita Scale Rating: F2

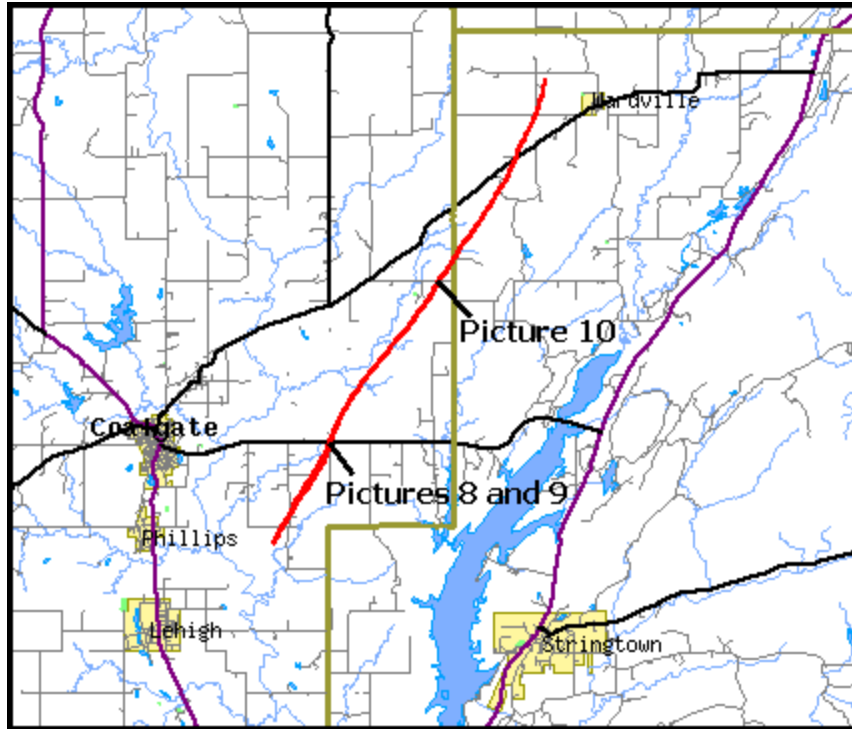


Figure 6. Same as Figure 2, except for Tornado 5, Coal County/Atoka County, OK (Inset 5 from Figure 1). Annotation indicates locations of Pictures 8, 9 and 10.



Picture 8: Former location of a completely destroyed mobile home 4 miles east of Coalgate, OK, looking east-northeast. One fatality, and minor injuries to another person, occurred at this location. (See Figure 6 for location of picture).



Picture 9: Close-up view of the same destroyed mobile home site as in Picture 8, except looking northwest. The only remnant of the mobile home was the steel beam frame, found approximately 200 yards to the northwest of the original home location. (In the field behind, and to the left of, the television satellite truck in the background of this photograph.) (See Figure 6 for location of picture).



Picture 10: Damage to frame home. Approximately half of the roof has been destroyed with minor damage to most of the exterior walls. Picture is looking northeast. (See Figure 6 for location of picture).

5. Acknowledgements

The Norman National Weather Service Forecast Office would like to extend sincere thanks to several people and organizations for providing their assistance and information during this post-event survey. These people are: **Stuart Rustin**, family of the man killed east of Coalgate, OK, **Betty Roan**, Johnston County Emergency Management, **Ed Reed**, Ardmore OK Emergency Management, **Mike Vescio** and **Gary Woodall**, NWS Forecast Office, Fort Worth TX and **Jim Gardner**, KFOR-TV Oklahoma City.

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