

## Storm Data and Unusual Weather Phenomena - October 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
<b>ILLINOIS, South</b>				
<b>ALEXANDER COUNTY --- CAIRO [37.00, -89.18]</b>				
	10/05/13 13:00 CST	0		Heavy Rain
	10/06/13 06:00 CST	0		Source: COOP Observer
A co-operative observer reported a daily rainfall total of 4.35 inches.				
<b>GALLATIN COUNTY --- 2.0 S JUNCTION [37.69, -88.23]</b>				
	10/05/13 13:00 CST	0		Heavy Rain
	10/06/13 07:00 CST	0		Source: Trained Spotter
A trained spotter reported a daily rainfall total of 4.40 inches. About 2.50 inches fell after midnight.				
<b>POPE COUNTY --- DELWOOD [37.58, -88.57]</b>				
	10/05/13 13:00 CST	0		Heavy Rain
	10/06/13 07:00 CST	0		Source: Trained Spotter
A trained spotter reported a daily rainfall total of 3.50 inches.				
<b>PERRY COUNTY --- PINCKNEYVILLE [38.08, -89.38]</b>				
	10/05/13 13:30 CST	0		Heavy Rain
	10/05/13 14:15 CST	0		Source: Unknown
Street flooding was reported as a line of thunderstorms moved northeast across the city.				
<b>JEFFERSON COUNTY --- INA [38.15, -88.90]</b>				
	10/05/13 13:45 CST	0		Thunderstorm Wind (MG 56 kt)
	10/05/13 13:45 CST	0		Source: Trained Spotter
A wind gust to 64 mph was measured by a trained spotter.				
<b>PULASKI COUNTY --- MOUND CITY [37.08, -89.17]</b>				
	10/05/13 19:30 CST	0		Hail (0.88 in)
	10/05/13 19:30 CST	0		Source: Unknown
<b>MASSAC COUNTY --- BROOKPORT [37.12, -88.63]</b>				
	10/05/13 20:20 CST	0		Heavy Rain
	10/06/13 02:00 CST	0		Source: Law Enforcement
A secondary road was underwater in some places.				
<p><b>Thunderstorms increased over southeast Missouri and southern Illinois within a moist and unstable environment ahead of an advancing cold front moving across southeast Missouri. Low level winds strengthened as the storms moved east across the Lower Ohio Valley, resulting in isolated strong wind gusts. The air mass ahead of the front was warm and humid, reminiscent of late summer. Moisture was in abundance, and storms were very efficient rain makers. Rainfall amounts ahead of the front were between 1 and 3 inches, although there were scattered amounts between 4 and 5 inches.</b></p>				
<b>(IL-Z075) JEFFERSON, (IL-Z076) WAYNE, (IL-Z077) EDWARDS, (IL-Z078) WABASH, (IL-Z080) PERRY, (IL-Z081) FRANKLIN, (IL-Z082) HAMILTON, (IL-Z083) WHITE, (IL-Z084) JACKSON, (IL-Z085) WILLIAMSON, (IL-Z086) SALINE, (IL-Z087) GALLATIN, (IL-Z088) UNION, (IL-Z089) JOHNSON, (IL-Z090) POPE, (IL-Z091) HARDIN, (IL-Z092) ALEXANDER, (IL-Z093) PULASKI, (IL-Z094) MASSAC</b>				
	10/25/13 00:00 CST	0		Frost/Freeze
	10/25/13 08:00 CST	0		
<p><b>Widespread temperatures below freezing were observed at numerous locations. Many locations saw temperatures fall well into the 20's after midnight and persist until shortly before sunrise. In addition to the below freezing temperatures, widespread moderate to locally heavy frost covered the ground. This frost and freeze event effectively ended the growing season. High pressure built into the region with a reinforcing shot of cold Canadian air.</b></p>				
<b>FRANKLIN COUNTY --- CHRISTOPHER [37.97, -89.05]</b>				

## Storm Data and Unusual Weather Phenomena - October 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	10/31/13 11:00 CST		0	Heavy Rain
	10/31/13 15:00 CST		0	Source: Trained Spotter

A trained spotter measured 2.50 inches of rain in four hours.

<b>ALEXANDER COUNTY --- 4.6 NW GALE [37.30, -89.51], 3.6 WSW MC CLURE [37.30, -89.49]</b>				
	10/31/13 18:20 CST		0.10M	Tornado (EF0, L: 1.24 mi , W: 200 yd)
	10/31/13 18:22 CST		0	Source: NWS Storm Survey

The tornado passed through East Cape Girardeau with estimated peak winds near 80 mph. Numerous trees and tree branches were blown down. There was shingle and other minor damage to several houses. A church steeple was blown off a church. Some damage occurred to fencing and small sheds. The average path width was 175 yards.

<b>JACKSON COUNTY --- CARBONDALE [37.72, -89.22]</b>				
	10/31/13 18:24 CST		0	Hail (0.75 in)
	10/31/13 18:24 CST		0	Source: Emergency Manager

<b>ALEXANDER COUNTY --- 6.0 N TAMMS [37.32, -89.27], 6.9 NNE TAMMS [37.32, -89.22]</b>				
	10/31/13 18:35 CST		10K	Tornado (EF1, L: 2.67 mi , W: 50 yd)
	10/31/13 18:40 CST		0	Source: NWS Storm Survey

The tornado produced only tree damage along its path through this forested area. Hardwood tree trunks were snapped. Peak winds were estimated near 100 mph as the tornado approached the Pulaski County line. The tornado continued into northwest Pulaski County.

<b>PULASKI COUNTY --- 2.9 W WETAUG [37.32, -89.22], 1.2 NE WETAUG [37.33, -89.15]</b>				
	10/31/13 18:40 CST		10K	Tornado (EF1, L: 3.84 mi , W: 50 yd)
	10/31/13 18:43 CST		0	Source: NWS Storm Survey

The tornado continued from Alexander County into northwest Pulaski County. Numerous hardwood trees were snapped. There was no structural damage noted in this rural area. Peak winds were estimated near 105 mph.

<b>WILLIAMSON COUNTY --- 1.0 S CREAL SPGS [37.61, -88.83], 4.2 SE PALZO [37.61, -88.71]</b>				
	10/31/13 18:51 CST		40K	Tornado (EF1, L: 6.43 mi , W: 175 yd)
	10/31/13 18:59 CST		0	Source: NWS Storm Survey

This tornado contained estimated peak winds near 100 mph. Three barns and two homes were damaged. Numerous trees were uprooted and snapped. Power lines were blown down. The tornado crossed into Saline County near the southern outskirts of Stonefort.

<b>JOHNSON COUNTY --- 2.4 WNW BELKNAP [37.33, -88.97], 1.9 NW BELKNAP [37.34, -88.96]</b>				
	10/31/13 18:56 CST		30K	Tornado (EF1, L: 0.70 mi , W: 50 yd)
	10/31/13 18:58 CST		0	Source: NWS Storm Survey

Hardwood trees were uprooted. Shingles were blown off two residences. Another residence had a tarp over the roof. Part of the roof was lifted off a small barn. Several hardwood tree trunks were snapped. Peak winds were estimated near 105 mph.

<b>SALINE COUNTY --- 0.9 SE STONEFORT [37.61, -88.71], 4.0 E STONEFORT [37.62, -88.65]</b>				
	10/31/13 18:59 CST		70K	Tornado (EF1, L: 3.47 mi , W: 175 yd)
	10/31/13 19:04 CST		0	Source: NWS Storm Survey

This tornado, which began in Williamson County, crossed into Saline County near Stonefort. The tornado contained estimated peak winds near 100 mph. Three barns and four homes were damaged. The damage consisted mainly of roof damage, including one home with its roof torn off. Numerous trees were uprooted and snapped. Power lines were blown down.

<b>SALINE COUNTY --- 2.0 W HARRISBURG [37.73, -88.59]</b>				
	10/31/13 19:10 CST		0	Thunderstorm Wind (MG 54 kt)
	10/31/13 19:10 CST		0	Source: Trained Spotter

A wind gust to 62 mph was measured.

<b>MASSAC COUNTY --- METROPOLIS [37.15, -88.73]</b>				
	10/31/13 19:42 CST		30K	Thunderstorm Wind (EG 52 kt)
	10/31/13 19:42 CST		0	Source: Emergency Manager

## Storm Data and Unusual Weather Phenomena - October 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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A large tree fell against a house, severely damaging trusses separating the front wall of the house from the side wall.

An outbreak of severe thunderstorms and isolated tornadoes occurred ahead of a cold front. Thunderstorms increased in coverage over southeast Missouri and then spread east-northeast into southern Illinois and western Kentucky during the late afternoon and evening. A surface low pressure wave over the Ozark Mountain region accelerated eastward in advance of a compact upper-level shortwave over the southern Plains. A mid-level dry slot overspread the surface warm sector, where dew points were in the low to mid 60's. Extremely strong wind shear compensated for weak instability. Strong forcing along the front and a moist low level air mass contributed to a forced line of storms, including some without lightning.

### INDIANA, Southwest

#### VANDERBURGH COUNTY --- EVANSVILLE [37.98, -87.55]

10/02/13 14:30 CST	10K	Heavy Rain
10/02/13 18:30 CST	0	Source: Law Enforcement

Two rounds of heavy rain resulted in standing water across roads, and even some reports of stranded cars. About two inches of rain fell with the two rounds of storms.

Showers and thunderstorms persisted across the Evansville metro area for a few hours, causing heavy rainfall that produced minor flooding. The showers and storms occurred ahead of a weak 500 mb shortwave lifting northeast across the Lower Mississippi Valley. A southerly wind flow of warm and moist air near the surface contributed to the activity.

#### SPENCER COUNTY --- ROCKPORT [37.88, -87.05]

10/05/13 00:00 CST	0	Heavy Rain
10/05/13 23:59 CST	0	Source: Trained Spotter

A trained spotter measured 3.30 inches of rain for the calendar day.

#### GIBSON COUNTY --- HAZLETON [38.48, -87.53]

10/05/13 13:00 CST	0	Heavy Rain
10/06/13 06:00 CST	0	Source: COOP Observer

A co-operative observer measured a daily rainfall total of 4.70 inches of rain.

#### GIBSON COUNTY --- FRANCISCO [38.33, -87.45]

10/05/13 22:35 CST	0	Heavy Rain
10/05/13 23:05 CST	0	Source: Trained Spotter

A trained spotter reported 1.15 inches of rain, most of that in 30 minutes.

#### WARRICK COUNTY --- CHANDLER [38.05, -87.37], 1.1 S TURPIN HILL [38.11, -87.28]

10/05/13 23:00 CST	2K	Thunderstorm Wind (EG 52 kt)
10/05/13 23:00 CST	0	Source: State Official

Tree limbs were blown down in Chandler. A tree was down across Highway 61 between Lynnville and Boonville.

Thunderstorms increased over southeast Missouri and southern Illinois within a moist and unstable environment ahead of an advancing cold front moving across southeast Missouri. Low level winds strengthened as the storms moved east across the Lower Ohio Valley, resulting in isolated strong wind gusts. The air mass ahead of the front was warm and humid, reminiscent of late summer. Moisture was in abundance, and storms were very efficient rain makers. Rainfall amounts ahead of the front were between 1 and 3 inches, although there were scattered amounts between 4 and 5 inches.

#### (IN-Z081) GIBSON, (IN-Z082) PIKE, (IN-Z085) POSEY, (IN-Z086) VANDERBURGH, (IN-Z087) WARRICK, (IN-Z088) SPENCER

10/25/13 00:00 CST	0	Frost/Freeze
10/25/13 08:00 CST	0	

Widespread temperatures below freezing were observed at numerous locations. Many locations saw temperatures fall well into the 20's after midnight and persist until shortly before sunrise. In addition to the below freezing temperatures, widespread moderate to locally heavy frost covered the ground. This frost and freeze event effectively ended the growing season. High pressure built into the region with a reinforcing shot of cold Canadian air.

#### WARRICK COUNTY --- NEWBURGH [37.95, -87.42]

## Storm Data and Unusual Weather Phenomena - October 2013

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	10/31/13 20:10 CST		30K	Thunderstorm Wind (EG 56 kt)
	10/31/13 20:10 CST		0	Source: Public

Trees were blown down. A power line was down across a home.

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### SPENCER COUNTY --- ROCKPORT [37.88, -87.05]

	10/31/13 20:35 CST		0	Thunderstorm Wind (MG 59 kt)
	10/31/13 20:35 CST		0	Source: Trained Spotter

The northern end of a line of thunderstorms clipped southwest Indiana as it raced eastward during the late afternoon and evening. A surface low pressure wave over the Ozark Mountain region accelerated eastward in advance of a compact upper-level shortwave over the southern Plains. Extremely strong wind shear compensated for weak instability. Strong forcing along the front and a moist low level air mass contributed to a forced line of storms, including some without lightning. A few of these storms produced damaging wind gusts.

## KENTUCKY, Southwest

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### DAVIESS COUNTY --- SORGHO [37.75, -87.25]

	10/05/13 00:00 CST		0	Heavy Rain
	10/05/13 23:59 CST		0	Source: Trained Spotter

A trained spotter reported a calendar day rainfall total of 3.46 inches.

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### MCCRACKEN COUNTY --- PADUCAH [37.08, -88.63]

	10/05/13 00:00 CST		0	Heavy Rain
	10/05/13 23:59 CST		0	Source: Trained Spotter

A trained spotter measured a calendar day rainfall of 4.10 inches.

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### WEBSTER COUNTY --- DIXON [37.52, -87.70]

	10/05/13 06:00 CST		0	Heavy Rain
	10/06/13 06:00 CST		0	Source: COOP Observer

A co-operative observer measured a daily rainfall total of 5.24 inches.

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### DAVIESS COUNTY --- OWENSBORO [37.77, -87.12]

	10/05/13 14:00 CST		0	Heavy Rain
	10/05/13 21:40 CST		0	Source: Trained Spotter

A trained spotter reported 2.40 inches of rain.

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### CARLISLE COUNTY --- BARDWELL [36.87, -89.02]

	10/05/13 16:30 CST		0	Thunderstorm Wind (EG 52 kt)
	10/05/13 16:30 CST		0	Source: Law Enforcement

Wind gusts were estimated between 55 and 60 mph by law enforcement personnel.

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### MCCRACKEN COUNTY --- 0.7 N AVONDALE HGTS [37.08, -88.67], 1.8 SE (PAH)BARKLEY ARPT PA [37.05, -88.74], 1.8 ESE CAMELIA [37.01, -88.75], 0.6 SSW MASSAC [37.01, -88.69], 1.6 SSW TYLER [37.03, -88.59], 2.5 ENE PADUCAH [37.09, -88.59]

	10/05/13 21:39 CST		15K	Flash Flood (due to Heavy Rain)
	10/06/13 02:30 CST		0	Source: Emergency Manager

Several houses experienced flooding of garages. At least one house had water inside the residence. Street flooding was reported in Paducah on a main artery, creating traffic problems. A low flood-prone spot under a railroad overpass on U.S. Highway 62 in Paducah was impassable. At the National Weather Service office just west of Paducah, 2.35 inches of rain fell in an hour.

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### CARLISLE COUNTY --- 2.3 NW ARLINGTON [36.80, -89.05], 2.4 NE ARLINGTON [36.81, -88.99], 1.6 E ARLINGTON [36.78, -88.99], 1.4 WSW ARLINGTON [36.77, -89.04]

	10/05/13 21:59 CST		0	Flash Flood (due to Heavy Rain)
	10/06/13 02:30 CST		0	Source: Law Enforcement

## Storm Data and Unusual Weather Phenomena - October 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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The intersection of State Routes 80 and 1772 was impassable due to flooding.

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**CRITTENDEN COUNTY --- 1.2 ENE MARION [37.34, -88.06], 1.1 NW MARION [37.34, -88.10], 2.1 NNW CRAYNE [37.30, -88.10], 1.8 SSE MARION [37.31, -88.07]**

	10/05/13 23:10 CST		0	Flash Flood (due to Heavy Rain)
	10/06/13 03:00 CST		0	Source: Law Enforcement

An intersection along U.S. Highway 641 was impassable due to flooding.

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**BALLARD COUNTY --- LOVELACEVILLE [36.97, -88.82]**

	10/05/13 23:25 CST		0	Heavy Rain
	10/06/13 01:00 CST		0	Source: Trained Spotter

A trained spotter reported two inches of water over U.S. Highway 62.

**Thunderstorms increased over southeast Missouri and southern Illinois within a moist and unstable environment ahead of an advancing cold front moving across southeast Missouri. Low level winds strengthened as the storms moved east across the Lower Ohio Valley, resulting in isolated strong wind gusts. The air mass ahead of the front was warm and humid, reminiscent of late summer. Moisture was in abundance, and storms were very efficient rain makers. Rainfall amounts ahead of the front were between 1 and 3 inches, although there were scattered amounts between 4 and 5 inches.**

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**(KY-Z001) FULTON, (KY-Z002) HICKMAN, (KY-Z003) CARLISLE, (KY-Z004) BALLARD, (KY-Z005) MCCrackEN, (KY-Z006) GRAVES, (KY-Z007) LIVINGSTON, (KY-Z008) MARSHALL, (KY-Z009) CALLOWAY, (KY-Z010) CRITTENDEN, (KY-Z011) LYON, (KY-Z012) TRIGG, (KY-Z013) CALDWELL, (KY-Z014) UNION, (KY-Z015) WEBSTER, (KY-Z016) HOPKINS, (KY-Z017) CHRISTIAN, (KY-Z018) HENDERSON, (KY-Z019) DAVIESS, (KY-Z020) MCLEAN, (KY-Z021) MUHLENBERG, (KY-Z022) TODD**

	10/25/13 00:00 CST		0	Frost/Freeze
	10/25/13 08:00 CST		0	

Widespread temperatures below freezing were observed at numerous locations. Many locations saw temperatures fall well into the 20's after midnight and persist until shortly before sunrise. In addition to the below freezing temperatures, widespread moderate to locally heavy frost covered the ground. This frost and freeze event effectively ended the growing season. High pressure built into the region with a reinforcing shot of cold Canadian air.

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**BALLARD COUNTY --- 2.4 SSW WICKLIFFE [36.94, -89.10], 2.0 S WICKLIFFE [36.94, -89.08]**

	10/31/13 19:14 CST		15K	Tornado (EF1, L: 0.92 mi , W: 200 yd)
	10/31/13 19:15 CST		0	Source: NWS Storm Survey

This tornado crossed the Mississippi River from Mississippi County, Missouri into Ballard County, Kentucky south of Wickliffe. Peak winds were estimated near 100 mph. A power pole was down, and a few trees were uprooted or snapped at a paper mill.

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**BALLARD COUNTY --- MONKEYS EYEBROW [37.18, -88.98]**

	10/31/13 19:15 CST		10K	Thunderstorm Wind (EG 52 kt)
	10/31/13 19:15 CST		0	Source: Trained Spotter

Trees were blown down.

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**CARLISLE COUNTY --- 1.3 SSW CUNNINGHAM [36.90, -88.89], 3.9 ENE CUNNINGHAM [36.95, -88.82]**

	10/31/13 19:25 CST		0.20M	Tornado (EF1, L: 5.01 mi , W: 200 yd)
	10/31/13 19:31 CST		0	Source: NWS Storm Survey

The damage began just south of the intersection of U.S. Highway 62 and County Road 1015. At that location, a very large but shallow-rooted tree was uprooted. A glass door to a home was destroyed. This home along with other homes in the immediate area had minor roof and siding damage. A mobile home was blown off its foundation. Two sheds were destroyed. Further northeast, along the south side of U.S. Highway 62, there were several homes with shingles missing and one home with the garage door blown in. On the north side of Highway 62, a large well-built barn sustained partial roof loss. Following U.S. Highway 62 northeast, there were many trees snapped or uprooted, large branches broken off, and bean fields flattened. An amateur radio tower was bent over, and more homes had minor roof damage. A mobile home was flipped over. Peak winds were estimated near 105 mph. The tornado path continued northeast into McCracken County just south of Lovelaceville.

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**BALLARD COUNTY --- 1.1 NE BLANDVILLE [36.96, -88.94], 1.3 NE BLANDVILLE [36.96, -88.93]**

	10/31/13 19:30 CST		15K	Tornado (EF0, L: 0.22 mi , W: 70 yd)
	10/31/13 19:31 CST		0	Source: NWS Storm Survey

Peak winds were estimated near 80 mph. Large sections of trees were snapped. A mobile home was moved off its foundation.

## Storm Data and Unusual Weather Phenomena - October 2013

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<b>MCCRACKEN COUNTY --- 4.9 W MELBER [36.95, -88.82], 2.6 NW MELBER [36.97, -88.77]</b>				
	10/31/13 19:31 CST		3K	Tornado (EF1, L: 3.25 mi , W: 200 yd)
	10/31/13 19:35 CST		0	Source: NWS Storm Survey
This tornado crossed from Carlisle County into McCracken County just south of Lovelaceville. Most of the McCracken County portion of the path was through rural wooded areas and fields. Tree damage was noted a few miles east of Lovelaceville. Peak winds were estimated near 105 mph.				
<b>MCCRACKEN COUNTY --- 1.2 ESE MELBER [36.94, -88.71], 0.8 SSE ST JOHNS [36.96, -88.67]</b>				
	10/31/13 19:39 CST		0.10M	Tornado (EF1, L: 2.15 mi , W: 225 yd)
	10/31/13 19:43 CST		0	Source: NWS Storm Survey
Peak winds were estimated near 100 mph. The damage began as trees were snapped just east of Melber on County Road 1820. Further northeast, a home near U.S. Highway 45 suffered damage as the garage was blown in and the porch was lifted up and damaged. This caused some damage to an interior wall inside the home. Numerous trees were snapped or uprooted, and tree limbs were broken off. Other homes near U.S. Highway 45 received shingle, siding, and gutter damage. Just south of St. Johns on the east side of Route 45, a camper was blown over and a few more homes had minor roof damage. Trees and tree limbs were blown down.				
<b>MCCRACKEN COUNTY --- 0.3 SE SHADY GROVE [36.98, -88.52], 1.2 E SHADY GROVE [36.98, -88.50]</b>				
	10/31/13 19:48 CST		15K	Tornado (EF0, L: 0.98 mi , W: 40 yd)
	10/31/13 19:49 CST		0	Source: NWS Storm Survey
This tornado, which occurred about a mile southeast of Reidland, contained peak winds near 75 mph. The tornado began along Highway 131. A large tree was uprooted. A very large, semi-rotten tree was split. The top was blown out of a large pine tree and a few other smaller trees. A porch roof was removed.				
<b>MCCRACKEN COUNTY --- 0.8 WNW REIDLAND [37.03, -88.54], 0.4 NW REIDLAND [37.02, -88.53]</b>				
	10/31/13 19:50 CST		35K	Tornado (EF1, L: 0.45 mi , W: 40 yd)
	10/31/13 19:51 CST		0	Source: NWS Storm Survey
Peak winds in this tornado were estimated near 90 mph. Numerous large tree branches approximately one foot in diameter were broken off or split from main tree trunks. One large hardwood tree was completely uprooted. There was shingle damage to several homes.				
<b>HENDERSON COUNTY --- HENDERSON [37.83, -87.58]</b>				
	10/31/13 20:00 CST		30K	Thunderstorm Wind (EG 52 kt)
	10/31/13 20:00 CST		0	Source: Emergency Manager
Two trees were blown down, blocking roads in northern sections of the city. Downed power lines and power outages were also reported in northern sections of the city.				
<b>MARSHALL COUNTY --- 1.9 S CALVERT CITY [37.00, -88.35], 1.6 SSE CALVERT CITY [37.01, -88.34]</b>				
	10/31/13 20:03 CST		35K	Tornado (EF0, L: 0.50 mi , W: 50 yd)
	10/31/13 20:04 CST		0	Source: NWS Employee
This tornado occurred on the south side of Calvert City near the intersection of U.S. Highway 62 and the Purchase Parkway. Peak winds were estimated near 85 mph. Metal roofing was removed from about two-thirds of a small strip mall. There was other minor damage to structures, as well. One large tree was uprooted, and limbs were broken on several other trees.				
<b>LIVINGSTON COUNTY --- 3.0 SW IUKA [37.05, -88.27]</b>				
	10/31/13 20:10 CST		5K	Thunderstorm Wind (EG 65 kt)
	10/31/13 20:10 CST		0	Source: NWS Employee
One tree and several large limbs were blown down, mainly along Highway 453.				
<b>LYON COUNTY --- 4.0 NNW KUTTAWA [37.12, -88.15]</b>				
	10/31/13 20:16 CST		2K	Thunderstorm Wind (EG 56 kt)
	10/31/13 20:16 CST		0	Source: NWS Employee
A few tree limbs were blown down, mainly along Highway 295.				
<b>CALLOWAY COUNTY --- 3.0 ENE FAXON [36.69, -88.10]</b>				
	10/31/13 20:35 CST		0.25M	Thunderstorm Wind (EG 70 kt)
	10/31/13 20:35 CST		0	Source: Emergency Manager

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A large boat dock, two fishing boats, and two pontoon boats were lifted and flipped upside down into the lake.				
<b>DAVISS COUNTY --- KNOTTSVILLE [37.77, -86.90], UTICA [37.62, -87.12]</b>				
	10/31/13 20:35 CST		4K	Thunderstorm Wind (MG 56 kt)
	10/31/13 20:43 CST		0	Source: Trained Spotter
A large tree was blown down, blocking Highway 144 near Knottsville. A wind gust measured at 65 mph was reported by a trained spotter in Utica.				
<b>TRIGG COUNTY --- CADIZ [36.87, -87.82]</b>				
	10/31/13 20:51 CST		20K	Thunderstorm Wind (EG 52 kt)
	10/31/13 20:51 CST		0	Source: Trained Spotter
Numerous trees were blown down.				
<p><b>An outbreak of severe thunderstorms and isolated tornadoes occurred ahead of a cold front. Thunderstorms increased in coverage over southeast Missouri and then spread east-northeast into southern Illinois and western Kentucky during the late afternoon and evening. A surface low pressure wave over the Ozark Mountain region accelerated eastward in advance of a compact upper-level shortwave over the southern Plains. A mid-level dry slot overspread the surface warm sector, where dew points were in the low to mid 60's. Extremely strong wind shear compensated for weak instability. Strong forcing along the front and a moist low level air mass contributed to a forced line of storms, including some without lightning.</b></p>				
<b>MISSOURI, Southeast</b>				
<b>BUTLER COUNTY --- POPLAR BLUFF [36.75, -90.40]</b>				
	10/05/13 13:00 CST		0	Heavy Rain
	10/05/13 14:00 CST		0	Source: Unknown
A line of thunderstorms produced torrential rains that caused minor street flooding.				
<b>MISSISSIPPI COUNTY --- EAST PRAIRIE [36.78, -89.38]</b>				
	10/05/13 20:10 CST		0	Heavy Rain
	10/05/13 21:45 CST		0	Source: Emergency Manager
Minor low-lying street flooding was reported.				
<p><b>Thunderstorms increased over southeast Missouri within a moist and unstable environment ahead of an advancing cold front moving across southeast Missouri. The air mass ahead of the front was warm and humid, reminiscent of late summer. Moisture was in abundance, and storms were very efficient rain makers. Rainfall amounts ahead of the front were between 1 and 3 inches, although there were scattered amounts between 4 and 5 inches.</b></p>				
<b>(MO-Z076) PERRY, (MO-Z086) BOLLINGER, (MO-Z087) CAPE GIRARDEAU, (MO-Z100) WAYNE, (MO-Z107) CARTER, (MO-Z108) RIPLEY, (MO-Z109) BUTLER, (MO-Z110) STODDARD, (MO-Z111) SCOTT, (MO-Z112) MISSISSIPPI, (MO-Z114) NEW MADRID</b>				
	10/25/13 00:00 CST		0	Frost/Freeze
	10/25/13 08:00 CST		0	
<p><b>Widespread temperatures below freezing were observed at numerous locations. Many locations saw temperatures fall well into the 20's after midnight and persist until shortly before sunrise. In addition to the below freezing temperatures, widespread moderate to locally heavy frost covered the ground. This frost and freeze event effectively ended the growing season. High pressure built into the region with a reinforcing shot of cold Canadian air.</b></p>				
<b>RIPLEY COUNTY --- 2.5 WSW OXLY [36.59, -90.74], 2.5 SE OXLY [36.57, -90.67]</b>				
	10/31/13 17:11 CST		0.10M	Tornado (EF1, L: 4.16 mi , W: 150 yd)
	10/31/13 17:19 CST		0	Source: NWS Storm Survey
Peak winds in this tornado were estimated near 95 mph. Many trees were snapped and uprooted. An attached carport was torn from a home. The roof deck was lifted off one home, damaging some of the interior walls. Debris missiles were impaled into the ground up to two feet deep. Several other homes received minor shingle damage. Some injured or dead cattle were reported. Two trained spotters reported seeing a partially rain-wrapped tornado.				
<b>BUTLER COUNTY --- 2.5 S HARVIELL [36.63, -90.47], 2.4 S HARVIELL [36.64, -90.47]</b>				
	10/31/13 17:30 CST		80K	Tornado (EF1, L: 0.22 mi , W: 50 yd)
	10/31/13 17:31 CST		0	Source: NWS Storm Survey

## Storm Data and Unusual Weather Phenomena - October 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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A large wood-frame mechanic shed was destroyed. Several trees were snapped, and one large tree was uprooted. A carport was destroyed. Peak winds were estimated near 95 mph.

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**BUTLER COUNTY --- POPLAR BLUFF [36.75, -90.40]**

	10/31/13 17:43 CST		40K	Thunderstorm Wind (EG 52 kt)
	10/31/13 17:43 CST		0	Source: Emergency Manager

Trees, tree limbs, and power lines were blown down throughout the city.

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**BUTLER COUNTY --- 1.5 NW BROSELEY [36.70, -90.27], 5.5 NE BROSELEY [36.74, -90.18]**

	10/31/13 17:48 CST		0.10M	Tornado (EF1, L: 5.70 mi , W: 75 yd)
	10/31/13 17:55 CST		0	Source: NWS Storm Survey

One mobile home was overturned. There was shingle damage to one home. Another home sustained partial roof loss. An agricultural pivot irrigation system was overturned. Several large trees and branches were snapped. Peak winds were estimated near 100 mph.

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**BOLLINGER COUNTY --- 1.0 W LEOPOLD [37.25, -89.95], 0.5 E LEOPOLD [37.25, -89.92]**

	10/31/13 17:54 CST		70K	Tornado (EF1, L: 1.50 mi , W: 200 yd)
	10/31/13 17:56 CST		0	Source: NWS Storm Survey

This tornado contained peak winds near 95 mph. Dozens of trees were snapped and uprooted. A pavilion was damaged by a falling tree. Some shingles were blown off a few homes.

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**STODDARD COUNTY --- 5.0 NW BERNIE [36.73, -90.03], 5.5 SE ESSEX [36.76, -89.78]**

	10/31/13 18:02 CST		75K	Tornado (EF1, L: 14.25 mi , W: 100 yd)
	10/31/13 18:21 CST		0	Source: NWS Storm Survey

A silo was destroyed, and a grain bin was dented. Several outbuildings were damaged or destroyed. Windows were blown out of a home. Cotton from bales was lofted and blown into trees nearby. Numerous large branches were blown down. Several trees were snapped or uprooted. A notable circulation track was observed in a bean field. Peak winds were estimated near 105 mph.

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**CAPE GIRARDEAU COUNTY --- 3.0 NW DUTCHTOWN [37.28, -89.71], 2.5 NE DUTCHTOWN [37.28, -89.64]**

	10/31/13 18:05 CST		0.13M	Tornado (EF1, L: 3.90 mi , W: 150 yd)
	10/31/13 18:09 CST		0	Source: NWS Storm Survey

Numerous trees were uprooted or snapped. A house was shifted slightly off its foundation, and the roof was lifted and shifted slightly. At least two other houses received roof damage from fallen trees and power lines. A barn was levelled, and several others sustained roof damage. Peak winds were estimated near 105 mph.

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**STODDARD COUNTY --- BERNIE [36.68, -89.97]**

	10/31/13 18:10 CST		10K	Thunderstorm Wind (EG 52 kt)
	10/31/13 18:10 CST		0	Source: Trained Spotter

Winds were measured to 60 mph. Power was out around the community.

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**CAPE GIRARDEAU COUNTY --- 2.5 W CAPE GIRARDEAU [37.30, -89.58], CAPE GIRARDEAU [37.30, -89.53]**

	10/31/13 18:15 CST		0.15M	Thunderstorm Wind (EG 83 kt)
	10/31/13 18:20 CST		0	Source: NWS Storm Survey

A National Weather Service damage survey indicated winds up to 95 mph occurred in a microburst over the south side of the city of Cape Girardeau. Dozens of trees, tree limbs, and some power lines were blown down. Downed trees closed a major intersection. There was mostly minor damage to several homes, including loss of shingles. The metal roof of a commercial building was peeled back. Traffic was slowed on Interstate 55 due to tree debris. A tractor-trailer rig was rolled over on Interstate 55 near the 96 mile marker. Except for a few downed branches, all of the damage was south of the downtown area and Shawnee Parkway (Highways 34 and 74). The average path width was a mile and one-quarter. The path length was 3.5 miles.

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**STODDARD COUNTY --- 6.0 S ESSEX [36.73, -89.85], 2.1 NNW DEMMITTIVILLE [36.75, -89.82]**

	10/31/13 18:24 CST		0.80M	Tornado (EF2, L: 1.93 mi , W: 100 yd)
	10/31/13 18:27 CST		0	Source: NWS Storm Survey

This tornado, which occurred a few miles southwest of Baker, contained estimated peak winds near 115 mph. Three large equipment sheds and four grain bins were levelled, and debris was carried hundreds of yards. Several large trees were snapped. Farm equipment was overturned. Part of a brick wall was removed from one side of a home. Roof damage occurred to two other homes.

## Storm Data and Unusual Weather Phenomena - October 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
<b>NEW MADRID COUNTY --- 3.6 NW MATTHEWS [36.81, -89.63], 4.1 N MATTHEWS [36.83, -89.58]</b>				
	10/31/13 18:40 CST		0.18M	Tornado (EF1, L: 2.99 mi , W: 50 yd)
	10/31/13 18:44 CST		0	Source: NWS Storm Survey

This tornado contained estimated peak winds near 100 mph. The tornado track began along Highway FF and ended along U.S. Highway 62. On Highway FF, a power pole was snapped and a metal shed about 14 by 16 feet was destroyed. On Highway 62, a large metal building door was blown in, with another door partially blown out. There was also siding damage. Two grain augers were blown over. Several grain pipes were blown around, including two across U.S. Highway 62. One of the poles impaled a passing car, shattering the window.

<b>MISSISSIPPI COUNTY --- WYATT [36.92, -89.22], 3.4 SE BIRDS PT [36.94, -89.10]</b>				
	10/31/13 19:05 CST		90K	Tornado (EF1, L: 6.70 mi , W: 200 yd)
	10/31/13 19:14 CST		0	Source: NWS Storm Survey

Peak winds in this tornado were estimated near 100 mph. The damage began on the south side of Wyatt. Homes in this area received roof damage, and a concrete block building was heavily damaged. The roof of a large pole barn was destroyed. Numerous trees and tree limbs were broken off. The tornado exited Wyatt around Highway EE and continued travelling northeast and uprooted a large tree on Highway HH. A small cemetery off of County Road 307 had several large tree branches snapped, and adjacent bean fields showed signs of wind damage. Further northeast near Brewer Lake, several trees were snapped or large branches were broken off. A few tree tops were broken off on the levee near the Mississippi River. The tornado crossed the Mississippi River into Ballard County, Kentucky just south of Wickliffe.

**An outbreak of severe thunderstorms and isolated tornadoes occurred ahead of a cold front. Thunderstorms increased in coverage over southeast Missouri and then spread east-northeast into southern Illinois and western Kentucky during the late afternoon and evening. A surface low pressure wave over the Ozark Mountain region accelerated eastward in advance of a compact upper-level shortwave over the southern Plains. A mid-level dry slot overspread the surface warm sector, where dew points were in the low to mid 60's. Extremely strong wind shear compensated for weak instability. Strong forcing along the front and a moist low level air mass contributed to a forced line of storms, including some without lightning.**