

## Storm Data and Unusual Weather Phenomena - June 2010

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
----------	-----------	-------------------	---------------------	------------------------

### OKLAHOMA, Western, Central and Southeast

**JACKSON COUNTY --- 2.0 S OLUSTEE [34.52, -99.42]**

06/02/10 19:53 CST	0	Hail (1.75 in)
06/02/10 19:57 CST	0	Source: Amateur Radio

Up to golf ball-size hail was reported for several minutes.

**GARFIELD COUNTY --- 3.1 E HAYWARD [36.28, -97.45]**

06/03/10 00:18 CST	0	Hail (1.25 in)
06/03/10 00:19 CST	0	Source: Law Enforcement

The hail was reported near Lucien.

**Thunderstorms developed during the late afternoon along a cold front, and briefly became severe across southwest Oklahoma. Golf ball size hail was reported over Jackson county. Later in the evening, more storms developed along the northern portion of the front, and one storm produced marginally severe hail. No damage was reported.**

**KAY COUNTY --- BLACKWELL [36.80, -97.28]**

06/07/10 04:11 CST	0	Thunderstorm Wind (MG 52 kt)
06/07/10 04:13 CST	0	Source: Law Enforcement

The winds were sustained at 50 mph, with gusts to 60 mph.

**A thunderstorm complex moved into northern Oklahoma just before sunrise. Along with very heavy rain, strong winds were reported over Blackwell. Although the winds were estimated near 60 mph, no damage was reported.**

**(OK-Z009) ELLIS, (OK-Z010) WOODWARD, (OK-Z015) DEWEY**

06/10/10 21:00 CST	0	High Wind (MAX 57 kt)
06/11/10 03:30 CST	0	

**A thunderstorm complex that had developed over the Texas panhandle weakened considerably as it moved into western and northwest Oklahoma. A heat burst, with a prolonged period of wind gusts of 45 to 55 mph occurred on the fringes of the dissipating storm complex. The wind event affected a large area of western and northwest Oklahoma. A few wind gusts exceeded severe limits, although no damage occurred with the gusts.**

**GARVIN COUNTY --- MAYSVILLE [34.82, -97.41]**

06/11/10 19:10 CST	1K	Thunderstorm Wind (EG 52 kt)
06/11/10 19:11 CST	0	Source: Law Enforcement

A power line was downed by the severe wind. Monetary damages were estimated.

**An mid-level disturbance moved north out of south Texas during the day on the 11th. Thunderstorms developed during the late afternoon and early evening hours as the disturbance neared the Red River. A thunderstorm briefly became severe over Garvin county, with winds estimated at 60 mph, causing minor damage to a power line.**

**GARFIELD COUNTY --- 0.5 SE ENID [36.39, -97.87]**

06/12/10 19:40 CST	1K	Thunderstorm Wind (EG 56 kt)
06/12/10 19:41 CST	0	Source: Emergency Manager

Several tree limbs up to six inches in diameter were downed by the strong winds. The downed limbs were reported a quarter of a mile southeast of downtown Enid. Monetary damages were estimated.

**GARFIELD COUNTY --- 0.7 ESE ENID [36.40, -97.87]**

06/12/10 19:45 CST	2K	Thunderstorm Wind (EG 56 kt)
06/12/10 19:46 CST	0	Source: Public

Several tree limbs 4 inches in diameter and a power line were downed. Monetary damages were estimated.

**A large upper level storm system located over the southwest United States slowly pushed east. A disturbance moved from south to north over Oklahoma, creating enough lift for thunderstorms to develop over the northern half of Oklahoma. One storm over Garfield county became severe, with winds causing damage near Enid.**

## Storm Data and Unusual Weather Phenomena - June 2010

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
<b>HARPER COUNTY --- 4.0 E BUFFALO [36.83, -99.56]</b>				
	06/13/10 16:45 CST		0	Thunderstorm Wind (EG 56 kt)
	06/13/10 16:46 CST		0	Source: Law Enforcement
The wind gust was reported on Highway 64.				
<b>ELLIS COUNTY --- 1.0 NE CATESBY [36.50, -99.95]</b>				
	06/13/10 17:35 CST		0	Hail (1.00 in)
	06/13/10 17:36 CST		0	Source: Public
<b>HARPER COUNTY --- 7.0 E LAVERNE [36.71, -99.77]</b>				
	06/13/10 17:45 CST		1K	Thunderstorm Wind (EG 56 kt)
	06/13/10 17:46 CST		0	Source: Law Enforcement
Several tree limbs were downed by the strong winds. Monetary damages were estimated.				
<b>ALFALFA COUNTY --- 10.0 ENE AMORITA [36.98, -98.12]</b>				
	06/13/10 19:05 CST		1K	Thunderstorm Wind (EG 56 kt)
	06/13/10 19:06 CST		0	Source: Public
Several tree limbs were downed. Monetary damages were estimated.				
<p><b>Thunderstorms developed over the eastern Texas panhandle, ahead of a cold front and dry line that had nearly stalled. The thunderstorms moved east into western and northwest Oklahoma, producing strong winds and marginally severe hail. Several outflow boundaries from prior days' convection also became a focus for thunderstorm development, especially with a mid level disturbance rotating over the state. As the evening progressed, the thunderstorms congealed into a complex, and the development of the low-level jet sustained the complex through the overnight hours. This set the stage for a historical flooding event over parts of central Oklahoma the following morning.</b></p>				
<b>OKLAHOMA COUNTY --- 3.5 NE THE VILLAGE [35.60, -97.50], 3.5 SE ARCADIA LAKE [35.62, -97.32], 5.8 NNE ARCADIA LAKE [35.72, -97.32], 5.5 NNW EDMOND [35.72, -97.52]</b>				
	06/14/10 06:00 CST		0	Flash Flood (due to Heavy Rain)
	06/14/10 10:00 CST		0	Source: Emergency Manager
Three to four inches of rainfall during the early morning caused several roads to be closed due to water flowing over top of them.				
<b>OKLAHOMA COUNTY --- 3.5 S BETHANY [35.46, -97.65], 1.6 WNW DEL CITY [35.46, -97.47], 5.8 NE ARCADIA LAKE [35.71, -97.30], 12.0 WNW EDMOND [35.73, -97.67]</b>				
	06/14/10 07:15 CST		0	Flash Flood (due to Heavy Rain)
	06/14/10 11:00 CST		0	Source: Emergency Manager
<p>A second round of heavy rainfall overspread much of Oklahoma county during the morning rush hour, with several locations receiving 5 to 9 inch rainfall totals in just a few hours. Numerous roadways across the metro were impassable due to several feet of water flowing over top of them. At least 60 swift water rescues occurred as a result of cars driving into flood waters and rapidly rising water into homes. A portion of Britton Road between Sooner Road and Air Depot Boulevard was washed out. Part of the dock along the Oklahoma River was washed away. All of the buildings at the Capital Complex reported water damage to some degree. Numerous other buildings, and dozens of residences were flooded. The worst residential damage occurred over the northern portion of Oklahoma City near the Logan county line, where several homes were flooded with over three feet of water, and most did not have flood insurance. Monetary damages were estimated at \$5.5 million for Oklahoma county during the day (entered on the last Oklahoma county flash flooding entry).</p>				
<b>CANADIAN COUNTY --- 3.5 NE MUSTANG [35.42, -97.67], 2.4 WNW MUSTANG [35.41, -97.76], 2.4 WSW MUSTANG [35.38, -97.76], 1.7 ESE MUSTANG [35.38, -97.69]</b>				
	06/14/10 07:30 CST		0	Flash Flood (due to Heavy Rain)
	06/14/10 10:30 CST		0	Source: Emergency Manager
Training thunderstorms flooded several roadways in town. Several roads had to be barricaded as high water made them impassable.				
<b>LINCOLN COUNTY --- 1.8 ENE CHANDLER [35.72, -96.85], 6.3 WSW WELLSTON [35.65, -97.16], 8.4 NNW FALLIS [35.87, -97.16], 3.2 E AGRA [35.91, -96.81]</b>				
	06/14/10 08:30 CST		0.60M	Flash Flood (due to Heavy Rain)
	06/14/10 10:30 CST		0	Source: Emergency Manager

## Storm Data and Unusual Weather Phenomena - June 2010

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
Several inches of rain accumulated over just a few hours. At least 15 bridges were impacted by the flood waters, and some of them collapsed or were washed out. Numerous roadways had to be closed due to high water flowing over top of them. Monetary damages were estimated.				
<b>POTTAWATOMIE COUNTY --- 3.3 NW SHAWNEE [35.36, -96.96], 3.0 NNE SHAWNEE [35.37, -96.89], 1.4 SE SHAWNEE [35.32, -96.90], 2.4 ESE TECUMSEH [35.24, -96.90], 2.0 SSW TECUMSEH [35.23, -96.96], 4.3 NW TECUMSEH [35.30, -97.00]</b>				
	06/14/10 15:30 CST		0	Flash Flood (due to Heavy Rain)
	06/14/10 17:30 CST		0	Source: Emergency Manager

Very heavy rain caused widespread flash flooding, especially near the Shawnee and Tecumseh areas. Several locations along Highway 177 and 18 were impassable, with vehicles becoming stranded in the rapidly rising water. A few swift water rescues occurred north of Tecumseh as two cars were swept off the roadway. Several homes also sustained damage. One residence had to be evacuated along Squirrel Creak as water rose out of its banks. Monetary damages for this portion of the event were not readily available.

<b>GARFIELD COUNTY --- 0.8 SSE DRUMMOND [36.29, -98.03]</b>				
	06/14/10 18:40 CST		5K	Thunderstorm Wind (EG 56 kt)
	06/14/10 18:41 CST		0	Source: Emergency Manager

A power pole, with associated power lines were downed just south of Drummond. Monetary damages were estimated.

<b>COMANCHE COUNTY --- 1.2 S LAWTON [34.59, -98.39], 1.7 NE LAWTON [34.63, -98.37], 2.0 WNW LAWTON [34.62, -98.42], 3.4 WSW LAWTON [34.59, -98.44]</b>				
	06/14/10 21:15 CST	1	0	Flash Flood (due to Heavy Rain)
	06/14/10 23:30 CST		0	Source: Emergency Manager

Numerous roads were closed due to high water. Several motorists had to be rescued after their automobiles stalled in the high water. One person drowned while trying to push his car out of the high water near NW Farris and 13th Street. No other serious injuries were reported.

Direct Fatalities: M50IW

<b>OKLAHOMA COUNTY --- OKLAHOMA CITY [35.47, -97.51], 2.6 N (OKC)WILL ROGERS APT [35.43, -97.60], 5.5 N (PWA)WILEY POST APT [35.61, -97.64], 3.1 SSE EDMOND [35.61, -97.46]</b>				
	06/14/10 21:15 CST		5.50M	Flash Flood (due to Heavy Rain)
	06/14/10 23:30 CST	136	0	Source: Emergency Manager

Another round of heavy rain occurred over parts of the Oklahoma City metro area. The heavy rain falling on already saturated ground quickly led to flash flooding. Several roadways had to be re-barricaded due to very high water. The water that had receded around some residences began to rise again. After the rain ended, some areas had received over a foot of rainfall for the day. Much of it fell in only a few hours. Total damages for the day were over \$5 million. One hundred twenty-two homes were affected, 52 of those home receiving minor damage, 11 receiving major damage, and one home was completely destroyed.

<b>POTTAWATOMIE COUNTY --- 4.2 E DALE [35.38, -96.98], 3.4 SW JOHNSON [35.38, -96.89], 1.3 NNW TECUMSEH [35.28, -96.95], 5.2 ENE PINK [35.28, -97.03]</b>				
	06/14/10 22:00 CST		0	Flash Flood (due to Heavy Rain)
	06/15/10 00:00 CST		0	Source: Emergency Manager

Several roadways between Bethel Acres and Shawnee had to be closed again when another round of heavy rain led to more flooding. Water reached 2 to 3 feet in some spots. One car became stranded in the rapidly rising water. No injuries were reported.

<b>PONTOTOC COUNTY --- 1.7 ESE VANOSS [34.75, -96.84], 5.3 WSW BYNG [34.84, -96.76], 1.0 S BYNG [34.85, -96.67], 2.5 WSW ADA [34.76, -96.72]</b>				
	06/14/10 22:45 CST		0	Flash Flood (due to Heavy Rain)
	06/15/10 01:00 CST		0	Source: Emergency Manager

Several roadways, including portions of Highway 19 west of Ada, had to be closed due to intense rainfall that occurred during the late evening hours.

**Significant flooding occurred over parts of central Oklahoma. Numerous homes and cars were flooded. One person died, and at least 136 people were injured. Damage was estimated at \$5.5 million in Oklahoma county alone.**

The event began late on June 13th, as thunderstorms developed over northwest Oklahoma. The thunderstorms developed ahead of a slow moving cold front that was located over southwest Kansas into the northern Texas panhandle. A large outflow boundary also extended eastward. The thunderstorms became more numerous as they moved along the outflow boundary. Strengthened by the new rainfall, the outflow boundary dropped toward central Oklahoma, and a very moist low-level jet resulted in new thunderstorm development near the boundary.

The first round of significant rain impacted central Oklahoma around 3 am. This round moved east before another, longer lived,

## Storm Data and Unusual Weather Phenomena - June 2010

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
----------	-----------	-------------------	---------------------	------------------------

thunderstorm complex developed over the Oklahoma City metro area. The outflow boundary was located south of Interstate 40, and the low-level jet transported warm and unseasonably humid air north of the boundary, creating very heavy rain. Thunderstorms continued to develop over the southwest metro area, and slowly moved northeast. Rainfall rates averaged one to two inches per hour, with some thunderstorm bands producing rates near three inches per hour.

The heavy rain accumulated quickly immediately before and during the busy morning drive time. Numerous cars became stranded in the rapidly rising water. Roadways were covered by rapidly flowing water, and ponds, creeks, and rivers easily spilled over their banks. Navigating in and around the metro area became almost impossible, and many motorists had to be rescued by boat. After several hours, the persistent heavy rainfall tapered off around noon.

The larger area of heavy rainfall moved south as the outflow boundary moved into southern Oklahoma. Significant rain developed over southwest Oklahoma by early afternoon, and flash flooding once again became a problem. Lawton was hard hit, receiving between four and five inches of rain, resulting in several roadways becoming flooded. Numerous motorists had to be rescued from the high water. One motorist, unfortunately, lost his life when his vehicle stalled in flood waters.

Thunderstorms developed again over central Oklahoma late in the afternoon and evening, but luckily the duration of the thunderstorms was relatively short. By the time it was all said and done, widespread totals of five to nine inches were reported over much of Oklahoma City. Will Rogers World Airport reported its largest daily precipitation since records began in 1891, with 7.62 inches. Even higher totals were reported over the north-central portion of Oklahoma City, where nine to twelve inches was measured.

Strong winds caused some power outages during the event. At the peak of the event, over 6700 people were without power. Isolated pockets of wind damage did occur, with a power pole/power lines downed south of Drummond in Garfield county.

**GARFIELD COUNTY --- DRUMMOND [36.30, -98.04]**

06/16/10 08:50 CST	1K	Thunderstorm Wind (EG 45 kt)
06/16/10 08:50 CST	0	Source: Emergency Manager

Several tree limbs were downed, and pea-size hail was also reported. Monetary damages were estimated.

**GARFIELD COUNTY --- WAUKOMIS [36.28, -97.90]**

06/16/10 09:22 CST	1K	Thunderstorm Wind (EG 52 kt)
06/16/10 09:23 CST	0	Source: Emergency Manager

Several tree limbs up to six inches in diameter were downed. Monetary damages were estimated.

**GARFIELD COUNTY --- 5.0 SSW GARBER [36.37, -97.61]**

06/16/10 10:20 CST	0	Thunderstorm Wind (EG 56 kt)
06/16/10 10:21 CST	0	Source: Emergency Manager

A couple of barns were damaged. Damage was also reported to a pool deck. Monetary damage estimates were not available.

**A weak disturbance moving Oklahoma helped numerous thunderstorms to develop over northern Oklahoma. The main impact with the thunderstorms was heavy rain, but a line of thunderstorms moving through Garfield county produced strong winds, which were enough to cause damage to trees and some structures.**

**KAY COUNTY --- BRAMAN [36.92, -97.33]**

06/23/10 18:35 CST	0	Thunderstorm Wind (MG 55 kt)
06/23/10 18:35 CST	0	Source: COOP Observer

**KAY COUNTY --- 2.0 S BRAMAN [36.89, -97.33]**

06/23/10 18:40 CST	0	Thunderstorm Wind (EG 61 kt)
06/23/10 18:41 CST	0	Source: COOP Observer

Minor damage was reported to a barn. A semi-trailer was also blown over at this location. Monetary damage estimates were not available.

Thunderstorms developed along a cold front and spread into northern Oklahoma around sunset. The thunderstorms became severe briefly, with wind gusts of around 60 mph causing minor damage to a barn.

### TEXAS, Western North

**HARDEMAN COUNTY --- 0.8 SSE COPPER BREAKS ST PK [34.10, -99.73]**

## Storm Data and Unusual Weather Phenomena - June 2010

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	06/02/10 19:10 CST		0	Hail (1.00 in)
	06/02/10 19:12 CST		0	Source: Public

A thunderstorm briefly became severe over Hardeman county, with quarter-size hail reported north of Crowell. No damage was reported with the hail.