



2016 KANSAS

SEVERE WEATHER AWARENESS WEEK

MARCH 14 - 18 2016

TORNADO SAFETY DRILL

TUESDAY, MARCH 15th

See map on page 3 for times



INFORMATION PACKET

National Weather Service

KANSAS SEVERE WEATHER AWARENESS WEEK
MARCH 14-18, 2016

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2016 Kansas Tornado Safety Drill Times



6:30pm

6:30pm Tuesday March 15th, 2016

Most of Kansas

1:30pm

1:30pm Tuesday March 15th, 2016

Doniphan, Atchison, Leavenworth,
Wyandotte, Johnson, Miami and Linn
Counties

2015 Kansas Tornado Facts

Tornadoes: 126 (65 above the 1950-2015 average of 61)
 (43 above the past 30 year average of 83)
 (26 above the past 10 year average of 100)

Fatalities: 0 **Injuries:** 3

Longest track: 51 miles (Seward-Meade-Gray Counties, November 16, EF3)

Strongest: EF3 (May 6, Jul 13, Nov 16)

Most in a county: 10 (Gray)

Tornado days: 33 (Days with 1 or more tornadoes)

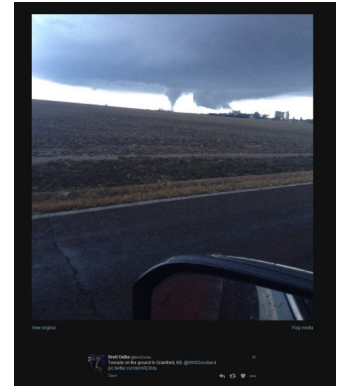
Most in one day: 22 (May 6)

Most in one month: 63 (May)

First tornado of the year: April 2 (Labette County, 7:24 pm CDT, EF0 0.04 mile length, 50 yard width)

Last tornado of the year: November 16 (Comanche County, 9:38 pm CST, EF1 5.3 mile length, 460 yard width)

Length of tornado season: 229 days (Days between first and last tornado)



Tornado near Grainfield (Gove County) November 16, 2015. Photo via Twitter courtesy of Brett Oelke. (Miami County, KS)

-----2015 Monthly Tornado Totals-----

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
EF5	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
EF4	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
EF3	0	0	0	0	2	0	1	0	0	0	1	0	4	3%
EF2	0	0	0	0	5	0	0	0	0	0	2	0	7	6%
EF1	0	0	0	1	14	2	1	0	2	0	8	0	28	22%
EF0	0	0	0	27	42	9	1	2	0	0	6	1	87	69%
Total	0	0	0	28	63	10	3	2	2	0	17	1	126	100%
Percent	0	0	0	22	50	9	2	2	2	0	14	3		

Violent (EF4—EF5) in red, Strong (EF2-EF3) in yellow, Weak (EF0-EF1) in green. Monthly totals in gray.
 (Monthly percent values do not add to 100% due to rounding)

Annual Highlights: In terms of tornado count, 2015 was an active year ranking 4th highest since 1950. By comparison, the most tornadoes ever reported in Kansas in a calendar year is 187 in 2008. The most active month in 2015 was May with 63 tornadoes reported, which is well above the normal 23 for the month but well shy of the record 127 which occurred in May of 2008. The most active tornado day in 2015 was May 6th when 22 tornadoes occurred, including 5 that resulted in several million dollars in damage.

Fortunately there were no violent tornadoes in Kansas last year, but 11 tornadoes were rated strong (EF2-3) and 115 were rated weak (EF0-1). One of the more noteworthy events was a late season tornado outbreak in western Kansas. On November 16th, a total of 17 tornadoes occurred between 5 and 10 pm, including one tornado which traversed 51 miles across Seward, Meade and Gray counties. It was rated EF3 with a width of approximately 2000 yards.

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Kansas Tornado Statistics

by county

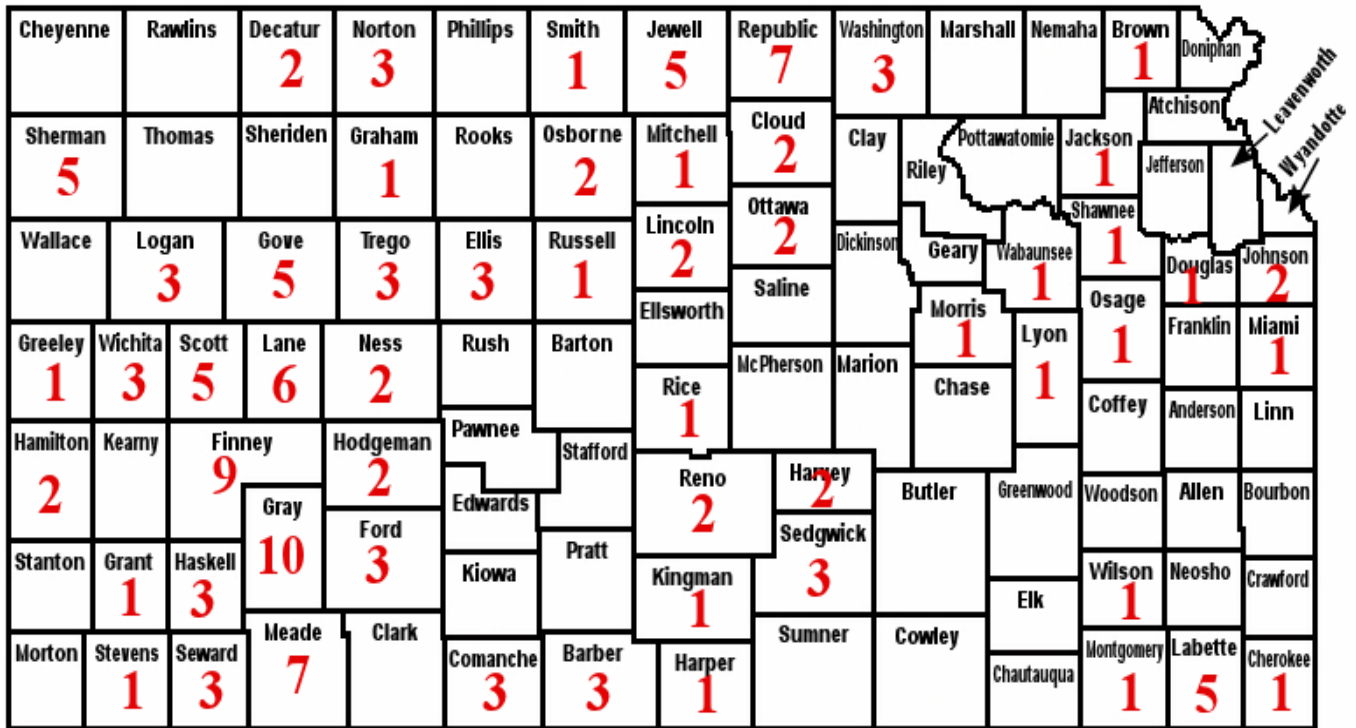
1950 - 2015

TORNADOES, FATALITIES, AND INJURIES

County	Tor	Fat	Inj	County	Tor	Fat	Inj	County	Tor	Fat	Inj
Allen	27	0	4	Greenwood	41	0	10	Pawnee	50	0	1
Anderson	15	3	12	Hamilton	25	0	1	Phillips	41	0	1
Atchison	15	0	11	Harper	62	0	1	Pottawatomie	31	1	5
Barber	37	0	2	Harvey	49	1	63	Pratt	70	3	10
Barton	95	2	38	Haskell	32	0	10	Rawlins	47	0	4
Bourbon	19	0	7	Hodgeman	48	0	4	Reno	79	0	22
Brown	45	0	5	Jackson	31	4	17	Republic	59	0	1
Butler	77	28	225	Jefferson	40	0	101	Rice	46	0	6
Chase	38	0	2	Jewell	43	0	2	Riley	27	0	51
Chautauqua	19	0	0	Johnson	42	0	12	Rooks	49	0	6
Cherokee	37	4	66	Kearny	42	0	0	Rush	49	0	8
Cheyenne	42	0	0	Kingman	63	0	1	Russell	78	1	7
Clark	39	0	0	Kiowa	57	11	74	Saline	38	0	66
Clay	38	1	31	Labette	40	1	29	Scott	49	1	1
Cloud	49	1	8	Lane	39	0	2	Sedgwick	89	13	360
Coffey	23	0	5	Leavenworth	30	2	30	Seward	37	0	15
Comanche	41	0	2	Lincoln	33	0	2	Shawnee	51	18	528
Cowley	69	77	293	Linn	14	0	3	Sheridan	38	0	0
Crawford	33	4	43	Logan	29	0	0	Sherman	109	0	0
Decatur	47	0	5	Lyon	46	7	222	Smith	44	0	2
Dickinson	37	1	12	Marion	47	1	2	Stafford	70	3	5
Doniphan	19	0	2	Marshall	32	0	1	Stanton	22	0	0
Douglas	40	1	48	McPherson	54	1	16	Stevens	25	1	5
Edwards	47	0	7	Meade	51	0	0	Sumner	83	5	14
Elk	24	2	8	Miami	20	4	10	Thomas	46	0	1
Ellis	60	0	6	Mitchell	48	0	5	Trego	62	5	101
Ellsworth	49	0	0	Montgomery	34	1	1	Wabaunsee	33	1	26
Finney	97	1	41	Morris	32	0	7	Wallace	35	0	4
Ford	85	0	0	Morton	18	1	2	Washington	39	2	12
Franklin	29	3	34	Nemaha	37	0	3	Wichita	28	0	4
Geary	17	0	3	Neosho	31	0	4	Wilson	16	0	0
Gove	53	0	3	Ness	47	0	4	Woodson	12	0	8
Graham	39	0	0	Norton	30	0	0	Wyandotte	10	2	36
Grant	25	0	9	Osage	44	17	6				
Gray	49	0	3	Osborne	44	0	13				
Greeley	35	0	0	Ottawa	29	2	9	Total	4476	237	2912

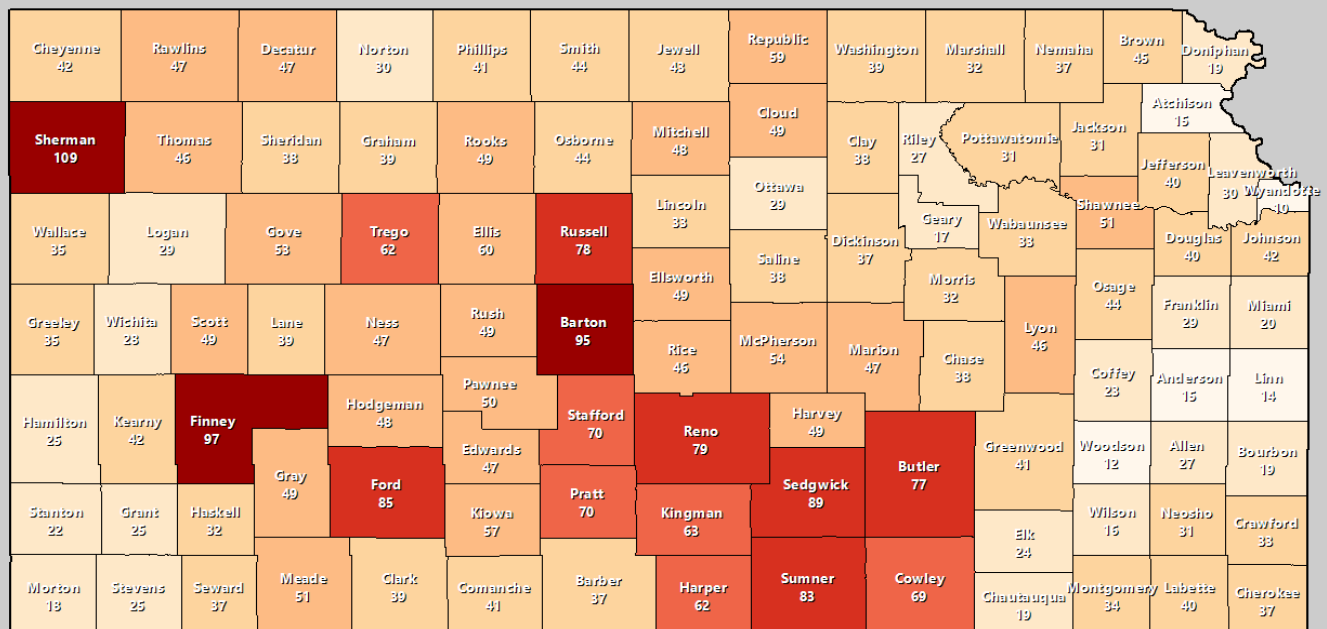
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Kansas Tornadoes 2015

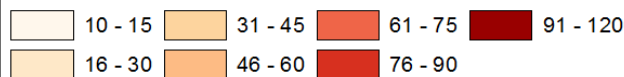


126 tornadoes (multiple county crossers)

Kansas Tornadoes Per County (1950-2015)



Kansas Tornadoes Per County (1950-2015)



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Check out a Storm Spotter and Weather Safety Training presentation near you this spring...

Each spring, the National Weather Service offices that serve the state of Kansas conduct storm spotter and weather safety training sessions in most counties in the state. The sessions are free and open to the public. You are not required to become a storm spotter nor will you have to take a test; however, the presentations provide a great deal of information on severe weather in Kansas. They cover severe weather safety and ways to get weather information from the National Weather Service. You can meet a meteorologist from your local National Weather Service office.

The schedule for storm spotter training sessions varies in each community, please check out www.weather.gov and click on your location for more information on a training session in your area.

Did you know that there are seven National Weather Service offices that serve portions of Kansas?

The NWS offices are located in Goodland; Dodge City; Wichita; Topeka; Hastings, Nebraska; Pleasant Hill, Missouri; and Springfield, Missouri. Each office is staffed by a team of highly trained meteorologists, technicians, electronics technicians, information technology specialists, hydrologists, and administrative assistants. The NWS offices are staffed 24 hours a day, seven days a week, 365 days a year.

Contact the NWS office in your area to learn more about weather, weather safety, NOAA Weather Radio, office tours, or to learn more about careers in meteorology in the NWS or in NOAA. We are here to serve you!

Kansas Tornado Facts

Days with more than 20 tornadoes

<u>Date</u>	<u>#Tornadoes</u>
05/23/08	70
04/14/12	43
06/15/92	39
05/05/07	36
06/04/55	33
05/29/04	28
10/26/06	28
05/25/97	25
06/09/05	25
05/15/91	24
07/07/04	23
05/06/15	22
04/26/91	21
06/15/09	21

Kansas Tornado Count by Decade

1950s: 560
1960s: 457
1970s: 303
1980s: 339
1990s: 789
2000s: 1192
2010s: 472 (through 2015)

Most Tornadoes in One Episode

May 23, 2008	70 Tornadoes
April 14, 2012	43 Tornadoes
June 15-16, 1992	41 Tornadoes

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2015 Severe Weather Summary

Extreme East Central and Northeast Kansas

National Weather Service Pleasant Hill, MO

A relatively quiet winter season of 2014-2015 slowly transitioned into an active severe weather season which continued into the late summer and early fall. Multiple rounds of large-scale storm systems also yielded unusually high precipitation amounts which spiked in May with an additional peak in the late fall.

The first significant event occurred in the early morning of April 8th in which several severe thunderstorms produced mostly hail in a number of counties in eastern Kansas. The largest hailstones recovered were in Atchison County where 2 inch hail fell before sunrise. These storms went on to produce a large swath of damaging winds over western Missouri during the afternoon and evening. The remainder of April remained relatively calm for eastern Kansas until a persistent active weather pattern began in early May. The month started out with a few storms producing large hail in Johnson County the evening of May 4th.

From mid-May to the end of the month, several large storm systems affected the area. The most notable of these occurred on May 16th and 17th; strong winds toppled several power lines and trees in Linn County. The same storm system led to flash flooding in Leavenworth and Johnson counties, closing down numerous roads and disabling several vehicles in waist-deep water. A second round of thunderstorm activity toward the end of May produced large hail in Linn County with flash flooding in Doniphan County which closed K7 in White Cloud the evening of May 26th.



*Tornado near Hillsdale Lake
(Miami County, KS)*

Active severe weather continued into June as heavy rain affected Johnson County on June 3rd. A substantial amount of water was running throughout the golf course in Mission Hills. By June 11th, several supercells formed in northeastern Kansas causing 70 mph winds which heavily damaged two barns near Lancaster. Another strong and damaging wind event occurred on June 26th with numerous toppled trees and power lines in Leavenworth, Wyandotte, Johnson, and Miami counties.

Strong winds and flash flooding started off the month of July as several storms developed late in the evening on July 1st. Several power poles were blown down in Linn County with local flooding also reported between Showalter and La Cygne which closed a portion of Highway 152. A slow moving cold front pushed through the region on July 6th producing an EF-1 tornado that developed in Douglas County before moving east into Johnson County for over two miles before dissipating. An EF-0 also developed near Cedar Park which

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caused minor tree damage. The same storm system also generated flash flooding for Leavenworth County with eight feet of water reported over Tongonoxie Road at Fivemile Creek. Several severe thunderstorms developed between July 13th and 15th and produced large hail and damaging winds over Miami, Linn, and Johnson counties. By the early morning of July 20th, multiple thunderstorms produced flash flooding in Johnson County. Water was reported flowing over numerous roads with several homes inundated. On the afternoon of July 25th a severe thunderstorm produced half-dollar sized hail over Johnson County closing out the month of July.

The month of August was comparatively quiet; a few storms caused wind damage in Miami and Linn Counties on August 8th. Several power lines and trees were reported down due to estimated 60 mph winds.

Conditions quickly ramped back up in the late summer as a decaying cluster of thunderstorms brought severe weather to east central Kansas in the morning of September 10th. Winds estimated at 60 mph over eastern Kansas damaged numerous trees in Leavenworth, Johnson, and Linn counties during the morning and evening hours. A water rescue in Johnson County was also reported later that night as the storms transitioned to a heavy rain event.

The severe weather season concluded on September 18th after a supercell developed in the evening after a generally rainy and cloudy day. This storm produced an EF-1 tornado which developed near the southeast side of Hillsdale Lake. The tornado then dissipated in rural Miami County between Spring Hill and Louisburg. The storm caused one non-critical injury at a trailer park in Hillsdale Lake. A single-wide manufactured home was rolled and destroyed. Three unsecured RVs were also rolled and heavily damaged.

The remainder of 2015 was relatively tranquil though an additional surge of precipitation during the months of November and December combined with higher than normal precipitation in the spring, resulted in a yearly rainfall total of 47.15 inches for Johnson County which was 7.11 inches above normal.



Damage from Tornado near Hillsdale Lake (Miami County, KS)

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2015 Severe Weather Summary

Northeast and North Central Kansas

National Weather Service-Topeka, KS

Summary

2015 could be best described as wet across much of northeast Kansas. In fact, it ended up the 3rd wettest year on record for Topeka, and many areas received over 12” of excess rainfall! There were a few remarkable weather events scattered throughout the year. The highlight of the severe weather season occurred on May 6th during the north central Kansas tornado outbreak. 14 tornadoes were confirmed across the area culminating with the EF-3 that destroyed a home near Munden, KS.

May 6th Tornadoes

During the afternoon and evening hours of May 6th, 2015 a very strong upper level system initiated widespread thunderstorm activity across north central Kansas. Fourteen confirmed tornadoes occurred with the majority of those receiving a rating of EF-1 or EF-2. However, one “strong” tornado received a rating of EF-3; a home near Munden, KS was destroyed, and one resident of the home sustained minor injuries.



Home destroyed near Munden, KS on May 6th, 2015



Kansas River in Lawrence, Kansas on June 5th, 2015

June 5th Strong Winds and Torrential Rainfall

Thunderstorms with winds up to 75 mph and torrential rainfall moved across the area during the late hours of June 4th into the early morning hours of June 5th, 2015. The Manhattan Regional Airport reported a wind gust of 73 mph. There were numerous power outages and tree damage across the city. Along with the strong winds, a weather spotter in Nemaha County reported 7.15 inches of rain. Widespread 3 to 6 inches of rainfall amounts caused widespread flooding of creeks and rivers.

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September 10th Hail and Heavy Rain

During the afternoon and evening hours of September 10th, 2015, discrete supercells developed across south central Nebraska and moved southeast across the area. These storms produced large hail upwards of softball size. [Picture to the right: Large hail in Randolph, KS] Numerous reports of damage from hail and wind were reported across the forecast area. Heavy rainfall and subsequent flash flooding created dangerous situations across the area. Topeka's Billard Airport ASOS reported 3.41 inches of rain in the hour from 9 to 10pm. This caused numerous water rescues across the city of Topeka.

November 26-29th Freezing Rain

A strong, slow-moving storm system brought multiple rounds of freezing rain across northeast Kansas during the Thanksgiving holiday. Locations along and east of the Kansas Turnpike hovered right at or just above freezing which limited the ice accumulations. However, locations west of the Kansas Turnpike remained just at or below freezing allowing continuous accumulation of freezing rain on trees and powerlines. Numerous power outages were reported across central and north central Kansas as the weight of the ice snapped powerlines and large tree branches. Total storm accumulations were quite impressive across portions of central Kansas as 0.75 inches of ice accumulation was reported in White City, KS.



Large hail in Randolph, KS



Snapped tree branches in Junction City, KS

2015 Severe Weather Summary

Portions of Central, South Central and Southeast Kansas

National Weather Service - Wichita, KS

Thunderstorm Highlights:

April 2-3 Severe Storms: The Kansas region's first substantial severe thunderstorm event of 2015 hit during the late evening and early morning hours of April 2-3. Severe thunderstorms moved into Barton, Rice, and Reno counties during the evening of the 2nd; they produced golf ball size hail and straight-line winds which snapped power lines and uprooted trees. The storms continued southeast into Harvey and Sedgwick counties producing significant wind damage in Newton and North Wichita. Winds were estimated around 100 mph. A hanger was destroyed at Jabara Airport in Wichita, and 1/10 of a mile of power poles were snapped off at the base. Portions of Newton had roof and tree damage. A mobile home near Whitewater was destroyed, yet the whole family survived. Nearly 50,000 residences were without power across the area. The storms continued into southeast Kansas producing additional damaging winds and large hail.



Unanchored mobile home rolled 25ft near northeast Wichita due to very strong straight-line damaging winds around midnight April 3rd. Photo courtesy of NWS Wichita.

April 24th Severe Storms: On April 24th, severe thunderstorms affected central and north central Kansas during the late afternoon and evening hours primarily across Russell and Lincoln counties. A brief tornado was observed just southwest of Paradise in Russell County along with golf ball size hail and 80 mph winds. North of the town of Russell, tennis ball size hail was observed along with 80 mph winds. The town of Lucas was next when hail to the size of tennis balls scoured the community. In fact, local emergency management indicated that virtually every car and roof sustained significant hail damage across town, and the skylights in the middle school were blown out. The supercell continued east producing tennis ball size hail just north of Wilson in Lincoln County and 60 mph winds north of Ellsworth. Another brief tornado touched in Lincoln County near Sylvan Grove destroying the press box and damaging the roof of the local high school. This tornado was rated an EF1 with winds around 90 mph.



Hail covering the ground in Lucas due to severe thunderstorms during the evening hours on April 24th. Photo courtesy of Susie Martin.

May 6th Severe Storms: During the late afternoon and evening of May 6th, strong to severe storms affected central and south central Kansas mainly west of I-135. The first tornado (later rated an EF0) developed in Lincoln County, 7 miles southwest of Lincoln, causing minor damage south and east of



May 6th tornado near Mount Hope. The twister inflicted EF3 damage to a farmstead. Photo courtesy of Jim Reed.

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town. The strongest tornado of the day developed near Mount Hope in northwest Sedgwick County and tracked north through Harvey County. With estimated peak winds up to 150 mph, the tornado extensively damaged a farmstead northeast of Mount Hope. The tornado crossed Highway 50 west of Halstead and continued tracking north toward Moundridge before dissipating. The tornado was rated an EF3.

July 13th Nickerson Tornado: During the afternoon of July 13th, a supercell thunderstorm moved slowly and uncharacteristically south-southwest across Rice and northern Reno counties; it produced baseball size hail along with a very picturesque tornado which began in rural areas of southeast Rice County and moved slowly southwest into Reno County passing just east of Nickerson. The tornado, rated EF3 with winds of 150-165 mph, produced extensive damage to hardwood trees and destroyed a home just northeast of Nickerson. The tornado's maximum width was estimated at 350 yards with a path length of nearly 5.3 miles.



The very picturesque Nickerson tornado on July 13th. Photo courtesy of Hans Mast.

September 10th Storms: This was the last substantial severe thunderstorm event of the year. The storms hit during the afternoon and evening hours of September 10th. A cluster of thunderstorms developed across southern Nebraska and northern Kansas rapidly achieving severity as they moved southeast. The storms produced winds in excess of 80 mph along with hail larger than golf balls. The community of Great Bend was particularly hit hard by these storms with Lincoln Elementary sustaining significant wind damage.



Supercell thunderstorm west of Wilson, September 10th. Photo courtesy of Brandon Ivey.

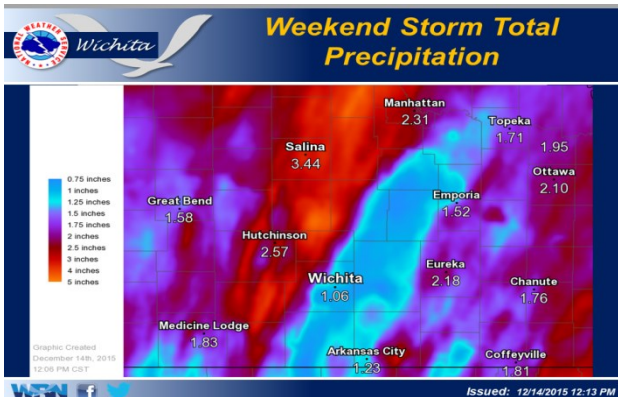
Winter Weather Highlights:

Thanksgiving Weekend Ice Storm: A potent slow-moving storm system affected the region over Thanksgiving weekend, causing a prolonged period of precipitation. The system began as rain and brought upwards of 1-3 inches over eastern Kansas Thanksgiving Day. This system transitioned into a winter storm of freezing rain, sleet and snow from Thanksgiving night (Thursday night) through Sunday night as colder air filtered south across the area. The prolonged period of freezing drizzle and freezing rain resulted in significant ice accumulations of one-quarter to three-quarters of an inch across portions of central and south central Kansas generally west of the Flint Hills. Consequently, damage to trees and power-lines was extensive in spots.



Hutchinson tree damage from Thanksgiving weekend ice storm. Photo courtesy of Ashley Booker.

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Storm-total precipitation for the December 12th weekend storm.

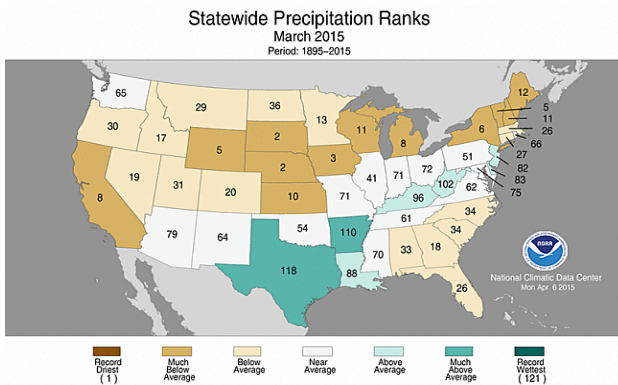
Rare December Flooding: An intense low pressure system lifted out of the desert southwest and moved into the High Plains on the weekend of December 12th. This storm system pulled rich gulf moisture into the Plains causing rare December flooding for much of central and eastern Kansas. Many streams and rivers overflowed their banks across the area with rainfall amounts ranging from 1-3 inches. No doubt if this rainfall would have fallen as snow, accumulations would have been measured in feet rather than inches!

December 26-28th Winter Storm: An intense slow moving area of low pressure moved northeast from the Southern Plains into the Midwest during the weekend of December 26th resulting in widespread precipitation. Heavy rain affected far southeast Kansas with amounts exceeding 5 inches over far southeast Kansas. Further northwest over portions of south central and southeast Kansas, precipitation fell as primarily freezing rain with ice accumulations up to one-half inch.

Climate Highlights:

Dry March: A quiet weather pattern supported a dry March across the region. Wichita recorded its 10th driest

March on record with 0.28” which was the driest since 1994. Salina recorded its 3rd driest March with 0.05” which was the driest since 1968. Chanute tied for the 8th driest March with 0.55” which was the driest since 1999. Statewide, Kansas recorded its 10th driest March since 1895.



Kansas recorded its 10th driest March since 1895.

Near record wet May: Multiple rounds of thunderstorms with heavy rainfall during the 2nd half of May contributed to Kansas’ 2nd wettest May on record (since 1895). The culprit was a persistent area of low pressure anchored over the southwest USA which allowed for rich gulf moisture to surge north across mid America. An average of 8.28” of rain deluged the state, 2nd only to May of 1995 when 8.79” was averaged across Kansas. Many area streams and rivers were overwhelmed by the multiple deluges producing widespread flooding across primarily low-lying areas. This was quite a change from one year ago when May of 2014 ranked as Kansas’ 6th driest May on record. As far as individual cities are concerned, Wichita recorded its 2nd wettest May with 11.77”, Salina its 4th wettest with 8.28”, and Chanute its 6th wettest with 11.58”.



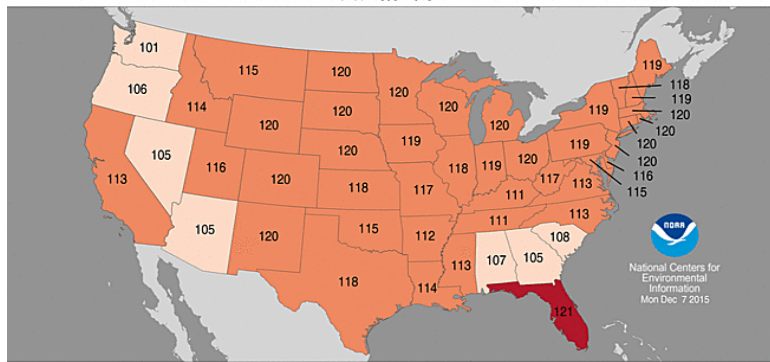
Flooding along the Cottonwood River near Florence, due to several bouts of heavy rain across the region during the second half of May.

Warm June: June 2015 warmed up and dried out compared to May. Wichita tied its 9th warmest June on record which was also the 3rd warmest since 1991. Salina recorded its 6th warmest June on record which was also the 3rd warmest since 1992. Both Wichita and Salina reached 90 degrees or higher on 19 separate days during the month which was near the top-10 highest. Chanute tied for 3rd warmest June since 1995.

Cool August: Much of mid America experienced a cooler than normal August. It was the first August Wichita did not experience a 100-degree reading since August 2009. Furthermore, only 12 days during the month reached 90 degrees or higher in the Air Capital which was below the normal of 18 days.

Near Record Warm Fall: A strong El Niño supported a near record warm fall (Sept-Nov) across much of the nation. Both Wichita and Salina recorded their 2nd warmest falls on record while the state of Kansas recorded its 4th warmest.

Statewide Average Temperature Ranks
September–November 2015
Period: 1895–2015

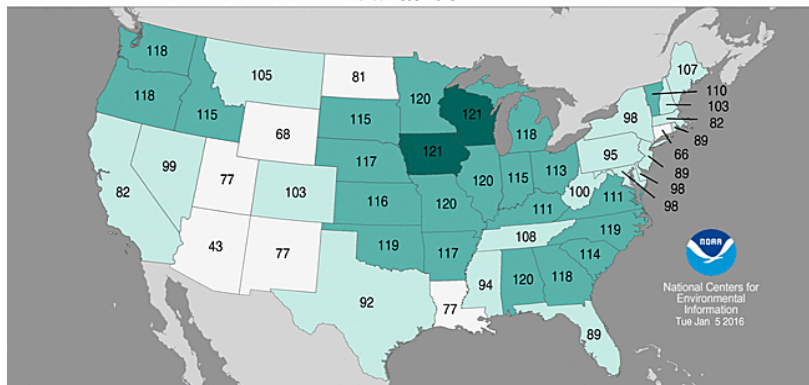


Statewide temperature rankings September–November 2015. Kansas recorded its 4th warmest fall on record (since 1895).

Near Record Wet November–December:

In addition to the relatively mild temperatures, the strong El Niño also supported near record precipitation in November and December. Wichita recorded its 7th wettest November on record with 4.17” which was the wettest November since 1992. Chanute measured its 6th wettest December with 3.55”. Overall, it was Kansas’ 8th wettest November on record and the 6th wettest December.

Statewide Precipitation Ranks
December 2015
Period: 1895–2015



Kansas tallied its 6th wettest December since 1895.

Near Record Warm December:

The strong El Niño continued to exert its influence toward the end of 2015 with Kansas recording its 4th warmest December on record. In fact, the relatively mild weather was so prevalent, that the United States as a whole recorded its warmest December on record (since 1895). It was Wichita’s 5th warmest (tied) December which was the warmest December since 1965. In Salina, this was the 6th warmest (tied) on record.

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2015 Severe Weather Summary

North Central Kansas

National Weather Service - Hastings, NE

The 2015 severe weather season across north central Kansas was highlighted by three different tornado events and at least one significant hailstorm.

On April 12, a supercell thunderstorm slipped across Smith and Rooks counties. Around 6:46 pm, a brief EF-0 rated tornado occurred 3 miles northeast of Smith Center and caused minor damage to a couple of farmsteads. This tornado had a maximum estimated wind speed of 75 mph on its intermittent one-mile path.

Severe weather was expected on May 6 and Mother Nature did not disappoint. At least two EF-2 rated tornadoes impacted a part of north central Kansas. The first moved north along a 12.8 mile path from west of Mankato to north of Burr Oak. Damage was extensive with this tornado with four homes sustaining damage and one farmstead almost completely destroyed. Unfortunately, one injury also occurred with this tornado. Peak winds were estimated at 130 mph.

Within an hour, a second EF-2 rated tornado occurred in Jewell County but this time northeast of Webber. Damage was widespread ranging from roofs torn from homes, complete destruction of outbuildings to several pivots left as twisted metal. This tornado had a peak wind of over 120 mph, and it continued to move northeast in Nebraska. Ironically, the tornado appeared to literally “drive across” the Republican River on the bridge south of Hardy before grazing the southeast side of the small border community. Jewell County was doused with up to 8 inches of rain which lead to flash flooding of small creeks and extensive damage to county roads and crops. One observer reported 7.92” of rain about 3 miles northeast of Webber which mostly fell in a matter of a few hours.

The third and final recorded tornado event across north central Kansas for 2015 occurred on June 3 near Tipton. Two tornadoes occurred west of town while a third briefly touched down about 2 miles east of Tipton. Both tornadoes west of town were rated EF-1 for winds about 95-100 mph. Despite its short 1.25 mile path, the second tornado actually moved west within the parent



Tornado damage from the May 6 tornado northeast of Webber, KS. NWS storm survey photo.



A flattened storage shed after the passage of a tornado near Formoso, KS on May 6. NWS storm survey photo.

KANSAS SEVERE WEATHER AWARENESS WEEK
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An after dark shot of one of the Tipton, KS tornadoes on June 3. Photo by Nick Biermann.

circulation of the slow moving supercell thunderstorm. Such motion is not unheard of but uncharacteristic of most tornadoes. None of the three tornadoes were wider than 125 yards, but they still managed to clip at least three farmsteads and cause several thousand dollars in damage.



This photo was typical of the hail which fell across parts of north central Kansas on September 10. Photo by Corey Heitmann.

As fall approached, a damaging wind and hail storm pounded north central Kansas on September 10. Most of the storms started in Nebraska and rolled southeast into Kansas. Jewell County was one of the harder hit locations as ping pong ball size hail driven by 60-80 mph winds ripped mature crops to shreds, stripped trees of leaves and pummeled homes and vehicles. Crop and pasture loss was likely in the millions of dollars.

Severe Weather Terminology

- **Severe Thunderstorm** – The National Weather Service issues severe thunderstorm warnings for thunderstorms that are currently producing or are capable of producing winds of 58 mph or stronger and/or hail one inch in diameter or larger. Severe thunderstorms often may be much stronger than this minimum criteria, so it is a good idea to take severe thunderstorm warnings seriously.
- **Tornado** – A tornado is a violently rotating column of air, in contact with the ground, either as a pendant from a cumuliform cloud or underneath a cumuliform cloud, and often (but not always) visible as a funnel cloud. A funnel cloud is a condensation cloud typically funnel-shaped and extending outward from a cumuliform cloud and is associated with a rotating column of air.
- **Flash Flood** – A flash flood is flooding that occurs very rapidly usually within 6 hours of heavy rainfall. Flash flooding may occur along creeks, rivers or streams. It can also occur in low lying or urban areas where drainage is poor. Water levels can rise very quickly during flash flooding including locations that did not receive the heavy rainfall but are located downstream from areas that received an extreme amount of rainfall. Flash flooding can occur in the winter months when rain falls on existing snowpack and causes it to melt rapidly. Flooding is the number one severe weather killer in the U.S.

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2015 Severe Weather Summary

Southwest Kansas

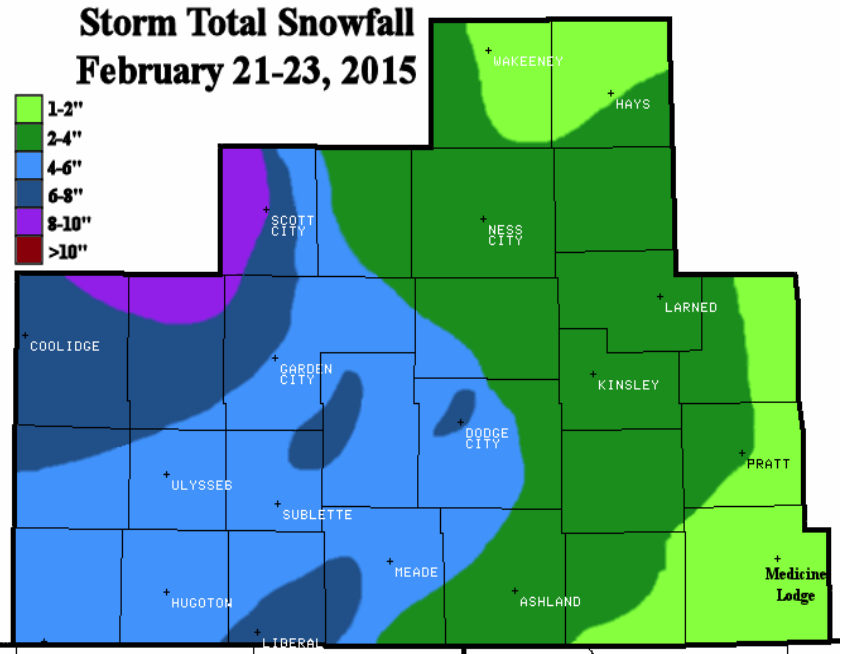
National Weather Service - Dodge City

Active weather returned with a vengeance during the year with dramatically increased rainfall as well as severe thunderstorms which included hail, high wind and tornadoes!

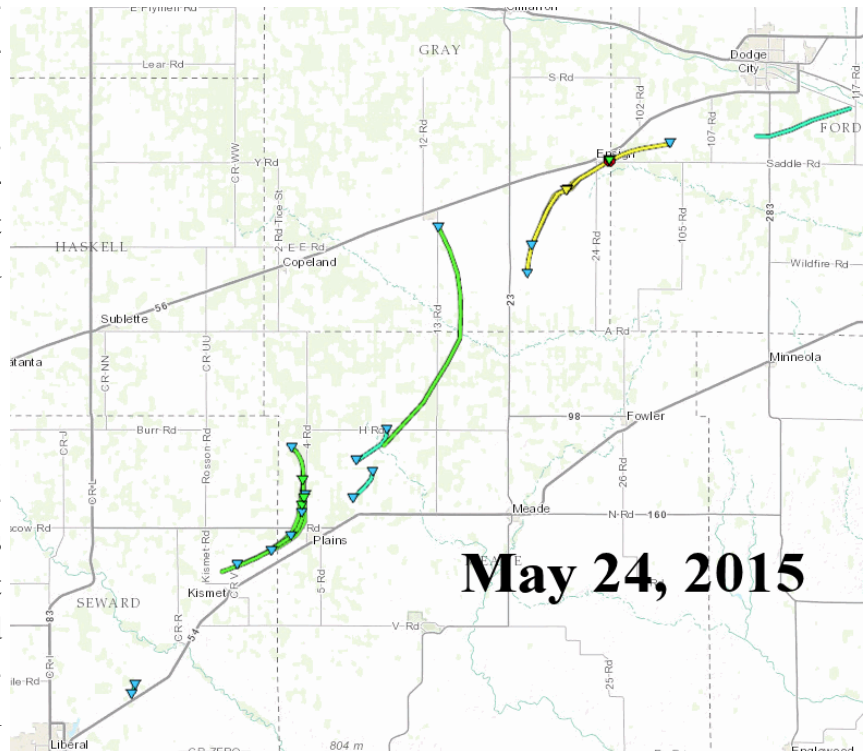
The weather got active in late February when a powerful winter storm brought heavy snow especially to western areas. Amounts of eight to ten inches were common north of Hwy 50 and west of Hwy 83.

Severe weather including tornadoes increased during April. The first tornado to occur in our area for 2015 was on the 8th of April when 3 tornadoes were observed in Comanche and Barber counties. Only minor damage was done to trees as they occurred across a sparsely populated area. There were other tornadoes on the 11th, 12th, 16th, 17th and the 24th. All were relatively weak with no damage reported. It was quite amazing that there was limited damage!

In May the tornado occurrences continued. There were tornadoes on the 4th, 7th, 9th, 24th, 27th and 28th. By far the most significant day was on May 24th. Tornadoes formed along a warm front lifting north out of Oklahoma. Many storm spotters and storm chasers were unable to see the tornadoes due to the proximity of dense fog on



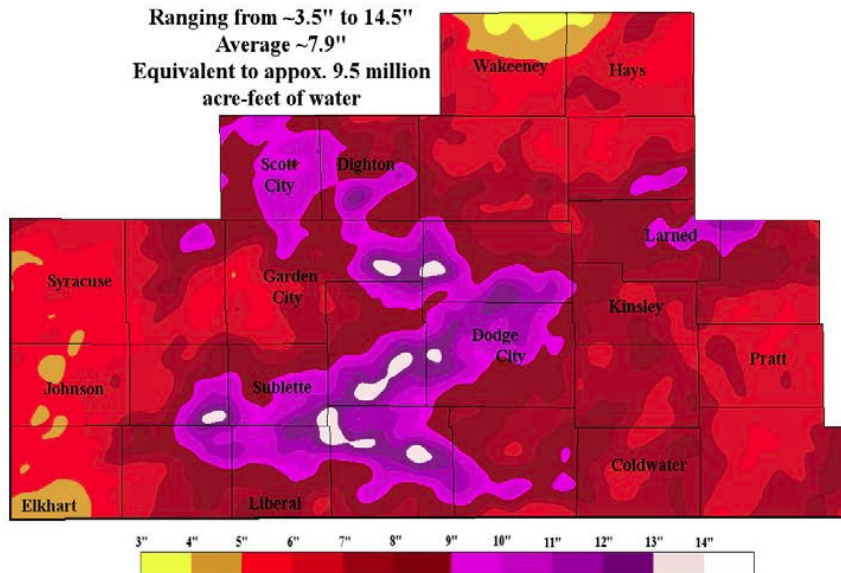
Below: May 24th, 2015 Tornado Tracks between Kismet and Dodge City



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May 2015 Rainfall

Ranging from ~3.5" to 14.5"
Average ~7.9"
Equivalent to approx. 9.5 million
acre-feet of water



the cold side of the warm front. Those that did observe the tornadoes were astonished at the apparent width and magnitude of the tornadoes. It appears that the condensation part of the tornadoes was exceptionally large due to the cold and moist air mass being entrained into them; the tornadoes were still capable of producing significant damage. There were 10 confirmed tornadoes that evening. It is amazing that another outbreak of tornadoes that occurred later in the year (November) occurred in nearly the exact location.

May was also an exceptionally wet month! There was quite a bit of flooding across the area from rainfall that exceeded 10 inches at many locations. Local lakes and ponds filled to capacities and in some instances there was extreme damage done to county roads. Episodes of heavy rain continued into the summer months although not nearly as widespread as what occurred during May.

In early July there was a particularly severe thunderstorm that moved south through parts of southwest Kansas primarily in Gray County. There were reports of corn fields (6 foot high stalks) that were completely shredded



Damage to hog farm west of Kismet on November 16th, 2015. EF3 damage

with nothing left but nubs. Wildlife in these fields were killed with numerous reports of dead deer, rabbits and other critters. Thirty-three pivot irrigation sprinklers were overturned. Several high voltage transmission line structures were crumpled by the high wind with speeds in excess of likely 110 MPH.

As the fall months approached, severe weather did not retreat. A tornado outbreak occurred on November 16th across a large portion of the high plains from the Texas panhandle into northwest Kansas. There were 11 tornadoes

**KANSAS SEVERE WEATHER AWARENESS WEEK
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that impacted southwest Kansas; one was very long tracked (51 miles) and had a very large in width (1 ¼ miles). It started just northeast of Liberal and then narrowly missed Kismet and Plains before dissipating in Gray County. In addition, the track of this tornado was very close to the one that occurred May 24th. The tornadoes during the evening hours on the 16th were also fast moving – around 50 MPH at times.

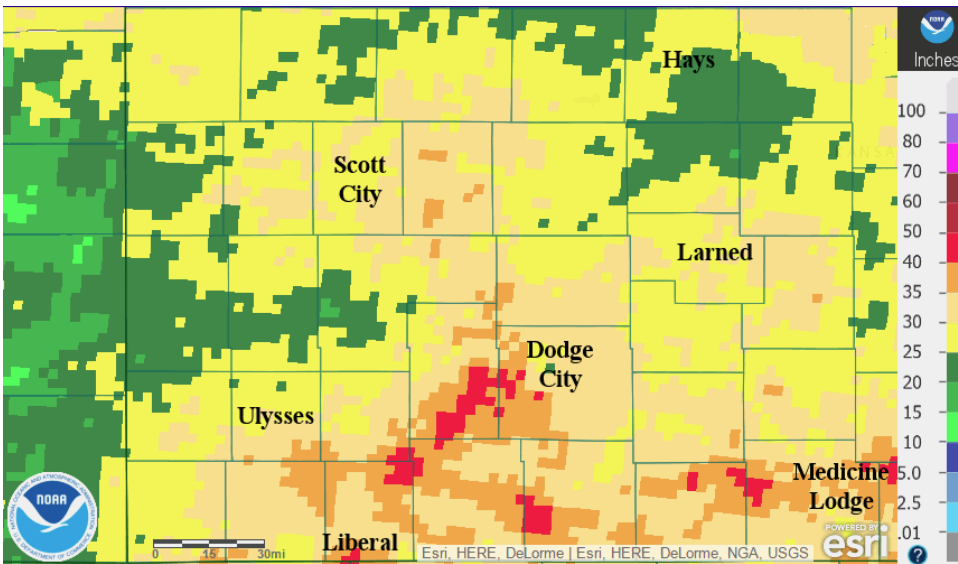


Damage to hog farm west of Kismet on November 16th, 2015.

The strongest tornado of the evening struck a hog farm just west of Kismet. Unfortunately a number of livestock perished in the tornado. Damage to the farm was extensive with EF3 damage observed.

After the long tracked tornado dissipated, another smaller tornado formed in the cyclic supercell thunderstorm. This tornado did damage to the same home near Ensign that was heavily damaged by the May 24th tornado! It was just about ready to be moved into.

The next big event during the late fall was a heavy rain, sleet and snow storm that struck on December 12 and



2015 Annual Rainfall total, some areas had 300% of normal

13th. A relatively narrow band of 6 to 12 inches of snow fell from near Meade to Jetmore. The heaviest snow was concentrated in the Dodge City and Jetmore areas.

For the year, rainfall was astonishing at some locations. Rainfall of nearly 300 percent of normal was noted.

For 2015, there were 58 tornadoes occurring in our local area. This is significantly above average and is the most since 2008 when a record 81 tornadoes occurred.



Also be sure to check if your county emergency manager has a facebook page for your county.

Be sure to find your local NWS office on facebook

NWSDodgeCity

NWSGoodland

NWSHastings

NWSKansasCity

NWSSpringfield

NWSTopeka

NWSWichita

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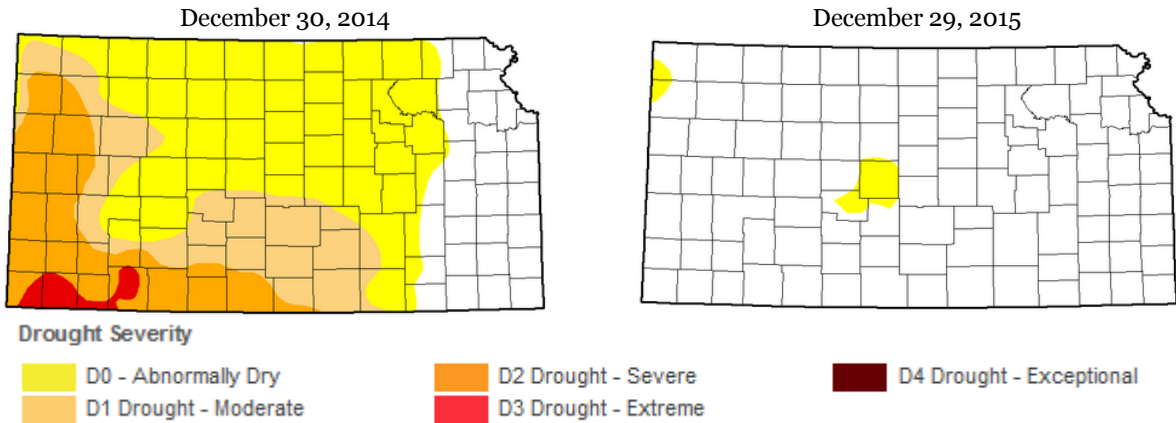
2015 Severe Weather Summary

Northwest Kansas

National Weather Service - Goodland, KS

Drought

The drought situation across the state improved dramatically in 2015 thanks to numerous weather systems which brought heavy rainfall (in addition to severe weather). The year began with Severe to Extreme Drought across the far west and southwest counties thanks to below normal precipitation from 2012- 2014. By year's end, no Kansas counties were in drought with a few counties listed as being "abnormally dry".



Winter Weather

The first few months of 2015 were on the quiet side in terms of winter weather. On January 3rd a weather system brought light snow and strong winds of 40-50 mph resulting in blowing snow and visibilities dropping to near zero at times. This prompted the closing of Interstate 70 from the Colorado state line to Colby, as well as Highway 24 in Sherman County (Goodland). The next wintry weather event occurred February 21 -22 when an area of heavy snow developed across Sherman, Wallace, Greeley, Logan and Wichita counties. Five to nine inches of snow fell during the afternoon and into the overnight hours. The highest snow amount was nine inches in southwest Sherman County. No significant winter weather occurred in March.

Severe Weather

The month of April started off with a bang. Thunderstorms developed over eastern Colorado on April 2nd and roared into western Kansas producing a dust storm and wind gusts estimated at over 100 mph. Widespread wind damage occurred at several residences as well as a dairy farm in extreme northern Greeley

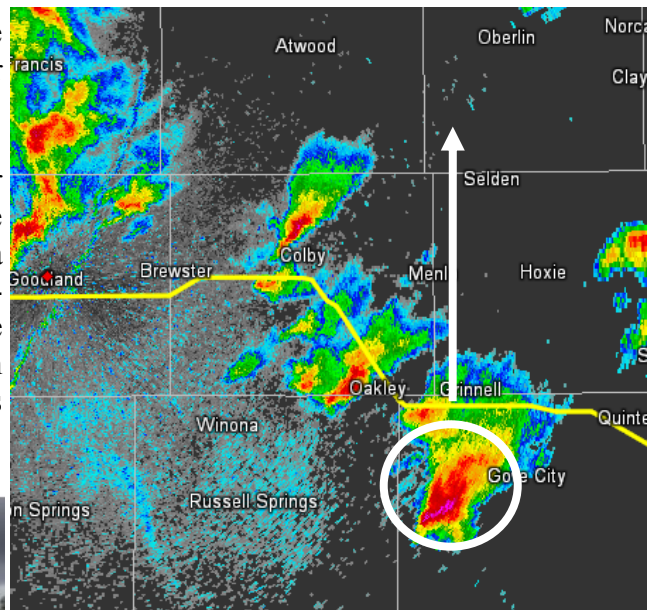


A 100 mph down-burst produced a dust storm and significant damage at a dairy farm in extreme northern Greeley County (left), as well as causing extensive tree and outbuilding damage at a farmstead (right).

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County. A number of animals at the dairy farm had to be put down, but fortunately there were no human injuries or fatalities.

In May, a cyclic supercell thunderstorm intensified over western Gove County during the early evening hours of the 9th and tracked straight north for 3-4 hours. It produced a total of six tornadoes in northwest Kansas and an additional tornado after it crossed the state line into Nebraska. One of the tornadoes produced EF2 damage at a farmstead in Sheridan County. Damage to grain bins, trees, utility poles and outbuildings was noted.



Above: Doppler radar view of long-tracked supercell as it intensified over Gove County.



Left: Tornado damage to grain bins near Selden (photo courtesy of Danielle Hickert-Young).

A noteworthy late season tornado event occurred in mid-November when a strong storm system resulted in severe storms which moved into northwest Kansas from the south. A total of six tornadoes occurred in Gove, Sheridan and Norton counties during the evening; the longest produced a 17 mile track and lasted for 30 minutes. Since 1950 there has never been a tornado in northwest Kansas this late in the year.



Above: Straight-line wind damage in Hill City on November 16th. Roof was removed from the power plant (photo courtesy of Mickie Helberg, Graham County Emergency Management).

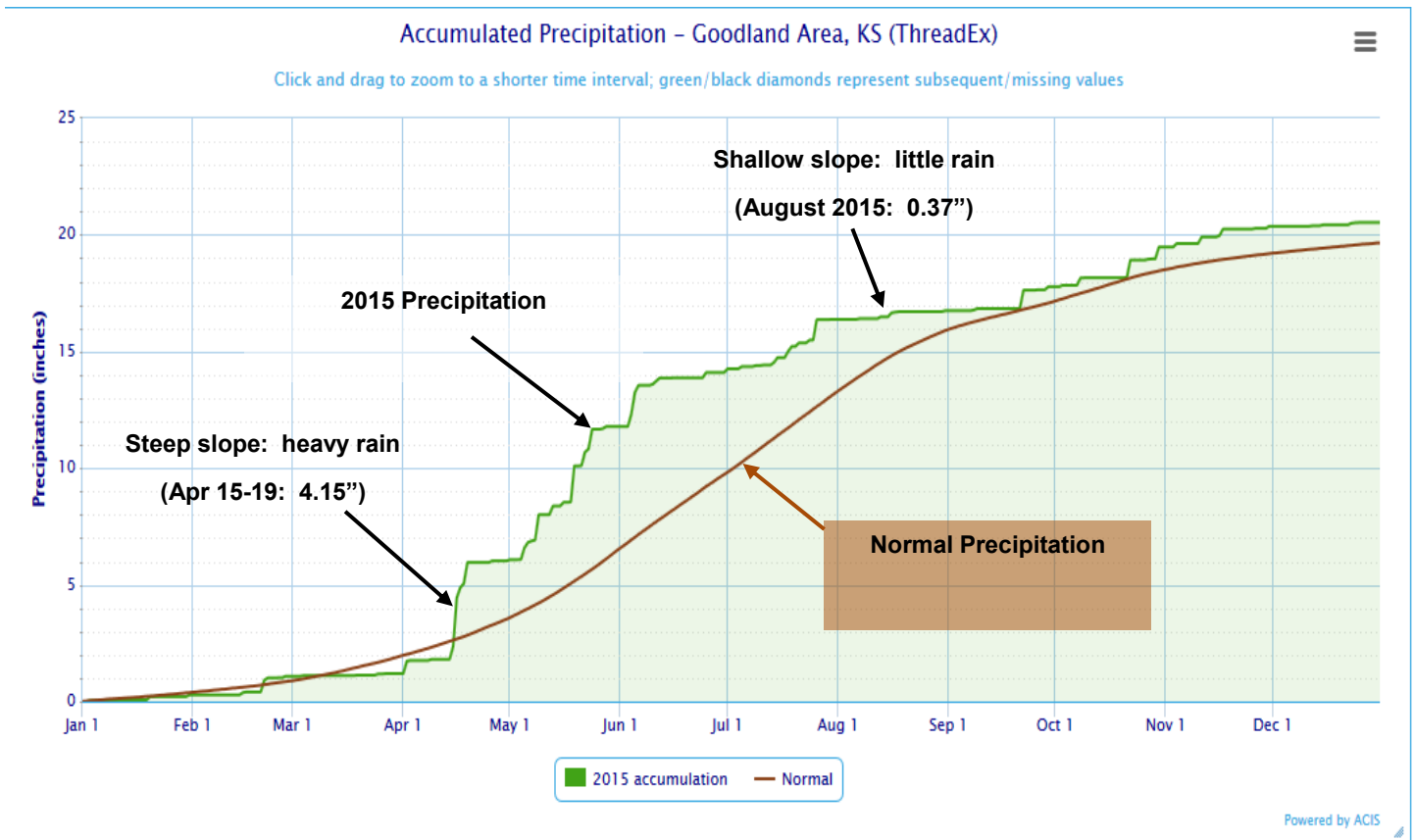
Right: Tornado near Grainfield, received via Twitter, courtesy of Brett Oelke.



Precipitation (2015 vs Normal)

The chart below is a timeline of precipitation for Goodland. The smooth brown line shows normal precipitation; the jagged green line shows 2015 precipitation. Time of year increases from left (January) to right (December) on the bottom axis. When the green line is above the brown line, precipitation is above normal. Shallow slopes indicate precipitation accumulating slowly with time while steep slopes indicate precipitation accumulating rapidly with time.

Heavy rainfall in April and May helped contribute to an above normal year for moisture. Looking at December 31st on the right, the brown line indicates Goodland normally receives annual moisture of 19.66", but the green line indicates Goodland actually received 20.53".



Be sure to find your local NWS office on YouTube



NWS Dodge City, KS at www.youtube/user/NWSDodgeCity

NWS Goodland, Kansas at www.youtube/user/NWSGoodland

NWS Hastings, Nebraska at www.youtube/user/NWSHastings

NWS Kansas City, Missouri at www.youtube/user/NWSKansasCity

NWS Springfield, Missouri at www.youtube/user/NWSSpringfield

NWS Topeka, Kansas at www.youtube/user/NWSTopekaKS

NWS Wichita, Kansas at www.youtube/user/NWSWichita

KANSAS SEVERE WEATHER AWARENESS WEEK
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2015 Severe Weather Summary

Southeast Kansas

National Weather Service - Springfield, MO

The year of 2015 was fairly quiet in regards to severe weather and flooding across southeast Kansas compared to the past years. Factors contributing to a less active weather season were a persistent pattern with the jet stream displaced from the area and the lack of deep Gulf of Mexico moisture. The overall weather pattern was not conducive for much in the way of active weather.

There was only 1 tornado that was reported which happened across rural portions of western Cherokee County on April 2nd. This tornado was rated a weak EF-0 and was very brief with no damage reported. There were several rounds of severe weather through out the year which caused minor wind damage and hail. The largest hail report was of baseball size hail on the morning of August 27th west of Girard, Kansas. This large hail event caused damage to several cars and homes. Throughout the year there were also a few reports of minor flooding.

There was a unique strong wind event which occurred on Veteran's Day, November 11th. A strong low pressure system moving across the Plains into the Midwest caused strong gusty winds across southeast Kansas. The pressure gradient from the storm system caused 50 to 55 mph winds for several hours over a widespread area. This wind event caused power lines and trees to be blown down along with numerous power outages across southeast Kansas. There were some reports of minor damage structural damage as well.



Picture credit: Sarah Geier Avery



Also be sure to check if your county emergency manager has a twitter account for your county.

Be sure to find your local NWS office on Twitter

NWS Dodge City, Kansas at [@NWSDodgeCity](#)

NWS Goodland, Kansas at [@NWSGoodland](#)

NWS Hastings, Nebraska at [@NWSHastings](#)

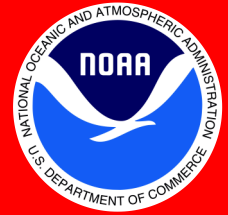
NWS Kansas City, Missouri at [@NWSKansasCity](#)

NWS Springfield, Missouri at [@NWSSpringfield](#)

NWS Topeka, Kansas at [@NWSTopeka](#)

NWS Wichita, Kansas at [@NWSWichita](#)

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Have you ever sat down with your family to discuss and plan what you would do in case of an immediate weather threat? If you haven't, now would be an excellent time to sit down with your family and devise a plan. Finding the time to do this can be difficult, but taking the 15 minutes to develop and practice a plan could save the lives of ones you love. Please remember these tips when planning and carrying out your actions.

Tornado Safety Tips

Before the storm:

- Develop a plan of action
- Have frequent drills
- Have a NOAA Weather Radio with a warning alarm tone
- Listen to radio and television for information
- If planning a trip outdoors, listen to forecasts

In Homes or Small Buildings:

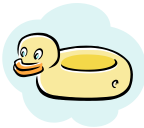
Go to the basement or to an interior room on the lowest floor (e.g. closet or bathroom). Upper floors are unsafe. If there is no time to descend, go to a closet, a small room with strong walls or an inside hallway. Wrap yourself in overcoats or blankets to protect yourself from flying debris.

In Schools, Hospitals, Factories, or Shopping Centers:

Go to interior rooms and halls on the lowest floor. Stay away from glass enclosed places or areas with wide span roofs such as auditoriums and warehouses. Crouch down and cover your head. Don't take shelter in halls that open to the south or the west. Centrally-located stairwells are good shelter.

If a warning is issued or threatening weather approaches

- Always remember **"DUCK"**
- Stay away from windows
- Get out of automobiles and get into a sturdy structure or ditch.



"DUCK"

Down to the lowest level
Under something sturdy

Cover your head

Keep in the shelter until
the storm has passed

- Or, buckle your seat belt and get below window level of your vehicle.

In High-Rise Buildings:

Go to interior small rooms or halls. Stay away from exterior walls or areas with glass.

In Mobile Homes:

ABANDON THEM IMMEDIATELY!!!

Many deaths occur in mobile homes. If you are in a mobile home when severe weather approaches, leave it immediately and go to a substantial structure or designated tornado shelter. Determine your shelter ahead of time so you don't have to think about it when weather strikes.

If no Suitable Structure is Nearby:

Lie flat in the nearest ditch or depression and use your hands to cover your head. Be alert for flash floods.

Tornadoes and Overpass Safety

Many people mistakenly think that a highway overpass provides safety from a tornado. In reality, an overpass may be one of the worst places to seek shelter from a tornado. Seeking shelter under an overpass puts you at greater risk of being killed or seriously injured by flying debris from the powerful tornadic winds.

Tornadic winds can make the most benign item a dangerous missile. In addition to the debris that can injure you, the winds under an overpass are channeled and could easily blow you or carry you out from under the overpass and throw you 100s of yards.

As a last resort, lie flat in a ditch, ravine or below grade culvert to protect yourself from flying debris. If no ditch is available, you may remain in your vehicle, put on your seatbelt, lower yourself below window level, and cover your head with your hands or a blanket.

Lightning Safety

- Watch for developing thunderstorms and be ready to act when thunder is heard.
- Lightning can strike as far as 10 miles from an area where it is raining. That's about the distance you can hear thunder.

If you can hear thunder, you are within striking distance. Seek safe shelter IMMEDIATELY!

- Outdoor Activities: Minimize the risk of being struck by moving indoors or to vehicles at the first roar of thunder.
 - Inside Activities: Things to avoid
 - Corded phones
 - Computers
 - Other electrical equipment
 - Indoor/Outdoor pools
 - Tubs and showers and other things connected to metal plumbing
- Wait 30 minutes after the last roar of thunder before going outside again.**
- Help a Lightning Victim: Call 911 and get help immediately. You are in no danger when helping a lightning victim. The charge will not affect you.

When Thunder Roars, Go Indoors!

Flood Safety

- Floods, especially Flash Floods kill more people each year than any other weather phenomenon.
- As little as 6 inches of fast moving water can sweep you off of your feet.
- As little as 18-24 inches of water is enough to float a car and carry it away.
- If you see a road barrier across a flooded roadway....
TURN AROUND. DON'T DROWN!
- Tune to the NOAA Weather Radio, or your favorite news source for all flood and any other weather related information.
- Leave areas subject to flooding, such as dips, low spots and underpasses.
- Do not attempt to cross flowing streams, you don't know how deep the water could be.
- Never drive through flooded roadways.
- If your vehicle is suddenly caught in rising water, leave it immediately and seek higher ground.
- Report any flooding to your local authorities or to the National Weather Service.

Turn Around. Don't Drown!

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Mobile Home Safety

- The average annual death rate in mobile homes due to tornadoes is **20 times** higher than in permanent homes
- Mobile homes were the most common location for **tornado fatalities (44%)** from 1985 to 2005 followed by permanent homes (25.3%) and vehicles (9.9%). This disparity is more striking when considering that mobile homes accounted for a mere 5%–8% of U.S. housing units during this period.
- The National Weather Service (NWS) considers mobile homes unsafe during a tornado.
- Mobile home residents should go to the nearest sturdy building or storm shelter. Do NOT seek shelter inside your mobile home!
- In many cases, your car can be a safer sheltering option than staying in your mobile home.



Mobile homes:

- overturn or slide between 70 and 100 mph
- Are completely blown away at 110-137 MPH EF2

Truck stays - M. Home flipped



Picher, OK 2008

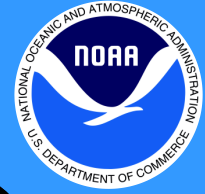
Remember!

- 1) Participate in a tornado drill in your mobile home community. If you don't have one, then organize a tornado drill!
- 2) Understand the definition of a tornado warning*
- 3) Have an emergency response plan for seeking shelter **away** from your mobile home.

By following these 3 points you can lower the risk to you and your family from the hazards posed by tornadoes in Kansas.

***A Tornado Warning means:** there is immediate danger for the warned area. All in a tornado warning are urged to seek shelter immediately, as it can be a life-threatening situation. For our residents who live in mobile homes, this means evacuating the mobile home and seeking shelter in the nearest sturdy building or storm shelter.

National Weather Service Kansas



Disaster Kit

www.weather.gov

Are you ready?

When disaster strikes, it pays to be prepared. Having a disaster kit prepared will save you time and could save your life. A disaster kit should be in your *designated shelter* and it would also be helpful to have a *smaller version in a small backpack or other containers that are easily carried if you need to evacuate your home*. Disaster kits should be reviewed annually to be kept up-to-date with your family's needs. Items in your kit should include, but are not limited to:

Staple Items

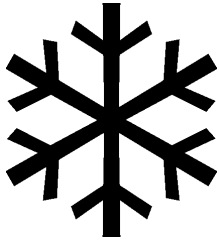
- 3 day supply of water (1 gallon per person per day)
- 3 day supply of nonperishable, ready to eat food items and manual can opener
 - high energy foods, e.g. peanut butter
 - juices, dried milk
 - sugar, salt, pepper
- First Aid Kit (see list for individual items)
- Flashlight and extra batteries, or ones that generate their own energy by shaking them
- Battery operated or Hand Crank radio
 - NOAA All-Hazard Weather Radio
- Clothing— Think about the climate: warm and/or cool season clothes
- Shoes
- Sanitation and hygiene items (such as hand sanitizer, moist towelettes, and toilet paper)
- Matches in waterproof container
- Whistle
- Blankets
- Other tools (e.g. hammer, pliers)
- Cash and coins
- Photocopies of important documents, personal ID's and credit cards
- Baby needs
- Special Needs
 - Prescription medications, eye glasses,
 - Contact lens solution, etc.
- Games to pass the time (e.g. cards)
- Pet food and extra water

A graphic with the words "BE PREPARED" in large, bold, black letters. The word "BE" is positioned above "PREPARED". The text is set against a yellow, starburst-shaped background with a dotted pattern.

First Aid Kit

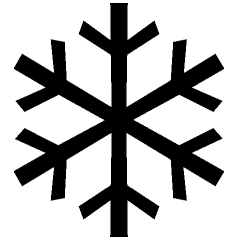
- Sterile adhesive bandages in assorted sizes
- 2-inch and 4-inch sterile gauze pads
- Hypoallergenic adhesive tape
- Triangular bandages
- Scissors & tweezers
- 2-inch and 3-inch sterile roll bandages
- Waterless alcohol-based hand sanitizer
- Antiseptic wipes
- Petroleum jelly or other lubricant
- Latex gloves
- Anti-bacterial ointment
- Aspirin or non-aspirin pain reliever
- Antacid (for upset stomach)
- Cold pack
- CPR breathing barrier, such as a face shield
- Assorted sizes of safety pins

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Winter Disaster Kit

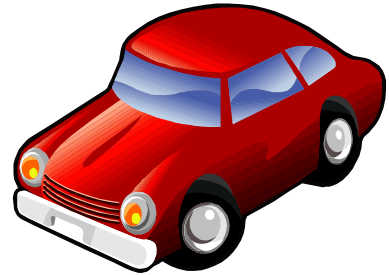
Winterizing your Disaster Kit



If you live in a cold climate, you must think about warmth. It is possible that you will not have heat during or after a disaster. Think about your clothing and bedding needs. Be sure to include one set of the following for each person to add to your Disaster Kit.

- Jacket or Coat
- Long pants and long sleeve shirt
- Sturdy Shoes
- Hat, Mittens, and Scarf
- Sleeping Bag or Warm Blanket
- Extra Blankets
- Lantern or Flashlight

A Disaster Kit for your Vehicle



You may be in your vehicle when disaster strikes, or possibly stuck in your vehicle in a summer/winter environment. Below are a few items that you should keep in your car as part of your Vehicle Disaster Kit.

- | | |
|---|--|
| <input type="checkbox"/> Flashlight and extra batteries | <input type="checkbox"/> Booster/Jumper cables |
| <input type="checkbox"/> Maps | <input type="checkbox"/> Air pump |
| <input type="checkbox"/> Small First Aid Kit | <input type="checkbox"/> Flares |
| <input type="checkbox"/> White Distress Flag | <input type="checkbox"/> Bottled water |
| <input type="checkbox"/> Tire Repair kit | <input type="checkbox"/> Non-perishable foods such as granola bars |

Winter supplies

- Blanket or Sleeping Bag
- Hat and Mittens
- Shovel
- Sand Bags
- Tire Chains
- Windshield Scraper
- Florescent Distress Flag

Summer Supplies

- Sunscreen
- Shade Item (umbrella or wide brimmed hat)
- Bug spray

Sirens Are An Outdoor Warning System

Every year the National Weather Service and the emergency management communities get together and provide severe weather information for the public. Each year we emphasize the fact that the outdoor sirens are just that...an Outdoor Warning System. Every year we get a multitude of calls telling us that the sirens can't be heard while in the house.

Severe weather season usually begins in the early spring in Kansas. We all need to be prepared for severe weather at any time of the day or night and at any time of year. The National Weather Service, emergency management, law enforcement, the 9-1-1 center, and the fire department cannot notify every individual of the possibility of severe weather in their town. The local media outlets and All Hazards NOAA Weather Radio are your best sources for information concerning severe weather watches and warnings. Do not wait for the sirens to be your warning system at home. Sirens may not be working if the power is out and oftentimes cannot be heard indoors. Sirens may not be activated for other severe threats such as damaging straight line winds in excess of 60 mph, large hail, and flooding. Monitor NOAA Weather Radio and local media then take the appropriate action for the severe weather threat. If it appears that a severe thunderstorm is approaching your location, do not wait for the outdoor sirens but take immediate action to protect your life and the lives of others in your home.



Hundreds of volunteer storm spotters, amateur radio operators, and first responders provide the first line of defense every time there is severe weather in the local area. They do this because they care about the people in their communities and want to make sure those people are given the best chance at survival. The storm spotters, emergency managers, law enforcement and other volunteers immediately relay severe weather reports to the National Weather Service. The National Weather Service in turn disseminates that information to the media and public through warnings, statements, and local storm reports. Getting the word out to the public in a timely manner may save lives. When severe weather threatens at night while most people sleep, it can be especially dangerous. Oftentimes in the heat of the spring and summer, we cannot hear outdoor sirens over running air conditioners. A NOAA Weather Radio with a back-up battery can make the difference for you and your family.

Take responsibility...listen to the media...take protective action....survive to enjoy the wonderful warm sunny days that also come this time of year.

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Weather Safety Handout In Spanish

**KANSAS SEVERE WEATHER AWARENESS WEEK
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Medidas de seguridad en clima severo



¿Tiene un plan familiar en caso de que se presente una emergencia? Si no, entonces ahora es un tiempo perfecto para hacer lo. Sólo le llevará 15 minutos hacer y practicar su plan. Tome en cuenta los siguientes consejos .

Consejos de seguridad en caso de tornados

Antes de la tormenta:

- Tenga un plan de acción
- Practique frecuentemente los procedimientos a seguir
- Compre un radio del tiempo NOAA para que tener una alarma
- Escuche el radio y la televisión para tener más información
- Si está planeando una actividad al aire libre primero investigue el pronóstico del tiempo

Si se emite una alarma

- Evite las ventanas
- Abandone los autos y busque un refugio en una zanja o una cuneta (drenaje vial).



Está en una casa o en un edificio pequeño:

Busque un refugio en el sótano, en una habitación o en el pasillo del nivel más bajo del edificio. Si no le da tiempo de bajar busque refugio en un ropero, un cuarto dentro de la casa que tenga paredes resistentes. Cúbrase con unas cobijas o una bolsa de dormir para protegerse de los escombros que salgan volando.

Está la escuela, hospital, una fábrica o en un centro comercial:

Busque refugio en un cuarto interior o un pasillo del nivel más bajo. Evite las ventanas o las áreas abiertas como un almacén o un auditorio. Las escaleras en el centro son un buen refugio.

Está en un edificio de muchos pisos:

Busque refugio en un cuarto interior o un pasillo. Evite las ventanas y las paredes exteriores.

Está en una casa prefabricada o un auto: ¡¡¡Abandónelo Inmediatamente!!!

La mayoría de las muertes ocurren en casas prefabricadas o en autos. Si está en una casa prefabricada o un auto entonces abandónelo inmediatamente y busque refugio en un edificio con una estructura fuerte. Planee y determine su refugio antes que el clima severo ocurra.

Si no hay edificio cerca:

Busque un refugio en una cuneta y cubra su cabeza o zanja y cubra su cabeza con sus manos. Esté alerta por si hay una inundación.

Tornados y Seguridad en Puentes

Muchas personas piensan, equivocadamente, que los puentes o pasos a desnivel en las carreteras son lugares seguros para protegerse de un tornado. En realidad, esos puentes son los peores lugares para buscar refugio de un tornado. Buscar protegerse debajo de un puente le pone en mayor riesgo de muerte o de ser fuertemente herido debido a los escombros que los fuertes vientos del tornado arrastran.

Los vientos del tornado pueden convertir los objetos menos peligrosos en armas de muerte. Además del peligro de los escombros, los vientos debajo del puente son más intensos y pueden fácilmente sacarlo de ahí y aventarlo cientos de millas.

Como último recurso, acuéstese boca abajo en una zanja a lado de la carretera, o entre en un tubo de drenaje para protegerse de ser arrastrado. Si no hay ninguna zanja o tubo quédese en su carro con su cinturón de seguridad puesto y póngase debajo del nivel de la ventana. Cubra su cabeza con sus manos o con una sábana.

Aléjese de los Relámpagos

- Esté al pendiente de saber si habrá tormentas eléctricas y alístese para actuar.
- Los rayos pueden caer hasta 10 millas de distancia de donde está lloviendo. Esa es la distancia aproximada de donde se puede escuchar un trueno.

Si puede escuchar el trueno, significa que está en un área peligrosa donde puede caerle un rayo ¡Aléjese y busque refugio!

- Actividades al aire libre: Para evitar ser tocado por un rayo mejor realice las actividades en un lugar techado o entre en su carro cuando escuche el primer trueno.
- Actividades Interiores: Cosas a evitar
 - Teléfonos conectados a la electricidad
 - Computadoras
 - Cualquier equipo eléctrico
 - Albercas techadas o al aire libre
 - Tuberías, regaderas y cualquier otra cosa que esté conectada a la tubería

Después de escuchar el último trueno espere 30 minutos antes de salir.

Para ayudar una víctima de un rayo: Llame al 9-1-1 o a su servicio local de ambulancia. Y pida ayuda inmediatamente. Usted no corre peligro al ayudar a una víctima de un rayo. La energía que esa persona recibió no le afectará a usted.

¡Cuando escuche un trueno, ir a dentro es bueno!

Seguridad de Las Inundaciones

- Las inundaciones, particularmente las riadas, cada año provocan la muerte de muchas personas más que cualquier otro evento asociado con clima severo .
- Aguas de 6 pulgadas de profundidad que se muevan rápidamente pueden arrastrar a casi cualquier persona.
- Su auto, camión o SUV puede empezar a flotar en agua de menos de 2 pies de profundidad y que se están moviendo rápidamente.
- Cuando vea una calle inundada...
¡ES MEJOR REGRESARSE, QUE AHOGARSE!
- Escuche el radio de NOAA o su noticiero local para más información de las inundaciones.
- Salga de las áreas que son susceptibles a la inundación por ejemplo sótanos y valles.
- No trate de cruzar los riachuelos.
- Nunca conduzca en caminos inundados.
- Si su auto está en un lugar donde el nivel del agua sube rápidamente, abandónelo y busque refugio en un lugar alto.
- Llame a las autoridades locales o su Servicio Nacional de Meteorología para informar de la inundación

¡ES MEJOR REGRESARSE, QUE AHOGARSE!

**KANSAS SEVERE WEATHER AWARENESS WEEK
MARCH 14-18, 2016**



Americans live in the most severe weather-prone country on Earth, and the state of Kansas is no exception. Each year a startling 10,000 thunderstorms, 2,500 floods, 1,000 tornadoes, and 10 hurricanes impact the United States. Potentially deadly severe weather impacts every American. Communities can rely on the National Weather Service's StormReady program to help them guard against the ravages of Mother Nature.

What is StormReady?

Ninety percent of all presidentially declared disasters are weather related. Through the StormReady program, NOAA's National Weather Service gives communities the skills and education needed to survive severe weather – before and during the event. StormReady helps community leaders and emergency managers strengthen their local hazardous weather operations.

StormReady Does Not Mean Storm Proof

StormReady communities are better prepared to save lives from the onslaught of severe weather through better planning, education and awareness. Communities have fewer fatalities and property damage if they plan before dangerous weather arrives. No community is storm proof, but StormReady can help communities save lives.

How Can My Community Become StormReady?

The entire community – from the mayor and emergency managers, to business leaders and civic groups – can take the lead on becoming StormReady. Local National Weather Service forecast offices work with communities to complete an application and review process. To be recognized as StormReady, a community must:

- ✓ Establish a 24-hour warning point and emergency operations center.
- ✓ Have more than one way to receive severe weather warnings and forecasts and to alert the public.
- ✓ Create a system that monitors local weather conditions.
- ✓ Promote the importance of public readiness through community seminars.
- ✓ Develop a formal hazardous weather plan, which includes training severe weather spotters and holding emergency exercises.

Go to <http://www.stormready.noaa.gov> for more information.

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Weather-Ready Nation

National Oceanic and Atmospheric Administration

The Weather-Ready Nation Ambassador™ initiative is the National Oceanic and Atmospheric Administration's (NOAA) effort to formally recognize NOAA partners who are improving the nation's readiness, responsiveness, and overall resilience against extreme weather, water, and climate events.

As a WRN Ambassador, partners commit to working with NOAA and other Ambassadors to strengthen national resilience against extreme weather. In effect, the WRN Ambassador initiative helps unify the efforts across government, non-profits, academia, and private industry toward making the nation more ready, responsive, and resilient against extreme environmental hazards.

WRN Ambassadors serve a pivotal role in affecting societal change — helping to build a nation that is ready, responsive, and resilient to the impacts of extreme weather and water events.

To be officially recognized as a WRN Ambassador, an organization must commit to:

- Promoting Weather-Ready Nation messages and themes to their stakeholders;
- Engaging with NOAA personnel on potential collaboration opportunities;
- Sharing their success stories of preparedness and resiliency;
- Serving as an example by educating employees on workplace preparedness



As a WRN Ambassador, you will serve as a change agent and leader in your community. You will inspire others to be better informed and prepared, helping to minimize or even avoid the impacts of these natural disasters. To support your efforts, NOAA can:

- Provide outreach content about creating a Weather-Ready Nation;
- Explore innovative approaches for collaboration with your organization;
- Assist with StormReady® opportunities for communities;
- Recognize your organization as a WRN Ambassador; and
- Share the WRN Ambassador logo for your use.

Together we will inform and empower communities, businesses, and people to make pre-event decisions that can be life-saving and prevent or limit devastating economic losses. We are a nation of many communities, and it is only through connected communities that we will achieve this goal.

Any organization across all levels of government, businesses large and small, non-profit and non-governmental organizations, and academia can become a WRN Ambassador. The WRN Ambassador initiative is intended for organizations and designed to help serve the public by strengthening our national resilience against extreme weather events.

http://www.nws.noaa.gov/com/weatherreadynation/amb_tou.html

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