

## Storm Data and Unusual Weather Phenomena - February 2011

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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### OKLAHOMA, Western, Central and Southeast

(OK-Z004) HARPER, (OK-Z005) WOODS, (OK-Z006) ALFALFA, (OK-Z007) GRANT, (OK-Z008) KAY, (OK-Z009) ELLIS, (OK-Z010) WOODWARD, (OK-Z011) MAJOR, (OK-Z012) GARFIELD, (OK-Z013) NOBLE, (OK-Z014) ROGER MILLS, (OK-Z015) DEWEY, (OK-Z016) CUSTER, (OK-Z017) BLAINE, (OK-Z018) KINGFISHER, (OK-Z019) LOGAN, (OK-Z020) PAYNE, (OK-Z021) BECKHAM, (OK-Z022) WASHITA, (OK-Z023) CADDO, (OK-Z024) CANADIAN, (OK-Z025) OKLAHOMA, (OK-Z026) LINCOLN, (OK-Z027) GRADY, (OK-Z028) MCCLAIN, (OK-Z029) CLEVELAND, (OK-Z030) POTTAWATOMIE, (OK-Z031) SEMINOLE, (OK-Z032) HUGHES, (OK-Z033) HARMON, (OK-Z034) GREER, (OK-Z035) KIOWA, (OK-Z036) JACKSON, (OK-Z037) TILLMAN, (OK-Z038) COMANCHE, (OK-Z039) STEPHENS, (OK-Z040) GARVIN, (OK-Z041) MURRAY, (OK-Z042) PONTOTOC, (OK-Z043) COAL, (OK-Z044) COTTON, (OK-Z045) JEFFERSON, (OK-Z046) CARTER, (OK-Z047) JOHNSTON, (OK-Z048) ATOKA, (OK-Z051) MARSHALL

02/01/11 00:00 CST	0		Winter Storm
02/01/11 18:00 CST	0		

(OK-Z050) LOVE, (OK-Z052) BRYAN

02/01/11 00:00 CST	0		Winter Weather
02/01/11 18:00 CST	0		

After a relatively quiet early winter, a dose of reality, in the form of a major, record-setting winter storm, affected all of Oklahoma from late on January 31 through February 1. Periods of heavy sleet and snow, combined with winds that gusted over 40 mph, disrupted travel and closed hundreds of schools and businesses. Snowfall totals reached over a foot in some places, with snow drifts reaching three to five foot depths. Temperatures plummeted into the single digits and lower teens, and wind chills fell well below zero. In fact, wind chill values fell below -25 degrees over parts of northwestern Oklahoma!

Several days before the event, one would have thought that these were the final days of winter and that spring would soon begin. Record high temperatures were common over a large area on the 28th and 29th of January, with readings well into the 70s.

Unfortunately, these warm, mild days came to an abrupt end as a strong cold front moved southward over the southern Great Plains on January 30th, reducing high temperatures to 30 to 40 degrees cooler than the previous day. Max temperatures only reached the 20s across northern Oklahoma, with highs in the 30s prevailing across the southern two-thirds of Oklahoma and into north Texas.

Late on January 29th, a strong storm system finally moved onshore over southern California. At the same time, an arctic cold front began its trek south through the northern Great Plains, with a strong surface high pressure building in behind it.

The freezing line at the surface slowly moved south during the day on the January 31st, lying across the northwest half of Oklahoma by sunset and then advancing quickly southeast. At the same time, the storm system was moving through New Mexico with increasing lift out ahead of it.

Thunderstorms, some containing heavy sleet, developed over parts of west Texas and moved northeast over northern Texas. By this time, some of precipitation was developing and moving over sub-freezing surface temperatures. The precipitation coverage expanded through the evening hours toward Lawton and Oklahoma City. Periods of heavy thunder-sleet, occasionally mixed with freezing rain and heavy snow, were reported up and down I-44 toward Oklahoma City by 10 pm, with a light glaze of ice developing on elevated surfaces, and sleet accumulations of 1 to 2 inches over some areas of central Oklahoma. By 1 AM, temperatures were at or below freezing over all but far southeast Oklahoma.

With the cold air deepening above the surface, the precipitation was falling as snow across western and northwest Oklahoma, with a mixture of sleet and snow over southwest and central Oklahoma, and northern Texas, and freezing rain and sleet over southern Oklahoma. By 4 AM, all but southeast Oklahoma was reporting snow, with moderate to heavy snow bands setting up over western and central Oklahoma. The temperatures also continued to fall, with temperatures ranging from near 10 degrees over northern Oklahoma, to the lower to middle 20s over southeast Oklahoma, and the teens in between.

The snowfall was moderate to heavy at times, with some areas from central into northeast Oklahoma reporting snowfall rates of 2-3 inches per hour. By sunrise, around 6 inches of snow had fallen from Norman and Oklahoma City northeast toward Shawnee and Chandler, and the heavy snow continued to fall in parts of central Oklahoma.

In addition to the snow, the winds gusted at 35 to 45 mph, and temperatures fell into the single digits and lower teens. Rush hour traffic was very slow going. Visibilities with the heavy snow and strong winds were falling below ¼ mile, resulting in numerous accidents and stalled automobiles. The wind chills became just as big an issue by this time, with wind chill values falling below -15 degrees.

By mid morning, the heaviest snow bands had pivoted into eastern Oklahoma, but areas of moderate snowfall were still moving east through western and central Oklahoma. These bands still produced snowfall rates of 1 inch per hour over central Oklahoma. The snow finally ended from west to east by early afternoon, but the wind speeds remained strong with frequent gusts over 40 mph still occurring. Even after the snowfall had ended, near blizzard conditions continued through the afternoon, which hindered snow removal on roadways, and slowed rescues from stalled cars and accidents.

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Unfortunately, four deaths were reported as a result of the winter storm, with one death occurring in Moore, and three in Miami, OK. The Oklahoma Highway Patrol reported over 150 automobile accidents statewide, ten of which resulted in injuries. There were also over 460 motorist-related calls, mainly from people that had become stranded in their vehicles. The situation could have been worse, but schools and businesses had closed prior to the beginning of the winter storm, which kept traffic at a minimum for much of the day on February 1st. In addition, the winter storm mainly produced snow and sleet, and freezing rain was less widespread and fell in shorter durations. As a result, ice accumulations were kept at a minimum, reducing the number of power outages across Oklahoma.

(OK-Z018) KINGFISHER, (OK-Z019) LOGAN, (OK-Z023) CADDO, (OK-Z024) CANADIAN, (OK-Z025) OKLAHOMA, (OK-Z026) LINCOLN, (OK-Z028) MCCLAIN, (OK-Z029) CLEVELAND, (OK-Z030) POTTAWATOMIE

02/01/11 00:00 CST	0	Drought
02/28/11 23:59 CST	0	

Several months of below normal precipitation continued to wreak havoc on Oklahoma's agriculture. Summer and fall crops, hay forages, and alfalfa were hit hard by the lack of any significant precipitation. Farm pond water levels continued to decrease, or dry up altogether, which added insult to injury for area livestock. The extent of the damage was still undetermined monetary, but it was beginning to look like a total loss for many Oklahoma farmers.

(OK-Z025) OKLAHOMA, (OK-Z026) LINCOLN, (OK-Z028) MCCLAIN, (OK-Z029) CLEVELAND, (OK-Z030) POTTAWATOMIE, (OK-Z031) SEMINOLE, (OK-Z039) STEPHENS, (OK-Z040) GARVIN, (OK-Z041) MURRAY, (OK-Z042) PONTOTOC, (OK-Z043) COAL, (OK-Z046) CARTER, (OK-Z047) JOHNSTON, (OK-Z048) ATOKA, (OK-Z051) MARSHALL, (OK-Z052) BRYAN

02/04/11 02:00 CST	0	Winter Weather
02/04/11 15:00 CST	0	

A slow-moving upper level low pressure moved from central Texas through the eastern half of Oklahoma. Broad-scale ascent over a very cold temperatures at the surface allowed for very dry snow to fall over southern and eastern Oklahoma. An area of two to four inches extended over a large area, with lighter amounts further north into central Oklahoma. The snow ended from west to east, pushing out of the region by late afternoon.

(OK-Z004) HARPER, (OK-Z005) WOODS, (OK-Z006) ALFALFA, (OK-Z007) GRANT, (OK-Z008) KAY, (OK-Z009) ELLIS, (OK-Z010) WOODWARD, (OK-Z011) MAJOR, (OK-Z012) GARFIELD, (OK-Z013) NOBLE, (OK-Z014) ROGER MILLS, (OK-Z015) DEWEY, (OK-Z016) CUSTER, (OK-Z017) BLAINE, (OK-Z018) KINGFISHER, (OK-Z019) LOGAN, (OK-Z020) PAYNE, (OK-Z021) BECKHAM, (OK-Z022) WASHITA, (OK-Z023) CADDO, (OK-Z024) CANADIAN, (OK-Z025) OKLAHOMA, (OK-Z026) LINCOLN, (OK-Z027) GRADY, (OK-Z028) MCCLAIN, (OK-Z030) POTTAWATOMIE, (OK-Z031) SEMINOLE, (OK-Z032) HUGHES, (OK-Z035) KIOWA, (OK-Z038) COMANCHE, (OK-Z039) STEPHENS, (OK-Z045) JEFFERSON

02/08/11 12:00 CST	0	Winter Storm
02/09/11 12:00 CST	0	

(OK-Z034) GREER, (OK-Z036) JACKSON, (OK-Z042) PONTOTOC, (OK-Z043) COAL

02/08/11 19:00 CST	0	Winter Weather
02/09/11 12:00 CST	0	

Fresh on the heels of the record-setting blizzard that occurred a few days before, another significant winter storm affected the southern Plains. Snowfall totals reached a foot over parts of northern Oklahoma, with widespread totals of 4 to 8 inches over the northern 2/3 of Oklahoma.

A strong surface high pressure developed south out of Canada into Kansas early on the 8th behind a cold front, that finally moved into northern Oklahoma during the late morning and early afternoon hours. Behind the arctic front were very cold temperatures, with temperatures falling into the single digits, and even sub-zero readings across many areas of the northern and central Plains (sub-zero temperatures would soon overspread much of Oklahoma). Precipitation, some of it heavy, developed behind the front as a strong low-level jet transported relatively warm and more moist air north over-top of the front. Snowfall totals north of the Oklahoma/Kansas border totaled 6 to 10 inches, with northerly surface winds gusting over 30 mph.

During the day, the cold front made substantially more southward progress over the Texas panhandle into western Oklahoma, with additional heavy snow accumulations developing behind the boundary by late afternoon. Additional support for precipitation development had developed ahead of a potent mid-level disturbance that moved southeast toward Oklahoma. Normally, progressive storm systems such as this one would not big snow-producers over the southern Plains, but with strong warm advection and very cold temperatures at the surface and aloft (and getting colder through the event), snow growth was maximized, which in turn caused moderate to heavy snowfall to occur.

By mid evening, the main snow band had developed over northern Oklahoma, with moderate to heavy snowfall occurring over the northern two or three tiers of counties for several hours. Here, widespread totals of 8 to 12 inches of snow was reported, with even higher totals toward northeast Oklahoma. Further to the south, an area of moderate to heavy snowfall progressed east, but started a little later and did not last near as long. This included the Oklahoma City metro, although Will Rogers World Airport still managed to pick

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up almost 6 inches of snow. Even further south toward the Red River, lighter totals of 2 to 4 inches occurred due to the even later onset and quicker progression of the precipitation.

In addition to the snowfall, a strong pressure gradient created very gusty winds behind the front. The strongest winds were reported over western Oklahoma, as pressure rises were maximized behind the quickly moving cold front. Gusts to almost 50 mph created wind chill values well below zero as temperatures fell into the lower teens, which also caused considerable blowing and drifting snow. Farther north and east, blowing and drifting snow also became a significant issue, even with slightly lower wind speeds. Wind gusts over 30 mph were reported at times, with visibilities falling to an 1/8 of a mile at times in the heavier snow bands.

Around 240 injuries statewide were reported by the Oklahoma State Department of Health, with 33 injuries associated with around 84 automobile accidents. And, like last storm, there were fatalities (2) with this storm.

(OK-Z033) HARMON, (OK-Z034) GREER, (OK-Z035) KIOWA, (OK-Z036) JACKSON, (OK-Z037) TILLMAN, (OK-Z038) COMANCHE, (OK-Z039) STEPHENS, (OK-Z040) GARVIN, (OK-Z044) COTTON

02/22/11 00:00 CST	0	Drought
02/28/11 23:59 CST	0	

Several months of below normal precipitation continued to wreak havoc on Oklahoma's agriculture. Summer and fall crops, hay forages, and alfalfa were hit hard by the lack of any significant precipitation. Farm pond water levels continued to decrease, or dry up altogether, which added insult to injury for area livestock. The extent of the damage was still undetermined monetary, but it was beginning to look like a total loss for many Oklahoma farmers.

ALFALFA COUNTY --- 6.0 E ALINE [36.51, -98.34]

02/27/11 16:12 CST	0	Hail (1.00 in)
02/27/11 16:12 CST	0	Source: Storm Chaser

(OK-Z010) WOODWARD

02/27/11 16:15 CST	0	High Wind (MAX 63 kt)
02/27/11 16:15 CST	0	

ALFALFA COUNTY --- 4.0 N GOLTRY [36.59, -98.15]

02/27/11 16:27 CST	0	Hail (0.88 in)
02/27/11 16:27 CST	0	Source: Public

GRANT COUNTY --- 3.0 E NASH [36.67, -98.00]

02/27/11 16:42 CST	0	Hail (0.75 in)
02/27/11 16:42 CST	0	Source: Public

GRANT COUNTY --- 3.0 SSE NASH [36.63, -98.03]

02/27/11 16:42 CST	0	Hail (1.75 in)
02/27/11 16:42 CST	0	Source: Storm Chaser

The time was estimated based on radar.

GRANT COUNTY --- 6.0 E NASH [36.67, -97.94]

02/27/11 16:47 CST	0	Hail (1.00 in)
02/27/11 16:47 CST	0	Source: Storm Chaser

GRANT COUNTY --- JEFFERSON [36.72, -97.79]

02/27/11 16:55 CST	0	Hail (1.00 in)
02/27/11 16:55 CST	0	Source: COOP Observer

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

02/27/11 17:30 CST	0	Hail (1.00 in)
02/27/11 17:30 CST	0	Source: COOP Observer

KAY COUNTY --- 1.0 S CHILOCCO [36.98, -97.07]

02/27/11 18:00 CST	0	Hail (1.00 in)
02/27/11 18:00 CST	0	Source: Public

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**KAY COUNTY --- 8.0 NE NEWKIRK [36.96, -96.96]**

02/27/11 18:00 CST			0	Hail (1.00 in)
02/27/11 18:00 CST			0	Source: Public

A strong mid-level disturbance moved over the southern Plains, with an associated dry line punching well into Oklahoma, and a cold front that moved into northern Oklahoma. A strong cap held thunderstorm development in check for much of the afternoon, but eventually was overcome by the latter portion of the afternoon over northern Oklahoma. The thunderstorms developed and quickly moved over the northern two tiers of counties. Hail up to golf-ball size was reported, with a severe wind gust also measured over Woodward county. No damage was reported with the wind or hail.

### TEXAS, Western North

**(TX-Z086) WICHITA**

02/01/11 00:00 CST			0	Winter Storm
02/01/11 15:00 CST			0	

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Several days before the event, one would have thought that these were the final days of winter and that spring would soon begin. Record high temperatures were common over a large area on the 28th and 29th of January, with readings well into the 70s.

Unfortunately, these warm, mild days came to an abrupt end as a strong cold front moved southward over the southern Great Plains on January 30th, reducing high temperatures to 30 to 40 degrees cooler than the previous day. Max temperatures only reached the 20s across northern Oklahoma, with highs in the 30s prevailing across the southern two-thirds of Oklahoma and into north Texas.

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Thunderstorms, some containing heavy sleet, developed over parts of west Texas and moved northeast over northern Texas. By this time, some of precipitation was developing and moving over sub-freezing surface temperatures. The precipitation coverage expanded through the evening hours toward Wichita Falls. Periods of heavy thunder-sleet, occasionally mixed with freezing rain and heavy snow were reported.

A mixture of sleet and snow continued over northern Texas at midnight, but had changed to all snow by 4 AM. Temperatures were now in the teens over northern Texas. The snowfall was moderate to heavy at times, and by sunrise, around 6 inches of snow had fallen over parts of northern Texas.

In addition to the snow, the winds gusted at 35 to 45 mph, and temperatures fell into the single digits and lower teens. Rush hour traffic was very slow going. Visibilities with the heavy snow and strong winds were falling below ¼ mile, resulting in numerous accidents and stalled automobiles. The wind chills became just as big an issue by this time, with wind chill values falling below -15 degrees.

**(TX-Z083) HARDEMAN, (TX-Z084) FOARD, (TX-Z085) WILBARGER, (TX-Z087) KNOX, (TX-Z088) BAYLOR, (TX-Z089) ARCHER**

02/08/11 22:00 CST			0	Winter Weather
02/09/11 12:00 CST			0	

**(TX-Z086) WICHITA, (TX-Z090) CLAY**

02/08/11 22:00 CST			0	Winter Storm
02/09/11 12:00 CST			0	

A strong surface high pressure developed south out of Canada into Kansas early on the 8th behind a cold front, that finally moved into northern Texas during the late afternoon hours. Behind the arctic front were very cold temperatures, with temperatures falling into the single digits, and even sub-zero readings across many areas of the northern and central Plains. Precipitation, developed behind the front as a strong low-level jet transported relatively warm and more moist air north over-top of the front. Snowfall totals generally ranged from 2 to 4 inches over western north Texas, with northerly surface winds gusting over 30 mph reducing visibilities to near 1/4

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of a mile at times.

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(TX-Z083) HARDEMAN, (TX-Z084) FOARD, (TX-Z085) WILBARGER, (TX-Z086) WICHITA

02/22/11 00:00 CST

0

Drought

02/28/11 23:59 CST

0

Several months of below normal precipitation continued to wreak havoc on north Texas' agriculture. Summer and fall crops, hay forages, and alfalfa were hit hard by the lack of any significant precipitation. Farm pond water levels continued to decrease, or dry up altogether, which added insult to injury for area livestock. The extent of the damage was still undetermined monetary, but it was beginning to look like a total loss for many Texas farmers.