

Storm Data and Unusual Weather Phenomena - December 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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ILLINOIS, South

(IL-Z075) JEFFERSON, (IL-Z080) PERRY, (IL-Z081) FRANKLIN, (IL-Z084) JACKSON, (IL-Z085) WILLIAMSON, (IL-Z088) UNION, (IL-Z089) JOHNSON, (IL-Z092) ALEXANDER, (IL-Z093) PULASKI, (IL-Z094) MASSAC	12/03/13 01:00 CST		0	Dense Fog
	12/03/13 08:00 CST		0	

Southerly winds ahead of a cold front over the Plains brought lots of moist air northward from the Gulf of Mexico. This resulted in widespread dense fog during the late night and early morning hours. The dense fog was along and west of Interstates 57 and 24, including the Marion and Carbondale area. Visibility was one-quarter mile or less.

(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-Z085) WILLIAMSON, (IL-Z086) SALINE, (IL-Z087) GALLATIN	12/04/13 04:00 CST		0	Dense Fog
	12/04/13 08:00 CST		0	

During the early morning hours, widespread dense fog formed along and ahead of a warm front over the Lower Ohio Valley. The dense fog was north and east of Carbondale, including Marion, Harrisburg, Mount Vernon, and the Wabash Valley. Visibility was one-quarter mile or less.

(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	12/05/13 08:00 CST		0	Winter Storm
	12/06/13 18:00 CST		0	

A major winter storm brought primarily heavy snow and sleet to southern Illinois. The precipitation changed from freezing rain to sleet and then to snow. The wintry precipitation slowly progressed southeast across southern Illinois, starting by mid-morning in Mount Vernon and reaching the southern tip of the state by mid-afternoon. Storm total accumulations ranged from 5 to 12 inches. About a foot of snow fell along and north of a line from Du Quoin in Perry County to Mount Carmel in Wabash County. Between 8 and 12 inches fell across most of the remainder of southern Illinois, including Marion, Carbondale, Harrisburg, and Carmi. Accumulations were from 5 to 7 inches along the Ohio River from Cairo to Metropolis to Hardin County due to large amounts of sleet and freezing rain. Before the changeover to snow, there was about one-quarter inch of glazing from freezing rain, along with about one-half to one inch of sleet. Isolated power outages were reported. Once the precipitation changed to snow, it fell heavily at times. Visibility was occasionally one-quarter mile in heavy snow, with snowfall rates at least an inch per hour. A trained spotter in White County reported 1.5 inches of snow in an hour. In the area that received the heaviest snow, unplowed farm roads were impassable without four-wheel drive. In all areas, roads became very slick and hazardous as temperatures dropped through the 20's. Numerous accidents were reported. Non-emergency travel was not advised by some county officials. An arctic cold front swept east across the region, bringing much colder air. As the depth of the cold air increased behind the front, precipitation changed from freezing rain to sleet and then snow. A pair of disturbances in the upper levels of the atmosphere moved northeast across the region, causing wintry precipitation to become heavy at times.

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Photo of a truck plowing a side road in northern Massac County, Illinois following the winter storm. Photo courtesy of Beau Dodson.

(IL-Z075) JEFFERSON, (IL-Z076) WAYNE, (IL-Z077) EDWARDS, (IL-Z078) WABASH, (IL-Z080) PERRY

12/09/13 20:00 CST	0	Winter Weather
12/10/13 03:00 CST	0	

A fast-moving disturbance in the upper levels of the atmosphere moved from the Texas panhandle northeast across the Lower Ohio Valley. This system produced a narrow band of light to moderate snow. From one to three inches of snow was observed along and north of Interstate 64, as well as across Perry County. Visibility was reduced below one mile in the snow. Specific reports of accumulations included 3 inches in Albion (Edwards County) and one inch in DuQuoin (Perry County). There was an isolated report of 4 inches in Edwards County at Bone Gap.

JACKSON COUNTY --- 0.5 E BARR [37.75, -89.26], 1.6 SSW REEDS [37.75, -89.19], 1.9 ESE CARBONDALE [37.71, -89.19], 2.0 WSW CARBONDALE [37.71, -89.25]

12/21/13 07:50 CST	0	Flash Flood (due to Heavy Rain)
12/21/13 13:30 CST	0	Source: Trained Spotter

Street flooding occurred in Carbondale, with water running over roadways. A trained spotter in Carbondale reported 3.32 inches of rain in about eight hours, with rain still falling.

WILLIAMSON COUNTY --- 5.0 SE MARION [37.68, -88.87], 0.5 NNE PITTSBURG [37.78, -88.85], HURST [37.83, -89.15], 3.5 WSW CARTERVILLE [37.72, -89.13]

12/21/13 08:07 CST	0	Flash Flood (due to Heavy Rain)
12/21/13 14:30 CST	0	Source: Amateur Radio

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
Water was running over several Marion city roads. There was standing water in several parking lots. Numerous roads were flooded outside the city of Marion, including Highway 149 near Hurst.				
WHITE COUNTY --- 2.2 SE TRUMBULL [38.06, -88.21], 2.2 WSW EPWORTH [38.06, -88.14], 1.5 NE CARMI MUNI ARPT [38.11, -88.13], 2.7 NW CARMI [38.11, -88.20]				
	12/21/13 09:01 CST		0	Flash Flood (due to Heavy Rain)
	12/21/13 13:30 CST		0	Source: Trained Spotter
Two feet of water covered the entrance to a nursing home in Carmi. Access by ambulance was difficult. City streets were flooded in Carmi, with water bubbling up through a manhole. A small lake overflowed, submerging most of the bridge along a private drive.				
GALLATIN COUNTY --- 2.1 SW SHAWNEETOWN [37.68, -88.16], 1.0 NNW BOWLESVILLE [37.68, -88.22], 2.1 NE JUNCTION [37.74, -88.21], 2.1 NE SHAWNEETOWN [37.72, -88.11]				
	12/21/13 10:00 CST		0	Flash Flood (due to Heavy Rain)
	12/21/13 14:30 CST		0	Source: Emergency Manager
Numerous roads were flooded. Water was over Illinois Route 13 west of Shawneetown.				
SALINE COUNTY --- 1.9 ENE PANKEYVILLE [37.71, -88.50], 0.6 NW LEDFORD [37.71, -88.59], 3.1 E TOWN HALL [37.77, -88.59], 1.1 SE MUDDY [37.76, -88.50]				
	12/21/13 13:30 CST		0	Flash Flood (due to Heavy Rain)
	12/21/13 14:30 CST		0	Source: Public
Water was up to the door sills of a pickup truck on the east side of Harrisburg.				
WHITE COUNTY --- 1.9 WSW ENFIELD [38.09, -88.36], 1.5 ESE ENFIELD [38.09, -88.30], 2.0 ESE MILL SHOALS [38.24, -88.32], 1.5 SSW MILL SHOALS [38.23, -88.36]				
	12/21/13 13:30 CST		0	Flood (due to Heavy Rain)
	12/21/13 21:00 CST		0	Source: Public
U.S. Highway 45 was under water between Enfield and Mill Shoals. There was swift-moving water over the highway with floating debris just outside of Enfield.				
MASSAC COUNTY --- 0.3 E BROOKPORT [37.12, -88.62], 0.6 SSE METROPOLIS [37.14, -88.73], 0.1 NNE JOPPA [37.20, -88.85], 2.5 WNW BOAZ [37.32, -88.94], 2.2 NNW MIDWAY [37.26, -88.64]				
	12/21/13 14:00 CST		10K	Flood (due to Heavy Rain)
	12/21/13 23:00 CST		0	Source: Trained Spotter
Widespread flooding of creeks and fields was reported. Numerous roads around the county had water over them. Eight inches of water covered parts of a main street in Metropolis. A lake overflowed its embankment. Massac Creek rose out of its banks and threatened to flood homes just north of Metropolis. A sewage backup occurred at a church. The total rainfall for the calendar day was 9.57 inches at a meteorologist's residence in the central part of Massac County.				
GALLATIN COUNTY --- 0.6 SE ELBA [37.81, -88.31], EQUALITY [37.73, -88.33], SHAWNEETOWN [37.70, -88.13], 4.0 E INMAN [37.82, -88.10]				
	12/21/13 14:30 CST		0	Flood (due to Heavy Rain)
	12/21/13 22:00 CST		0	Source: Trained Spotter
Widespread flooding occurred along secondary roads throughout the county. A trained spotter just south of Junction measured 8.10 inches with rain still falling.				
SALINE COUNTY --- 1.2 WSW LEDFORD [37.69, -88.60], 0.8 SE LEDFORD [37.69, -88.57], 0.7 NE LEDFORD [37.71, -88.57], 1.0 WNW LEDFORD [37.71, -88.60]				
	12/21/13 14:30 CST		0	Flood (due to Heavy Rain)
	12/21/13 21:00 CST		0	Source: Trained Spotter
Water was over a roadway near Ledford.				
POPE COUNTY --- 1.8 SSE BRISTOL [37.43, -88.71], 1.6 W ROCK [37.42, -88.65], 1.1 S ALLENS SPG [37.35, -88.65], 1.2 WNW DIXON SPGS STATION [37.36, -88.70]				
	12/21/13 15:00 CST		0	Flood (due to Heavy Rain)
	12/22/13 10:00 CST		0	Source: Trained Spotter

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Highway 145 was closed about 1.5 miles north of Highway 146 due to flooding. Standing water was over the intersection of Highways 145 and 146. A calendar day rainfall total of 9 inches was reported at Herod.				
HAMILTON COUNTY --- BROUGHTON [37.93, -88.45], 2.0 W BROUGHTON [37.93, -88.49], 2.6 NE OLGA [38.01, -88.53], 0.8 NE DALE [38.01, -88.47]				
	12/21/13 18:00 CST		0	Flood (due to Heavy Rain)
	12/22/13 12:00 CST		0	Source: Department of Highways
Highway 142 was closed due to flooding near Broughton.				
WAYNE COUNTY --- 3.6 W WYNOOSE [38.59, -88.28], 2.0 SE WYNOOSE [38.58, -88.19], 5.9 E MT ERIE [38.53, -88.12], WAYNE CITY [38.35, -88.58], 1.0 SE KEENESVILLE [38.39, -88.64]				
	12/21/13 18:00 CST		2K	Flood (due to Heavy Rain)
	12/22/13 20:00 CST		0	Source: Trained Spotter
The Elm River rose out of its banks near Mount Erie, threatening a local road. A trained spotter measured 5.0 inches of rain since midnight, with rain still falling. Near Wayne City, minor flooding of the Skillet Fork River occurred. Low-lying fields and woodlands were underwater, along with river access roads.				
JOHNSON COUNTY --- 2.1 SW VIENNA [37.40, -88.92], 2.0 SE VIENNA [37.40, -88.88], 1.1 SSE BLOOMFIELD [37.43, -88.88], 1.3 NW VIENNA [37.43, -88.92]				
	12/21/13 20:00 CST		0	Flood (due to Heavy Rain)
	12/22/13 03:00 CST		0	Source: Trained Spotter
On U.S. Highway 45 near Vienna, water was too deep for most vehicles to pass through. A vehicle dealership in the center of town had one foot of water over its parking lot.				
EDWARDS COUNTY --- ALBION [38.38, -88.05], WEST SALEM [38.52, -88.02], 3.1 ESE WEST SALEM [38.51, -87.97], 1.2 N BROWNS [38.40, -87.98]				
	12/22/13 01:00 CST		0	Flood (due to Heavy Rain)
	12/22/13 12:00 CST		0	Source: Trained Spotter
A trained spotter measured 5.9 inches of rain in about 24 hours. Considerable flooding of low-lying areas was reported.				
A slow-moving cold front passed across the region between the 20th and 22nd. Several upper level disturbances moved north-northeast along the front, touching off numerous showers and thunderstorms. The ground was already moist from snowmelt in the wake of the early December winter storm. On the 21st, a strong negatively tilted shortwave at 500 mb ejected northeast from the southern Plains, providing strong forcing for ascent. Widespread heavy rain and thunderstorms surged northeast in association with the strengthening surface low that tracked across the Lower Ohio Valley. Storm total rainfall amounts ranged from 4 to 8 inches, with isolated higher amounts around 9 inches in the southern tip of the state, from the city of Cairo to Massac and Gallatin Counties. Ditches and creeks quickly spilled out onto roadways and into nearby fields. There were numerous road closures and water rescues as waters continued to rise.				
GALLATIN COUNTY --- SHAWNEETOWN [37.70, -88.13], 2.0 SW SHAWNEETOWN [37.68, -88.15], 2.0 SSW SHAWNEETOWN [37.67, -88.15], 0.4 E SHAWNEETOWN [37.70, -88.12]				
	12/24/13 06:00 CST		1K	Flood (due to Heavy Rain)
	12/31/13 23:59 CST		0	Source: River/Stream Gage
Minor flooding occurred along the Ohio River. Low-lying fields and woodlands were underwater, along with river access roads and a boat ramp.				
WABASH COUNTY --- 1.6 ENE MT CARMEL [38.43, -87.74], 1.4 ENE MT CARMEL [38.43, -87.75], 1.3 SE MT CARMEL [38.41, -87.75], 1.6 SE MT CARMEL [38.41, -87.75]				
	12/24/13 07:00 CST		10K	Flood (due to Heavy Rain)
	12/31/13 23:59 CST		0	Source: River/Stream Gage
Water began to flow over County Road 1280 on the north side of Mt. Carmel. A city street that parallels the river was closed. A local restaurant along the river also was closed. Several local river roads flooded. All oil field production ceased with the exception of pumping units on substructures. Access to these was by boat only. Many river cabins became inaccessible.				
WHITE COUNTY --- MAUNIE [38.03, -88.05], 1.1 E MAUNIE [38.03, -88.03], 0.4 E RISING SUN [38.00, -88.02], 0.1 SSW RISING SUN [38.00, -88.03]				
	12/24/13 14:30 CST		0	Flood (due to Heavy Rain)
	12/31/13 23:59 CST		0	Source: River/Stream Gage
Minor flooding occurred along the Wabash River. Low-lying woods and fields were underwater.				

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JACKSON COUNTY --- 1.4 W MT CARBON [37.75, -89.36], 2.5 WNW MT CARBON [37.76, -89.37], 2.3 W MURPHYSBORO [37.77, -89.37], 1.4 WNW MT CARBON [37.76, -89.36]				
	12/24/13 15:15 CST		2K	Flood (due to Heavy Rain)
	12/30/13 22:45 CST		0	Source: River/Stream Gage

Moderate flooding occurred along the Big Muddy River. Floodwaters began to creep into residential neighborhoods along the river on the south end of Murphysboro. Low-lying fields and woodlands were underwater, along with a riverside park. At the Murphysboro river gage, the river crested at 28.39 feet on the 26th. Flood stage is 22 feet.

FRANKLIN COUNTY --- 1.5 SE ZEIGLER [37.89, -89.03], 1.3 WSW PLUMFIELD [37.87, -89.02], 1.6 S ZEIGLER [37.88, -89.05], 0.8 S ZEIGLER [37.89, -89.05]				
	12/24/13 16:00 CST		0	Flood (due to Heavy Rain)
	12/28/13 01:00 CST		0	Source: River/Stream Gage

Minor flooding occurred along the Big Muddy River. Low-lying fields and woodlands were flooded.

WAYNE COUNTY --- 5.9 E MT ERIE [38.53, -88.12], 0.5 NW WYNOOSE [38.60, -88.23], 2.5 W WYNOOSE [38.60, -88.27], 2.5 NNE MT ERIE [38.55, -88.22], 3.1 E MT ERIE [38.53, -88.17], 1.4 E MERRIAM [38.37, -88.25], 7.3 E BARNHILL [38.26, -88.24], 7.8 SSE ELLERY [38.25, -88.08]				
	12/24/13 19:00 CST	1	20K	Flood (due to Heavy Rain)
	12/31/13 21:00 CST		0	Source: Broadcast Media

Flooding of the Little Wabash River affected low-lying fields and woodlands. A 42-year-old woman died after driving her car into the backwaters of the Little Wabash River northeast of Fairfield. Using an airplane, state police located her body beneath ice not far from the abandoned car. She was taken to a local hospital, where she was pronounced dead of hypothermia.

Direct Fatalities: F42VE

WHITE COUNTY --- 1.9 SE CARMi [38.06, -88.14], 1.1 SSE CARMi MUNI ARPT [38.09, -88.14], 1.0 ENE CARMi [38.08, -88.15], 1.5 SE CARMi [38.06, -88.15]				
	12/24/13 19:00 CST		2K	Flood (due to Heavy Rain)
	12/31/13 23:59 CST		0	Source: River/Stream Gage

Minor flooding occurred along the Little Wabash River. Some county roads were inundated. Low-lying fields and woodlands were underwater.

MASSAC COUNTY --- BROOKPORT [37.12, -88.63], METROPOLIS [37.15, -88.73], 0.8 SSE METROPOLIS [37.14, -88.73], 0.4 SSW BROOKPORT [37.11, -88.63]				
	12/27/13 18:00 CST		1K	Flood (due to Heavy Rain)
	12/31/13 23:59 CST		0	Source: River/Stream Gage

Minor flooding occurred along the Ohio River. Low-lying fields and woodlands were flooded, including riverside parks. River access roads were flooded.

PULASKI COUNTY --- OLMSTED [37.18, -89.08], 0.5 ESE AMERICA [37.13, -89.11], 1.0 ESE AMERICA [37.13, -89.10], 0.6 SSE OLMSTED [37.17, -89.07]				
	12/29/13 03:00 CST		0	Flood (due to Heavy Rain)
	12/31/13 23:59 CST		0	Source: River/Stream Gage

Minor flooding occurred along the Ohio River. Low-lying fields and woodlands were flooded.

Heavy rainfall shortly before Christmas caused sharp rises on regional rivers. The heavy rainfall was caused by a slow-moving cold front that passed across the Lower Ohio and Mid Mississippi Valleys between the 20th and 22nd. Several low pressure systems moved north-northeast along the front, touching off numerous showers and thunderstorms. Generally only minor river flooding was reported.

INDIANA, Southwest

(IN-Z081) GIBSON, (IN-Z082) PIKE, (IN-Z085) POSEY, (IN-Z086) VANDERBURGH, (IN-Z087) WARRICK, (IN-Z088) SPENCER				
	12/05/13 14:00 CST		0	Winter Storm
	12/06/13 18:00 CST		0	

A major winter storm produced heavy accumulations of sleet and snow across southwest Indiana. The precipitation changed from rain to freezing rain, then to sleet and finally to snow. The leading edge of wintry precipitation progressed slowly eastward, starting by mid-afternoon along the Wabash River and reaching Spencer County by mid-evening. The heaviest snow and sleet accumulations were

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north and west of Evansville, where 7 to 12 inches fell in Pike, Gibson, and Posey Counties. In Evansville, about 6 inches of sleet and snow fell. East of Evansville in Warrick and Spencer Counties, accumulations were 3 to 5 inches due to an abundance of sleet and freezing rain. Around one-quarter inch of ice and an inch of sleet was reported in those counties. Once the precipitation changed to snow, it fell heavily. A trained spotter in Warrick County reported two inches of snow in one hour. Roads throughout the region became very hazardous due to snow and ice. An arctic cold front swept east across the region, bringing much colder air. As the depth of the cold air increased behind the front, precipitation changed from freezing rain to sleet and then snow. A pair of disturbances in the upper levels of the atmosphere moved northeast across the region, causing wintry precipitation to become heavy at times.

(IN-Z081) GIBSON, (IN-Z082) PIKE

12/09/13 23:00 CST	0	Winter Weather
12/10/13 06:00 CST	0	

A fast-moving disturbance in the upper levels of the atmosphere moved from the Texas panhandle northeast across the Lower Ohio Valley. This system produced a narrow band of light to moderate snow. From one to three inches of snow was observed north of Interstate 64. Visibility was reduced below one mile in the snow. Specific reports of accumulations included 3 inches at Hazleton, and 2 inches in Fort Branch and Princeton. All three reports are in Gibson County.

VANDERBURGH COUNTY --- 3.8 SE EVANSVILLE [37.94, -87.50], 1.9 W CYPRESS [37.92, -87.67], 1.0 W KASSON [38.02, -87.65], 1.0 SE (EVV)DRESS ARPT EVAN [38.02, -87.52]

12/21/13 10:33 CST	20K	Flash Flood (due to Heavy Rain)
12/22/13 00:15 CST	0	Source: Public

Widespread street flooding occurred in Evansville. The Evansville Fire Department assisted at least one motorist stranded in floodwaters. The U.S. 41 South off-ramp for the Lloyd Expressway was closed due to standing floodwater. There were areas of standing or running water across sections of the Lloyd Expressway. All three lanes of the westbound side of the Lloyd Expressway were flooded at U.S. Highway 41. Water was over roads in a subdivision in Evansville. The calendar day rainfall total at the Evansville airport was 4.42 inches. On the west side of Evansville, a rainfall total of 5.10 inches was reported.

GIBSON COUNTY --- 2.0 WNW HAUBSTADT [38.21, -87.60], 2.4 ENE HAUBSTADT [38.21, -87.53], 0.9 SE OAKLAND CITY [38.32, -87.34], 1.1 NE OAKLAND CITY [38.34, -87.33], 2.3 W LYLE [38.38, -87.69], 1.1 W OWENSVILLE [38.27, -87.70]

12/21/13 12:48 CST	30K	Flash Flood (due to Heavy Rain)
12/22/13 00:15 CST	0	Source: Trained Spotter

County Road 800S was closed south of Fort Branch. A water rescue was conducted on County Road 750S near Fort Branch, where a mini-van was stranded in floodwater. Another water rescue was conducted on State Route 64 east of Oakland City, near the Pike County line. Three persons were standing on the roof of a car that was submerged in floodwater. Route 64 was closed near the county line. Near Oakland City, a truck was washed off the road on County Road 950E at 350S. West of Princeton, State Route 64 was closed near State Route 65 due to a levee breach. Other roads around the county were covered by water at various locations. A trained spotter in Fort Branch measured 6.80 inches of rain.

SPENCER COUNTY --- RICHLAND CITY [37.95, -87.17]

12/21/13 18:40 CST	0	Hail (0.88 in)
12/21/13 18:40 CST	0	Source: Emergency Manager

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

12/21/13 18:40 CST	0	Thunderstorm Wind (MG 55 kt)
12/21/13 18:40 CST	0	Source: Trained Spotter

A trained spotter measured a wind gust to 63 mph near downtown Rockport.

WARRICK COUNTY --- 1.7 NNW EAMES [38.10, -87.14], 2.0 NE TENNYSON [38.10, -87.09], 2.0 SE TENNYSON [38.06, -87.09], 1.7 SW EAMES [38.06, -87.15], 1.1 SSW BOONVILLE [38.03, -87.28], 3.0 SW BOONVILLE [38.02, -87.31], 2.1 E CHANDLER [38.05, -87.33]

12/21/13 18:53 CST	20K	Flash Flood (due to Heavy Rain)
12/22/13 00:15 CST	0	Source: Emergency Manager

Fire and rescue personnel removed persons from a vehicle stranded in floodwaters on a local road near Tennyson. County Road 350N was flooded waist-high near State Route 161 in Tennyson. Significant street flooding occurred in Boonville. A van containing a woman and four children became stranded in floodwaters on Highway 261 between Chandler and Boonville.

SPENCER COUNTY --- 1.5 NW ROCKPORT [37.90, -87.07], 1.1 SW ROCKPORT [37.87, -87.07], 0.7 SSE ROCKPORT [37.87, -87.04], 1.1 NNE ROCKPORT [37.90, -87.04]

12/21/13 20:00 CST	0	Flash Flood (due to Heavy Rain)
12/22/13 00:15 CST	0	Source: Trained Spotter

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Standing water was over numerous roads throughout Rockport. Some roads had water flowing across them. A trained spotter in Rockport measured 5.05 inches since midnight.

WARRICK COUNTY --- TENNYSON [38.08, -87.12], 0.5 N TENNYSON [38.09, -87.12], 2.7 NNW STANLEY [38.20, -87.37], 1.2 WNW STANLEY [38.17, -87.37], 0.8 W EAMES [38.08, -87.14]

12/22/13 00:15 CST	10K	Flood (due to Heavy Rain)
12/22/13 12:00 CST	0	Source: Broadcast Media

A vehicle was stranded in floodwaters on County Road 350N near Tennyson. One female was stuck in water and was rescued by fire department personnel. Indiana 68 between Indiana 57 and 61 (west of Lynnville) was closed due to high water.

A slow-moving cold front passed across the region between the 20th and 22nd. Several upper level disturbances moved north-northeast along the front, touching off numerous showers and thunderstorms. The ground was already moist from snowmelt in the wake of the early December winter storm. On the 21st, a strong negatively tilted shortwave at 500 mb ejected northeast from the southern Plains, providing strong forcing for ascent. Widespread heavy rain and thunderstorms surged northeast in association with the strengthening surface low that tracked across the Lower Ohio Valley. Storm total rainfall amounts ranged mainly from 4 to 7 inches, with the highest amounts north and west of Evansville. Ditches and creeks quickly spilled out onto roadways and into nearby fields. There were numerous road closures and water rescues as waters continued to rise.

GIBSON COUNTY --- 3.3 ESE PATOKA [38.40, -87.52], 1.0 SSE PATOKA [38.41, -87.58], 1.4 S PATOKA [38.40, -87.58], 3.2 ESE PATOKA [38.39, -87.53]

12/21/13 17:30 CST	0	Flood (due to Heavy Rain)
12/31/13 23:59 CST	0	Source: River/Stream Gage

Moderate flooding occurred along the Patoka River. Low-lying fields and woodlands were underwater, along with river access roads. The river crested at 21.08 feet on the 27th. Flood stage at Princeton is 18 feet.

PIKE COUNTY --- 1.7 E IVY [38.50, -87.09], 2.3 NE IVY [38.53, -87.09], 2.9 NNE IVY [38.54, -87.11], 5.0 NNW ALGIERS [38.55, -87.19], 1.5 NW PETERSBURG [38.52, -87.30]

12/21/13 23:00 EST	1	20K	Flood (due to Heavy Rain)
12/31/13 23:59 EST	1	0	Source: River/Stream Gage

Moderate flooding occurred along the White River. There was extensive flooding of bottomland fields and woods in northern Pike County. Floodwaters came onto State Route 257 east of Petersburg, resulting in a fatality. A vehicle containing a man and his wife drove into floodwaters just south of the State Route 257 bridge, then became submerged. The couple got out of the vehicle and clung to some tree branches in the water. The man and a dog were rescued, but the body of the man's wife was not found for several days. The man was transported to a regional hospital for treatment of hypothermia. The submerged pickup truck was located about 75 yards from the roadway. Some bottomland county roads were flooded, some by several feet of water. County roads that were flooded east of State Route 57 included 750N, 600N, and 1000E. Pike County roads that flooded west of Route 57 included 250W, 400W, 675N, 700N, 1000W, 900W, 700W, and 775W. Several small oil fields were inaccessible. High water isolated some river cabin residents. At the Petersburg river gage, the river crested at 24.43 feet on the 29th. Flood stage is 16 feet.

Direct Fatalities: F31VE

GIBSON COUNTY --- 1.0 NW HAZLETON [38.49, -87.54], 1.7 NNE HAZLETON [38.50, -87.52], 1.8 W GIRO [38.50, -87.50], 0.6 NNW HAZLETON [38.49, -87.53]

12/22/13 03:00 CST	30K	Flood (due to Heavy Rain)
12/31/13 23:59 CST	0	Source: River/Stream Gage

Moderate flooding occurred along the White River. There was extensive flooding of bottomland fields and woods in northern Gibson County. Numerous county roads were flooded. Some city streets were flooded in Hazleton. A water pump was installed to keep water off the streets. Some river cabin residents evacuated. Several oil fields were flooded and inaccessible. Flood gates were installed at Hazleton. Flood waters covered the Hazleton softball field. At the Hazleton river gage, the river crested at 25.2 feet on the 29th. Flood stage is 16 feet.

GIBSON COUNTY --- 2.0 WSW EAST MT CARMEL [38.39, -87.76], 1.1 NW EAST MT CARMEL [38.41, -87.74], 1.1 NNE EAST MT CARMEL [38.41, -87.72], 1.7 NE SKELTON [38.36, -87.76]

12/23/13 07:00 CST	10K	Flood (due to Heavy Rain)
12/31/13 23:59 CST	0	Source: River/Stream Gage

Minor flooding occurred on the Wabash River. Flood waters began to affect residents of East Mt. Carmel, Indiana. Several local river roads were flooded. All oil field production ceased with the exception of pumping units on substructures. Access to these was by boat only. Many river cabins became inaccessible.

WARRICK COUNTY --- NEWBURGH [37.95, -87.42], 0.6 S NEWBURGH [37.94, -87.42], 2.9 ESE NEWBURGH [37.93, -87.37], 2.5 ESE NEWBURGH [37.94, -87.38]

Storm Data and Unusual Weather Phenomena - December 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	12/24/13 07:00 CST		1K	Flood (due to Heavy Rain)
	12/31/13 09:15 CST		0	Source: River/Stream Gage

Minor flooding occurred along the Ohio River. Low-lying fields and woodlands were underwater, along with river access roads and riverside parks. Backwater from the Ohio River contributed to flooding along Pigeon Creek. Some streets and a few homes were impacted by flooding of Pigeon Creek in western Warrick County. Water entered the crawl spaces of a few homes.

POSEY COUNTY --- 2.3 SSW NEW HARMONY [38.10, -87.94], 2.4 SW NEW HARMONY [38.10, -87.96], 0.9 WSW NEW HARMONY [38.13, -87.94], 0.7 WSW NEW HARMONY [38.13, -87.94]

12/24/13 14:30 CST	10K	Flood (due to Heavy Rain)
12/31/13 23:59 CST	0	Source: River/Stream Gage

Minor flooding occurred along the Wabash River. Low-lying woods and fields near the river were underwater. Some stripper oil wells near the river were flooded.

POSEY COUNTY --- 0.5 SW MT VERNON [37.93, -87.91], 1.1 NE HOVEY [37.91, -87.92], 1.3 NE HOVEY [37.91, -87.91], 0.5 SSW MT VERNON [37.92, -87.90]

12/24/13 18:00 CST	1K	Flood (due to Heavy Rain)
12/31/13 23:59 CST	0	Source: River/Stream Gage

Minor flooding occurred along the Ohio River. Some low-lying fields and woodlands were underwater, along with river access roads and riverside parks.

Heavy rainfall shortly before Christmas caused sharp rises on regional rivers. The heavy rainfall was caused by a slow-moving cold front that passed across the Lower Ohio and Mid Mississippi Valleys between the 20th and 22nd. Several low pressure systems moved north-northeast along the front, touching off numerous showers and thunderstorms. Generally only minor river flooding was reported.

KENTUCKY, Southwest

(KY-Z001) FULTON, (KY-Z002) HICKMAN, (KY-Z003) CARLISLE, (KY-Z004) BALLARD, (KY-Z006) GRAVES

12/03/13 01:00 CST	0	Dense Fog
12/03/13 08:00 CST	0	

Southerly winds ahead of a cold front over the Plains brought lots of moist air northward from the Gulf of Mexico. This resulted in widespread dense fog during the late night and early morning hours. The dense fog was mainly over the Mississippi River counties of western Kentucky. Visibility was one-quarter mile or less.

(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

12/05/13 17:00 CST	70K	Winter Storm
12/06/13 19:00 CST	0	

A winter storm produced a variety of precipitation types across western Kentucky. The precipitation changed from rain to freezing rain, then to sleet, and finally to snow in most areas. The wintry precipitation started late in the evening across most areas, but not until early the next morning in the Hopkinsville area. The heaviest accumulations of snow and sleet were in the Ohio River counties from Henderson through Paducah to Ballard County, where 4 to 6 inches fell on top of a quarter inch of ice. Isolated amounts up to 7 inches were measured in Ballard County. Along the Tennessee border from Murray to the Hopkinsville area, about one-quarter to one-half inch of icing occurred, followed by up to an inch of sleet and snow. In between the Tennessee border counties and the aforementioned Ohio River counties, two to four inches of sleet and snow along with up to one-quarter inch of ice was reported. This included Owensboro, Madisonville, Princeton, and Mayfield. The freezing rain caused some sagging of power lines and trees, especially where glazing was the heaviest in the Hopkinsville area. Isolated power outages were reported. Where precipitation changed to snow, it fell heavily for a few hours. Visibility was reduced below one-half mile, and snowfall rates were at least an inch per hour. An off-duty meteorologist near Paducah reported nearly two inches of snow per hour. Roads were very slick and hazardous across all of western Kentucky, with numerous accidents reported. A tractor-trailer rig jackknifed on Interstate 24 between Paducah and Reidland. Another tractor-trailer rig jackknifed on the Natcher Parkway near the Owensboro by-pass. Non-essential travel was discouraged in the hardest hit counties, such as Ballard County. A state of emergency was declared in Henderson County. At a farm on State Route 1377 southeast of Bardwell (in Carlisle County), a section of a chicken house roof about 200 feet long collapsed. The roof structure of an immediately adjacent chicken house was compromised. These same areas of roof structure were likely weakened by a severe thunderstorm wind event on October 31, 2013. An arctic cold front swept east across the region, bringing much colder air. As the depth of the cold air increased behind the front, precipitation changed from freezing rain to sleet and then to snow in most areas. A pair of disturbances in the upper levels of the atmosphere moved northeast across the region, causing wintry precipitation to become heavy at times.

Storm Data and Unusual Weather Phenomena - December 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
(KY-Z009) CALLOWAY, (KY-Z012) TRIGG, (KY-Z017) CHRISTIAN, (KY-Z022) TODD				
	12/08/13 00:00 CST		0	Ice Storm
	12/08/13 09:00 CST		0	
(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-Z010) CRITTENDEN, (KY-Z011) LYON, (KY-Z013) CALDWELL, (KY-Z014) UNION, (KY-Z015) WEBSTER, (KY-Z016) HOPKINS, (KY-Z018) HENDERSON, (KY-Z019) DAVIESS, (KY-Z020) MCLEAN, (KY-Z021) MUHLENBERG				
	12/08/13 01:00 CST		0	Winter Weather
	12/08/13 09:00 CST		0	
<p>A disturbance in the upper levels of the atmosphere lifted northeast across the Lower Ohio Valley. This disturbance ushered in warmer air aloft. Rain fell into a shallow layer of sub-freezing air near the surface, resulting in freezing rain. Where the layer of sub-freezing air was deeper, the precipitation fell as sleet. In the Tennessee border area from Murray eastward to Hopkinsville and Elkton, around one-quarter inch of ice coated all surfaces. Trees and power lines were ice-covered. Roads were ice-covered and hazardous. Scattered power outages were reported in the Murray area. Across the remainder of western Kentucky away from the Murray to Hopkinsville corridor, ice accumulations were mainly one-tenth inch or less.</p>				
CHRISTIAN COUNTY --- 0.7 NE HOPKINSVILLE ARPT [36.86, -87.44], 0.3 E HOPKINSVILLE ARPT [36.85, -87.44], 1.3 NNE CASKY [36.84, -87.42], 4.0 N PEMBROKE [36.84, -87.35], 3.1 SW HONEY GROVE [36.85, -87.35]				
	12/21/13 04:00 CST		0	Flood (due to Heavy Rain)
	12/21/13 14:30 CST		0	Source: River/Stream Gage
<p>Moderate flooding occurred along the south fork of the Little River on the east side of Hopkinsville. At the river gage at the U.S. Highway 68 bridge, the river crested at 17.75 feet. Flood stage there is 15 feet. A secondary road on the south fork of the Little River was closed. Low-lying woods and fields were flooded.</p>				
HENDERSON COUNTY --- 0.7 N HENDERSON [37.84, -87.58], 1.6 ENE HENDERSON ARPT [37.81, -87.66], 2.8 NNE SMITH MILLS [37.84, -87.75], 0.8 NW KINGS MILLS [37.74, -87.76], 1.6 E ROCK SPGS [37.73, -87.62], 1.8 E ANTHOSTON [37.77, -87.50]				
	12/21/13 09:01 CST		0	Flash Flood (due to Heavy Rain)
	12/22/13 00:15 CST		0	Source: Department of Highways
<p>Several state roads were closed due to high water, including portions of Highways 2247, 812, 1557, and 1439. There was high water on Kentucky Highways 2183 and 136, but they remained open. A water rescue was conducted near Smith Mills, where a vehicle overturned in a ditch. All persons were removed from the vehicle by EMS personnel. In the city of Henderson, there was one to two feet of standing water on a street, and high water signs were posted on U.S. Highway 41 near Audubon Park.</p>				
CARLISLE COUNTY --- 1.3 NNE BERKELEY [36.82, -89.09], 3.2 S BERKELEY [36.75, -89.10], 2.1 SSE ARLINGTON [36.75, -89.00], 2.5 NE ARLINGTON [36.81, -88.99], 0.6 NNW KIRBYTON [36.86, -88.86], CUNNINGHAM [36.92, -88.88]				
	12/21/13 15:00 CST		0	Flash Flood (due to Heavy Rain)
	12/21/13 19:45 CST		0	Source: Trained Spotter
<p>Highway 80 was closed due to flooding on the west side of Arlington. State Route 1820 was also closed. U.S. Highway 62 was flooded by Westfork Creek between Cunningham and Bardwell but was not closed. Several low-lying roads were flooded in the Cunningham area.</p>				
MCCRACKEN COUNTY --- REIDLAND [37.02, -88.53], OAKS [36.97, -88.55], CAMMELIA [37.02, -88.78], GRAHAMVILLE [37.10, -88.78], 2.0 ESE ROWLANDTOWN [37.09, -88.60]				
	12/21/13 15:35 CST		0	Flash Flood (due to Heavy Rain)
	12/22/13 01:15 CST		0	Source: Emergency Manager
<p>A number of roads were affected by flooding. Severe flooding was reported at a couple of intersections on U.S. Highway 62 in the city of Paducah. A county road off of U.S. Highway 60 west of Paducah was impassable due to three feet of water. At least one city street in Paducah was impassable. On Highway 60 in Paducah, a manhole cover was blown off by water surging up from the storm sewer. The rainfall total at the Paducah National Weather Service office was 5.26 inches.</p>				
BALLARD COUNTY --- OSCAR [37.13, -89.03], WICKLIFFE [36.97, -89.08], LOVELACEVILLE [36.97, -88.82], 5.0 E INGLESIDE [37.12, -88.83], 5.0 N KEVIL [37.15, -88.90]				
	12/21/13 17:06 CST	1	10K	Flash Flood (due to Heavy Rain)
	12/22/13 01:15 CST		0	Source: Trained Spotter

Storm Data and Unusual Weather Phenomena - December 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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Major flash flooding prompted a declaration of a state of emergency for Ballard County. Numerous roads were flooded across the county, including at least 16 that were impassable. A 54-year-old man was killed near Barlow when he was swept away by floodwaters after trying to get out of his car. His body was washed one-quarter to one-half mile off the small county road into a wooded area. An elderly woman was rescued from a stranded vehicle near a bridge on State Highway 725 near Kevil. Flooding of Clayton Creek impacted a road near Bandana such that only the top of the bridge was visible. An emergency management official in La Center measured 9.12 inches of rain, most of which fell in 15 hours.

Direct Fatalities: M54VE

CALLOWAY COUNTY --- 0.7 NNW STELLA [36.66, -88.39], 2.9 W VAN CLEAVE [36.65, -88.28], 2.7 SE MURRAY [36.59, -88.29], 1.0 E HAZEL [36.50, -88.30], 0.4 W CROSSLAND [36.50, -88.39], LYNN GROVE [36.60, -88.43]

	12/21/13 17:31 CST		40K	Flash Flood (due to Heavy Rain)
	12/22/13 02:15 CST		0	Source: Trained Spotter

The main street through the center of Murray was nearly impassable in spots. Cars were stalling out in the roadway. Floodwaters from a city creek were backing into homes. Highway 80 north of Murray was impassable in spots. A water rescue was conducted on a residential street on the south side of Murray. Five people were stranded on top of a jeep. A heavily travelled access road was closed in a business strip of Murray along the Highway 121 bypass. A mile west of Hazel, a car was swept off the road. The occupants were rescued. Several roadways around Lynn Grove had areas of standing water.

FULTON COUNTY --- 0.8 ESE FULTON [36.52, -88.86], 3.0 NNW CAYCE [36.59, -89.05], 1.1 WSW CAYCE [36.54, -89.05], 2.0 SSE FULTON ARPT [36.50, -88.91], 1.6 SSE FULTON [36.50, -88.86]

	12/21/13 18:52 CST		0	Flash Flood (due to Heavy Rain)
	12/22/13 00:15 CST		0	Source: Emergency Manager

Water was approaching the back of stores in the Fulton business district, prompting sandbagging of some buildings. City streets were flooded, and a couple were closed. South of Cayce, the intersection of Highways 94 and 239 was closed.

HOPKINS COUNTY --- 0.9 NW MADISONVILLE [37.34, -87.51], 2.3 E WICKS WELL [37.37, -87.51], 2.6 NW MADISONVILLE ARPT [37.37, -87.44], 0.6 SW EAST DIAMOND [37.33, -87.46], DAWSON SPGS [37.17, -87.70], BEULAH [37.27, -87.68]

	12/21/13 19:10 CST		10K	Flash Flood (due to Heavy Rain)
	12/22/13 00:30 CST		0	Source: Law Enforcement

Highway 254 was impassable due to flooding near Madisonville. In Madisonville, U.S. Highway 41 was closed due to flooding, and a vehicle was stranded in floodwaters at a mall. The driver of the vehicle was safely removed. Four streets in Dawson Springs were closed. A secondary road near Beulah was blocked by flooding.

TRIGG COUNTY --- 0.6 SSW ROCKCASTLE [36.89, -87.98], 2.9 W CADIZ BROADBENT ARPT [36.90, -87.78], 3.4 NW MAGGIE [36.77, -87.79], 2.0 SSW CANTON [36.77, -87.96]

	12/21/13 19:45 CST		0	Flash Flood (due to Heavy Rain)
	12/22/13 00:30 CST		0	Source: Emergency Manager

Several roads were closed in the county. A couple of streets were flooded in Cadiz.

HICKMAN COUNTY --- 1.5 NE FULHAM [36.66, -88.85], BEULAH [36.77, -88.85], 3.7 E COLUMBUS [36.77, -89.03], 2.5 WSW CLINTON [36.66, -89.02], 1.6 S WATTS [36.65, -88.82]

	12/21/13 21:00 CST		0	Flash Flood (due to Heavy Rain)
	12/21/13 23:40 CST		0	Source: Department of Highways

Highway 123 was closed between the 13 and 15 mile markers. Water was over Highway 58 at the Graves County line. Kentucky 307 was underwater near Beulah. U.S. Highway 51 was underwater near Clinton. A section of Kentucky 239 was underwater.

A slow-moving cold front passed across the region between the 20th and 22nd. Several upper level disturbances moved north-northeast along the front, touching off numerous showers and thunderstorms. The ground was already moist from snowmelt in the wake of the early December winter storm. On the 21st, a strong negatively tilted shortwave at 500 mb ejected northeast from the southern Plains, providing strong forcing for ascent. Widespread heavy rain and thunderstorms surged northeast in association with the strengthening surface low that tracked across western Kentucky. Storm total rainfall amounts ranged from 3 to 6 inches in most areas, with the highest amounts west of Kentucky Lake. Isolated higher rainfall amounts up to 9 inches occurred in Ballard County, near the confluence of the Mississippi and Ohio Rivers. Ditches and creeks quickly spilled out onto roadways and into nearby fields. There were numerous road closures and water rescues as waters continued to rise.

GRAVES COUNTY --- 4.0 S CLEAR SPGS [36.77, -88.53]

	12/21/13 17:16 CST		0	Hail (0.88 in)
	12/21/13 17:16 CST		0	Source: Public

Storm Data and Unusual Weather Phenomena - December 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
GRAVES COUNTY --- 2.3 ENE MAYFIELD GRAVES ARPT [36.78, -88.54], 2.3 WSW HICKSVILLE [36.78, -88.53]				
	12/21/13 17:18 CST		3K	Thunderstorm Wind (EG 56 kt)
	12/21/13 17:19 CST		0	Source: NWS Storm Survey
A microburst was oriented in a northeast direction across Kentucky Highway 58, just west of the intersection with Route 301. A trampoline was tossed about 25 yards. Several shingles on the west side of two garages were dislodged. A large dead tree was knocked over. Large tree limbs were down. The damage path width was about 90 yards. The microburst developed along a north to south oriented squall line that moved through eastern Graves County.				
CALLOWAY COUNTY --- COLDWATER [36.65, -88.45], KIRKSEY [36.70, -88.38]				
	12/21/13 17:27 CST		30K	Thunderstorm Wind (EG 61 kt)
	12/21/13 17:27 CST		0	Source: Trained Spotter
Some minor damage occurred at a house near Coldwater. At a farm near Kirksey, the hood was torn off a tractor, the top was blown out of a cedar tree, and a truck topper was wrapped around a tree.				
CALLOWAY COUNTY --- 1.1 S WADESBORO [36.73, -88.32], 1.2 SSE WADESBORO [36.73, -88.31]				
	12/21/13 17:31 CST		2K	Tornado (EF0, L: 0.33 mi , W: 50 yd)
	12/21/13 17:32 CST		0	Source: NWS Storm Survey
A relatively weak tornado touched down 2 miles west of Dexter in northern Calloway County. The tornado uprooted a couple of trees and downed power lines during its brief touchdown.				
CALLOWAY COUNTY --- 1.8 W ALMO [36.70, -88.30], 0.8 NNW WISWELL [36.59, -88.39]				
	12/21/13 17:31 CST		50K	Thunderstorm Wind (EG 65 kt)
	12/21/13 17:35 CST		0	Source: Trained Spotter
Several trees were blown down and power poles were snapped. The area of spotty damage extended from U.S. Highway 641 north of Murray to Highway 783 west-southwest of Murray. On U.S. Highway 641 a few miles north of Murray, a trampoline was blown into the middle of the road. Construction barrels were blown over. The peak wind gust at the Murray/Calloway County airport was 67 mph.				
MARSHALL COUNTY --- 1.5 E HARVY [36.82, -88.39], 1.8 ESE BRIENSBURG [36.89, -88.29]				
	12/21/13 17:32 CST		38K	Thunderstorm Wind (MG 63 kt)
	12/21/13 17:47 CST		0	Source: Fire Department/Rescue
Strong damaging winds around 70 mph were observed throughout the Benton area. A wind gust to 72 mph was measured at a firefighter's home in Benton. A trained spotter on the west side of town estimated a wind gust to 65 mph. Roof damage was reported to a couple of businesses in Benton. Power lines were blown down near U.S. Highway 641. On U.S. Highway 68 northeast of Benton, large trees were blown down.				
HOPKINS COUNTY --- BEULAH [37.27, -87.68], 0.5 ESE FIDDLE BOW [37.27, -87.66]				
	12/21/13 18:05 CST		3K	Thunderstorm Wind (EG 56 kt)
	12/21/13 18:05 CST		0	Source: Law Enforcement
A secondary road off of Highway 70 was blocked by downed trees and flooding.				
TRIGG COUNTY --- MONTGOMERY [36.88, -87.73]				
	12/21/13 18:08 CST		10K	Thunderstorm Wind (MG 65 kt)
	12/21/13 18:08 CST		0	Source: Emergency Manager
A trained spotter measured a wind gust to 75 mph on Interstate 24 near Montgomery, which is near the Cadiz exit. About 1,000 households were without power in Trigg County.				
MCLEAN COUNTY --- CALHOUN [37.53, -87.27]				
	12/21/13 18:30 CST		80K	Thunderstorm Wind (EG 65 kt)
	12/21/13 18:30 CST		0	Source: Trained Spotter
The roof of the county high school was partially torn off. The gymnasium sustained major water damage.				
DAVIESS COUNTY --- OWENSBORO [37.77, -87.12], UTICA [37.62, -87.12]				
	12/21/13 18:38 CST		50K	Thunderstorm Wind (MG 50 kt)
	12/21/13 18:42 CST		0	Source: AWOS

Storm Data and Unusual Weather Phenomena - December 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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Trees and power lines were damaged in Owensboro. A barn collapsed near Utica. The peak wind gust at the Owensboro airport was 58 mph. A trained spotter in Utica measured a wind gust to 58 mph.

DAVIESS COUNTY --- 4.0 SSW KNOTTSVILLE [37.72, -86.93], 3.0 SSW KNOTTSVILLE [37.73, -86.92]				
	12/21/13 18:50 CST		50K	Thunderstorm Wind (EG 65 kt)
	12/21/13 18:50 CST		0	Source: Trained Spotter

One barn was blown off its foundation. The roof was blown off another barn.

CHRISTIAN COUNTY --- NEWSTEAD [36.80, -87.62], HOPKINSVILLE [36.85, -87.48]				
	12/21/13 20:05 CST		15K	Thunderstorm Wind (MG 72 kt)
	12/21/13 20:07 CST		0	Source: Trained Spotter

A trained spotter in Hopkinsville measured a wind gust to 83 mph. Other trained spotters measured wind gusts around 60 mph. At the intersection of Highways 117 and 164 in Newstead, the wind gusted to 60 mph. On U.S. Highway 68 West at the Hopkinsville by-pass, a wind gust was measured to 58 mph. About four miles west of Hopkinsville, a new barn sustained damage to the roof and walls. A tree about 18 inches in diameter was uprooted in Hopkinsville.

CHRISTIAN COUNTY --- PEMBROKE [36.78, -87.35]				
	12/21/13 20:20 CST		6K	Thunderstorm Wind (EG 70 kt)
	12/21/13 20:20 CST		0	Source: Emergency Manager

A section of roofing was removed from an attached garage.

A surface low pressure system deepened as it moved northeast across western Tennessee, reaching the Lower Ohio Valley in the evening. A strong, negatively tilted shortwave at 500 mb ejected northeast from the southern Plains, providing strong forcing for ascent. A squall line organized near the Mississippi River and then surged east-northeast in association with the strengthening surface low. Unseasonably warm and moist air advanced across western Kentucky and southwest Indiana ahead of the squall line. Though instability was weak, it was based near the ground. Very strong low-level wind shear supported embedded circulations within the squall line. These resulted in pockets of very damaging winds and an isolated tornado.

MUHLENBERG COUNTY --- PARADISE [37.27, -86.98], 0.7 SW PARADISE [37.26, -86.99], 1.9 SE MARTWICK [37.31, -87.00], 2.3 SE MARTWICK [37.31, -86.99]				
	12/22/13 11:30 CST		0	Flood (due to Heavy Rain)
	12/25/13 23:30 CST		0	Source: River/Stream Gage

Minor flooding occurred along the Green River. Low-lying fields and woodlands were underwater.

UNION COUNTY --- 1.0 W UNIONTOWN [37.77, -87.95], 2.6 WNW UNIONTOWN [37.78, -87.98], 2.6 W UNIONTOWN [37.77, -87.98], 1.0 WSW UNIONTOWN [37.76, -87.95]				
	12/25/13 07:45 CST		1K	Flood (due to Heavy Rain)
	12/31/13 23:59 CST		0	Source: River/Stream Gage

Minor flooding occurred along the Ohio River. Low-lying fields and woodlands were underwater, along with river access roads.

Heavy rainfall shortly before Christmas caused sharp rises on regional rivers. The heavy rainfall was caused by a slow-moving cold front that passed across the Lower Ohio and Mid Mississippi Valleys between the 20th and 22nd. Several low pressure systems moved north-northeast along the front, touching off numerous showers and thunderstorms. Generally only minor river flooding was reported.

MISSOURI, Southeast

(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				
	12/02/13 22:00 CST		0	Dense Fog
	12/03/13 08:00 CST		0	

Southerly winds ahead of a cold front over the Plains brought lots of moist air northward from the Gulf of Mexico. This resulted in widespread dense fog during the late night and early morning hours. Visibility was one-quarter mile or less.

(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				
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Storm Data and Unusual Weather Phenomena - December 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	12/05/13 09:00 CST		0	Winter Storm
	12/06/13 17:00 CST		0	

A major winter storm produced primarily heavy snow and sleet. The precipitation changed from freezing rain to sleet and then to snow. The wintry precipitation slowly progressed southeast, starting about mid-morning at Perryville and reaching the Arkansas border counties late in the afternoon. The heaviest accumulations were along and northwest of a line from Jackson (Cape Girardeau County) to Dexter (Stoddard County), where 9 to 12 inches of snow fell. About 10 inches was reported in Poplar Bluff. The lowest accumulations were in the Mississippi Delta region south and southeast of Sikeston, where sleet and freezing rain restricted amounts to 2 to 4 inches. Cape Girardeau measured about 6 inches. Before the changeover to snow, there was about one-quarter inch of glazing from freezing rain, along with one-half to one inch of sleet. Isolated power outages were reported. Once precipitation changed to snow, it fell heavily. A trained spotter in Stoddard County reported 5 inches fell in four hours. In all areas, roads became very slick and hazardous as temperatures dropped through the 20's. Numerous accidents were reported. An arctic cold front swept east across the region, bringing much colder air. As the depth of the cold air increased behind the front, precipitation changed from freezing rain to sleet and then snow. A pair of disturbances in the upper levels of the atmosphere moved northeast across the region, causing wintry precipitation to become heavy at times.

RIPLEY COUNTY --- NAYLOR [36.58, -90.60], FAIRDEALING [36.67, -90.62], 1.2 W BENNETT [36.73, -91.02], 1.2 W PONDER [36.58, -91.00]				
	12/21/13 09:30 CST		0	Flood (due to Heavy Rain)
	12/22/13 12:00 CST		0	Source: Department of Highways

Several state roads were closed, including sections of Highways 142, H, K, NN, and W.

CARTER COUNTY --- ELLSINORE [36.93, -90.75], GRANDIN [36.83, -90.83], FREMONT [36.95, -91.17], VAN BUREN [37.00, -91.02]				
	12/21/13 10:00 CST		0	Flood (due to Heavy Rain)
	12/22/13 12:00 CST		0	Source: Department of Highways

Several roads were closed, including sections of Highways K, M, and Z. Carter County Road 259 was flooded by the Little Black Creek.

BOLLINGER COUNTY --- 5.7 SSW GIPSY [37.09, -90.21], 6.5 WSW ARAB [37.05, -90.18], 1.6 SSE HUSKEY [37.31, -89.89], 0.8 ENE LUTESVILLE AIRPK ARP [37.32, -90.01]				
	12/21/13 11:00 CST		50K	Flash Flood (due to Heavy Rain)
	12/21/13 13:00 CST		0	Source: Emergency Manager

A water rescue was conducted by the fire department on Highway P and TT near the border of Wayne County. Flash flooding of Crooked Creek surrounded a restaurant in Marble Hill. Parts of Highways H, P, and W were closed.

WAYNE COUNTY --- 4.3 WNW LAKE WAPPAPELLO [36.97, -90.40], 3.5 SE TASKEE STATION [36.93, -90.44], 3.2 WSW LAKE WAPPAPELLO [36.93, -90.37], 2.5 WNW LAKE WAPPAPELLO [36.96, -90.36]				
	12/21/13 12:00 CST		10K	Flash Flood (due to Heavy Rain)
	12/21/13 13:00 CST		0	Source: Amateur Radio

Two to three inches of water was in a house off of Highway PP. About a half dozen state roads were closed, including sections of Highways 49, C, E, FF, KK, P, and TT.

BOLLINGER COUNTY --- PATTON JCT [37.52, -90.02], GREENBRIER [37.12, -90.03], 2.9 SSW GIPSY [37.13, -90.20], CASTOR [37.30, -90.22], 7.8 NNW GRISHAM [37.47, -90.18]				
	12/21/13 13:00 CST		0	Flood (due to Heavy Rain)
	12/22/13 12:00 CST		0	Source: Department of Highways

A number of roads were closed, including parts of Highways H, P, and W.

WAYNE COUNTY --- 1.8 NNE SILVA [37.20, -90.51], 1.5 NE SILVA [37.19, -90.50], 2.1 NE SILVA [37.19, -90.49], 2.1 NNE SILVA [37.20, -90.50]				
	12/21/13 13:00 CST		0	Flood (due to Heavy Rain)
	12/22/13 22:30 CST		0	Source: River/Stream Gage

Minor flooding occurred on the St. Francis River near Patterson. Low-lying woods and fields near the river were inundated, along with riverside parks and campgrounds.

WAYNE COUNTY --- WAPPAPELLO [36.93, -90.28], COLDWATER [37.30, -90.42], PIEDMONT [37.17, -90.72], 7.3 S LEEPER [36.97, -90.73]				
	12/21/13 13:00 CST		0	Flood (due to Heavy Rain)
	12/22/13 12:00 CST		0	Source: Department of Highways

About a half dozen state roads were closed, including sections of Highways 49, C, E, FF, KK, P, and TT.

Storm Data and Unusual Weather Phenomena - December 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
BUTLER COUNTY --- 3.8 WSW HENDRICKSON [36.88, -90.55], 2.3 SSW ROMBAUER [36.82, -90.29], 2.4 WNW BATESVILLE [36.71, -90.29], 0.6 S STRINGTOWN [36.74, -90.58]				
	12/21/13 13:22 CST		90K	Flash Flood (due to Heavy Rain)
	12/21/13 21:00 CST	1	0	Source: Emergency Manager
Northwest of Poplar Bluff, flash flooding of Cane Creek resulted in a vehicle being inundated. A water rescue was conducted near U.S. Highway 60 and County Road 410, where two people were trapped in the vehicle, including a child. One person was injured and transported to a local hospital for treatment. Another water rescue was conducted on a secondary road near the junction of U.S. Highway 60 and Route T, east of Poplar Bluff. Two occupants were removed from the vehicle with no injuries. In the city of Poplar Bluff, persons were evacuated from a flooded home near the junction of Business Loop 60 and U.S. 67. About four miles west of Poplar Bluff, the fire department evacuated an elderly couple by boat from their home on County Road 450. Water was too deep for fire trucks to pass.				
CAPE GIRARDEAU COUNTY --- 5.1 N NEW WELLS [37.62, -89.64], 2.8 N OLD APPLETON [37.62, -89.72], 0.4 ESE OLD APPLETON [37.58, -89.71], 3.4 WNW JACKSON [37.39, -89.73], JACKSON [37.38, -89.67]				
	12/21/13 14:00 CST		4K	Flood (due to Heavy Rain)
	12/22/13 12:00 CST		0	Source: Department of Highways
A few roads were closed by flooding, including a section of Highway A. In Jackson, basement flooding was reported.				
BUTLER COUNTY --- POPLAR BLUFF [36.75, -90.40], 1.8 S MENGO [36.77, -90.38], 2.0 SSE MENGO [36.77, -90.37], 0.7 E POPLAR BLUFF [36.75, -90.39]				
	12/21/13 16:30 CST		0	Flood (due to Heavy Rain)
	12/23/13 19:15 CST		0	Source: River/Stream Gage
Minor flooding occurred on the Black River. Farmland south of Poplar Bluff was flooded. Mainly bottomland woods and fields were inundated, including a riverside park in Poplar Bluff.				
STODDARD COUNTY --- 0.8 E PAXICO [36.95, -90.16], 1.1 NW ASHERVILLE [36.91, -90.19], 1.8 NW ASHERVILLE [36.92, -90.20], 0.1 S PAXICO [36.95, -90.17]				
	12/21/13 17:30 CST		0	Flood (due to Heavy Rain)
	12/21/13 21:30 CST		0	Source: Department of Highways
A section of Highway T was closed by flooding.				
NEW MADRID COUNTY --- PORTAGEVILLE [36.43, -89.70], 0.8 ESE PORTAGEVILLE [36.43, -89.69], 1.2 ESE LILBOURN [36.60, -89.60], 0.4 WNW LILBOURN [36.60, -89.63]				
	12/21/13 19:45 CST		0	Flood (due to Heavy Rain)
	12/22/13 09:00 CST		0	Source: Emergency Manager
In Lilbourn, water was being pumped over a highway to keep homes from flooding in the northeast corner of town. The problem was caused by flooding of a large ditch along Highway U. In Portageville, streets and yards were flooded. A section of Highway FF was closed.				
SCOTT COUNTY --- DIEHLSTADT [36.97, -89.43], 2.5 WNW SIKESTON [36.89, -89.62], 1.4 ENE CROWDER [36.98, -89.65], 2.8 N PORTER [37.02, -89.47]				
	12/21/13 20:55 CST		0	Flood (due to Heavy Rain)
	12/22/13 09:00 CST		0	Source: Law Enforcement
North of Sikeston, U.S. Highway 61 was closed, along with Highway HH. A trained spotter in Diehlstadt measured 7.36 inches of rain in the previous 18 hours.				
BUTLER COUNTY --- HENDRICKSON [36.90, -90.48], STRINGTOWN [36.75, -90.58], NEELYVILLE [36.57, -90.50], QULIN [36.60, -90.27], 1.3 NNE ROMBAUER [36.87, -90.27]				
	12/21/13 21:00 CST		0	Flood (due to Heavy Rain)
	12/22/13 12:00 CST		0	Source: Department of Highways

Several roads were closed, including parts of Highways 142 and 158.

A slow-moving cold front passed across the region between the 20th and 22nd. Several upper level disturbances moved north-northeast along the front, touching off numerous showers and thunderstorms. The ground was already moist from snowmelt in the wake of the early December winter storm. On the 21st, a strong negatively tilted shortwave at 500 mb ejected northeast from the southern Plains, providing strong forcing for ascent. Widespread heavy rain and thunderstorms surged northeast in association with the strengthening surface low that tracked across western Tennessee and Kentucky. Storm total rainfall amounts ranged mostly from 4 to 9 inches, with the highest amounts from Sikeston south along the Mississippi River. Ditches and creeks quickly spilled out onto roadways and into nearby fields. There were numerous road closures and water rescues as waters continued to rise. Minor flooding

Storm Data and Unusual Weather Phenomena - December 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
occurred along the Black and St. Francis Rivers.				