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# STORM DATA



AND UNUSUAL WEATHER PHENOMENA  
WITH LATE REPORTS AND CORRECTIONS



**NCEI** NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE  
NATIONAL CENTERS FOR ENVIRONMENTAL INFORMATION

**Cover:** This cover represents a few weather conditions such as snow, hurricanes, tornadoes, heavy rain and flooding that may occur in any given location any month of the year. *(Photos courtesy of NCEI)*

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### **STORM DATA**

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National Centers For Environmental Information

Editor: Sherri Nave

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The Storm Data and Unusual Weather Phenomena narratives and Hurricane/Tropical Storm summaries are prepared by the National Weather Service. Monthly and annual statistics and summaries of tornado and lightning events resulting in deaths, injuries, and damage are compiled by the National Centers For Environmental Information (NCEI) and the National Weather Service's (NWS) Storm Prediction Center.

**STORM DATA** contains all confirmed information on storms available to our staff at the time of publication. Late reports and corrections will be printed in each edition.

Except for limited editing to correct grammatical errors, the data in Storm Data are published as received.

Note: "None Reported" means that no severe weather occurred and "Not Received" means that no reports were received for this region at the time of printing.

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Storm Data  
National Centers For Environmental Information  
151 Patton Avenue  
Asheville, NC 28801-5001  
e-mail: [storm.data@ncdc.gov](mailto:storm.data@ncdc.gov)

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Margarita Gregg, Ph.D.  
Acting Director,  
National Centers For Environmental Information

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ALABAMA, Central

ALZ011>015-017>  
039-041-043>050

**Autauga - Barbour - Bibb - Blount - Bullock - Calhoun - Chambers - Cherokee - Chilton - Clay - Cleburne - Coosa - Elmore - Etowah - Fayette - Greene - Hale - Jefferson - Lamar - Lee - Macon - Marengo - Marion - Montgomery - Perry - Pickens - Pike - Randolph - Russell - Shelby - St. Clair - Sumter - Talladega - Tallapoosa - Tuscaloosa - Walker - Winston**

01	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Many locations across central Alabama received little or no rainfall during a majority of the month of November. Drought conditions continued to worsen with Extreme (D3) to Exceptional Drought (D4) conditions covering all 39 counties in central Alabama. The Governor of Alabama expanded the Drought Emergency Declaration on November 7th to include all of central Alabama. The declaration prohibited all outdoor burning.

ALZ040-042

**Dallas - Lowndes**

15	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Many locations across central Alabama received little or no rainfall during a majority of the month of November. Drought conditions continued to worsen with Extreme (D3) to Exceptional Drought (D4) conditions covering all 39 counties in central Alabama. The Governor of Alabama expanded the Drought Emergency Declaration on November 7th to include all of central Alabama. The declaration prohibited all outdoor burning.

## Sumter County

6 S Cuba

28	1907CST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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Several large trees uprooted along County Road 5 near the intersection of Randolph Street.

A strong line of thunderstorms moved eastward across west Alabama during the evening hours. A severe storm developed on the tail end of the convective line and produced damaging winds over southwest Sumter County. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

## Pickens County

4 NNW Melrose  
6 W Palmetto

29	1915CST								
	1925CST	5.3	600	0	0	0.00K	0.00K		Tornado (EF1)

National Weather Service meteorologists surveyed damage in northern Pickens County just northeast of Ethelsville and determined that the damage was consistent with an EF-1 tornado, with maximum winds estimated near 95 mph. The tornado touched down about 5 miles northeast of Ethelsville on County Road 35. A few trees were snapped off around this location but the initial damage was rather minor. The tornado continued northeast and crossed Antiach Church Road where it continued snapping off and uprooting trees. The tornado then approached County Road 34 where the tornado was at its maximum intensity. Numerous trees were snapped off and were uprooted on both sides of the tornado path. Several outbuildings were either damaged or destroyed. The tornado continued northeast where it crossed Shawtone Road, Woodard Road, and Miller Road. The tornado lifted just before it crossed County Road 27. There were sporadic trees blown down within one mile on the southern side path. This damage was due to strong inflow winds into the storm.

## Marion County

1 W Twin  
2 SSW Whitehouse

29	1929CST								
	1943CST	10.6	150	0	0	0.00K	0.00K		Tornado (EF0)

National Weather Service meteorologists surveyed damage in southern Marion County near Twin and determined that the damage was consistent with an EF-0 tornado, with maximum winds estimated near 75 mph. The tornado touched down about 3 miles north of Gu-Win, or just southwest of the Twin Community on County Road 250. The tornado damage was light and mainly consisted of tree and tree branch damage northeastward across County Road 3, Alabama Highway 253 and up to Interstate 22. The tornado proceeded northeastward and crossed County Road 95, County Road 36 and Vinston Road. More tree and tree branch damage was done on this part of the path. The tornado then passed Piney Grove Road, Alabama Highway 129 and lifted near County Road 170. More light tree damage occurred and a few outbuildings sustained damage in this area.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ALABAMA, Central

### Winston County 2 SSE Forkville

29	2004CST 2006CST	0.4	100	0	0	0.00K	0.00K	Tornado (EF1)
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National Weather Service meteorologists surveyed damage in northwest Winston County near Forkville and determined that the damage was consistent with an EF-1 tornado, with maximum winds estimated near 105 mph. The tornado touched down about 5 miles east northeast of Haleyville. At initial touch down along Chicken Foot Road, there were a few trees that were blown down and minor damage to a garage roof. The tornado continued northeastward where it snapped several power poles, one home suffered roof damage, and some garage doors were blown in. A metal pole and rafter barn was destroyed and the debris was scattered across a field. Toward the end of the path, several tree trunks were snapped off.

### Fayette County 5 SE Hubertville

29	2006CST 2007CST	0.3	50	0	0	0.00K	0.00K	Tornado (EF0)
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National Weather Service meteorologists surveyed damage in Fayette County near Flynn and determined that the damage was consistent with an EF-0 tornado, with maximum winds estimated near 65 mph. A brief, weak tornado touched down near the intersection of Flynn Road and Alabama Highway 102. This location is about 3 miles southwest of Fowlers Crossroads or 10 miles northeast of Fayette. Some trees were knocked down along the short path. Minor roof damage to an outbuilding occurred near the end of the path.

### Winston County 2 SSW Pleasant Hill

29	2006CST 2012CST	3.2	300	0	0	0.00K	0.00K	Tornado (EF2)
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National Weather Service meteorologists surveyed damage in eastern Winston County in the Ashridge Community and determined that the damage was consistent with an EF-2 tornado, with maximum winds estimated near 125 mph. The tornado touched down along County Road 55 just north of Macedonia Road. This location was about 4 miles northwest of Double Springs or 2 miles south of Ashridge. At the beginning point, one home lost a portion of its roof covering. The tornado moved north northeast and almost paralleled County Road 55. A chicken house sustained significant damage and one home suffered roof damage on County Road 3182. The tornado increased its intensity and width as it entered the Bankhead National Forest near Ashridge. Several homes and outbuildings sustained damage and numerous trees were snapped or uprooted. The EF -2 damage occurred just off County Road 55 south of Ashridge. Two mobile homes and one outbuilding were totally destroyed. Numerous power poles and trees were blown down. The tornado continued north northeast and crossed Alabama Highway 195, County Road 2 and eventually lifted near Jim Brown Road. Several structures sustained damage and many trees were snapped off on this final section of the tornado path.

### Winston County 1 S Nathan 2 NE Helicon

29	2052CST 2105CST	7.1	1000	0	0	0.00K	0.00K	Tornado (EF2)
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National Weather Service meteorologists surveyed damage in eastern Winston County near Arley and determined that the damage was consistent with an EF-2 tornado, with maximum winds estimated near 130 mph. This tornado touched down in a wooded area just northeast of Southside Drive and southwest of Winston County Road 3906. As it crossed Winston County Road 3906 and neared County Road 12, the circulation became substantially stronger and snapped numerous pine trees and caused minor structure damage to two homes along County Road 12. It continued to snap trees and cause minor structural damage as it crossed County Road 77/ Helicon Rd and Hosanna Highway. As it neared Hosanna Highway along the shores of Smith Lake, it intensified to EF-2 strength with wind speeds of 130 to 135 mph, rendering 4 homes as uninhabitable/destroyed. As the tornado crossed Smith Lake, it decreased intensity but widened to a maximum path width of 1000 yards. The tornado re-intensified and narrowed as it continued to move northeastward along County Road 77/Helicon Road, snapping and uprooting trees and damaging another 10 homes and several sheds and outbuildings, and snapping more than a quarter mile stretch of concrete power poles. The tornado continued to brush the south side of Helicon, destroying a Fire Department training building and passing over a community storm shelter. From there it continued northeastward across Winston County Road 40 and weakened as it crossed into Cullman County approximately 2 miles ENE of Helicon.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## ALABAMA, Central

### Winston County 2 WSW Nesmith

29	2220CST 2225CST	3	100	0	0	0.00K	0.00K	Tornado (EF1)
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National Weather Service meteorologists surveyed damage in extreme eastern Winston County just southeast of Addison and determined that the damage was consistent with an EF-1 tornado, with maximum winds estimated near 110 mph. This tornado touched down about 6 miles north northeast of Arley along County Road 66. A few trees and large branches were snapped off near the initial touch down. The tornado continued northeast and paralleled County Road 66. The tornado continued producing tree damage and at County Road 39, it produced roof damage to a home and outbuilding. Farther down County Road 66, a mobile home was rolled over, a garage was significantly damaged, and a carport was damaged. The tornado continued northeast where it damaged several other structures and took down many trees. The tornado crossed US Highway 278 and entered Cullman County near County Road 45.

### Lamar County 2 W Vernon Lamar Co Arpt 3 SSE Beaverton

29	2340CST 2353CST	9.69	600	0	0	0.00K	0.00K	Tornado (EF1)
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National Weather Service meteorologists surveyed damage in Central Lamar County and determined that the damage was consistent with an EF-1 tornado, with maximum winds estimated near 105 mph. The tornado touched down about 3 miles west southwest of the Lamar County Airport, near the intersection of Buck Jackson Road and Morris Road. There were several trees with large branches removed and a few trees that were snapped off. The tornado moved northeastward and crossed County Road 25 and Country Club Road. Several trees were snapped or uprooted and a few mobile homes suffered minor damage. The tornado then hit the Lamar County Airport at US Highway 17. Two hangers were destroyed, three planes were destroyed, several outbuildings were destroyed, one restaurant sustained roof damage, several mobile homes sustained minor damage and one home was destroyed. The tornado continued northeastward and produced more tree damage and minor mobile home damage on Pitts Road and Bluebird Road. Additional damage was located on Taylor Springs Road where several trees were uprooted and snapped off, a few homes sustained roof damage, and a few mobile homes were damaged. The tornado continued to snap off trees until it lifted near the intersection of County Road 49 and Garrison Road.

### Marion County 2 SE Guin 5 SE Whitehouse

30	0001CST 0024CST	16.85	900	0	0	0.00K	0.00K	Tornado (EF1)
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National Weather Service meteorologists surveyed damage in southern Marion County and determined that the damage was consistent with an EF-1 tornado, with maximum winds estimated near 90 mph. The same storm that produced the Lamar County Airport Tornado continued to move northeast, and eventually caused a tornado in Marion County. This tornado touched down about a mile south of the city of Guin on County Road 69. From there, the tornado quickly widened as it moved to the northeast. As the tornado crossed US Highway 43, it caused significant damage to the roof of a restaurant, and snapped and uprooted several large trees. The tornado then crossed County Roads 27 and 164, and Alabama Highway 253, causing damage to numerous trees and several outbuildings. As the tornado approached and crossed Interstate 22, the damage path narrowed and the damage was barely discernible. The damage path slowly widened again as passed to the northwest of the Brilliant Community, damaging many more trees. A wooden barn structure was significantly damaged on County Road 36 northwest of Brilliant. From there, the path continued northeast over mostly rural farmland, producing more tree damage on Alabama Highway 129, County Roads 46, 171, and 70, and Alabama Highway 233. From there, the tornado began to narrow once again, and it finally lifted near Crooked Creek Road, just south of US Highway 278.

### Marengo County 3 S Allenville 3 NW Faunsdale

30	0510CST 0518CST	5.13	250	0	0	0.00K	0.00K	Tornado (EF1)
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National Weather Service meteorologists surveyed damage in extreme northern Marengo near Faunsdale and determined that the damage was consistent with an EF-1 tornado, with maximum winds estimated near 90 mph. The tornado touched down just south of Cedarcrest Lane in northeastern Marengo County near the communities of Siddonsville and Faunsdale. The tornado traveled northeast and crossed Cedarcrest Farms where it damaged several trees, barns and outbuildings. The tornado then crossed County Road 54 where it reached its maximum strength and width. Here, it uprooted and snapped several hardwood and softwood trees. The tornado continued northeast and crossed US Highway 80 where it entered Hale County.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ALABAMA, Central

### Hale County

5 ESE Gallion	30	0518CST							
1 S Newbern		0532CST	7.8	250	0	0	0.00K	0.00K	Tornado (EF1)

This tornado is a continuation from Marengo County. National Weather Service meteorologists surveyed damage in extreme northern Marengo and southeast Hale Counties and determined that the damage was consistent with an EF-1 tornado, with maximum winds estimated near 90 mph.

The tornado crossed into southern Hale County about 1 mile west of County Road 25. Several more trees sustained damage along County Road 12, County Road 10, and Alabama Highway 25 and Alabama Highway 61. The tornado lifted near Alabama Highway 61 just west of Perry County line.

### Lee County

1 ENE Middle Brooks Xrds	30	1235CST							
1 WNW Waverly		1239CST	2.7	300	0	0	0.00K	0.00K	Tornado (EF1)

National Weather Service meteorologists surveyed damage in extreme northern Lee County and determined that the damage was consistent with an EF-1 tornado, with maximum winds estimated near 90 mph.

The first damage surveyed was along Lee Road 88 just southwest of US Highway 280 near the town of Waverly. The tornado then traveled northeast and crossed Lee Road 453 where it caused minor structure damage and several trees were either snapped or uprooted. The tornado then crossed US Highway 280 and entered southern Chambers County about one mile west of Highway 147.

### Chambers County

1 WNW Waverly	30	1239CST							
		1240CST	0.52	300	0	0	0.00K	0.00K	Tornado (EF1)

National Weather Service meteorologists surveyed damage in extreme northern Lee County and extreme southern Chambers County and determined that the damage was consistent with an EF-1 tornado, with maximum winds estimated near 90 mph. This tornado entered southern Chambers County from Lee County about one mile west of Highway 147. The tornado traveled northeast and crossed County Road 21. Numerous hardwood and softwood trees were uprooted and snapped near County Road 21. The tornado lifted just north of County Road 21.

A warm front moved northward during the day on Tuesday, November 29th, and surface temperatures climbed into the 70s across north Alabama. Low level shear and storm relative helicity increased over west Alabama Tuesday evening and discrete supercells developed over west Alabama.

## ALABAMA, North

### ALZ001>010-016

#### Colbert - Cullman - Dekalb - Franklin - Jackson - Lauderdale - Lawrence - Limestone - Madison - Marshall - Morgan

01	0000CST				0	0	0.00K	0.00K	Drought
30									

The worst drought conditions are ongoing since the last major drought in 2007. With no appreciable rainfall in sight, conditions will further deteriorate, with the dry conditions complicating several factors, mainly that of farming and water conservation in the near future.

### ALZ016

#### Cullman

08	0000CST				0	0	0.00K	0.00K	Drought
30									

The worst drought conditions are ongoing since the last major drought in 2007. With no appreciable rainfall in sight, conditions will further deteriorate, with the dry conditions complicating several factors, mainly that of farming and water conservation in the near future.

### ALZ001>007

#### Colbert - Franklin - Lauderdale - Lawrence - Limestone - Madison - Morgan

15	0000CST				0	0	0.00K	0.00K	Drought
30									

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ALABAMA, North

The worst drought conditions are ongoing since the last major drought in 2007. With no appreciable rainfall in sight, conditions will further deteriorate, with the dry conditions complicating several factors, mainly that of farming and water conservation in the near future.

20	0200CST 0700CST				0	0	0.00K	0.00K	Frost/Freeze
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### ALZ002>010-016

#### Colbert - Cullman - Dekalb - Franklin - Jackson - Lawrence - Limestone - Madison - Marshall - Morgan

20	0200CST 0700CST				0	0	0.00K	0.00K	Frost/Freeze
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Freezing temperatures of in the mid 20s to around 30 were experienced in North Alabama on the morning of the 20th.

### Franklin County

#### 1 SE Red Bay Muni Arpt

29	1838CST				0	0	0.00K	0.00K	Hail (0.88)
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Nickel sized hail was reported in Red Bay.

### Franklin County

#### 2 SSE Pleasant Grove 1 WNW Frankfort

29	1905CST 1908CST	3.98	100		0	1			Tornado (EF2)
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A supercell crossed over northern Franklin County Alabama and a tornado developed and touched down near Lost Creek Road on the northeast side of the Cedar Creek Reservoir. When it touched down, a number of hardwood trees, softwood trees, and power poles were snapped and a well built single family home lost a significant amount of the roofing material and the one occupant of the home was injured when the tornado occurred. The home also shifted with cracks noted on the concrete undergirding of the home. This is where the tornado was at its strongest (EF-2). The tornado quickly moved northeast snapping 10-20 trees and power poles as it moved towards the Frankfort Community along County Road 88.

### Colbert County

#### 3 W Crooked Oak 4 SW Colbert Hgts

29	1908CST 1923CST	6.89	100		0	2			Tornado (EF1)
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A tornado crossed into Colbert County from Franklin County. More softwood and hardwood trees were snapped causing damage to a single wide manufactured home and car shed on Jones Road. More softwood and hardwood trees were snapped as the tornado continued northeast across County Road 49. Then, as the tornado continued to move northeast multiple softwood and hardwood trees were snapped close to Underwood Mountain Road before striking a single wide manufactured home. The single wide manufactured home sustained damage consistent with EF-1 rating with destruction of roof and walls leaving floor and undercarriage in place. Two people within this home sustained injuries. Another single family dwelling next to this manufactured home sustained damage uplift of the roof damage while more snapped hardwood trees were noted just to the northeast of these houses. This is also where the tornado had the largest width of 100 yards. The tornado then lifted shortly after this damage occurred.

A tornado outbreak occurred during the evening hours of the 29th into the early morning hours of the 30th. A very mild and unstable air mass was in place along with a strong southwesterly upper level jet. These ingredients combined with a cold front and pre-frontal trough sweeping from west to east across the area sparked scattered supercell thunderstorms during the evening, a few of which were tornadic. This was followed by a quasi-linear convective system (QLCS) that occurred with the trough, which also was responsible for severe weather. Beneficial rainfall occurred with this system with 2-5 inches reported. Some of the rainfall fell fast enough to produce brief flash flooding in the Florence area during the evening.

### Lauderdale County

#### 1 WSW Florence

29	2020CST				0	0	0.00K	0.00K	Flash Flood
30	2359CST								

Two feet of water along Tennessee and Locust Roads in Florence. Intersection being closed. Person trapped in vehicle as well. Relayed by Florence Police Department.

### Colbert County

#### Muscle Shoals

29	2030CST				0	0	0.00K	0.00K	Flash Flood
30	2359CST								

Vehicles now trapped in the Walmart parking lot in Muscle Shoals due to rapidly rising water. No occupants are inside any of the vehicles. Relayed by Colbert EOC.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ALABAMA, North

During the passage of a strong cold front at the end of November, several waves of heavy rainfall traversed the region, with several instances of Flash Flooding occurring across the area.

### **Morgan County** 2 NNW Danville 1 SSE Basham

29	2040CST								
	2048CST	6.2	175	0	0				Tornado (EF3)

The tornado first touched down along Danville Road just east of the Lawrence County line. In this area, trees were snapped and uprooted. Minor damage was noted to a shed here. The tornado then moved northeast and strengthened as it crossed the intersection of Maddox Road and Johnson Chapel Road. Here hardwood trees were snapped near the base and a home suffered significant roof and structural damage.

Along northwest Maddox Road several homes sustained significant structural damage. One home had the roof and a large section of the wall blown out. The residents of the home rode the storm out safely in the interior most hallway. Several power poles were snapped at the base. Damage here was consistent with very high end EF-2 damage.

The tornado once again crossed Danville Road causing structural damage to several buildings including a multi-story home. Significant roof uplift was noted in this location. A large industrial garage in this area was also destroyed. A convenience store nearby suffered damage, and the owner's family received warning alerts and took shelter in an interior hallway to ride out the storm.

The tornado then approached Neel School Road causing significant damage in and around the Neel Volunteer Fire Department. The roof was nearly completely taken off the fire department and large metal trusses were bent at this facility. A nearby large building was obliterated and other well built structure had its roof and supports taken off.

As the tornado moved northeast, it cross Singleton Road impacting more structures. Several homes sustained structural damage, mainly roof damage. One very large building was completely destroyed with another sustaining near collapse. The tornado then reached its maximum intensity as it crossed Boys Ranch Road on the eastern edge of Bogar Loop.

Here a home suffered complete roof loss and partial wall collapse. An anchored mobile home was obliterated with the contents thrown over 100 yards. A motor cycle repair shop that included an anchor bolted large shop building was nearly wiped clean with motorcycles thrown or rolled large distances. An SUV parked here was thrown and then rolled about 75 yards. Damage here was consistent with lower end EF-3 damage at 140 mph.

The tornado then crossed mostly rugged, hilly and rural terrain downing trees as it began to slowly wind down in intensity. The tornado then once again crossed Danville Road north of McCleskey producing widespread tree damage. Here very large hardwood trees were snapped near the based and uprooted. A home here sustained damage to the roof and also damage due to falling trees. A large shed/outbuilding here was destroyed. As the tornado crossed Herring Road it produced damage to a roof on a conventional home and also significant roof and structural damage to a mobile home. On the northeast side of Herring Road minor tree damage was noted as the tornado finally lifted.

### **Cullman County** 4 NW Crane Hill 4 SSW Jones Chapel

29	2105CST								
	2107CST	2.41	580	0	0				Tornado (EF1)

This tornado was originally the Arley/Helicon EF-2 tornado that originated in Winston County. It continued across County Road 986, causing significant damage to a barn and snapping several hardwood and softwood trees. The tornado continued northeast, continued to snap trees and destroyed another shed as it crossed CR 946 and 939. It appeared to lift northeast of CR 939.

### **Lawrence County** 2 NE Beavers Cross

29	2110CST			0	0	0.00K	0.00K		Hail (0.88)
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Nickel sized hail was reported.

### **Madison County** 2 E Oakwood College

29	2120CST			0	0	1.00K	0.00K		Thunderstorm Wind (52EG)
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A power pole was knocked down along Oakwood Avenue in Huntsville.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.



# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ALABAMA, North

### Madison County

1 ESE Huntsville Mills Arp	29	2129CST							
5 E Greenfield		2145CST	13.21	130	0	0			Tornado (EF2)

Initial continuous damage was found along the leading edge of Monte Sano Mountain close to the intersection of Monte Sano Blvd. and Nolan Avenue. Several trees were snapped and uprooted as it moved along the northern brow of the mountain. A clear, continuous path of snapped trees was observed just north of the RV campground area of Monte Sano State Park. From here, the tornado skipped down the northeast face of the mountain, caused minor tree damage near Wall Road, US Highway 72, and Moring Road.

More significant damage resumed near Ryland Pike near its intersection with Delta Pine Dr. Trees were snapped on Ryland Pike, then the tornado entered the Central Estates neighborhood. At least 15 houses had at least some roof decking removed in the neighborhood. A few houses had large sections of the roof structure removed, including one house on Moontown Road which had its entire roof and roof structure removed. Elsewhere around the neighborhood, many more houses had at least superficial damage to fascias and gutters, or had privacy fencing blown away.

The Flint Ridge horse farm suffered significant damage. Nearly all of the tin roofing was removed from one large and one small horse barn, and a riding arena was completely destroyed. Nearly all of the trees within 50-75 yards of the farm buildings were snapped. The tornado was clearly at its strongest between the house that lost all roofing, and the horse farm damage. At this location, the peak intensity is set at 125 MPH, an EF-2 on the Enhanced Fujita scale. The tornado continued over a nearby ridge and weakened slightly, snapping and uprooting more trees along Hurricane Creek Road, Sharps Cove Road, and Neal Drive. Additional damage to houses was noted along Sharps Cove and Neal Drive, where roofing was peeled off a manufactured home and nearby single family home.

A tornado outbreak occurred during the evening hours of the 29th into the early morning hours of the 30th. A very mild and unstable air mass was in place along with a strong southwesterly upper level jet. These ingredients combined with a cold front and pre-frontal trough sweeping from west to east across the area sparked scattered supercell thunderstorms during the evening, a few of which were tornadic. This was followed by a quasi-linear convective system (QLCS) that occurred with the trough, which also was responsible for severe weather. Beneficial rainfall occurred with this system with 2-5 inches reported. Some of the rainfall fell fast enough to produce brief flash flooding in the Florence area during the evening.

### Franklin County

1 E Reedtown	29	2140CST							
	30	2359CST			0	0	0.00K	0.00K	Flash Flood

Four to five feet of water reported along the intersection of Tuscaloosa Street and Washington Avenue in Russellville.

During the passage of a strong cold front at the end of November, several waves of heavy rainfall traversed the region, with several instances of Flash Flooding occurring across the area.

### Jackson County

5 W Princeton	29	2145CST							
3 WNW Swaim		2200CST	6.64	150	0	0			Tornado (EF1)

DEC 2 2016 Update... NWS and UAH survey team determined that the Monte Sano EF-2 tornado tracked into Western Jackson County and crossed over Putnam Mountain. The team observed mainly EF-1 and EF-0 damage. Numerous hardwood trees were either snapped or uprooted as the tornado crossed the western slope of Putnam Mountain along with a homestead sustaining minor roof damage and damage to a small shed. Near the ridge top, significant tree damage was reported near a small camp ground. Several camper trailer sustained damage from the downed trees. Additional ridge top tree damage was observed slightly further to the WSW along CR-303 but was rated lower to slight beetle rot. The tornado continued downslope where more hardwood trees were snapped or uprooted along with a camper trailer that destroyed in the valley.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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## ALABAMA, North

### Jackson County

2 E Estillfork  
2 S Grays Chapel

29	2202CST		0.9	40	0	0			Tornado (EF1)
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The parent supercell thunderstorm that produced the Monte Sano EF-2 tornado also produced a separate area of rotation that caused the EF-1 Estillfork tornado. The National Weather Service and University of Alabama in Huntsville surveys found significant softwood tree damage in the form of healthy and snapped pine trees along CR-9, east of the CR-9 and CR-141 intersection. The convergence of the down trees was evident at several locations along CR-9 and in the Estillfork area. Peak winds were determined to be 95 MPH.

### Cullman County

5 SW Jones Chapel

29	2205CST		0.15	50	0	0			Tornado (EF1)
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The tornado that began in Winston County producing EF-1 damage continued into NW Cullman County near Ne Smith, AL where multiple hardwood and softwood trees were snapped as it moved towards a storage shed building on County Road 1024. As it moved towards the small building the tornado uplifted the roof of the building causing the walls collapse and sending debris across a field. Then, as the tornado proceeded northeast it uplifted the metal roof on another single family building. This damage was consistent with EF-1 intensity and was the strongest damage with this portion of the tornado track. More trees were snapped just to the northeast of this position on County Road 1024 near another single family home before it lifted.

### Jackson County

1 SE Bridgeport

29	2300CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter sized hail was reported.

### Jackson County

2 NE Christian Home  
3 S Bryant

29	2300CST		2.31	150	0	0			Tornado (EF1)
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A survey team from the University of Alabama in Huntsville (UAH) relayed reports of damage and geocoded photographs along CR-690, south of Bryant, AL (Jackson County). NWS Huntsville, after coordination with UAH and investigation of the photos and radar data, determined the damage was associated with a weak EF-1 tornado.

The bulk of the damage was generally observed along CR-690, between CR-691 and CR-676. Damage indicators were limited to snapped soft wood trees and/or snapped large branches. While the majority of the damage was indicative of an EF-0 tornado, there was a small path of EF-1 damage just to the west of CR-676. In this area, several healthy softwood trees were snapped before the tornado weakened as it approached a ridge on the east side of CR-676.

### Morgan County

Morgan City

29	2304CST				0	0	0.00K	0.00K	Hail (0.88)
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Nickel sized hail was reported.

### Marshall County

2 ENE Oleander

29	2305CST		1.2	50	0	0			Tornado (EF1)
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A tornado developed near the Union Grove Road and Tinner Mayo Road intersection in the Union Grove Community. As it developed multiple trees were snapped and uprooted causing minor roof damage to one single family home. More significant home damage was sustained to another nearby single family house due to trees snapping and falling on the roof.

As the tornado proceeded northeast to Tinner Mayo Road, it flipped a recreational vehicle and moved it into a single family home causing damage to the home and destroying the recreational vehicle. Meanwhile, the tornado caused shingles to come off the roof of this single family house. Further to the northeast, the tornado uplifted the roof of a storage shed for hay and caused minor roof damage to a double wide manufactured home.

More damage was sustained to a single family dwelling near Tinner Mayo and Brock Chapel road as the tornado continued northeast where the roof was completely uplifted and blown into the field. The tornado then snapped a few more hardwood trees before lifting just northeast of Bean Rock Road.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ALABAMA, North

### Jackson County

1 S Roslie	30	0002CST							
3 S Flat Rock		0009CST	5.12	206	3	0			Tornado (EF2)

Sporadic damage was first observed along CR-71, north of Pisgah with much more widespread tree and structure damage observed CR-71 and CR-60, entering into Rosalie, where the tornado was suspected to touch down. Numerous hardwood and pine softwood trees were observed to be uprooted or snapped along with several wooden power line poles snapped. As the tornado moved east-northeast, nearly on top of CR-71, roof damage was reported to a brick church. Additionally, a large two story wooden structure (used for church related receptions) was heavily damaged. Damage indicators for that structure were related to a small barn. EF-1 damage was recorded for the area around the church with winds approximately 100 mph.

EF-2 damage was observed nearly one quarter mile further ENE along CR-71. A long, one story strip mall was destroyed (Rosalie Plaza Grocery). The assessment team noted that the roof was not strapped down and that cinder blocks were only held together by mortar. It was determined that the tornado likely blew the roof off the structure which quickly led to the block walls to collapse. Winds of 125 mph were estimated.

Additional EF-2 damage was reported one quarter to one third mile further ENE along CR-71. Several mobile homes, with at least one mobile home noted to have been tied down, were completely destroyed. Three fatalities were reported from this section of damage. Additionally, numerous softwood trees were either uprooted or snapped along with several wooden power poles snapped. M26MH, F22MH, F21MH

### DeKalb County

2 WNW Ider	30	0009CST							
6 NNE Sulphur Spgs		0020CST	8.36	206	1	9	0.00K	0.00K	Tornado (EF3)

The assessment team was able to connect the previous Rosalie track to the Ider track after observing significant roof damage to single family home with complete destruction to a barn on the property near the intersection of CR-345 and CR-78. Additional points were added along CR-330 to CR-117 (DeKalb Co.) after the team recorded snapped softwood and hardwood trees and damage to a large anchored shed.

Significant damage was observed from the tornado along CR-117 and CR-159. Numerous hardwood and softwood trees were either uprooted or snapped at the trunk along CR-117 leading up to CR-159. The strongest winds of this tornado were recorded near this location. A one story day care center was completely destroyed and blown off its foundation. Preliminary info recorded 10 injuries at this location. The damage assessment team noted the structure was bolted the foundation, however the floor plates connecting to the foundation were observed to have some degree of degradation. This led to a preliminary assessment of a tornado of EF-3 strength with winds approximately 145 mph. \*Update: of the 10 injuries, one individual has since passed away on 2/8/17.

Between CR-117 and AL-75 in DeKalb County, numerous chicken farms were completely destroyed along. Several homes in the area sustained significant roof damage and two anchored mobile homes were observed to have rolled. One unanchored mobile home was completely destroyed with scattered debris.

Finally, the team traveled along CR-792 in the Deer Head Cove area (near the AL/GA state line) and observed complete destruction to a well anchored and large metal shed. Winds were estimated to be 111 MPH at this location. Numerous soft wood pine trees were snapped or uprooted up to the AL/GA state line. The team traveled into nearby Dade County, observed minor debris, but no damage. F69PH

### Lawrence County

2 W Caddo	30	0040CST			0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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APRS weather station at East Lawrence High School. Relayed via Amateur Radio.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### Madison County

2 NNE Lily Flag	30	0148CST			0	0	2.00K	0.00K	Thunderstorm Wind (61EG)
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Two large oak trees were snapped at about 25 feet above their base at a residence on Tannahill Drive in south Huntsville.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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## ALABAMA, North

### **Jackson County** 4 WSW Olalee

30	0211CST 0217CST		3.4	30	0	0			Tornado (EF0)
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A small area of tight rotation was observed within a line of strong thunderstorms west of the Stevenson area. A National Weather Service and University of Alabama in Huntsville (UAH) survey team found EF-0 damage near the Allison area associated with this area of rotation. Numerous large tree branches and roof damage to a large farm shed was noted near CR-564. Additional tree damage converged near CR-53 and CR-54. Peak winds were 62 MPH.

### **Cullman County** 1 S Jones Chapel

30	0300CST				0	0	0.00K	0.00K	Hail (1.75)
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Golf ball sized hail was reported.

A tornado outbreak occurred during the evening hours of the 29th into the early morning hours of the 30th. A very mild and unstable air mass was in place along with a strong southwesterly upper level jet. These ingredients combined with a cold front and pre-frontal trough sweeping from west to east across the area sparked scattered supercell thunderstorms during the evening, a few of which were tornadic. This was followed by a quasi-linear convective system (QLCS) that occurred with the trough, which also was responsible for severe weather. Beneficial rainfall occurred with this system with 2-5 inches reported. Some of the rainfall fell fast enough to produce brief flash flooding in the Florence area during the evening.

### **Madison County** 1 ENE Huntsville Park

30	0430CST 2359CST				0	0	0.00K	0.00K	Flash Flood
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Water covering the roadway at the intersection of 1st Street and 15th Avenue.

During the passage of a strong cold front at the end of November, several waves of heavy rainfall traversed the region, with several instances of Flash Flooding occurring across the area.

## ALABAMA, Southeast

### **ALZ066>069**

#### **Dale - Geneva - Henry - Houston**

01	0000EST								
30	2359EST				0	0			Drought

D2 drought conditions were occurring to start November across the area. The drought intensified to D3 status during the middle of the month and continued into December.

### **ALZ065**

#### **Coffee**

08	0000EST								
30	2359EST				0	0			Drought

D2 drought conditions spread into Coffee County on November 8th. The drought intensified to D3 status on November 22nd and continued through the month into December.

### **Coffee County** 2 N Damascus

30	1422CST				0	0	1.00K	0.00K	Thunderstorm Wind (45EG)
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A large tree limb snapped off and fell onto a power line, resulting in a power outage to 33 customers along County Roads 518 and 522.

Note: The estimated wind gust of 45 knots is equivalent to 52 mph.

### **Coffee County** 1 SW Enterprise

30	1440CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was blown down onto Grimes Street.

A line of strong storms moved into southeast Alabama ahead of a cold front. However, the line generally weakened as it moved into the area, producing only a couple of reports of impacts in Coffee county. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ALABAMA, Southwest

**ALZ051>064**

**Butler - Choctaw - Clarke - Conecuh - Covington - Crenshaw - Escambia - Lower Baldwin - Lower Mobile - Monroe - Upper Baldwin - Upper Mobile - Washington - Wilcox**

01	0000CST								
30	2359CST			0	0	0.00K	0.00K	Drought	

An extensive period of dry weather resulted in worsening drought conditions, with extreme drought developing over all of southwest and south central Alabama during the month of November.

**ALZ053-056**

**Clarke - Conecuh**

28	1343CST								
	1530CST			0	0	5.5K	0.00K	Strong Wind	

Strong southerly gradient winds developed across southwest Alabama ahead of a developing storm system. The winds resulted in the downing of some trees in the area.

## ALASKA, Southeast

**AKZ027-028**

**Dixon Entrance to Cape Decision Coastal Area - Southern Inner Channels**

03	0000AKS								
	0600AKS			0	0	0.00K	0.00K	High Wind	

A rapidly deepening storm center down to 964 MB on the afternoon of 11/2 was well southwest of Dixon Entrance. Although the storm weakened as it moved northward into the Gulf on the morning of 11/3, it was enough to cause wind in excess of 60 MPH for both Prince of Wales Island and the Ketchikan area on 11/3. No damage was reported.

**AKZ025-027-028**

**Dixon Entrance to Cape Decision Coastal Area - Juneau Borough and Northern Admiralty Island - Southern Inner Channels**

04	0900AKS								
	1500AKS			0	0	20.0K	0.00K	High Wind	

On the heels of the first storm, a second strong low developed south of the Panhandle on the night of 11/3. A triple point deepened to storm force 964 MB off Dixon Entrance around 9 AM. By afternoon the associated front moved onto Prince of Wales Island to drive some very strong winds for the southern Panhandle, BUT this case is unusual in that the wind damage was in the Juneau area with downed trees and power outages.

**AKZ027**

**Dixon Entrance to Cape Decision Coastal Area**

09	2100AKS								
10	1200AKS			0	0	0.00K	0.00K	High Wind	

A monster 956 MB Hurricane force low developed covering much of the North Pacific Ocean including the Gulf of Alaska on 11/9. The associated front with a 979 MB wave moved into the eastern Gulf on the morning of 11/10. Very strong winds developed for Prince of Wales Island but missed the rest of the coast. Minor damage was reported on the west coast of Prince of Wales Isl.

**AKZ018-019**

**Haines Borough and Lynn Canal - Taiya Inlet and Klondike Highway**

29	0300AKS								
30	2359AKS			0	0	0.00K	0.00K	Winter Storm	

**AKZ025>028**

**Dixon Entrance to Cape Decision Coastal Area - Inner Channels from Kupreanof Island to Etolin Island - Juneau Borough and Northern Admiralty Island - Southern Inner Channels**

29	0600AKS								
	1500AKS			0	0	2.0K	0.00K	High Wind	

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ALASKA, Southeast

An arctic front had become established over the Panhandle on 11/27 & 11/28. At the same time a storm force low developed well southwest of the Panhandle and moved rapidly toward the out coast while developing. The result was a radical pattern shift with a 964 MB storm off the coast on 11/29 that brought warm moist air over the arctic front while also causing high wind. Trees came down and snow was hard to remove, but no significant damage was reported.

## ALASKA, Southern

### **AKZ181-185**

#### **Alaska Peninsula - Eastern Aleutians**

26	0556AKS				0	0	0.00K	0.00K	High Wind
	1756AKS								

A strong low pressure system developed just south of the Aleutian chain and brought a frontal system through the Eastern Aleutians and the Alaska Peninsula. Westerly winds behind the front were enhanced by terrain.

## ARIZONA, Central and Northeast

### **Navajo County**

#### **1 N Joseph City**

03	1632MST				0	0	0.00K	0.00K	Funnel Cloud
	1635MST								

A funnel cloud was seen from Joseph City.

An upper level low slowly moving across Arizona triggered showers and thunderstorms. One storm produced a funnel cloud.

### **AZZ015-016**

#### **Eastern Mogollon Rim - Western Mogollon Rim**

26	0900MST				0	0	0.00K	0.00K	Heavy Snow
29	1100MST								

A large trough of low pressure from the Pacific moved across the Western States with three distinct short wave troughs impacting northern Arizona. This storm system brought widespread rain and snow to the area. The heaviest snow fell over the Mogollon Rim at the end of the Thanksgiving weekend.

## ARIZONA, Northwest

### **Mohave County**

#### **5 WSW Golden Valley**

21	0453MST				0	0	1.00K	0.00K	Flash Flood
	0530MST								

A swift water rescue occurred near the intersection of Egar Rd and Diabase Rd in Golden Valley.

A short line of thunderstorms formed rapidly overnight, bringing isolated flash flooding.

### **AZZ036**

#### **Lake Mead National Recreation Area**

27	1415MST				0	0	15.0K	0.00K	Strong Wind
	1430MST								

Another Pacific low pressure system brought isolated high winds to the Mojave Desert.

## ARIZONA, South

### **Graham County**

#### **Pima**

04	1130MST				0	0	0.00K	100.00K	Flash Flood
	1230MST								

Two to three inches of rain caused Union Canal to overflow into the streets of Pima. In addition, flood damage occurred to cotton that was already harvested and being stored as modules in area fields.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ARIZONA, South

### **Graham County**

**Central  
1 NNE Pima**

04	1150MST				0	0	20.00K	0.00K	Hail (1.00)
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Large hail damaged several cars and residences in the community of Pima.

### **Graham County**

**Central  
1 ESE Dublin**

04	1150MST				0	0	15.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds damaged large tree limbs and a number of roofs in the community of Pima.

Thunderstorms moved north in advance of upper level low pressure which was approaching from the west. A severe thunderstorm produced large hail, damaging winds, heavy rain and flooding in the Graham County community of Pima. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Pima County**

**Vail Jct**

04	1745MST				0	0	0.00K	0.00K	Hail (0.75)
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Scattered thunderstorms moved northwest in advance of upper level low pressure. Thunderstorms produced moderate to large hail in Vail.

### **AZZ508**

#### **Eastern Cochise County Below 5000 Feet**

27	1500MST				0	0	5.0K	0.00K	Strong Wind
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An upper level low over the Great Basin brought strong west winds to southeast Arizona. Strong winds damaged the roof of one residence in Willcox.

## ARIZONA, Southwest

### **AZZ023**

#### **Greater Phoenix Area**

03	0600MST				0	0	2.0K	0.00K	Strong Wind
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On the morning of November 3rd, scattered showers along with isolated thunderstorms, developed and moved into the central and eastern portions of the greater Phoenix area from the southeast. The showers produced pockets of gusty east winds which reached upwards of 45 mph at times; the gusty winds were sufficient to uproot a tree in the Scottsdale area at about 0700MST.

## ARKANSAS, East

### **ARZ028-036-058**

#### **Crittenden - Mississippi - Phillips**

15	0600CST				0	0			Drought
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Abnormally dry weather continued during the month of November and fueled the spread of at least moderate (D2) drought conditions over most portions of the Mid-South. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. Dry conditions negatively impacted pastures, triggering more feeding of hay, and causing concern for hay shortages for the winter months. The drought caused river and lake levels to be at low levels.

### **ARZ017-026>027-035-048>049**

#### **Craighead - Cross - Greene - Lawrence - Lee - Poinsett - St. Francis**

22	0600CST				0	0			Drought
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Abnormally dry weather continued during the month of November and fueled the spread of at least moderate (D2) drought conditions over most portions of the Mid-South. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. Dry conditions negatively impacted pastures, triggering more feeding of hay, and causing concern for hay shortages for the winter months. The drought caused river and lake levels to be at low levels.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ARKANSAS, Northwest

### **ARZ019-029**

#### **Crawford - Franklin - Sebastian**

15	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Precipitation across northwestern Arkansas was below average during the month of November 2016, with most of the region receiving less than half the normal average precipitation for the month. These unusually dry conditions followed a period of below normal precipitation that began in early autumn. Much of the region was classified as Abnormally Dry (D0) or in Moderate Drought (D1) since early October. This month's precipitation deficits pushed portions of west central Arkansas into Severe Drought (D2) conditions. Monetary damage estimates resulting from the drought were not available.

### **ARZ020**

#### **Franklin**

17	1100CST								
18					0	0	250.0K	0.00K	Wildfire

Unseasonably warm temperatures, strong gusty wind, low relative humidity, and very dry vegetation promoted the rapid spread of several wildfires in northwestern Arkansas on the 17th. The largest was in Franklin County near Cecil and Charleston. That fire burned about 1000 acres, destroyed a home and five outbuildings, and threatened another two dozen structures. The fire was contained on the 18th.

## ARKANSAS, Southeast

### **ARZ074-075**

#### **Ashley - Chicot**

15	0000CST								
30	2359CST				0	0	0.00K	100.0K	Drought

Dry conditions continued into November, which created continued stress on crops. The drought continued to get worse across the state through the month before some relief came in the form of showers and thunderstorms near the end of November.

## ARKANSAS, Southwest

### **ARZ050-059>060-070**

#### **Hempstead - Howard - Little River - Miller - Sevier**

01	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Severe drought conditions (D2) expanded across portions of Southwest Arkansas during November 2016, as monthly temperatures remained two to four degrees above normal and below normal rainfall continued. Drought conditions even deteriorated to extreme (D3) by mid-month across portions of Miller and Little River Counties, before beneficial rains fell by the final week of the month.

### **ARZ071**

#### **Lafayette**

08	0000CST								
14	2359CST				0	0	0.00K	0.00K	Drought

Severe drought conditions (D2) expanded in Lafayette County Arkansas during the second week of November 2016, as monthly temperatures remained two to four degrees above normal and below normal rainfall continued. Beneficial rains fell across the county during the third week of the month, which resulted in a reduction of drought (to moderate, D1) by mid-month.

### **ARZ061**

#### **Nevada**

22	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Severe drought conditions (D2) expanded into Nevada County Arkansas during the third week of November 2016, as monthly temperatures remained two to four degrees above normal and below normal rainfall continued. These drought conditions persisted through the remainder of the month and into December.



# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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## CALIFORNIA, North Central

CAZ019-067

### Motherlode/Camptonville to Groveland - Northern San Joaquin Valley

01	0000PST								
30	2359PST				0	0	0.00K	0.00K	Drought

Some long term drought impacts continued through the November, although there was above average precipitation for the second month in a row. This was especially true for the northern Sierra, where the combined October and November 8-Station Index was the highest in over a decade. At the end of November, compared to historical averages, Lake Shasta was 108%, Lake Oroville was 69%, Folsom Lake was 95%, and Don Pedro was 103%. New Melones continued to lag behind the other significant area reservoirs and was only 39% of normal.

The U.S. Drought Monitor showed no change for the month, in spite of above normal rainfall, due largely to a lack of snow pack in the mountains.

Groundwater aquifers continued to recharge more slowly than the surface reservoirs.

Governor Jerry Brown declared a drought emergency for the entire state of California January 17, 2014 and this continued to be in effect. Governor Brown issued an executive order on May 9, 2016 that built on temporary statewide emergency water restrictions to establish longer-term water conservation measures, including permanent monthly water use reporting, new permanent water use standards in California communities and banned clearly wasteful practices such as hosing off sidewalks, driveways and other hardscapes.

Local Emergency proclamations remain for Colusa, Calaveras, El Dorado, Glenn, Plumas, San Joaquin, Shasta, Stanislaus, Sutter, Tuolumne, and Yuba counties. The cities of Live Oak (Sutter County), Lodi (San Joaquin County), Manteca (San Joaquin County), Portola (Plumas County), Ripon (San Joaquin County), and West Sacramento (Yolo County). Drought task forces remain in Lake, Nevada, Placer, Plumas, Sacramento, San Joaquin, Stanislaus, Sutter, Tehama, Tuolumne, and Yolo counties to coordinate response to the drought.

The State Water Resources Control Board announced that urban Californians monthly water conservation was 18.8 percent in November, a decrease from 19.6 percent in October and below the 20.2 percent savings in November 2015, when state-mandated conservation targets were in place. The State Water Board stressed the need for continued conservation despite early rains in Northern California, due to below normal snow pack conditions.

The state continued to supply food assistance to those impacted by the drought, along with California Disaster Assistance Act money for those who have lost drinking water due to dry wells. In June 2016, Governor Brown approved an additional \$254.7 million for the 2016-17 budget to continue the states response to the drought to aid in emergency drinking water for communities, emergency food assistance, enhanced fire protection, environmental and wildlife assistance, assistance to communities to help dispose of the dead and dying trees in high hazard zones for public safety issues, and the continued statewide awareness campaign.

CAZ068-069

### Mt Shasta/Western Plumas County - West Slope Northern Sierra Nevada

19	0000PST								
20	2100PST				0	0	0.00K	0.00K	Winter Weather

#### Placer County

2 WNW Hidden Vly

19	0900PST				0	0	0.00K	0.00K	Heavy Rain
20									

There was 1.20 inches of rain measured over 24 hours, 2 miles west northwest of Granite Bay.

Moderate rain and mountain snow fell with a series of systems, bringing 5 to 10 inches of snow above 6000 feet, and 3-5 of water equivalent in the northern Sierra.

CAZ069

### West Slope Northern Sierra Nevada

22	1800PST								
23	1200PST				0	0	0.00K	0.00K	Winter Weather

A storm brought snow which caused chain controls and travel problems, particularly on Highway 50 and I80, which were heavily traveled due to the Thanksgiving holiday.

26	0400PST								
27	1200PST				0	0	0.00K	0.00K	Heavy Snow

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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## CALIFORNIA, North Central

	26	0400PST							
	27	1200PST			0	0	0.00K	0.00K	Heavy Snow

Heavy snow fell in the mountains, with cold air bringing low snow levels. Some light snow fell into the upper foothills, as low as 3000 feet. The snow caused hazardous driving and delays for heavy post holiday travel on mountain highways.

## CALIFORNIA, South Central

CAZ089>099

**East Central San Joaquin Valley - Indian Wells Valley - Kern County Mountains - South Sierra Foothills - South Sierra Mountains - Southeast Kern County Desert - Southeast San Joaquin Valley - Southwest San Joaquin Valley - Tulare County Foothills - Tulare County Mountains - West Central San Joaquin Valley**

	01	0000PST							
	30	2359PST			0	0			Drought

The California drought continues during the month of November, 2016. Fresno received 1.38 of precipitation and Bakersfield received 0.38 precipitation during the month. Fresno had slightly above normal precipitation while Bakersfield had slightly below normal precipitation. The near normal precipitation amounts and above normal temperatures we received this month did allow for increased evaporation rates and soil moisture to slightly decrease.

The U.S. Drought Monitor continued to report exceptional drought conditions across the entire Central California region. This extent of exceptional drought is extremely unusual for California. The general trend of below normal precipitation and above normal temperatures has continued this year.

There continues to be significant media coverage on the on-going drought conditions. These reports include discussion of significant re-allocation of water resources from the east to west side of the San Joaquin Valley, farmers forgoing planting of some crops, loss or reduction of ground water, wells drying up in several communities leaving them with no water, and an unprecedented increase in fire danger across the Southern Sierra Nevada and Tehachapi Mountains. Also, communities in Central California interior face state mandated reductions in municipal water use.

CAZ090

**East Central San Joaquin Valley**

	02	0255PST 0845PST			0	0			Dense Fog
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Area of high pressure moved over the central California region creating favorable conditions for nighttime and early morning radiational fog development for parts of the San Joaquin Valley.

	13	0135PST 0850PST			0	0			Dense Fog
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	13	0245PST 0940PST			0	0			Dense Fog
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CAZ090-091

**East Central San Joaquin Valley - Southwest San Joaquin Valley**

	13	0455PST 0815PST			0	0			Dense Fog
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CAZ090

**East Central San Joaquin Valley**

	14	0435PST 0515PST			0	0			Dense Fog
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Area of high pressure moved over the central California region creating favorable conditions for nighttime and early morning radiational fog development for parts of the San Joaquin Valley.

CAZ095>099

**Indian Wells Valley - Kern County Mountains - South Sierra Mountains - Southeast Kern County Desert - Tulare County Mountains**

	16	1214PST 2140PST			0	0			High Wind
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## CALIFORNIA, South Central

An upper level low pressure system with an associated boundary moving southeast across central California with tightening surface pressure gradients created strong gusty winds in Sierra Nevada Mountains, Kern County Mountains, and Kern County Desert areas.

18	0709PST								
	1245PST				0	0			High Wind

Strong southerly synoptic flow created by high pressure over southern California and a low pressure trough over northern California brought gusty winds to the Kern County Mountains.

### CAZ098-099

#### **Indian Wells Valley - Southeast Kern County Desert**

19	0400PST								
	0750PST				0	0			Frost/Freeze

Cold upper level low brought hard freeze conditions to the Kern County Desert areas.

### Fresno County

#### **2 E (FCH) Chandler AF**

20	1830PST								
21	0000PST				0	0			Heavy Rain

Moderate to heavy rain in Fresno on Highway 99 north of Highway 41 interchange may have contributed to a fatal car crash around 1900 PST. The stretch of highway 99 was closed until around midnight 11/21 due to the crash investigation.

A cold front associated with an eastward moving low pressure system over northern and central California brought moderate rainfall with periods of heavy rainfall to parts of the San Joaquin Valley.

### CAZ090>092

#### **East Central San Joaquin Valley - Southeast San Joaquin Valley - Southwest San Joaquin Valley**

22	0115PST								
	1000PST				0	0			Dense Fog

High pressure moving into the central California region which was recently dampened by a previous storm system allowed for ideal radiational cooling conditions and dense fog in the San Joaquin Valley.

### CAZ093-096-097

#### **South Sierra Foothills - South Sierra Mountains - Tulare County Mountains**

26	1600PST								
27	1100PST				0	0			Heavy Snow

### CAZ095

#### **Kern County Mountains**

27	1329PST								
	1500PST				0	0			High Wind

Orographic lifting ahead of a cold frontal boundary associated with an eastern moving low pressure system through central and northern California caused heavy snows in parts of the Sierra Nevada range and high winds in the Kern County Mountains.

## CALIFORNIA, Southeast

### CAZ520

#### **Owens Valley**

16	1547PST								
	1642PST				0	0	15.0K	0.00K	High Wind

### CAZ525

#### **Morongo Basin**

16	2108PST								
					0	0	1.0K	0.00K	Strong Wind

A Pacific trough swinging through the region brought a brief period of high winds to the Owens Valley and the Morongo Basin.

# Storm Data and Unusual Weather Phenomena

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## CALIFORNIA, Southeast

### CAZ523

#### Western Mojave Desert

27	1131PST				0	0	0.00K	0.00K	High Wind
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Another Pacific low pressure system brought isolated high winds to the Mojave Desert.

## CALIFORNIA, Southwest

### CAZ043

#### San Diego County Coasts

04	1200PST								
05	0000PST				0	0	0.00K	0.00K	High Surf

A northwest swell brought a brief period of high surf to the southern San Diego County coast.

05	2330PST								
06	0830PST				0	0	0.00K	0.00K	Dense Fog

### CAZ043-554

#### Orange County Inland - San Diego County Coasts

06	0300PST								
	0700PST				0	0	0.00K	0.00K	Dense Fog

### CAZ552

#### Orange County Coastal

07	0500PST								
	0800PST				0	0	0.00K	0.00K	Dense Fog

A shallow marine layer and weak winds allowed dense fog to form along the coastal strip on the 6th and 7th of November. Impacts were felt during the morning commute both days, especially the I-5 corridor, and at local airports.

### CAZ043-552

#### Orange County Coastal - San Diego County Coasts

09	0600PST								
12	0000PST				2	5	50.0K	0.00K	High Surf

An elevated short period swell brought high surf and choppy seas to local beaches and the adjacent waters. One fatality was reported when a private fishing vessel capsized. M42BO

### CAZ043-552

#### Orange County Coastal - San Diego County Coasts

20	1200PST								
21	2000PST				0	0	0.00K	0.00K	High Surf

A northwest swell brought high surf to west facing beaches.

### CAZ055-056

#### Riverside County Mountains - San Bernardino County Mountains

26	1400PST								
	2100PST				0	0	0.00K	0.00K	Heavy Snow

26	1951PST								
	2151PST				0	0	0.00K	0.00K	High Wind

### CAZ056-058

#### Riverside County Mountains - San Diego County Mountains

27	0100PST								
	1015PST				0	0	0.00K	0.00K	High Wind

A rather cold upper level low pressure trough brought a smattering of weather to SoCal between November 26th and 28th. Snowfall was the most impactful feature of this system with up to 6 inches falling in the mountains over the Thanksgiving Holiday weekend. Rainfall amounts ranged from 0.25 inches at the coast to 2.50 inches along the coastal slopes. Onshore winds were also gusty with local 60-80 mph gusts reported in the mountains.

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November 2016

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## CALIFORNIA, Upper

**CAZ080>082**

**Central Siskiyou County - South Central Siskiyou County - Western Siskiyou County**

01	2200PST								
02	0800PST				0	0	0.00K	0.00K	Frost/Freeze

Clearing skies and a cool air mass allowed temperatures to fall below freezing over parts of northern California on this morning.

16	2300PST								
17	0900PST				0	0	0.00K	0.00K	Frost/Freeze

Clearing skies and a cold air mass allowed temperatures to drop below freezing over some areas in northern California.

**CAZ081**

**Central Siskiyou County**

18	1849PST								
	1948PST				0	0	0.00K	0.00K	High Wind

**CAZ085**

**Modoc County**

19	0004PST								
	0203PST				0	0	0.00K	0.00K	High Wind

An incoming front brought high winds to portions of northern California.

**CAZ080**

**Western Siskiyou County**

26	0017PST								
	0316PST				0	0	0.00K	0.00K	High Wind

An incoming front brought a brief period of strong winds to some northern California locations.

## CALIFORNIA, West South Central

**CAZ059**

**Antelope Valley**

27	0900PST								
	1000PST				0	0	0.00K	0.00K	High Wind

Strong westerly winds impacted the Antelope Valley in Los Angeles county. Wind gusts up to 62 MPH were reported.

## COLORADO, Central and Northeast

**COZ033>036**

**Jefferson & West Douglas Counties above 6000 Feet/Gilpin/Clear Creek/Northeast Park Counties below 9000 Feet - Larimer & Boulder Counties between 6000 & 9000 Feet - South & East Jackson/Larimer/North & Northeast Grand/Northwest Boulder Counties above 9000 Feet - South & Southeast Grand/West Central & Southwest Boulder/Gilpin/Clear Creek/Summit/North & West Park Counties above 9000 Feet**

17	0500MST				0	0		0.00K	Winter Weather
18									

Bands of moderate to heavy snow fell along the Interstate 70 corridor as strong fast moving storm system moved across Colorado. Wet roads quickly became icy and snowpacked. A 20-vehicle crash involving semis kept both directions of I-70 closed near Evergreen for a couple of hours. Storm totals in the north central mountains ranged from 7 to 14 inches, with 5 to 10 inches of snow in the Front Range Foothills.

**COZ031**

**West Jackson & West Grand Counties above 9000 Feet**

27	0600MST								
28	0500MST				0	0	0.00K	0.00K	Winter Storm

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## COLORADO, Central and Northeast

### **COZ033                      South & East Jackson/Larimer/North & Northeast Grand/Northwest Boulder Counties above 9000 Feet**

27	0600MST								
28	0500MST				0	0	0.00K	0.00K	Winter Weather

An upper level jet stream over Colorado produced bands of locally heavy snowfall over parts of the northern mountains. Storm totals included 17 inches at Zirkel SNOTEL in the Park Range and 14 inches at Arapaho SNOTEL in the Rabbit Ears Range; with lesser amounts of 4 to 7 inches elsewhere.

## COLORADO, East Central

### **COZ091-092                      Cheyenne County - Kit Carson County**

17	1900MST								
18	0400MST				0	0	0.00K	0.00K	Winter Weather

An area of light snow moved across east Colorado and along the Colorado border in northwest Kansas and extreme southwest Colorado. Snowfall accumulations ranged from a light dusting to two inches. Icy roads led to accidents in east Colorado.

29	1229MST								
					0	0	0.00K	0.00K	High Wind

During the early afternoon a high wind gust of 59 MPH was measured at the Burlington airport.

## COLORADO, South Central and Southeast

### **COZ079                      Wet Mountains between 8500 and 10000 Ft**

01	0000MST								
05	1000MST				0	0	0.00K	0.00K	Wildfire

The human-caused wildfire started October 17th around 3:30 a.m. A piece of metal roofing was lofted into power lines by high winds, starting the wildfire. The fire burned on the Pike/San Isabel National Forest (PSI), Bureau of Land Management (BLM), Colorado State Land Board, and Private lands. Initially, it rapidly burned through mixed fuels, scorching over 15,000 acres within the first 24 hours, affecting Custer and Pueblo Counties. Nine houses were destroyed, along with 17 outbuildings. Multiple communities were threatened and around 600 people were evacuated from their properties for a time. There were numerous road closures. The wildfire impacted the popular hunting and recreational area. The fire burned 18,403, and was contained on the 5th.

### **COZ087-088                      Trinidad Vicinity/Lower Huerfano River Basin & Western Las Animas County below 7500 Ft - Walsenburg Vicinity/Upper Huerfano River Basin below 7500 Ft**

17	1000MST								
	1800MST				0	0	0.00K	0.00K	High Wind

A weather system generated wind gusts exceeding 60 mph across sections of Huerfano and Las Animas Counties.

### **COZ068                      Eastern San Juan Mountains above 10000 Ft**

21	0000MST								
22	1100MST				0	0	0.00K	0.00K	Winter Storm

A Pacific storm system created moist, orographic flow across the eastern San Juan Mountains, and produced snowfall in excess of 8 inches. The summit of Wolf Creek Pass in Mineral County logged 12 inches of snow. Lesser amounts of snow occurred along the rest of the Continental Divide from Lake County into Saguache County.

26	2300MST								
27					0	0	0.00K	0.00K	Winter Storm

A Pacific storm system created moist, orographic flow across the eastern San Juan Mountains, and produced snowfall in excess of 8 inches. The summit of Wolf Creek Pass in Mineral County logged 10 inches of snow. Lesser amounts of snow occurred along the rest of the Continental Divide from Lake County into Saguache County.

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## COLORADO, West

### **COZ006**

#### **Grand Valley**

17	2130MST								
18	0930MST				0	0	0.00K	0.00K	Frost/Freeze

An upper trough and associated surface cold front brought widespread freezing temperatures to the Grand Valley.

## CONNECTICUT, Northeast

### **CTZ002>004**

#### **Hartford - Tolland - Windham**

01	0000EST								
30					0	0	0.00K	0.00K	Drought

In November, rainfall throughout much of northern Connecticut was below normal. This ranged from around an inch below normal in the Connecticut River Valley to over two inches below normal in parts of Tolland County.

The Connecticut Department of Public Health continued a Drought Watch for Hartford and Tolland Counties in Northern Connecticut and a Drought Advisory for Windham County. Voluntary water conservation and adherence to any local water restrictions were encouraged.

11	1430EST								
					0	0	0.3K	0.00K	Strong Wind

An arctic cold front moving through southern New England produced strong northwesterly winds, mainly during the afternoon and early evening hours.

## CONNECTICUT, Northwest

### **CTZ001**

#### **Northern Litchfield**

20	0300EST								
21	1800EST				0	0			Heavy Snow

### **CTZ013**

#### **Southern Litchfield**

20	0300EST								
21	1800EST				0	0			Winter Weather

A strong frontal boundary crossed the region during the early morning hours on Sunday, November 20th. Precipitation initially begin as rain or a mix of rain and snow, but quickly transitioned over to just snow as colder air quickly worked its way into the region.

Although precipitation only lasted a few hours across valley areas, the snowfall continued through the entire day on Sunday November 20th and into the day on Monday November 21st across the higher elevations, as the persistent westerly flow caused upslope flow into the higher terrain of the Litchfield Hills. While valley areas only saw a few inches of snowfall, the highest elevations around Norfolk saw up to 15 inches. Snowfall tapered off the early evening hours on Monday.

## DELAWARE

### **DEZ001**

#### **New Castle**

22	0200EST								
	0400EST				0	0			Astronomical Low Tide

An area of low pressure near James Bay Canada lead to a strong cold frontal passage across the middle Atlantic Saturday evening November 19. Northwesterly winds increased substantially immediately following the cold frontal passage, with several reports of gusts in the 45 to 55 mph range over Delmarva. These strong wind gusts persisted around 48 hours, through Monday November 21. The Wilmington, DE Airport recorded a peak wind gust of 52 mph at 19:30EST on November 18. Due to the persistent northwest flow, blowout tides occurred on Delaware Bay, with low water observed at Reedy Point.

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## DISTRICT OF COLUMBIA

### DCZ001

#### District of Columbia

08	0200EST				0	0			Frost/Freeze
	0800EST								

High pressure overhead caused mainly clear skies and light winds. Radiational cooling led to a freeze.

### District of Columbia 1 ESE Walter Reed

30	1813EST				0	0			Thunderstorm Wind (50EG)
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Roof damage was reported along a couple apartment buildings in the 400 Block of Cedar Street Northwest.

A cold front moved through the area during the evening hours of the 30th. There was enough forcing along the boundary for strong winds from aloft to mix down in an isolated thunderstorm. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

## FLORIDA, Northeastern

### FLZ033-124-125

#### Coastal Duval - Coastal Nassau - St. Johns

13	0718EST								
14	1312EST				0	0	0.00K	0.00K	Coastal Flood

A lingering NNE surge combined with high tide close to the full moon created elevated water levels along the Atlantic coast and within the St. Johns River Basin.

## FLORIDA, Northwest

### FLZ008>012-107> 108-112

#### Bay - Coastal Bay - Coastal Walton - Holmes - Jackson - North Walton - South Walton - Washington

15	0000EST								
30	2359EST				0	0			Drought

D2 drought conditions developed in portions of Jackson, Washington, Bay, Holmes, and Walton counties on November 15th. These conditions worsened to D3 status on November 29th with the drought continuing into December.

## FLORIDA, Southern

### FLZ172-173

#### Coastal Broward - Miami-Dade

12	0700EST				0	0			Coastal Flood
	2100EST								
13	0700EST				0	0	0.00K		Coastal Flood
	0900EST								

### FLZ168-172-173

#### Coastal Broward - Miami-Dade - Palm Beach

14	0700EST				0	0			Coastal Flood
	0900EST								

The combination of higher than normal tidal departures coupled with coupled with the annual perigean spring tide brought minor flooding at high tides for a weekend during mid-November. Vulnerable areas along the Broward, Miami-Dade and Palm Beach coast saw flooding of streets and walkways.

### Miami-Dade County 9 W Sweet Water

14	1625EST				0	0			Funnel Cloud
	1655EST								

A funnel cloud was reported by an NWS employee located 5 miles northeast of his vehicle while driving on US-41. The funnel cloud lasted from 4:25 PM EST until 4:55 PM EST and never touched down.

Weak northeasterly flow ahead of a cold front, with a weak disturbance aloft provided enough instability for scattered showers to form over the Atlantic waters and spread over the metro areas. One of these showers produced a funnel cloud.



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## FLORIDA, Southern

### **FLZ168**

### **Palm Beach**

15	0700EST				0	0			Coastal Flood
	0900EST								

The combination of higher than normal tidal departures coupled with coupled with the annual perigean spring tide brought minor flooding at high tides for a weekend during mid-November. Vulnerable areas along the Broward, Miami-Dade and Palm Beach coast saw flooding of streets and walkways.

## FLORIDA, West Panhandle

### **FLZ001>006**

### **Coastal Escambia - Coastal Okaloosa - Coastal Santa Rosa - Inland Escambia - Inland Okaloosa - Inland Santa Rosa**

01	0000CST				0	0	0.00K	0.00K	Drought
30	2359CST								

An extensive period of dry weather resulted in worsening drought conditions, with extreme drought developing over the western Florida Panhandle during the month of November.

### **Okaloosa County 1 NW Mary Esther**

30	1038CST		0.77	175	0	0	50.00K	0.00K	Tornado (EF0)
	1040CST								

The tornado started as a waterspout over Santa Rosa Sound, briefly lifted and then touched down as a tornado just south of Hurlburt Field along U.S. Highway 98. The tornado tracked northeast and produced sporadic damage along its path before lifting near Ready Avenue NW. The damage was concentrated along Kohler Drive and Mary Esther Road. The most significant damage occurred at two residences. One residence lost part of its overhanging roof and the other home experienced significant damage to a southward facing sunroom. Power lines were downed in the area along with sporadic tree damage.

Isolated supercells developed over the northern Gulf of Mexico and moved into the western Florida Panhandle ahead of a cold front. One of the supercells produced a tornado in Mary Esther, FL.

## GEORGIA, Lower

### **GAZ154-166**

### **Coastal Camden - Coastal Glynn**

13	0700EST				0	0	0.00K	0.00K	Coastal Flood
	0830EST								

A lingering NNE surge combined with high tide close to the full moon created elevated water levels along the Atlantic coast and within the St. Johns River Basin.

## GEORGIA, North and Central

### **GAZ005>007**

### **Fannin - Gilmer - Murray**

01	0000EST				0	0	8.5M		Wildfire
30	1100EST								

Throughout the spring, summer and autumn, north Georgia saw an extended period of below normal rainfall. By late summer and early fall all of north Georgia was experiencing severe, extreme or exceptional drought conditions. As summer vegetation began to die off and autumn leaves began falling from the trees, the continued extremely dry conditions led to very dangerous wildfire conditions. From early October through November, numerous wildfires erupted across north and central Georgia including 3 major wildfires covering multiple thousands of acres apiece in the north Georgia mountains. By early December, over \$20 million dollars in federal funds had been spent fighting wildfires in the Chattahoochee National Forest and on surrounding federal and state lands.

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## GEORGIA, North and Central

GAZ001>009-011>  
016-019>025-027-  
030>039-041>062-  
066>076-078>086-  
089>098-102>111

Baldwin - Banks - Barrow - Bartow - Bibb - Bleckley - Butts - Carroll - Catoosa - Chattahoochee - Chattooga - Cherokee - Clarke - Clayton - Cobb - Coweta - Crawford - Crisp - Dade - Dawson - De Kalb - Dodge - Dooly - Douglas - Emanuel - Fannin - Fayette - Floyd - Forsyth - Gilmer - Glascock - Gordon - Greene - Gwinnett - Hall - Hancock - Haralson - Harris - Heard - Henry - Houston - Jackson - Jasper - Jefferson - Johnson - Jones - Lamar - Laurens - Lumpkin - Macon - Madison - Marion - Meriwether - Monroe - Morgan - Murray - Muscogee - Newton - North Fulton - Oconee - Oglethorpe - Paulding - Peach - Pickens - Pike - Polk - Pulaski - Putnam - Rockdale - Schley - South Fulton - Spalding - Stewart - Sumter - Talbot - Taliaferro - Taylor - Telfair - Towns - Treutlen - Troup - Twiggs - Union - Upson - Walker - Walton - Warren - Washington - Webster - Wheeler - White - Whitfield - Wilcox - Wilkes - Wilkinson

01	0000EST								
30	2359EST				0	0	0.00K	0.00K	Drought

The D4 Exceptional drought conditions rapidly worsened over Georgia through the month of November. By the end of the month, all but two counties in north and central Georgia were in the D2 Severe to D4 Exceptional drought area. The drought conditions were greatly impacted by well below rainfall for the month, particularly across southern and eastern portions of the state. These areas only received 25 percent or less of the normal November rainfall.

The area was so dry, in fact, that Atlanta ended the record-breaking 43 days of no measurable rainfall on November 29. The previous record was in 1884. Rome broke the record with 61 days of no measurable rainfall on November 28 (previously set in 1897). The rainfall deficit for the previous 6 months worsened to 13 to 16 inches below normal across north and central Georgia.

The D2 Severe to D4 Extreme drought conditions encompassed an area north and west of a line from McRae, to Swainsboro, to Augusta. Although the drought conditions were at the peak at the end of November, the drought persisted through the end of the year and into 2017.

## GAZ009

### Towns

11	1100EST								
30	2359EST				0	0	879.23K		Wildfire

Throughout the spring, summer and autumn, north Georgia saw an extended period of below normal rainfall. By late summer and early fall all of north Georgia was experiencing severe, extreme or exceptional drought conditions. As summer vegetation began to die off and autumn leaves began falling from the trees, the continued extremely dry conditions led to very dangerous wildfire conditions. From early October through November, numerous wildfires erupted across north and central Georgia including 3 major wildfires covering multiple thousands of acres apiece in the north Georgia mountains. By early December, over \$20 million dollars in federal funds had been spent fighting wildfires in the Chattahoochee National Forest and on surrounding federal and state lands.

## GAZ002-005

### Murray - Walker

28	2104EST								
	2105EST				0	0	0.00K		Strong Wind

## GAZ002-003

### Catoosa - Walker

28	2115EST								
	2230EST				0	0	7.0K		High Wind

A deep low pressure system moving out of the plains into the eastern U.S. resulted in a tightening pressure gradient across north and central Georgia through the afternoon and evening of November 28th into the early morning hours of the 29th. A strong low-level jet ahead of this low pressure system resulted in a period of very strong and damaging winds across the higher elevations of far north Georgia.

## Dade County

1 NW Gass

30	0121EST								
	0126EST				0	0	3.00K		Thunderstorm Wind (50EG)

The Dade County 911 center reported multiple trees blown along Gass Road in the vicinity of Highway 136. County Transportation crews were called out to clear the roadway.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

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## GEORGIA, North and Central

### Catoosa County

1 ENE Copeland	30	0156EST						
1 N Post Oak		0158EST	1.29	225	0	0	50.00K	Tornado (EF0)

A brief EF0 tornado with maximum winds of 85 MPH moved along a path with a maximum width of 225 yards for 1.29 miles across portions of Catoosa County. The tornado began as several trees were uprooted or snapped just east of Ooltewah-Ringgold Road between Sleepy Lane and Mountain Lane. The tornado traveled east northeast over White Oak Mountain continuing to cause damage to trees before ending just east of Cherokee Valley Road around Swallow Lane where several homes sustained damage. One home had its garage doors blown in and part of the garage roof lifted off. Debris from this roof was carried more than 500 yards away. Siding was pulled off of another home in this area. [11/30/16: Tornado #1, County #1/1, EF0, Catoosa, 2016:007].

### Carroll County

1 WSW Bowdon Jct	30	1253EST						
2 WNW Center Pt		1258EST	4.02	100	0	0	8.00K	Tornado (EF0)

A short-lived EF0 tornado with maximum winds of 75 MPH moved along a path with a maximum width of 100 yards for 4.02 miles across portions of Carroll County. The tornado began north of the Mount Zion community along Lee Williams Road just west of Highway 27 where several large branches were snapped off of trees. Several other trees were snapped or uprooted along the path as the tornado moved northeast before ending around the intersection of Bell Road and Pleasant Ridge Road. [11/30/16: Tornado #2, County #1/1, EF0, Carroll, 2016:008].

### Cobb County

3 SSE Leland	30	1339EST						
3 SW Oakdale		1341EST	0.46	100	0	0	50.00K	Tornado (EF1)

A National Weather Service storm survey team found that an EF1 tornado with maximum winds of 100 MPH moved along a path with a maximum width of 100 yards for just under a half of a mile across portions of Cobb County. The tornado began along Delta Circle impacting several large, metal industrial buildings. The southern corner of one warehouse was ripped apart with metal siding and roofing was twisted and carried about a quarter of a mile away into an open field. At this location a tractor-trailer was flipped onto its side and several trees were snapped or uprooted. The tornado travelled northeast causing additional damage around the intersection of Mableton Parkway and Lee Industrial Boulevard where several large trees were snapped or uprooted and a wooden utility pole was ripped out of the ground. An aluminum light pole was snapped near the base and several more trees were snapped or uprooted along Discovery Boulevard before the tornado ended. [11/30/16: Tornado #3, County #1/1, EF1, Cobb, 2016:009].

### Fulton County

3 ENE Bolton	30	1350EST						
		1354EST	1.9	100	0	0	25.00K	Tornado (EF1)

A National Weather Service storm survey team found that an EF1 tornado with maximum winds of 90 MPH moved along a path with a maximum width of 100 yards for 1.90 miles across portions of northern Fulton County. The tornado began along Margaret Mitchell Ct. NW just east of I-75 where several large pine trees were snapped. The tornado swept east northeast snapping or uprooting several more large pine trees around the intersection of Northside Parkway and Moores Mill Road NW. The tornado then turned more easterly snapping or uprooting several more trees along Marne Drive and Arden Road NW before ending around the intersection of West Paces Ferry Road and Habersham Road NW. [11/30/16: Tornado #4, County #1/1, EF1, Fulton, 2016:010].

### Fulton County

1 NNW Ocee	30	1405EST						
		1410EST			0	0	1.00K	Thunderstorm Wind (45EG)

An Atlanta television station reported a tree blown down on Windward Parkway near Clubhouse Drive.

Note: The estimated wind gust of 45 knots is equivalent to 52 mph.

### Troup County

3 WNW Buena Vista	30	1405EST						
		1410EST			0	0	1.00K	Thunderstorm Wind (45EG)

The Troup County 911 center reported a tree blown down on Lovic Davis Road.

Note: The estimated wind gust of 45 knots is equivalent to 52 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## GEORGIA, North and Central

### Fulton County

2 NNW Ocee	30	1407EST 1409EST	1.07	100	0	0	1.00K		Tornado (EF0)
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A National Weather Service storm survey team found that an EF0 tornado with maximum winds of 80 MPH moved along a path with a maximum width of 100 yards for 1.10 miles across portions of northern Fulton County. The tornado began along Windward Parkway where two pine trees were uprooted. The tornado moved northeast to McGinnis Ferry Road where it crossed into Forsyth County. [11/30/16: Tornado #5, County #1/2, EF0, Fulton, 2016:011].

### Forsyth County

85 NW Sinclair Lake	30	1409EST 1413EST	1.86	100	0	0	15.00K		Tornado (EF0)
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A National Weather Service storm survey team found that an EF0 tornado with maximum winds of 80 MPH moved along a path with a maximum width of 100 yards for 1.86 miles across portions of Forsyth County. The tornado crossed into Forsyth County from Fulton County along McGinnis Ferry Road where several trees were snapped or uprooted and traveled northeast. A traffic light was damaged at the intersection of McFarland Parkway and Currie Drive and more trees were snapped or uprooted along the path before the tornado ended along Ridgefield Drive. [11/30/16: Tornado #5, County #2/2, EF0, Forsyth, 2016:011].

### Gwinnett County

1 NNE Norcross Pittman	30	1410EST 1418EST			0	0	20.00K		Thunderstorm Wind (50EG)
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An Atlanta area television news station reported a large tree blown down onto North Peachtree Street near Sunset Drive and a large tree blown down onto a house on Tina Court.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Rockdale County

Honey Creek 1 NNE Milstead	30	1450EST 1455EST			0	0	4.00K		Thunderstorm Wind (50EG)
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The Rockdale County Emergency Manager reported trees blown down from around Ebenezer Road and Goode Road to around Hi Roc Road and Arlin Street.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Pike County

1 NNW Lawrences Mill 1 ESE Reidsboro	30	1453EST 1458EST			0	0	3.00K		Thunderstorm Wind (50EG)
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The Pike County 911 center reported trees blown down on Lawrence Mill Road, Roberts Quarters Road and Drew Allen Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Jackson County

2 SW Grove Level	30	1504EST 1510EST	2.37	100	0	0	50.00K		Tornado (EF1)
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A National Weather Service storm survey team found that an EF1 tornado with maximum winds of 90 MPH moved along a path with a maximum width of 100 yards for 2.3 miles across portions of Jackson County. The tornado began near a poultry supply store on Maysville Road just north of I-85 where it blew over 5, half-ton, unsecured poultry feed bins and downed several large tree branches. The tornado moved northeast paralleling the interstate. Two street signs were bent over along Ridgeway Church Road. The tornado path crossed over a large outlet mall where no apparent damage was noted, however the most severe damage occurred just past the mall where an automobile trailer sales business had two large overhead doors blown in and the front door to the business blown off. Several trailers were rolled about 50 feet and damage to the roof of the building was also noted at this location. The tornado then continued northeastward where it crossed into Banks County. [11/30/16: Tornado #6, County #1/2, EF1, Jackson, 2016:012].

### Banks County

Banks Crossing	30	1510EST 1511EST	0.43	100	0	0	15.00K		Tornado (EF1)
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# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## GEORGIA, North and Central

A National Weather Service storm survey team found that an EF1 tornado with maximum winds of 90 MPH moved along a path with a maximum width of 100 yards for 0.50 miles across portions of Banks County. The tornado crossed into Banks County from Jackson County along the I-85 frontage road and continued northeast before ending around the intersection of Highway 441 and East Ridgeway Road where a couple of large business signs were blown out. [11/30/16: Tornado #6, County #2/2, EF1, Banks, 2016:012].

### **Spalding County** 1 SSW Pomona

30	1512EST 1520EST			0	0	1.00K		Thunderstorm Wind (45EG)
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The Spalding County 911 center reported a tree blown down at North Expressway and Glenwood Drive.

Note: The estimated wind gust of 45 knots is equivalent to 52 mph.

### **Lamar County** 1 NNW Woodfin Mill 1 NNE Weldons Crossing

30	1513EST 1535EST			0	0	3.00K		Thunderstorm Wind (50EG)
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The Lamar County 911 center reported trees blown down across the northern portion of the county from around Young Road to I-75 near mile marker 198.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Butts County** 2 NE Stark

30	1539EST 1545EST			0	0	1.00K		Thunderstorm Wind (45EG)
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The Butts County 911 center reported a tree blown down on Hamm Road.

Note: The estimated wind gust of 45 knots is equivalent to 52 mph.

### **Madison County** 1 NE Colbert 1 NW Carlton

30	1553EST 1557EST			0	0	4.00K		Thunderstorm Wind (50EG)
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The Madison County 911 center reported 4 trees blown down between Colbert and Carlton across the southern portion of the county.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Oglethorpe County** 2 W Crawford 3 ENE Smithonia

30	1555EST 1605EST			0	0	8.00K		Thunderstorm Wind (50EG)
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The Oglethorpe County 911 center reported multiple trees blown down from the Arnoldsville, Crawford and Lexington areas to just south of Comer. Some locations include Dora Hill Bush Road, Arnoldsville Road, Collier Church Road, Washington Road and Hutchins Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Hancock County** 3 NNE Sandy Run

30	1645EST 1650EST			0	0	7.00K		Thunderstorm Wind (50EG)
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The Hancock County 911 center reported several trees blown down in the Holiday Shores area.

A strong cold front associated with a deep and sharp upper-level trough swept through the state accompanied by a line of thunderstorms. Despite only marginal instability; ample deep-layer shear and a strong low-level jet resulted in several reports of damaging winds and tornadoes with these thunderstorms. The early morning hours tornado that occurred in Catoosa County was actually associated with a supercell. The other tornadoes were associated with a Quasi-Linear Convective System (QLCS) during the late morning/afternoon hours of the 30th. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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## GEORGIA, Northeast

**GAZ010-017-026-028>029**

### **Elbert - Franklin - Habersham - Hart - Rabun - Stephens**

01	0000EST								
30	2359EST				0	0	0.00K		Drought

Unseasonably dry and warm conditions continued across western portions of northeast Georgia through much of November, until a cold front brought much-needed rainfall to the area during the last couple of days of the month. Up until that point, most locations had little more than a half inch of rain for the month. Total rainfall from May through October ranged only from 10-14 inches across this area, which is less than half of the normal amount. Being that the growing season was more or less over by this point, agricultural impacts were not as great as earlier in the year. Nevertheless, water levels on area reservoirs and stream flows on waterways remained well below normal, and voluntary water restrictions remained in place in some communities.

09	0000EST								
30	2359EST				0	0	0.00K		Wildfire

The drought conditions that began in late winter of 2016, and continued through the year resulted in very dry vegetation across the north Georgia mountains by mid-autumn. These conditions were exacerbated by an unusually warm summer and fall, when temperatures averaged as much as 5 degrees above normal. In these conditions, a large wildfire ignited and spread during early November, and was not completely contained until a cold front brought much-needed rain to the area at the end of the month.

### **Habersham County**

**1 NW View  
3 SSE Tallulah Lodge**

30	1448EST								
	1506EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)

County comms reported numerous trees blown down across the county.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Elbert County**

**1 SW Elberton**

30	1607EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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Emergency manager reported a couple of trees blown down.

A strong cold front brought a line of showers and strong to severe thunderstorms to northeast Georgia during the afternoon. Severe weather was limited to damaging winds, particularly across Habersham County. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

## GEORGIA, Southeast

**GAZ119**

### **Coastal Chatham**

13	0642EST								
	0648EST				0	0	0.00K		Coastal Flood

A combination of astronomical and meteorological influences resulted in a very high high tide cycle along the southeast Georgia coast. A full moon and the annual proxigee produced an elevated astronomical influence and elevated northeast winds further locally enhanced the tide through Ekman transport processes. The result was a high tide measured at Fort Pulaski, GA that ranked in the top 10 highest on record.

## GEORGIA, Southwest

**GAZ120>122-124-126>127-142**

### **Clay - Early - Lee - Quitman - Randolph - Terrell - Worth**

01	0000EST								
30	2359EST				0	0			Drought

The month started with D2 drought conditions across the area. The drought intensified to D3 status on November 15th and continued into December.

**GAZ123-125-128-143>145**

### **Baker - Calhoun - Dougherty - Miller - Mitchell - Turner**

15	0000EST								
30	2359EST				0	0			Drought

D2 drought conditions developed across the area on November 15th and intensified to D3 status during the subsequent week. The drought continued through the remainder of the month and into December.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## GEORGIA, Southwest

**GAZ129>131-146>148-155>160**

**Ben Hill - Berrien - Brooks - Colquitt - Cook - Decatur - Grady - Irwin - Lowndes - Seminole - Thomas - Tift**

22	0000EST								
30	2359EST				0	0			Drought

D2 drought conditions expanded southward into additional portions of southwest Georgia during the week of November 22nd. D3 drought conditions were present in portions of Colquitt, Cook, Tift, Irwin, and Ben Hill counties by November 29th. The drought conditions continued into December.

**GAZ161**

**Lanier**

29	0000EST								
30	2359EST				0	0			Drought

D2 drought conditions spread into Lanier County at the end of the month and continued into December.

## HAWAII

**HIZ003-019-021**

**Kauai Leeward - Leeward Haleakala - Maui Central Valley**

01	0000HST								
30	2359HST				0	0	0.00K	0.00K	Drought

Very dry conditions persisted across portions of the Aloha State in November. As a matter of fact, parts of leeward Kauai and Maui deteriorated from the D2 category of severe drought to the D3 level of extreme drought.

**HIZ001>003-006>009-012>013-017-019>020-025**

**Big Island North and East - Kauai Leeward - Kauai Windward - Maui Central Valley - Maui Windward West - Molokai Leeward - Molokai Windward - Niihau - Oahu Koolau - Oahu North Shore - Olomana - Waianae Coast - Windward Haleakala**

03	0200HST								
05	0900HST				0	0	0.00K	0.00K	High Surf

A swell from a strong low far northwest of the Aloha State generated surf of 15 to 25 feet along the north- and west-facing shores of Niihau, Kauai, and Molokai; and the north-facing shores of Oahu and Maui; 10 to 20 feet along the north-facing shores of the Big Island of Hawaii; and 10 to 15 feet along the west-facing shores of Oahu. The high water inundated parking areas at Baldwin Beach Park on Maui on the 3rd, and officials closed the area for a time until the higher surf subsided. No serious property damage or injuries were reported.

06	1000HST								
12	1400HST				0	0	0.00K	0.00K	High Surf

**HIZ002-006>009-012>013-017-019>020-025**

**Big Island North and East - Kauai Leeward - Kauai Windward - Maui Central Valley - Maui Windward West - Molokai Leeward - Molokai Windward - Oahu Koolau - Oahu North Shore - Olomana - Waianae Coast - Windward Haleakala**

06	1000HST								
12	1400HST				2	0	0.00K	0.00K	High Surf

A swell from a powerful low far northwest of the islands produced surf of 25 to 40 feet along the north- and west-facing shores of Niihau, Kauai, and Molokai; and the north-facing shores of Oahu and Maui; and 20 to 30 feet along the west-facing shores of Oahu and the north-facing shores of the Big Island of Hawaii. One man drowned on the 8th on the north shore of Kauai, in an area to the east of Kilauea called Larsen's Beach. The surf was reported to have been high at the time, according to the online site Honolulu Civil Beat. There were no reports of serious property damage, or any other fatalities or significant injuries. M73IW

**HIZ001>003-006>009-012>013-017-019>020**

**Kauai Leeward - Kauai Windward - Maui Central Valley - Maui Windward West - Molokai Leeward - Molokai Windward - Niihau - Oahu Koolau - Oahu North Shore - Olomana - Waianae Coast - Windward Haleakala**

13	2000HST								
15	1200HST				0	0	0.00K	0.00K	High Surf

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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## HAWAII

Another swell from a strong low northwest of the Aloha State caused surf of 15 to 30 feet along the north- and west-facing shores of Niihau, Kauai, and Molokai; and the north-facing shores of Oahu and Maui; and 10 to 18 feet along the west-facing shores of Oahu. No significant injuries or property damage were reported, though lifeguards kept busy with issuing warnings and providing assistance to those having difficulty in the water.

### HIZ006

#### Waianae Coast

17	1900HST								
21	0600HST				0	0	0.00K	0.00K	Wildfire

A fire blackened approximately 2000 acres of mainly dry brush in leeward Oahu, in the Waianae Valley. The blaze did engulf between 400 and 500 vehicles at a towing and auto parts business in the area, though the cost of damages had not been determined. And the fire for a time had threatened homes and other structures but was turned away by winds and the actions of the firefighters. No significant injuries were reported. The cause of the blaze was not known.

### HIZ001>003-007>009-012>013-017-019>020-025

#### Big Island North and East - Kauai Leeward - Kauai Windward - Maui Central Valley - Maui Windward West - Molokai Leeward - Molokai Windward - Niihau - Oahu Koolau - Oahu North Shore - Olomana - Windward Haleakala

18	0500HST								
19	0800HST				0	0	0.00K	0.00K	High Surf

A swell from the north-northwest generated surf of 10 to 20 feet along the north-facing shores of Niihau, Kauai, Oahu, Molokai, Maui, and the Big Island of Hawaii. No serious property damage or injuries were reported.

### HIZ002-008-012-017-020-024>025

#### Big Island North and East - Kauai Windward - Maui Windward West - Molokai Windward - Oahu Koolau - Olomana - South Big Island - Windward Haleakala

20	0600HST								
30	2359HST				0	0	0.00K	0.00K	High Surf

A trade wind swell, in combination with a north-northeast swell, produced surf of 6 to 12 feet along the east-facing shores of Kauai, Oahu, Molokai, Maui, and the Big Island of Hawaii. There were no reports of serious property damage or injuries.

### HIZ026

#### Kohala

29	0200HST								
30	2359HST				0	0	0.00K	0.00K	Drought

A small area in leeward Big Island became dry enough to become listed in the D2 category of severe drought by the end of November.

### HIZ003-019-021

#### Kauai Leeward - Leeward Haleakala - Maui Central Valley

01	0000HST								
30	2359HST				0	0	0.00K	0.00K	Drought

Very dry conditions persisted across portions of the Aloha State in November. As a matter of fact, parts of leeward Kauai and Maui deteriorated from the D2 category of severe drought to the D3 level of extreme drought.

### HIZ001>003-006>009-012>013-017-019>020-025

#### Big Island North and East - Kauai Leeward - Kauai Windward - Maui Central Valley - Maui Windward West - Molokai Leeward - Molokai Windward - Niihau - Oahu Koolau - Oahu North Shore - Olomana - Waianae Coast - Windward Haleakala

03	0200HST								
05	0900HST				0	0	0.00K	0.00K	High Surf

A swell from a strong low far northwest of the Aloha State generated surf of 15 to 25 feet along the north- and west-facing shores of Niihau, Kauai, and Molokai; and the north-facing shores of Oahu and Maui; 10 to 20 feet along the north-facing shores of the Big Island of Hawaii; and 10 to 15 feet along the west-facing shores of Oahu. The high water inundated parking areas at Baldwin Beach Park on Maui on the 3rd, and officials closed the area for a time until the higher surf subsided. No serious property damage or injuries were reported.

06	1000HST								
12	1400HST				0	0	0.00K	0.00K	High Surf



# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## HAWAII

**HIZ002-006>009-012>013-017-019>020-025**

**Big Island North and East - Kauai Leeward - Kauai Windward - Maui Central Valley - Maui Windward West - Molokai Leeward - Molokai Windward - Oahu Koolau - Oahu North Shore - Olomana - Waianae Coast - Windward Haleakala**

06	1000HST								
12	1400HST				2	0	0.00K	0.00K	High Surf

A swell from a powerful low far northwest of the islands produced surf of 25 to 40 feet along the north- and west-facing shores of Niihau, Kauai, and Molokai; and the north-facing shores of Oahu and Maui; and 20 to 30 feet along the west-facing shores of Oahu and the north-facing shores of the Big Island of Hawaii. One man drowned on the 8th on the north shore of Kauai, in an area to the east of Kilauea called Larsen's Beach. The surf was reported to have been high at the time, according to the online site Honolulu Civil Beat. There were no reports of serious property damage, or any other fatalities or significant injuries. M73IW

**HIZ001>003-006>009-012>013-017-019>020**

**Kauai Leeward - Kauai Windward - Maui Central Valley - Maui Windward West - Molokai Leeward - Molokai Windward - Niihau - Oahu Koolau - Oahu North Shore - Olomana - Waianae Coast - Windward Haleakala**

13	2000HST								
15	1200HST				0	0	0.00K	0.00K	High Surf

Another swell from a strong low northwest of the Aloha State caused surf of 15 to 30 feet along the north- and west-facing shores of Niihau, Kauai, and Molokai; and the north-facing shores of Oahu and Maui; and 10 to 18 feet along the west-facing shores of Oahu. No significant injuries or property damage were reported, though lifeguards kept busy with issuing warnings and providing assistance to those having difficulty in the water.

**HIZ006**

**Waianae Coast**

17	1900HST								
21	0600HST				0	0	0.00K	0.00K	Wildfire

A fire blackened approximately 2000 acres of mainly dry brush in leeward Oahu, in the Waianae Valley. The blaze did engulf between 400 and 500 vehicles at a towing and auto parts business in the area, though the cost of damages had not been determined. And the fire for a time had threatened homes and other structures but was turned away by winds and the actions of the firefighters. No significant injuries were reported. The cause of the blaze was not known.

**HIZ001>003-007>009-012>013-017-019>020-025**

**Big Island North and East - Kauai Leeward - Kauai Windward - Maui Central Valley - Maui Windward West - Molokai Leeward - Molokai Windward - Niihau - Oahu Koolau - Oahu North Shore - Olomana - Windward Haleakala**

18	0500HST								
19	0800HST				0	0	0.00K	0.00K	High Surf

A swell from the north-northwest generated surf of 10 to 20 feet along the north-facing shores of Niihau, Kauai, Oahu, Molokai, Maui, and the Big Island of Hawaii. No serious property damage or injuries were reported.

**HIZ002-008-012-017-020-024>025**

**Big Island North and East - Kauai Windward - Maui Windward West - Molokai Windward - Oahu Koolau - Olomana - South Big Island - Windward Haleakala**

20	0600HST								
30	2359HST				0	0	0.00K	0.00K	High Surf

A trade wind swell, in combination with a north-northeast swell, produced surf of 6 to 12 feet along the east-facing shores of Kauai, Oahu, Molokai, Maui, and the Big Island of Hawaii. There were no reports of serious property damage or injuries.

**HIZ026**

**Kohala**

29	0200HST								
30	2359HST				0	0	0.00K	0.00K	Drought

A small area in leeward Big Island became dry enough to become listed in the D2 category of severe drought by the end of November.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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## IDAHO, Northwest

### **IDZ001**

#### **Northern Panhandle**

24	0900PST				0	0	0.00K	0.00K	Heavy Snow
25									

A moist pacific storm system brought heavy snow to North Idaho.

## IDAHO, Southeast

### **IDZ019**

#### **Upper Snake Highlands**

27	2000MST						0.00K	0.00K	Winter Storm
28	1400MST				0	0	0.00K	0.00K	Winter Storm

### **IDZ020-021**

#### **Lower Snake River Plain - Upper Snake River Plain**

28	0400MST						45.0K	0.00K	Winter Storm
	1500MST				0	0	45.0K	0.00K	Winter Storm

A late November snow storm created extensive travel problems in the Snake River Plain and Upper Snake Highlands. 4 to 12 inches of snow was reported in the Upper Snake Highlands and 2 to 4 inches of snow fell in the Snake River Plain resulting in extensive travel problems including one fatality near Rexburg.

## ILLINOIS, Central

### **Fulton County Farmington**

02	1450CST						0.00K	0.00K	Hail (0.75)
	1455CST				0	0	0.00K	0.00K	Hail (0.75)

### **Peoria County Elmwood**

02	1450CST						2.00M	0.00K	Hail (1.75)
	1500CST				0	0	2.00M	0.00K	Hail (1.75)

Wind-driven hail caused significant damage to the roofs and siding of 50 houses in Elmwood. One house suffered a broken window. Numerous cars were damaged as well.

### **Peoria County Hanna City**

02	1505CST						500.00K	0.00K	Hail (1.25)
	1510CST				0	0	500.00K	0.00K	Hail (1.25)

Numerous vehicles sustained hail damage in Hanna City.

### **Peoria County Mapleton**

02	1515CST						500.00K	0.00K	Hail (1.25)
	1520CST				0	0	500.00K	0.00K	Hail (1.25)

Numerous cars sustained hail damage south of Peoria.

### **Peoria County (PIA)Gtr Peoria Arprt**

02	1519CST						0.00K	0.00K	Hail (1.00)
	1524CST				0	0	0.00K	0.00K	Hail (1.00)

### **Tazewell County North Pekin**

02	1522CST						0.00K	0.00K	Hail (0.88)
	1527CST				0	0	0.00K	0.00K	Hail (0.88)

Nickel-sized hail covered the ground in North Pekin.

### **Sangamon County 2 NNE Leland Grove**

02	1525CST						0.00K	0.00K	Thunderstorm Wind (52EG)
	1530CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)

A tree was blown down and blocked one lane of Chatham Road in Springfield.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## ILLINOIS, Central

### **Tazewell County** 2 ESE Creve Coeur

02	1527CST 1532CST				0	0	0.00K	0.00K	Hail (1.25)
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### **Tazewell County** Groveland

02	1528CST 1533CST				0	0	0.00K	0.00K	Hail (1.00)
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### **Tazewell County** Morton

02	1530CST 1535CST				0	0	0.00K	0.00K	Hail (0.75)
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### **Tazewell County** 1 E Morton

02	1535CST 1540CST				0	0	0.00K	0.00K	Hail (1.50)
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### **McLean County** Downs

02	1630CST 1635CST				0	0	0.00K	0.00K	Hail (1.00)
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### **Macon County** 1 E Decatur

02	1652CST 1657CST				0	0	50.00K	0.00K	Thunderstorm Wind (52EG)
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Numerous tree limbs and power lines were blown down on the south side of Decatur.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Douglas County** Tuscola

02	1737CST 1742CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A large tree limb was blown down in Tuscola.

A line of strong to severe thunderstorms developed ahead of a cold front during the late afternoon and evening of November 2nd. The airmass ahead of the front was unseasonably warm and humid with temperatures in the 70s and dewpoints of around 60 degrees. In addition to the moderately strong instability, a vigorous short-wave trough approaching from the Central Plains enhanced low-level wind shear across the area. Some of the resulting thunderstorms interacted with an old outflow boundary left behind by morning convection, further enhancing the available shear. One of the most intense storms developed near Elmwood in Peoria County then tracked southeastward to Morton in Tazewell County. This particular cell produced copious amounts of large hail, accumulating to several inches in some locations. Nearly \$3 million worth of damage was done as a result of wind-driven large hail across Peoria County. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Vermilion County** Catlin

18	1503CST 1508CST				0	0	25.00K	0.00K	Thunderstorm Wind (52EG)
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Numerous power lines were blown down in Catlin.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Vermilion County** Danville

18	1515CST 1520CST				0	0	70.00K	0.00K	Thunderstorm Wind (52EG)
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Numerous power lines were blown down in Danville.

A fast-moving cold front triggered scattered thunderstorms during the afternoon of November 18th. A few of the storms produced 50-60 mph wind gusts and minor wind damage along the Illinois-Indiana border. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ILLINOIS, South

### **ILZ088>094**

#### **Alexander - Hardin - Johnson - Massac - Pope - Pulaski - Union**

01	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Severe drought conditions spread into the southern tip of Illinois, primarily the Metropolis area. Moderate drought conditions encompassed the remainder of southern Illinois south of a Carbondale to Harrisburg line. A lack of precipitation caused soil moisture to decrease rapidly. Pasture land deteriorated, causing some farmers to begin feeding hay to livestock. Stock ponds began to run low. Some farmers began hauling in water for their livestock. Just across the state line, Paducah, Kentucky recorded its driest September-October combination on record. Only about one-quarter inch of rain fell during the first few weeks of November. This lack of precipitation, combined with above normal temperatures, contributed to the rapid onset of drought conditions. At Paducah, 1.28 inches of rain fell from September 1 to November 18. This was 8.69 inches below normal for that period. Small streams as well as larger rivers were running well below normal. Parts of the Ohio River were at 40 percent of normal flows. A heavy rainfall event late in the month brought some improvement in the drought.

### **ILZ075>078-080>094**

#### **Alexander - Edwards - Franklin - Gallatin - Hamilton - Hardin - Jackson - Jefferson - Johnson - Massac - Perry - Pope - Pulaski - Saline - Union - Wabash - Wayne - White - Williamson**

13	0000CST								
	0800CST				0	0	0.00K	0.00K	Frost/Freeze

The first widespread freeze of the season ended the growing season across southern Illinois. Low temperatures were in the mid to upper 20's. Widespread heavy frost was observed. A sprawling high pressure system moved southeast from the northern Plains to the Ohio Valley, bringing unseasonably cold air.

## INDIANA, Central

### **Fountain County 3 N Coal Creek**

18	1630EST						2.00K	0.00K	Thunderstorm Wind (52EG)
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Power poles were downed on the 1400 block of South Stringtown Road due to damaging thunderstorm wind gusts.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Tippecanoe County 1 NW Taylor**

18	1700EST						1.50K	0.00K	Thunderstorm Wind (52EG)
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A tree and large limbs were downed due to damaging thunderstorm wind gusts.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Putnam County 1 NNE Fincastle**

18	1710EST							0.00K	Thunderstorm Wind (56EG)
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A car was blown off of Route 231 due to damaging thunderstorm wind gusts.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

### **Putnam County 1 SW Commercial Place 1 SSE Greencastle**

18	1715EST						1.00K	0.00K	Thunderstorm Wind (52EG)
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One tree was reported down on the west side due to damaging thunderstorm wind gusts.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Hamilton County 3 ENE Carmel**

18	1802EST						0.50K	0.00K	Thunderstorm Wind (52EG)
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Large tree limbs were reported down due to damaging thunderstorm wind gusts.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Morgan County 1 N Bethany**

18	1802EST							0.00K	Thunderstorm Wind (52EG)
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An estimated 60 mph thunderstorm wind gust was observed in this location.

A band of showers and thunderstorms moved into western Indiana from eastern Illinois during the middle to late afternoon hours of November 18th. Strong to damaging wind speeds and wind damage was observed, mainly across portions of the western half of central Indiana. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<b>INDIANA, Northeast</b>									
<b>Pulaski County</b> 1 E Winamac	18	1605CST 1606CST			0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
									The public reported a 30 foot tall, seven inch diameter healthy tree was snapped in half.
									Note: The estimated wind gust of 55 knots is equivalent to 63 mph.
<b>Pulaski County</b> 3 SE Lawton	18	1610CST 1611CST			0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
									The public reported a portion of a center pivot irrigation system being rolled over.
									Note: The estimated wind gust of 60 knots is equivalent to 69 mph.
<b>Cass County</b> 1 SE Logansport Muni Arpt	18	1722EST 1723EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
									The Logansport automated weather site recorded a 58 mph gust.
									Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
<b>Cass County</b> 1 NW Lewisburg	18	1730EST 1731EST			0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
									A local newspaper reported a tree of unknown size and conditions was blown down, blocking a lane in the 6300 block of Logansport Road.
									Note: The estimated wind gust of 55 knots is equivalent to 63 mph.
<b>Fulton County</b> 1 N Lake Manitou	18	1733EST 1734EST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
									The public reported trees being blown down with estimated wind gusts to 65 mph.
									Note: The estimated wind gust of 56 knots is equivalent to 64 mph.
<b>Kosciusko County</b> Etna Green	18	1737EST 1738EST			0	1	0.00K	0.00K	Thunderstorm Wind (55EG)
									Emergency management officials reported a tree was blown down onto a vehicle. One occupant was injured.
									Note: The estimated wind gust of 55 knots is equivalent to 63 mph.
<b>Kosciusko County</b> 1 S Warsaw Arpt	18	1743EST 1744EST			0	0	0.00K	0.00K	Thunderstorm Wind (55MG)
									The Warsaw airport automated wind sensor recorded a 63 mph wind gust.
									Note: The measured wind gust of 55 knots is equivalent to 63 mph.
<b>Kosciusko County</b> 1 ENE Beaver Dam	18	1745EST 1746EST			0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
									Local media reported a few trees were blown down near Beaver Dam Lake.
									Note: The estimated wind gust of 55 knots is equivalent to 63 mph.
<b>Kosciusko County</b> 1 ENE Leesburg	18	1745EST 1746EST			0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
									An off duty NWS employee reported 4 end segments of a center pivot were flipped.
									Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## INDIANA, Northeast

### **Kosciusko County**

**1 SW Redmond Park**

18	1747EST 1748EST						0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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Local media reported a portion of metal roofing was tore off a building and thrown. Debris likely struck nearby electrical wires, causing a transformer to blow.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Elkhart County**

**4 SSW Bristol**

18	1749EST 1750EST						0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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The public reported a large spruce tree was uprooted.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### **Elkhart County**

**Benton**

18	1750EST 1751EST						0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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An off duty NWS employee reported estimated wind gusts to 60 mph.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Elkhart County**

**1 W Benton**

18	1808EST 1809EST						0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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An off duty NWS employee reported large tree limbs were blown down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Whitley County**

**2 W Raber**

18	1810EST 1811EST						0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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The public estimated wind gusts to 60 mph.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Grant County**

**2 N Michaelsville**

18	1832EST 1833EST						0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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A trained spotter reported an approximately 100 foot tall pine tree was snapped off about 4 feet above the roots.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### **Grant County**

**1 E Fairmount**

18	1835EST 1836EST						0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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The public reported power lines were blown down onto a car with people trapped inside. No reports of injuries.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Grant County**

**1 NW Home Corner**

18	1837EST 1838EST						0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A trained spotter reported several four to five inch diameter trees were blown down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Wells County**

**1 ENE Bluffton**

18	1855EST 1856EST						0	0	0.00K	0.00K	Thunderstorm Wind (64MG)
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A trained spotter measured a 74 mph wind gust using a handheld anemometer.

Note: The measured wind gust of 64 knots is equivalent to 74 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## INDIANA, Northeast

### **Wells County 2 E Murray**

18	1856EST 1857EST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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A mesonet site recorded a 60 mph wind gust.  
Note: The measured wind gust of 52 knots is equivalent to 60 mph.

### **Grant County 2 E Fairmount**

18	1859EST 1900EST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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The public reported a tree down, as well as power lines.  
Strong low pressure system was off to the northwest with a trailing cold front that was draped south over Illinois in the morning. Right entrance region of jet over Indiana created strong synoptic lift out ahead of the front and combined with the forcing due to the front, allowed for rapid development of thunderstorms along the frontal system. Strong southerly flow allowed for temperatures to warm near records in the low to mid 70s across the state of Indiana. Although marginal instability existed, strong wind fields and associated shear was sufficient for sporadic wind damage reports. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

## INDIANA, Southwest

### **INZ081-085>088**

#### **Gibson - Pike - Posey - Spencer - Vanderburgh - Warrick**

01	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Moderate drought conditions spread across southwest Indiana. A number of brush fires and field fires occurred, prompting the issuance of burn bans for almost all counties except Posey. At Evansville, 4.59 inches of rain fell from September 1 to November 18. This was 4.05 inches below normal for that period. This lack of precipitation, combined with above normal temperatures, contributed to the rapid onset of drought conditions. Small streams as well as larger rivers were running well below normal. Parts of the Ohio River were at 40 percent of normal flows. A heavy rainfall event late in the month brought some improvement in the drought.

13	0000CST 0800CST				0	0	0.00K	0.00K	Frost/Freeze
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### **INZ082-085>088**

#### **Pike - Posey - Spencer - Vanderburgh - Warrick**

13	0000CST 0800CST				0	0	0.00K	0.00K	Frost/Freeze
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The first widespread freeze of the season ended the growing season across southwest Indiana. Low temperatures were in the mid to upper 20's. Widespread heavy frost was observed. A sprawling high pressure system moved southeast from the northern Plains to the Ohio Valley, bringing unseasonably cold air.

## IOWA, Central

### **IAZ004-073**

#### **Emmet - Warren**

18	1511CST 1920CST				0	0	0.00K	0.00K	High Wind
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A strong low pressure system moved out of northeast Kansas and progressed northeast up through Iowa during the morning and afternoon hours of the 18th. On the backside, a strong pressure gradient developed with the aide of high pressure slowly moving into the Plains off the Rockies. As a result, a number of areas saw wind gusts in excess of 40 mph and sustained winds in excess of 25 mph. Northern Iowa saw the strongest winds, including an automated report of 59 mph. Additionally, tree damage was reported in central Iowa, just southwest of the Des Moines metro.

### **Hardin County Radcliffe 3 S Buckeye**

28	1244CST 1255CST	5.22	50	0	0	5.00K	0.00K	Tornado (EF0)
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Weak tornado developed on the north side of Radcliffe doing minor damage and tipping an old truck on its side. The tornado continued on an intermittent track across rural areas northeast of Radcliffe for several miles with little additional damage.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
<b>IOWA, Central</b>									
<b>Grundy County</b> 3 NW Fern	28	1531CST			0	0	0.00K	0.00K	Funnel Cloud
	Trained spotter reported a funnel cloud 3 miles west of Stout.								
<b>Grundy County</b> 4 NNW Fern 3 WNW Stout	28	1538CST 1543CST	2.59	50	0	0	0.00K	0.00K	Tornado (EF0)
	A tornado developed in far northern Grundy County in rural areas southwest of Parkersburg. The tornado was documented by video as it traveled northeast. The funnel was diffuse and intermittent for much of it's track. The tornado crossed into Butler County.								
<b>Grundy County</b> 1 ESE Grundy Center Arpt	28	1541CST 1544CST	1.47	25	0	0	0.00K	0.00K	Tornado (EF0)
	Weak tornado occurred west of Grundy Center and remained in farm fields with little if any damage.								
<b>Butler County</b> 1 SSE Parkersburg 1 NW Sinclair	28	1543CST 1550CST	3.09	40	0	0	3.00K	0.00K	Tornado (EF0)
	Tornado continued from Grundy County. The weak circulation moved northeast into Butler County and affected a small neighborhood on the east side of Parkersburg. Only weak damage occurred in the form of shingle damage to houses in the vicinity. Video of the tornado shows a diffuse circulation.								
<b>Monroe County</b> 5 ESE Avery	28	1544CST			0	0	0.00K	0.00K	Hail (0.75)
	Trained spotter reported penny sized hail with rotation being reported within the storm northeast of Blakesburg.								
<b>Mahaska County</b> 3 NE New Sharon	28	1611CST 1615CST	1.64	30	0	0	0.00K	0.00K	Tornado (EF0)
	Public pictures taken of tornado along with a tornadic debris signature on radar confirm this tornado. Tornado remained in rural areas of far northern Mahaska County with little damage before crossing into Poweshiek County.								
<b>Poweshiek County</b> 2 SE Forest Home 2 WSW Montezuma Sig Arpt	28	1615CST 1621CST	2.9	40	0	0	0.00K	0.00K	Tornado (EF0)
	Tornado moved into Poweshiek County from Mahaska County. Law enforcement observed this tornado from a distance. This tornado also produced a tornadic debris signature on radar. Little damage occurred along it's intermittent path.								
<b>Poweshiek County</b> 2 E Montezuma	28	1625CST			0	0	0.00K	0.00K	Funnel Cloud
	Cedar Falls Dispatch relayed a report from an officer of a funnel cloud SW of his position. At the time of the report, the officer was just south of I-80 on Highway 21 looking to the SW. Location estimated based on radar.								
<b>Poweshiek County</b> 1 NE Montezuma Sig Arpt 1 WSW Montezuma East Arpt	28	1630CST 1633CST	1.17	30	0	0	0.00K	0.00K	Tornado (EF0)
	Law enforcement observed this brief tornado. The intermittent path remained in open fields just to the southeast of Montezuma. Mini-supercells developed in a narrow corridor of weak surface based instability and effective helicities around 50-100 m2/s2. These parameters would typically be considered quite weak for Iowa but given it was the end of November, these values were decent and assisted by good dynamics. Five tornadoes occurred during the afternoon, many with intermittent tracks but with plenty of spotter reports and visual evidence to substantiate their occurrence.								



# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Estimated Crops	Character of Storm
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## IOWA, Northwest

### IAZ001-012

#### Lyon - Sioux

18	0500CST 1500CST				0	0	0.00K	0.00K	Winter Weather
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Wet snow accumulated 1 to 4 inches in far northwest Iowa. Northwest winds gusting as high as 50 mph combined with the falling snow to lower visibilities to around a half mile at times. Wind chills were driven down into the teens to lower 20s, not an unusual level for mid November. However, the change to colder weather was sudden, as unseasonably warm weather had brought daytime temperatures as warm as the 60s and 70s within the previous five days.

### IAZ014

#### Clay

28	0004CST				0	0	0.00K	0.00K	High Wind
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Strong southerly winds ahead of a cold front gusted to 59 mph at Spencer Iowa Airport just after midnight on November 28th.

## KANSAS, East

### Douglas County 1 N Midland

02	1840CST 1841CST				0	0			Hail (0.75)
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Penny size hail observed. Heavy rain was also occurring.

### Douglas County 1 NNE Lawrence

02	1845CST 1846CST				0	0			Hail (0.75)
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A broken line of thunderstorms moved across portions of northeast Kansas during the evening hours of November 2nd. Small hail was the only report received from the storms.

### Riley County

#### 9 WNW (MHK)Manhattan Mu

22	1551CST	0.3	25		0	0	0.00K	0.00K	Tornado (EF0)
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Manhattan airport tower and airline pilot reported that a weak funnel contacted the ground for less than 2 miles over open country. There was no visible debris or damage. This weak tornado came from a convective shower with no evidence of lightning.

Showers occurred during the late afternoon and evening on November 22nd. One shower produced a brief, weak land spout tornado over the artillery range on the Fort Riley Army Base in Riley County Kansas. The funnel was reported by an airplane pilot over the range with no damage seen.

## KANSAS, Northeast

### Leavenworth County 4 SW Reno

02	1845CST				0	0	0.00K	0.00K	Hail (0.75)
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### Johnson County 1 E De Soto

02	1913CST 1915CST				0	0	0.00K	0.00K	Thunderstorm Wind (55MG)
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A 63 mph wind gust was measured by a weather station in DeSoto.

Note: The measured wind gust of 55 knots is equivalent to 63 mph.

### Johnson County

#### 1 WNW (OJC)Johnson Co Exe

02	1930CST 1932CST				0	0			Thunderstorm Wind (60EG)
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A National Weather Service employee reported a few 6 to 8 inch tree limbs down due to strong thunderstorm winds. The condition of the branches are unknown.

On the evening of November 2, 2016 a cluster of severe storms moved through northeast Kansas. They produced some sub severe hail and a couple isolated reports of some wind damage. Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## KANSAS, Northwest

### KSZ013

#### Sherman

27	1210MST				0	0	0.00K	0.00K	Dust Storm
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During the early afternoon south winds gusting around 50 MPH, ahead of an advancing cold front, lofted dirt from an open field near I-70 into the air and across the roadway. This created a narrow corridor of zero visibility near the Edson exit. The lack of visibility caused an accident involving an unknown number of vehicles.

## KANSAS, Southwest

### Haskell County

#### 1 SW Satanta Muni Arpt

17	1658CST				0	0			Thunderstorm Wind (78EG)
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A trailer was damaged and there was heavy tree damage in Satanta. Dozens of pivot irrigation sprinklers near Satanta were rolled over.

Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

### Haskell County

#### Sublette

17	1705CST				0	0	1.80M		Thunderstorm Wind (78EG)
----	---------	--	--	--	---	---	-------	--	--------------------------

There was heavy tree damage in Sublette. At least 2 dozen pivot sprinkler irrigation sprinklers were overturned or destroyed, mainly west and north of Sublette. There were a few sprinklers reported damaged south of town town. There was video of the downburst wind moving through town with a few brief gustnadoes observed on the leading edge of the wall of dirt that was picked up.

Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

### Haskell County

#### 7 SE Sublette Arpt

17	1715CST				0	0	110.00K		Thunderstorm Wind (70EG)
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Power poles were blown down and at least 2 pivot irrigation sprinklers were overturned in the vicinity.

Very high based showers with occasional lightning along the leading edge of a short wave trough produced a high wind event across mainly Haskell county. Numerous wind gusts over 80 MPH were reported. Estimates of around 100 MPH gusts were verified by the amount of damage that was observed. Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

## KENTUCKY, Central

### Warren County

#### 1 SW Bowling Green

28	1826CST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
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The ASOS at the Bowling Green Municipal Airport measured a 58 mph gust.

Note: The measured wind gust of 50 knots is equivalent to 58 mph.

### Warren County

#### 1 SSW Three Spgs

28	1834CST				0	0	0.00K	0.00K	Thunderstorm Wind (61MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The Kentucky Mesonet station 5 miles south of Bowling Green measured a 70 mph wind gust.

Note: The measured wind gust of 61 knots is equivalent to 70 mph.

### Warren County

#### 1 SW Bowling Green

28	1850CST				0	0	25.00K	0.00K	Thunderstorm Wind (52EG)
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Local law enforcement reported trees and tree limbs down across town due to strong thunderstorm winds. There were several power lines down as well according to utility companies.

A strong cold front brought a line of heavy rain showers across central Kentucky during the afternoon and evening hours November 28. As the line passed through south-central Kentucky, wind gusts ranged from 55 mph to 70 mph in isolated locations. This resulted in sporadic power outages and downed limbs. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

## KENTUCKY, Eastern

### KYZ087-112>113-115-118-120

#### Bell - Breathitt - Harlan - Knott - Letcher - Perry - Pike

03	1100EST				0	0			Wildfire
	1600EST								

Abnormally dry conditions led to several wildfires throughout Pike County on November 3rd. Shelby Valley High School, Valley Elementary School, and Dorton Elementary School were all forced to close for two days as smoke became thick and thus made breathing difficult.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## KENTUCKY, Eastern

**KYZ058-068>069-079>080-083>088-106>118-120**

**Bell - Breathitt - Clay - Estill - Floyd - Harlan - Jackson - Johnson - Knott - Knox - Laurel - Lee - Leslie - Letcher - Magoffin - McCreary - Morgan - Owsley - Perry - Pike - Powell - Pulaski - Rockcastle - Wayne - Whitley - Wolfe**

08	0700EST								
30	2359EST				0	0			Drought

An abnormally dry start to the autumn season in September and October continued through the majority of November. Rainfall deficits of 4-6 inches during this timeframe sparked the introduction of severe drought across almost all of eastern Kentucky by the second and third weeks in November. Extreme drought also developed across much of the Cumberland Valley toward the end of November as the 4th driest fall on record was recorded at both Jackson and London. Additionally, the Fall of 2016 was the warmest on record across eastern Kentucky.

Early impacts ranged from farm ponds drying up and low streamflows in southern Kentucky to a few cities, such as Salyersville, mentioning possible water supply issues without significant rainfall by the end of November. Several farmers also mentioned the early consumption of hay by cattle, possibly leading to a shortage into the winter.

Wildfire activity began to rapidly increase across eastern Kentucky, especially southeastern Kentucky, by late October. The Kentucky State Emergency Operations Center was activated on November 3rd as at least five wildfires flared up across Harlan County, while three schools in Pike County were forced to close due to dense smoke. A state of emergency was later declared by the governor on the 3rd after meeting with the Kentucky Division of Forestry.

Impacts from as many as 41 wildfires at any one time became numerous rather quickly as nearly 500 personnel from the Kentucky Division of Forestry, Kentucky Fire Commission, Natural Resource Conservation Services, the Kentucky National Guard, and American Red Cross were deployed to southeastern Kentucky to assist local fire departments in fighting wildland fires. Crews battled the flames from both the ground and air as the Kentucky National Guard mobilized six UH-60M Black Hawk helicopters equipped with 600-gallon buckets and two LUH-72 Lakotas, dumping nearly 2 million gallons of water over approximately 50,000 acres.

One fire in Harlan County was responsible for consuming 7,400 acres on Pine Mountain. Kentucky Highway 1679 (Little Shepherds Trail) in Harlan County was closed to all traffic, except emergency vehicles, from Swap to the entrance of Kingdom Come State Park, while a portion of the Red River Gorge in the Daniel Boone National Forest was closed for several days along Tunnel Ridge Road north of Mountain Parkway. Numerous other roadways were closed as burned trees toppled over and smoke produced reduced visibilities. On the morning of November 16th, near-zero visibilities developed on Mountain Parkway just east of the Slade exit as smoke became extremely dense at ground level. A 12 car pileup resulted, injuring approximately 20 people and causing one fatality as a man stepped out of his coal truck to help others. Mountain Parkway was closed for over 10 hours between exits 22 and 40. One home was burned down in Knott County, while smoke and flames endangered several additional homes near Putney and Cumberland in Harlan County. Sadly, one firefighter passed away after being injured battling a late October brushfire near Beverly in Bell County. The city of Jackson and the National Weather Service office were also impacted by nearby wildfires and smoke, including the Eagles Nest Fire.

Burn bans were eventually issued for all 33 counties in eastern Kentucky, helping the state of Kentucky receive a Fire Management Assistance Grant from FEMA Region IV to support continuing fire operations in southeastern Kentucky. These continued until November 28th when the Kentucky Division of Forestry, National Guard, and Kentucky Fire Commission were demobilized as increasing moisture filtered into eastern Kentucky prior to resulting in widespread rainfall amounts of 1-4 inches.

**KYZ044-050>052-060-104**

**Bath - Elliott - Fleming - Menifee - Montgomery - Rowan**

15	0700EST								
30	2359EST				0	0			Drought

Continued dry conditions led to the expansion of severe drought into the Bluegrass region from mid-late November. While sporadic wildfires occurred, the main impacts continued to be farther south through southern and southeastern Kentucky.

**KYZ059**

**Powell**

16	0800EST								
	1100EST				0	0			Wildfire

Severe drought led to a prolonged wildfire in the Red River Gorge near Tunnel Ridge Road, north of Mountain Parkway. On the morning of November 16th, near-zero visibilities developed on Mountain Parkway just east of the Slade exit as smoke became extremely dense at ground level. A 12 car pileup resulted, injuring approximately 20 people and causing one fatality as a man stepped out of his coal truck to help others. Mountain Parkway was closed for over 10 hours between exits 22 and 40.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## KENTUCKY, Eastern

**KYZ119**

**Martin**

22	0700EST								
30	2359EST				0	0			Drought

The continued lack of rain from mid-late November produced severe drought conditions farther east into Martin County.

## KENTUCKY, Southwest

**KYZ001>022**

**Ballard - Caldwell - Calloway - Carlisle - Christian - Crittenden - Daviess - Fulton - Graves - Henderson - Hickman - Hopkins - Livingston - Lyon - Marshall - McCracken - McLean - Muhlenberg - Todd - Trigg - Union - Webster**

01	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Severe drought conditions spread across almost all of western Kentucky with the exception of the Henderson and Owensboro areas, which were in moderate drought conditions. A number of brush fires and field fires occurred, prompting the issuance of burn bans for almost all counties except a few in the Henderson and Owensboro areas. On the afternoon of November 1, a field fire west of Paducah on the north side of Highway 358 burned about 100 acres. All county fire departments in McCracken County assisted in fighting the wind-driven fire, which prompted the closure of Highway 358 but did not spread to any structures. On the Fort Campbell military installation in southern Christian and Trigg Counties, about 8,500 acres of wildland burned. Large wildfires are not uncommon on the installation, and no structures were known to be involved. The lack of precipitation caused soil moisture to decrease rapidly. Pasture land deteriorated, causing some farmers to begin feeding hay to livestock. Stock ponds began to run low. Some farmers began hauling in water for their livestock. Paducah recorded its driest September-October combination on record. Only about one-quarter inch of rain fell during the first few weeks of November. This lack of precipitation, combined with above normal temperatures, contributed to the rapid onset of drought conditions. At Paducah, 1.28 inches of rain fell from September 1 to November 18. This was 8.69 inches below normal for that period. Small streams as well as larger rivers were running well below normal. Parts of the Ohio River were at 40 percent of normal flows. A heavy rainfall event late in the month brought some improvement in the drought.

13	0000CST				0	0	0.00K	0.00K	Frost/Freeze
	0800CST								

**KYZ002>022**

**Ballard - Caldwell - Calloway - Carlisle - Christian - Crittenden - Daviess - Graves - Henderson - Hickman - Hopkins - Livingston - Lyon - Marshall - McCracken - McLean - Muhlenberg - Todd - Trigg - Union - Webster**

13	0000CST				0	0	0.00K	0.00K	Frost/Freeze
	0800CST								

The first widespread freeze of the season ended the growing season across western Kentucky. Low temperatures were in the mid to upper 20's. Widespread heavy frost was observed. A sprawling high pressure system moved southeast from the northern Plains to the Ohio Valley, bringing unseasonably cold air.

## LOUISIANA, Northeast

**LAZ007-015>016-023**

**Franklin - Madison - Morehouse - Richland - West Carroll**

01	0000CST								
30	2359CST				0	0	0.00K	500.0K	Drought

Dry conditions continued into November, which created continued stress on crops. The drought continued to get worse across the state through the month before some relief came in the form of showers and thunderstorms near the end of November.

**LAZ009-024-025**

**Catahoula - East Carroll - Tensas**

08	0000CST								
30	2359CST				0	0	0.00K	150.0K	Drought

Dry conditions continued into November, which created continued stress on crops. The drought continued to get worse across the state through the month before some relief came in the form of showers and thunderstorms near the end of November.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## LOUISIANA, Northeast

### LAZ025

#### Tensas

28	1300CST				0	0	5.0K	0.00K	Strong Wind
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### Franklin Parish 2 NW Brownell

28	1450CST				0	0	12.00K	0.00K	Thunderstorm Wind (52EG) Multiple trees were blown down across southern Franklin Parish between Winnsboro and Fort Necessity.
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Two separate bouts of severe weather impacted a large portion of the ArkLaMiss region over a two day period in late November. The first event began on the afternoon of Monday, November 28th and ended around midnight on Tuesday, November 29th. A potent upper level low pressure system spinning over the Northern Plains caused a strong surface low pressure system to develop and rapidly race northeast from the Central Plains to the Great Lakes region. This resulted in a strong cold front racing east into and through the ArkLaMiss region. As it did so, it encountered a strongly wind-sheared and marginally unstable air mass over the area. This equated to a line of storms racing east across the ArkLaMiss, that downed numerous trees and powerlines across the area. Numerous trees were also reported down well ahead of the front due to widespread sustained gradient winds between 25-35 mph, gusting between 40-50 mph at times over the ArkLaMiss. After this cold front pushed through the region, it stalled near the central gulf coast Tuesday morning, aiding in setting the stage for the second bout of severe weather that would affect the region from Tuesday afternoon into the early morning hours of Wednesday, November 30th.

Another piece of upper level energy associated with the low pressure system aloft over the Northern Plains, approached the Southeast United States Tuesday afternoon. As this happened, it caused the front stalled south of the area to begin lifting north through the area as a warm front. As warm moist unstable air overspread the region from the south, both wind shear and forcing over the region became adequate, such that supercell thunderstorms began developing and moving northeast through the area. Numerous storms became severe and produced damaging wind gusts and large hail, primarily ranging from quarter to golfball size.

As a cold front finally pushed east and through the ArkLaMiss early Wednesday morning, severe weather finally came to an end across the entire area around sunrise. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### LAZ026

#### Concordia

29	0000CST								
30	2359CST				0	0	0.00K	50.0K	Drought

Dry conditions continued into November, which created continued stress on crops. The drought continued to get worse across the state through the month before some relief came in the form of showers and thunderstorms near the end of November.

### Franklin Parish 2 ENE Liddieville

29	1455CST				0	0	0.00K	0.00K	Hail (1.00) Quarter sized hail fell on Erskin Road.
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### Franklin Parish 1 N Liddieville

29	1620CST				0	0	0.00K	0.00K	Hail (1.00)
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### Franklin Parish 1 N Liddieville

29	1629CST				0	0	0.00K	0.00K	Hail (1.00)
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### Franklin Parish 1 N Liddieville

29	1708CST				0	0	0.00K	0.00K	Hail (1.00)
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### Morehouse Parish 3 SW Twin Oaks 2 NE Laark

29	1818CST 1845CST				0	0	4.00K	0.00K	Hail (1.75)
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A thunderstorm brought a swath of hail to the parish, including golfball sized hail that fell in Galion.

### Franklin Parish Chase

29	1957CST				0	0	0.00K	0.00K	Hail (1.00) Quarter sized hail fell in Chase.
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### Catahoula Parish 4 NNE Webb

29	2140CST				0	0	7.00K	0.00K	Thunderstorm Wind (50EG) Large limbs and power lines were blown down, which resulted in power outages.
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# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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## LOUISIANA, Northeast

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Another piece of upper level energy associated with the low pressure system aloft over the Northern Plains, approached the Southeast United States Tuesday afternoon. As this happened, it caused the front stalled south of the area to begin lifting north through the area as a warm front. As warm moist unstable air overspread the region from the south, both wind shear and forcing over the region became adequate, such that supercell thunderstorms began developing and moving northeast through the area. Numerous storms became severe and produced damaging wind gusts and large hail, primarily ranging from quarter to golfball size.

As a cold front finally pushed east and through the ArkLaMiss early Wednesday morning, severe weather finally came to an end across the entire area around sunrise. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

## LOUISIANA, Northwest

**LAZ006-010-014-017-021**

### **Caldwell - De Soto - Natchitoches - Ouachita - Sabine - Union**

01	0000CST							
30	2359CST			0	0	0.00K	0.00K	Drought

Severe drought conditions (D2) expanded across portions of North Louisiana during November 2016, as monthly temperatures remained two to four degrees above normal and below normal rainfall continued. Widespread monthly rainfall amounts of only one to three inches fell across much of North Louisiana, although isolated higher amounts exceeding five inches did fall across portions of Central Caddo, Bossier, Webster, and Western Claiborne Parishes which did help to alleviate drought conditions. However, extreme (D3) drought conditions did develop by the third week of November across the southern and eastern sections of Northcentral Louisiana given the prolonged lack of rainfall since September.

**LAZ002-005-011>013-019>020-022**

### **Bienville - Bossier - Grant - Jackson - La Salle - Lincoln - Red River - Winn**

08	0000CST							
30	2359CST			0	0	0.00K	0.00K	Drought

Severe drought conditions (D2) expanded across portions of North Louisiana during November 2016, as monthly temperatures remained two to four degrees above normal and below normal rainfall continued. Widespread monthly rainfall amounts of only one to three inches fell across much of North Louisiana, although isolated higher amounts exceeding five inches did fall across portions of Central Caddo, Bossier, Webster, and Western Claiborne Parishes which did help to alleviate drought conditions. However, extreme (D3) drought conditions did develop by the third week of November across the southern and eastern sections of Northcentral Louisiana given the prolonged lack of rainfall since September.

**Caddo Parish  
Vivian**

28	1111CST			0	0	0.00K	0.00K	Hail (0.75)
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Dime size hail was reported in Vivian.

A vigorous upper level storm system moved out of the Inter-Mountain West and into the Southern Plains during the morning hours of November 28th. This system was very dynamic in nature as it was associated with an upper level jet of over 150kts with a low level jet in excess of 60kts across the Lower Mississippi Valley. Despite the very strong jet dynamics associated with the system, surface based instability was severely lacking across much of the region. For this reason, strong storms were mostly sub-severe but an isolated severe wind report and a small hail report was produced with these thunderstorms activity across portions of East Texas and Northwest Louisiana.

**La Salle Parish  
1 W Olla**

29	1415CST			0	0	0.00K	0.00K	Hail (0.75)
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A resident reported dime size hail falling in the Olla Community on the KNOE-TV Facebook page.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## LOUISIANA, Northwest

### **Lincoln Parish**

1 NNE Vienna	29	1517CST			0	0	0.00K	0.00K	Hail (1.00) Quarter size hail fell in the Vienna community.
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### **Caldwell Parish**

1 ESE Grayson	29	1555CST			0	0	0.00K	0.00K	Hail (1.75) Golfball size hail fell in the town of Grayson.
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### **Caldwell Parish**

Pulpwood	29	1557CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG) Trees were downed along Highway 165 between Grayson and Columbia.
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Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

### **Grant Parish**

2 NE Dry Prong	29	1702CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG) Trees were downed along Highway 123 northeast of Dry Prong.
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Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

### **Caldwell Parish**

8 ENE Copenhagen	29	1705CST			0	0	0.00K	0.00K	Funnel Cloud Law enforcement reported a funnel cloud moving northeast on Highway 4 near the Three Rivers Bridge along the Caldwell/Franklin Parish line.
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### **Sabine Parish**

1 ESE Florien	29	1715CST			0	0	0.00K	0.00K	Hail (0.75) A resident reported dime size hail that fell in the Florien community, via the KSLA-TV Facebook page.
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### **La Salle Parish**

1 WNW Olla	29	1730CST			0	0	0.00K	0.00K	Hail (1.25) Half-dollar size hail fell at the Olla Grocery near Highway 127.
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### **Natchitoches Parish**

2 S Vowells Mill	29	1735CST			0	0	0.00K	0.00K	Hail (1.00) A resident reported quarter size hail that fell in the Vowells Mill community, via the KSLA-TV Facebook page.
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### **La Salle Parish**

1 NW Jena	29	2120CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG) Trees were downed along Highway 84 in Jena.
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Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

### **La Salle Parish**

1 SW Good Pine	29	2120CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG) Trees were blown down on Sparrow Road off of Highway 8.
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A warm front shifted north across portions of Deep East Texas and Northcentral Louisiana during the morning and mid-afternoon hours on November 29th, well ahead of an upper level low pressure system over Westcentral Texas. This warm front transported much warmer, more humid, and unstable air northward, with impulses in the southwest flow aloft ahead of the upper low lifting northeast across the area along the warm front. Very strong wind shear was also present within the increasingly unstable air mass, resulting in scattered strong to severe thunderstorm development from the mid-morning hours across portions of Deep East Texas, which shifted northeast into the southern and eastern sections of Northcentral Louisiana during the afternoon and evening. These storms produced multiple reports of hail and damaging winds which downed trees across Shelby and Angelina Counties in Deep East Texas, as well as Grant, La Salle, and Caldwell Parishes in Northcentral Louisiana. A couple reports of funnel clouds were also received from Caldwell Parish, but no tornado touchdowns were determined from National Weather Service damage surveys. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

## LOUISIANA, Southeast

### **Jefferson Parish**

1 NW Westwego	30	0845CST 0847CST	0.76	30	0	0	0.00K	Tornado (EF0)
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A weak tornado touched down near the intersection of Avenue C and Columbus Street in Westwego. It caused minor damage to the roofs of about 5 homes, tore the carport off of one home, bent a power pole, and snapped limbs on several trees. It moved eastward through an industrial area, causing damage to the roof and garage doors of a warehouse. It then lifted as it crossed River Road. Estimated maximum wind speed was 85 mph.

A line of thunderstorms developed in advance of a cold front moving across southeast Louisiana. One tornado was confirmed in Jefferson Parish.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## LOUISIANA, Southwest

### **Rapides Parish**

**1 WNW Pineville**

28	1545CST				0	0	0.00K	0.00K	Funnel Cloud
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A funnel cloud was reported through social media.

### **Avoyelles Parish**

**1 ENE Mansura**

28	1625CST	0.01	10	0	0	0.00K	0.00K	Tornado (EF0)
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The Avoyelles Parish OEP relayed a report from the Marksville Fire Department of a brief tornado in a rice field.

### **Acadia Parish**

**1 W Iota**

28	1725CST				0	0	0.00K	0.00K	Funnel Cloud
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The Lafayette sheriff's department relayed a report of a funnel cloud east of Iota.

### **Calcasieu Parish**

**4 S Vincent**

29	2345CST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Entergy reported 3 power poles downed by wind. Dog kennels were also blown over at a near by home.

A pair of short waves traversed the area while a moist and unstable air mass moved north from the gulf. One tornado occurred and one severe thunderstorm. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

## MAINE, North

**MEZ002-005-006**

### **Northeast Aroostook - Northern Penobscot - Southeast Aroostook**

29	1300EST								
30	0400EST				0	0			Heavy Snow

Low pressure tracked northeast across the Gulf of Maine through the overnight hours of the 29th...then exited across the maritimes during the morning of the 30th. Snow began during the afternoon of the 29th and persisted into the early morning hours of the 30th. Warning criteria snow accumulations occurred from the late evening hours of the 29th into the early morning hours of the 30th. Storm total snow accumulations generally ranged from 6 to 12 inches...with local totals up to around 15 inches across southeast Aroostook county.

## MAINE, South

**MEZ023-024**

### **Coastal Cumberland - Coastal York**

16	1200EST								
	1400EST				0	0	20.0K	0.00K	Coastal Flood

A weak area of low pressure slowly intensified as it moved over coastal Maine on November 16th. Ahead of the system a northerly wind of 20 to 25 knots developed over the coastal waters, before becoming light from the south near the time of high tide. This coastal flood event coincided with the day after the King Tide, which brought some of the highest astronomical tides since 1948.

## MARYLAND, Central

**MDZ011-013-016>  
018-504-506-508**

### **Anne Arundel - Calvert - Central And Southeast Howard - Central And Southeast Montgomery - Charles - Prince Georges - Southeast Harford - Southern Baltimore - St. Mary`s**

13	0200EST								
	0800EST				0	0			Frost/Freeze

High pressure overhead caused mainly clear skies and light winds. Radiational cooling led to a freeze.

**MDZ501**

### **Extreme Western Allegany**

19	1827EST				0	0			High Wind
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A strong cold front passed through on the 19th. Strong pressure rises along with cold advection caused high winds from aloft to mix down.

**MDZ004**

### **Frederick**

20	2238EST				0	0			High Wind
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Strong low pressure intensified over New England. A strong pressure gradient between the low and high pressure over the Midwest led to high winds.



# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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## MARYLAND, Central

21	0517EST				0	0			High Wind
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Strong low remained over eastern Canada. A strong pressure gradient between the low and high pressure over the Midwest led to high winds.

## MASSACHUSETTS, Central and East

### MAZ002>022-026

**Barnstable - Eastern Essex - Eastern Franklin - Eastern Hampden - Eastern Hampshire - Eastern Norfolk - Eastern Plymouth - Northern Bristol - Northern Worcester - Northwest Middlesex County - Southeast Middlesex - Southern Bristol - Southern Plymouth - Southern Worcester - Suffolk - Western Essex - Western Franklin - Western Hampden - Western Hampshire - Western Middlesex - Western Norfolk - Western Plymouth**

01	0000EST				0	0	0.00K	0.00K	Drought
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Rainfall was below normal for all of Massachusetts during November, with amounts in Southeast Massachusetts ranging from near 2 to 3 inches below normal.

A Drought Warning remains in effect for most of Massachusetts. A Drought Advisory continued for Cape Cod and the Islands. November average streamflows were mostly below or significantly below normal in every drought region. Groundwater levels were below normal in all areas except in the Northeast and Cape/Islands. Reservoir levels were below normal for all regions.

### MAZ002>005-010

**Eastern Franklin - Eastern Hampshire - Northern Worcester - Western Franklin - Western Middlesex**

11	1104EST				0	0	2.6K	0.00K	Strong Wind
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An arctic cold front moving through southern New England produced strong northwesterly winds, mainly during the afternoon and early evening hours.

### MAZ007

**Eastern Essex**

20	0855EST				0	0	0.00K	0.00K	High Wind
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### MAZ003-015

**Eastern Franklin - Suffolk**

20	1100EST				0	0	3.2K	0.00K	Strong Wind
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### MAZ006

**Western Essex**

21	1606EST				0	0	0.1K	0.00K	Strong Wind
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A surface low pressure area tracked across northeast MA late on Nov. 20 and moved northeast of the region on Nov. 21. A potent upper level disturbance moved across southern New England on the 20th.

Rain changed to a period of heavy wet snow across the higher terrain above 1000 feet in the slopes of the Berkshires early in the morning on the 20th. Snow accumulated 3 to 5 inches by 8 AM on the 20th. Then another 2 to 4 inches occurred from the 20th into early on the 21st...with 2-day totals reaching 9 inches in Heath and 6 inches in Rowe, both in Franklin County, MA. This did not reach Winter Storm Warning temporal thresholds.

Gusty southwest winds also occurred on the 20th, followed by strong west winds with a few pockets of high winds behind the system on the 21st, causing some damage.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MASSACHUSETTS, West

### **MAZ001-025**

### **Northern Berkshire - Southern Berkshire**

20	0300EST								
21	1800EST				0	0			Heavy Snow

A strong frontal boundary crossed the region during the early morning hours on Sunday, November 20th. Precipitation initially begin as rain or a mix of rain and snow, but quickly transitioned over to just snow as colder air quickly worked its way into the region.

The snowfall continued through the entire day on Sunday November 20th and into the day on Monday November 21st, especially across the highest terrain, as the persistent westerly flow caused upslope flow into the Berkshires. Snowfall tapered off the early evening hours on Monday and storm total amounts ranged from around 9 inches in Pittsfield to nearly 20 inches in Peru.

## MICHIGAN, East

### **Washtenaw County**

#### **3 ESE Lyndon Center**

18	1930EST								
					0	0	15.00K	0.00K	Thunderstorm Wind (56EG)

Widespread reports of tree damage across Washtenaw County.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

### **Livingston County**

#### **1 N Howell**

18	1940EST								
					0	0	0.00K	0.00K	Thunderstorm Wind (52EG)

Several trees and tree limbs reported down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Livingston County**

#### **3 ESE Howell**

18	1942EST								
					0	0	0.00K	0.00K	Thunderstorm Wind (52EG)

A few downed pine trees.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Livingston County**

#### **1 W Brighton**

18	1945EST								
					0	0	10.00K	0.00K	Thunderstorm Wind (56EG)

Numerous reports of trees down between Brighton and Howell.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

### **Genesee County**

#### **1 SW Flint**

18	2010EST								
					0	0	15.00K	0.00K	Thunderstorm Wind (56EG)

Trees and power lines reported throughout the city.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

### **Lapeer County**

#### **2 E Lapeer**

18	2016EST								
					0	0	20.00K	0.00K	Thunderstorm Wind (52EG)

Roof blown off Vic Bond Sales.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Huron County**

#### **Bad Axe**

18	2055EST								
					0	0	0.00K	0.00K	Thunderstorm Wind (51MG)

Record highs in the lower 70s gave way to several thunderstorms which produced wind damage as a strong cold front track through Southeast Michigan. Note: The measured wind gust of 51 knots is equivalent to 59 mph.

## MICHIGAN, Extreme Southwest

### **Hillsdale County**

#### **2 SE Jonesville**

18	1855EST								
	1856EST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)

The public and local media reported a well built barn demolished, with trees blown down in the area. A large wooden swing set was also blown away.

Strong low pressure system was off to the northwest with a trailing cold front that was draped south over Illinois in the morning. Right entrance region of jet over Indiana created strong synoptic lift out ahead of the front and combined with the forcing due to the front, allowed for rapid development of thunderstorms along the frontal system. Strong southerly flow allowed for temperatures to warm near records in the low to mid 70s across the state of Indiana. Although marginal instability existed, strong wind fields and associated shear was sufficient for sporadic wind damage reports. Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MICHIGAN, North

**MIZ008-019>022-025>028-031>034**      **Antrim - Benzie - Charlevoix - Chippewa - Crawford - Grand Traverse - Kalkaska - Leelanau - Manistee - Missaukee - Otsego - Roscommon - Wexford**

19	1300EST								
20	0300EST				0	0	0.00K	0.00K	Winter Storm

Strong low pressure moved from Minnesota to Lake Superior late on the 18th, then continued east. Persistent warm weather would give way to by far the coldest air of the season thus far. Lake enhanced snow and very gusty winds resulted. Wind gusts to around 60 mph were seen along parts of the Lake Michigan and Whitefish Bay shorelines. Snow amounts were highest southeast of Grand Traverse Bay, with Sharon (Kalkaska County) picking up 11 inches of snow.

## MICHIGAN, Upper

**MIZ002-009**      **Gogebic - Ontonagon**

18	1800CST								
19	1600CST				0	0	0.00K	0.00K	Winter Storm

**MIZ014**      **Southern Schoolcraft**

18	1940EST								
	1945EST				0	0	0.00K	0.00K	High Wind

**MIZ001-003-005-006**      **Alger - Keweenaw - Marquette - Northern Houghton**

19	0000EST								
	2200EST				0	0	1.0K	0.00K	Winter Storm

**MIZ013**      **Delta**

19	0600EST								
	2130EST				0	0	0.00K	0.00K	Winter Weather

**MIZ007**      **Luce**

19	0700EST								
20	0100EST				0	0	0.00K	0.00K	Winter Storm

**MIZ004-085**      **Baraga - Marquette - Northern Schoolcraft**

19	0800EST								
20	1300EST				0	0	0.00K	0.00K	Winter Weather

A strong low pressure system tracking through the Upper Great Lakes produced damaging wind and moderate snow over portions of Upper Michigan from the evening of 18th into the 20th.

**MIZ004>006-009>010**      **Alger - Baraga - Gogebic - Iron - Marquette**

23	0600CST								
24	0900CST				0	0	0.00K	0.00K	Winter Weather

A low pressure system tracking through the Lower Great Lakes brought moderate snow to portions of west and central Upper Michigan from the 23rd into the morning of the 24th.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MICHIGAN, West

### **Jackson County**

**1 SE (JXN)Reynolds Fld Ja**

18	1911EST 1912EST				0	0	10.00K	0.00K	Thunderstorm Wind (69MG)
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An isolated severe thunderstorm produced wind gusts up to 80 mph in Jackson. A 69 knot measured wind gust was reported at the Jackson airport. This resulted in numerous downed trees and limbs and power lines.

An isolated severe thunderstorm produced wind gusts of up to 80 mph in Jackson, resulting in downed trees and limbs and numerous power outages. At one point close to 8,000 people lost power in Jackson during the evening hours of November 18th. Note: The measured wind gust of 69 knots is equivalent to 79 mph.

## MINNESOTA, Central and South Central

**MNZ041-047>049-  
054>057-064>065-  
073**

**Chippewa - Douglas - Kandiyohi - Lac Qui Parle - Pope - Redwood - Renville - Stearns - Stevens - Swift - Todd - Yellow Medicine**

18	0330CST 1600CST				0	0	0.00K	0.00K	Blizzard
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**MNZ043>045-050-  
058**

**Benton - Kanabec - Meeker - Mille Lacs - Morrison**

18	0800CST 2000CST				0	0	0.00K	0.00K	Winter Storm
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A large synoptic scale storm system that originated across Colorado, moved northeast across the Plains and Upper Midwest from late Thursday November 17th, through early Saturday, November 19th. The bulk of the heavy snowfall occurred Friday morning through Friday afternoon, when locally 6 to 12 inches of snow fell across west central and into central Minnesota. In addition to the heavy snowfall, strong winds developed, creating blizzard conditions in west central Minnesota by Friday morning as the system intensified.

Initially, a band of mainly light precipitation spread northward into western Minnesota the early morning of Friday, November 18th. A couple of inches of snow fell along the Minnesota, South Dakota border, northeast to near Alexandria and Wadena before 6 am LST. In the warm sector, rain and some sleet occurred along with thunderstorms during the morning in southern Minnesota. Once the surface low moved from north central Iowa, northeast to west central Wisconsin, any mixture of sleet, rain or snow in western Minnesota, quickly changed over to all snow and became heavy with snowfall rates of 1 to 2 inches per hour.

The most intense time when both heavy snow and high winds occurred was between 6 am LST and 3 pm LST. This is when the pressure gradient strengthened and caused widespread wind speeds of 30 to 40 mph across southwest, and west central Minnesota. Highest gusts of 50 to 55 mph were recorded during the morning, and early afternoon.

Although the snow was wet and heavy, the combination of strong winds, and intense snowfall rates, produced blizzard conditions. The most snow fell in an area from Villard, Sauk Centre, north-northeast to Long Prairie, Little Falls and Camp Ripley. The heaviest snowfall in the state occurred in north central Minnesota and the arrowhead of Minnesota where up to two feet of snow fell. Once the snow tapered off in western Minnesota, surface visibility increased rapidly, gusty winds kept the area roadways snow covered, and no travel was recommended by the Minnesota Department of Transportation as numerous accidents occurred.

Some of the higher snowfall totals were...

12.2 inches north of Swanville, Minnesota in Todd County. 11.2 inches in Long Prairie. 9.8 inches in Milona. 9.2 inches in Villard. 8.5 inches north of Sauk Centre. 8.5 inches in Staples. 8.3 inches west of Donnelly in Stevens County. 8.0 inches near Carlos. 7.5 inches in Chokio. 7.3 inches in Morris. 7.0 inches in Little Falls. 6.0 inches in Canby and Rice.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MINNESOTA, Northeast

**MNZ010>012-019-025-033>035**

**Central St. Louis - Crow Wing - Koochiching - Northern Aitkin - Northern Cass - Northern Cook/Northern Lake - Northern St. Louis - Southern Cass**

17	2200CST								
18	1915CST				0	0			Heavy Snow

**MNZ018-026-036-037**

**Northern Itasca - Southern Aitkin - Southern Itasca - Southern St. Louis/Carlton**

18	0000CST								
	0600CST				0	0			Heavy Snow

**MNZ033-034**

**Crow Wing - Southern Cass**

18	0830CST								
	1630CST				0	0			Blizzard

An area of low pressure developed near Colorado and moved to the Upper Midwest Thursday and Friday, November 18th and 19th, bringing northeast Minnesota's first winter storm of the season after record warmth in November. Heavy snow, ranging from 8 to 25 inches, fell across northern Minnesota in a wide area from The Brainerd Lakes area through Grand Rapids, Nett Lake to Crane Lake and Ely and the Arrowhead. The snow began as rain and sleet but quickly changed over to snow in the evening of the 17th and overnight. There were intense snowfall rates of 1 to 3 per hour during the day. Two inches of snow fell in 30 minutes near Grand Rapids and 4 inches fell in 90 minutes between 11:00 am and 12:30 pm at Coleraine. The heavy snowfall rates brought very low visibility at times. Strong winds gusting over 40 mph created blizzard conditions, especially across Crow Wing County and portions of southern Cass County. The winds were the strongest at the head of Lake Superior where winds were gusting over 50 mph. The AWOS at the Sky Harbor Airport on Duluth's Park Point measured a gust of 55 mph around 11 am Friday. These strong east winds caused huge waves on Lake Superior where a Gale Warning was in effect. Waves were as high as 7 feet in the Duluth harbor's ship canal. The combination of heavy snow and strong winds brought down trees and power lines, which caused many power outages. The snow was accompanied by thunder and lightning at times. Some snowfall reports include 25.5 miles east of Leader, 24.8 near Orr, 19.4 miles south of Tower, 18 in Nisswa, 16.8 miles north-northwest of Coleraine, 14.2 at Kabetogama, 11 at Brainerd, 11.1 miles north-northwest of Whyte, 9 in Hoyt Lakes, 8.1 near Wright, 8.3 miles west of Iron Junction, Gunflint Lake with 7.2, and 6 in Floodwood. Locations along and near Lake Superior received had much less snow, with reports of about 5.3 in Lutsen, 4.8.5 miles northwest of Two Harbors, 3 to 3.5 in Duluth, 4 in Finland, 2.5 in Beaver Bay, and 3.3 in Silver Bay.

## MINNESOTA, Northwest

**MNZ029>031-040**

**East Otter Tail - Grant - West Otter Tail - Wilkin**

18	0000CST								
	1800CST				0	0			Blizzard

A Colorado Low moved into the Central Plains during the evening of November 17th, eventually tracking through central Iowa and into western Wisconsin on the 18th. This set up a strong southwest to northeast temperature gradient and even resulted in a few strong thunderstorms over southern Minnesota. Three to six inches of snow fell across the southern Red River Valley, but amounts increased to six to thirteen inches over portions of Grant and eastern Otter Tail counties. In combination with very gusty north winds, whiteout conditions developed. A 53 mph wind gust was reported at Tenney, Minnesota, and a 48 mph wind gust was reported at Fergus Falls, Minnesota. Several vehicles slid into ditches and a few schools closed for the day. Interstate 94 was closed several times to allow vehicles to be pulled out of the ditches.

**MNZ017-023-027>028-032**

**East Becker - Hubbard - South Beltrami - South Clearwater - Wadena - West Becker**

18	0000CST								
	1800CST				0	0			Winter Storm

A Colorado Low moved into the Central Plains during the evening of November 17th, eventually tracking through central Iowa and into western Wisconsin on the 18th. This set up a strong southwest to northeast temperature gradient and even resulted in a few strong thunderstorms over southern Minnesota. Six to fifteen inches of snow fell over the area, with the highest totals over Hubbard and eastern Becker counties. In combination with very gusty north winds, low visibilities developed. Several vehicles slid into ditches and a few schools closed for the day. The heavy snow also caused trees to snap, resulting in scattered power outages.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MINNESOTA, Southwest

### **MNZ089-098**

#### **Nobles - Rock**

18	0400CST 1500CST				0	0	0.00K	0.00K	Winter Storm
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### **MNZ071-080-097**

#### **Lincoln - Lyon - Murray - Pipestone**

18	0500CST 1800CST				0	0	0.00K	0.00K	Blizzard
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### **MNZ081-090**

#### **Cottonwood - Jackson**

18	0500CST 1700CST				0	0	0.00K	0.00K	Winter Weather
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Wet snow accumulated up to 7 inches in southwest Minnesota on November 18th. Northwest winds gusting as high as 57 mph combined with the falling snow to lower visibilities to below a quarter mile at times, making travel difficult. Wind chills were driven down into the teens, not an unusual level for mid November. However, the change to colder weather was sudden, as unseasonably warm weather had brought daytime temperatures as warm as the 60s within the previous five days.

## MINNESOTA, West Central

### **MNZ039-046**

#### **Big Stone - Traverse**

18	0600CST 1600CST				0	0	0.00K	0.00K	Blizzard
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A strong surface low pressure area moved northeast across the region and brought snowfall from 2 to 9 inches to west central Minnesota. Along with the snow, strong northwest sustained winds of 30 to 40 mph with gusts to 60 mph brought blizzard conditions to all of the region from the morning into the afternoon hours. The highest snowfall amount was near Ortonville with 9 inches. Travel was significantly affected. The snowfall began around 6 am and ended by 4 pm.

## MISSISSIPPI, Central

### **MSZ026-028>033-035>039-043>058-066**

#### **Attala - Choctaw - Claiborne - Clarke - Clay - Copiah - Grenada - Hinds - Holmes - Humphreys - Jasper - Jones - Kemper - Lauderdale - Leake - Lowndes - Madison - Montgomery - Neshoba - Newton - Noxubee - Oktibbeha - Rankin - Scott - Simpson - Smith - Warren - Webster - Winston**

01	0000CST				0	0	1.5M	0.00K	Drought
30	2359CST								

Dry conditions continued into November, which created continued stress on crops. Some locations were even classified as being in extreme drought. This drought classification expanded and covered much of the state by the end of the month.

### **MSZ018-025-034-040>041-059>065-072>074**

#### **Adams - Bolivar - Covington - Forrest - Franklin - Issaquena - Jefferson - Jefferson Davis - Lamar - Lawrence - Leflore - Lincoln - Marion - Sharkey - Sunflower - Washington**

15	0000CST				0	0	0.00K	800.0K	Drought
30	2359CST								

Dry conditions continued into November, which created continued stress on crops. The drought continued to get worse across the state through the month before some relief came in the form of showers and thunderstorms near the end of November.

### **MSZ057-066**

#### **Jasper - Jones**

28	1225CST				0	0	6.0K	0.00K	Strong Wind
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### **Washington County 1 NW Greenville**

28	1337CST				0	0	0.50K	0.00K	Thunderstorm Wind (43EG)
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A gutter was torn off of a house in Greenville.

Note: The estimated wind gust of 43 knots is equivalent to 49 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<b>MISSISSIPPI, Central</b>									
<b>Washington County</b> 1 ENE Leland	28	1348CST			0	0	10.00K	0.00K	Thunderstorm Wind (43EG) A tree was blown down on a house in Leland. Note: The estimated wind gust of 43 knots is equivalent to 49 mph.
<b>MSZ047-065-074</b>	<b>Covington - Forrest - Warren</b>								
	28	1400CST 1415CST			0	0	13.0K	0.00K	Strong Wind
<b>Humphreys County</b> 1 E Belzoni	28	1441CST			0	0	9.00K	0.00K	Thunderstorm Wind (53EG) Trees were blown down in Belzoni. Note: The estimated wind gust of 53 knots is equivalent to 61 mph.
<b>Warren County</b> 1 NE Cedars	28	1454CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG) Estimated 60mph wind gust in South Vicksburg. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
<b>Warren County</b> 1 SW Vicksburg Arpt	28	1500CST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG) A tree was blown down onto a house on Hartley Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
<b>Warren County</b> 1 SSE Waltersville 2 NNE Newmans	28	1500CST 1505CST			0	0	10.00K	0.00K	Thunderstorm Wind (52EG) Trees were blown down between Vicksburg and Bovina. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
<b>MSZ048</b>	<b>Hinds</b>								
	28	1505CST			0	0	12.0K	0.00K	Strong Wind
<b>Warren County</b> 3 ESE Yokena	28	1505CST			0	0	20.00K	0.00K	Thunderstorm Wind (50EG) A tree was blown down on a car near the intersection of Hankinson Road and Jeff Davis Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
<b>Yazoo County</b> 1 NE Eden	28	1507CST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG) A tree was blown down on the town hall building. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
<b>Yazoo County</b> 3 W Benton	28	1518CST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG) Trees were blown down along Old Benton Road and Sunny Lane. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
<b>Holmes County</b> Lexington	28	1520CST			0	0	8.00K	0.00K	Thunderstorm Wind (50EG) Trees and powerlines were blown down in Lexington. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
<b>Holmes County</b> 2 ESE Brozville 1 N Franklin	28	1521CST 1526CST			0	0	12.00K	0.00K	Thunderstorm Wind (54EG) Multiple trees were blown down Ebenezer Road and also along Highway 17. Note: The estimated wind gust of 54 knots is equivalent to 62 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
<b>MISSISSIPPI, Central</b>									
<b>Carroll County</b>									
<b>Vaiden</b>	28	1525CST			0	0	8.00K	0.00K	Thunderstorm Wind (50EG)
	Trees and powerlines were blown down. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
<b>Hinds County</b>									
<b>1 NNE Edwards</b>	28	1528CST			0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was blown down near the intersection of Highway 22 and Askew Ferry Road.  Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
<b>Attala County</b>									
<b>1 NE Possumneck</b>	28	1537CST			0	0	20.00K	0.00K	Thunderstorm Wind (52EG)
<b>12 SSE Ethel</b>		1617CST			0	0			
	Trees were blown down around Kosciusko, and scattered trees were down around the county.  Note: The estimated wind gust of 52 knots is equivalent to 60 mph.								
<b>Montgomery County</b>									
<b>4 ENE Poplar Creek</b>	28	1541CST			0	0	8.00K	0.00K	Thunderstorm Wind (50EG)
	Trees were blown down along Highway 413. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
<b>Webster County</b>									
<b>1 ENE Embry</b>	28	1544CST			0	0	33.00K	0.00K	Thunderstorm Wind (54EG)
	There was roughly a dozen trees blown down along Embry Road.  Note: The estimated wind gust of 54 knots is equivalent to 62 mph.								
<b>Webster County</b>									
<b>1 W Eupora Arpt</b>	28	1551CST			0	0	7.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was blown down on Grady Road and another was blown down on Lebanon Road.  Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
<b>Choctaw County</b>									
<b>4 W Sherwood</b>	28	1555CST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
<b>2 NNE Chester</b>		1601CST			0	0			
	Trees were blown down along the Natchez Trace Parkway and also along Highway 9.  Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
<b>Hinds County</b>									
<b>2 ESE Cayuga</b>	28	1607CST			0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was blown down along Tom Cain Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
<b>Leake County</b>									
<b>1 S Thomastown</b>	28	1607CST			0	0	20.00K	0.00K	Thunderstorm Wind (52EG)
<b>1 W Edinburg</b>		1645CST			0	0			
	Trees were blown down across the northwestern and northeastern part of the county.  Note: The estimated wind gust of 52 knots is equivalent to 60 mph.								
<b>MSZ031</b>									
<b>Lowndes</b>									
	28	1610CST			0	0	10.0K	0.00K	Strong Wind
		1620CST			0	0			
<b>Madison County</b>									
<b>Rocky Hill</b>	28	1614CST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A telephone line was blown down along Greens Crossing Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								



# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MISSISSIPPI, Central

### Hinds County

3 N Fairchilds Xrds

28	1615CST				0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was blown down near the intersection of Old Port Gibson Road and Short Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Hinds County

5 W Cynthia

28	1615CST				0	0	7.00K	0.00K	Thunderstorm Wind (52EG)
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Trees were blown down in the Bellewood subdivision.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### Copiah County

Carpenter

3 WSW Gatesville

28	1622CST				0	0	20.00K	0.00K	Thunderstorm Wind (52EG)
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Multiple trees were blown down in the northwest and northeast parts of the county.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### Oktibbeha County

2 SE Starkville

28	1632CST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Power lines were blown down around Highway 12 and the intersection of South Montgomery and Hancock Street.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Clay County

1 W West Pt

28	1638CST				0	0	15.00K	0.00K	Thunderstorm Wind (52EG)
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Numerous large trees were blown down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### Neshoba County

1 N Laurelhill

2 NNW Hope

28	1646CST				0	0	12.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were blown down along Highway 427 near the Leake/Neshoba county line. Trees and powerlines were also blown down on County Road 147.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Lowndes County

2 N Interstate City

College

28	1703CST				0	0	12.00K	0.00K	Thunderstorm Wind (50EG)
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A power pole was blown down along Ridge Road. A tree was also blown down near the intersection of Military Road and 4th Avenue.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Winston County

8 SE Noxapater

28	1706CST				0	0	30.00K	0.00K	Thunderstorm Wind (52EG)
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Some houses had roof damage and a barn was destroyed.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### Lowndes County

4 S Columbus/Lowndes

Co 5 NNE Forresteron

28	1716CST				0	0	15.00K	0.00K	Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

Trees and powerlines were blown down in the southeast part of the county.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### Neshoba County

Philadelphia

28	1720CST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was blown down on home on West Myrtle Street.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Noxubee County

1 SE Brooksville

28	1730CST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Road signs were bent over along Highway 45.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<b>MISSISSIPPI, Central</b>									
<b>Noxubee County</b>									
1 NE Shuqualak	28	1730CST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
			A large tree was snapped.						
			Note: The estimated wind gust of 50 knots is equivalent to 58 mph.						
<b>Smith County</b>									
1 NE Polkville	28	1744CST							
4 NE Pineville		1807CST			0	0	25.00K	0.00K	Thunderstorm Wind (52EG)
			Trees were blown down across the northern part of the county.						
			Note: The estimated wind gust of 52 knots is equivalent to 60 mph.						
<b>Lauderdale County</b>									
1 E Post	28	1754CST			0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
			A tree was blown down across Mayatt Road.						
			Note: The estimated wind gust of 50 knots is equivalent to 58 mph.						
<b>Newton County</b>									
1 E Popular Spgs	28	1816CST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
			Trees were blown down at Potterchitto Road at Airport Road.						
			Note: The estimated wind gust of 50 knots is equivalent to 58 mph.						
<b>Newton County</b>									
2 N Hickory	28	1820CST			0	0	0.00K	0.00K	Hail (0.88)
			Nickel sized hail fell on Interstate 20 near Hickory.						
<b>Lauderdale County</b>									
1 NE Meridian	28	1841CST			0	0	15.00K	0.00K	Thunderstorm Wind (52EG)
			Multiple trees were blown down in the City of Meridian.						
			Note: The estimated wind gust of 52 knots is equivalent to 60 mph.						
<b>Jasper County</b>									
2 W Waldrup	28	2140CST			0	0	4.00K	0.00K	Thunderstorm Wind (50EG)
			A tree was blown down along Highway 528.						
			Note: The estimated wind gust of 50 knots is equivalent to 58 mph.						
<b>Newton County</b>									
6 SSE Hickory	28	2155CST			0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
			A tree was blown down along County Road 2422.						
			Note: The estimated wind gust of 50 knots is equivalent to 58 mph.						
<b>Covington County</b>									
1 SW Collins Jaycee Arpt	28	2220CST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
			A powerline was blown down in Collins.						
			Note: The estimated wind gust of 50 knots is equivalent to 58 mph.						
<b>Claiborne County</b>									
4 WSW Westside	29	1345CST							
1 N Carlisle		1428CST			0	0	0.00K	0.00K	Hail (1.00)
			A swath of hail occurred across portions of Claiborne County. Quarter size hail occurred on the Alcorn State University campus as well as around Port Gibson.						
<b>Washington County</b>									
1 S Metcalf	29	1450CST							
2 NNE Helm		1512CST			0	0	2.00K	0.00K	Hail (1.25)
			A swath of hail occurred across portions of Washington County. The largest hail that fell was half dollar size in Metcalfe.						
<b>Sunflower County</b>									
1 NW Fairview	29	1516CST							
5 E Doddsville		1539CST			0	0	10.00K	0.00K	Hail (2.75)
			A thunderstorm moved out of Washington County and tracked northeast through Sunflower County. It brought a swath of hail to the county. The largest that fell was baseball size just to the southwest of Doddsville.						

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MISSISSIPPI, Central

### Rankin County

2 NNW Greenfield	29	1520CST			0	0	10.00K	0.00K	Hail (1.75)
1 NW Rice Hill		1524CST							

A thunderstorm moved through Brandon and hail fell that ranged from half dollar size to golfball size.

### Madison County

3 ESE Sloan	29	1551CST			0	0	0.00K	0.00K	Hail (1.00)
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Penny to quarter sized hail fell south of Canton.

### Holmes County

2 ESE Choctaw	29	1553CST			0	0	4.00K	0.00K	Hail (1.75)
1 NNW Emory		1624CST							

A thunderstorm brought a swath of hail to Holmes County, which included quarter to golfball size hail in Tchula.

### Holmes County

1 E Tchula	29	1557CST			0	0	15.00K	0.00K	Thunderstorm Wind (53EG)
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Multiple trees were blown down in the Tchula area.

Note: The estimated wind gust of 53 knots is equivalent to 61 mph.

### Rankin County

2 SSW Leesburg	29	1557CST			0	0	30.00K	0.00K	Tornado (EF1)
		1559CST	2.68	200					

This tornado touched down in the Leesburg community at the intersection of Harrell Rd and Leesburg Rd and tracked to the northeast. Before exiting Rankin County, the tornado downed trees and broke many large tree limbs. The heaviest tree damage was along Munn Rd where a few dozen trees were snapped/uprooted. The tornado was at its peak as it entered into Scott County and crossed Highway 481 and Measles Rd. Here, multiple trees were snapped along with some power lines down. A few homes were damaged by fallen trees along with a few having minor roof damage from the tornado. Several sheds or outbuildings were destroyed as well. The tornado continued to the northeast as it crossed Highway 13 north of Forkville. Sporadic tree damage occurred as it crossed many rural roads in northern Scott County. The tornado tracked into southeast Leake County just on the south side of Walnut Grove as it crossed Highway 35. More trees were down along Highway 492 just west of the correctional facility. The tornado dissipated just to the northeast of that location. The total path length of the entire tornado was 23.6 miles and total path width was 300 yards. Maximum estimated winds were 100mph.

### Scott County

2 W Groveton	29	1559CST			0	0	120.00K	0.00K	Tornado (EF1)
4 WNW Horseshoe		1629CST	18.55	300					

This tornado touched down in the Leesburg community at the intersection of Harrell Rd and Leesburg Rd and tracked to the northeast. Before exiting Rankin County, the tornado downed trees and broke many large tree limbs. The heaviest tree damage was along Munn Rd where a few dozen trees were snapped/uprooted. The tornado was at its peak as it entered into Scott County and crossed Highway 481 and Measles Rd. Here, multiple trees were snapped along with some power lines down. A few homes were damaged by fallen trees along with a few having minor roof damage from the tornado. Several sheds or outbuildings were destroyed as well. The tornado continued to the northeast as it crossed Highway 13 north of Forkville. Sporadic tree damage occurred as it crossed many rural roads in northern Scott County. The tornado tracked into southeast Leake County just on the south side of Walnut Grove as it crossed Highway 35. More trees were down along Highway 492 just west of the correctional facility. The tornado dissipated just to the northeast of that location. The total path length of the entire tornado was 23.6 miles and total path width was 300 yards. Maximum estimated winds were 100mph.

### Grenada County

3 W Oxberry	29	1611CST			0	0	0.00K	0.00K	Hail (1.00)
1 NNE Kirkman		1633CST							

A swath of quarter sized hail occurred across western and northern Grenada County, including near Holcomb and Grenada.

### Grenada County

3 WNW Troy	29	1620CST			0	0	40.00K	0.00K	Thunderstorm Wind (78EG)
		1624CST							

Numerous trees were blown down across the northwest portions of the county near McSwine and Pea Ridge roads. The strong winds also caused roof damage and window damage to some homes, as well as damage to a garage. The length of this microburst damage was 4.8 miles and the width was 6160 yards.

Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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## MISSISSIPPI, Central

### **Leake County**

<b>1 WSW Walnut Grove</b>	29	1629CST 1637CST	2.72	100	0	0	50.00K	0.00K	Tornado (EF0)
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This tornado touched down in the Leesburg community at the intersection of Harrell Rd and Leesburg Rd and tracked to the northeast. Before exiting Rankin County, the tornado downed trees and broke many large tree limbs. The heaviest tree damage was along Munn Rd where a few dozen trees were snapped/uprooted. The tornado was at its peak as it entered into Scott County and crossed Highway 481 and Measles Rd. Here, multiple trees were snapped along with some power lines down. A few homes were damaged by fallen trees along with a few having minor roof damage from the tornado. Several sheds or outbuildings were destroyed as well. The tornado continued to the northeast as it crossed Highway 13 north of Forkville. Sporadic tree damage occurred as it crossed many rural roads in northern Scott County. The tornado tracked into southeast Leake County just on the south side of Walnut Grove as it crossed Highway 35. More trees were down along Highway 492 just west of the correctional facility. The tornado dissipated just to the northeast of that location. The total path length of the entire tornado was 23.6 miles and total path width was 300 yards. Maximum estimated winds were 100mph in Scott County. The tornado was rated an EF0 in Leake County, but overall was rated an EF1.

### **Carroll County**

<b>Vaiden</b>	29	1630CST			0	0	0.00K	0.00K	Hail (1.00)
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### **Leake County**

<b>1 N Walnut Grove</b>	29	1631CST			0	0	10.00K	0.00K	Hail (2.00)
<b>2 NE Madden</b>		1644CST			0	0	10.00K	0.00K	Hail (2.00)

A swath of hail occurred in southern Leake County, including ping pong ball sized hail near Walnut Grove. The largest reported hail was 2 inch hail just to the west of Madden.

### **Warren County**

<b>1 N Ballground</b>	29	1631CST			0	0	0.00K	0.00K	Hail (1.00)
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### **Yazoo County**

<b>Eldorado</b>	29	1640CST			0	0	100.00K	0.00K	Thunderstorm Wind (50EG)
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A home was completely destroyed by a fallen tree.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Neshoba County**

<b>2 S Laurelhill</b>	29	1649CST			0	0	12.00K	0.00K	Hail (2.75)
<b>1 SSW Hope</b>		1655CST			0	0	12.00K	0.00K	Hail (2.75)

A swath of hail occurred in western Neshoba County. Hail up to baseball size was observed between Hope and Laurel Hill.

### **Montgomery County**

<b>1 NE Kilmichael</b>	29	1650CST			0	0	0.00K	0.00K	Hail (0.75)
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### **Yazoo County**

<b>1 N Bentonia</b>	29	1700CST			0	0	0.00K	0.00K	Hail (1.00)
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### **Leflore County**

<b>1 E Money</b>	29	1716CST			0	0	8.00K	0.00K	Thunderstorm Wind (50EG)
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A couple of powerlines were blown down near Money.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Webster County**

<b>1 W Eupora</b>	29	1724CST			0	0	15.00K	0.00K	Hail (1.75)
<b>3 ESE Daney</b>		1748CST			0	0	15.00K	0.00K	Hail (1.75)

A swath of hail occurred across Webster County, with the largest reported hail being golfball size just east of Walthall.

### **Grenada County**

<b>1 E Grenada</b>	29	1748CST			0	0	0.00K	0.00K	Hail (1.00)
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### **Winston County**

<b>5 S Fearn's Spgs</b>	29	1749CST 1752CST	2.31	170	0	0	150.00K	0.00K	Tornado (EF1)
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# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MISSISSIPPI, Central

This tornado touched down on C McDonald Rd and tracked northeast into Noxubee County. Multiple trees were blown down just after touchdown and as it crossed Jr Boy Goodin Rd. One home had a large tree on it, two mobile homes had skirting blown out and a large tractor shed was demolished. The tornado peaked as it crossed Ebenezer Church Rd. Here a few dozen trees were snapped/uprooted. One mobile home was heavily damaged and some power lines were down. The tornado continued northeast into a heavily wooded area and moved into Noxubee County. A tornadic debris signature was noted during this time. Several trees were snapped as it crossed Butler Rd. The tornado dissipated just to the northeast of that location. The maximum estimated winds were 105 mph. Total path length of the tornado was 4.6 miles.

### Clay County

2 SW Pinebluff	29	1750CST							
2 SE Montpelier		1758CST			0	0	10.00K	0.00K	Hail (1.75)

A swath of hail occurred across western Clay County, with the largest hailstone reported being golfball size around Montpelier.

### Grenada County

2 SSW Grenada Lake	29	1750CST			0	0	12.00K	0.00K	Thunderstorm Wind (52EG)
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Multiple trees were blown down in at the entrance to Hugh White State Park.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### Noxubee County

6 WNW Gholson	29	1752CST							
5 WSW Macedonia		1800CST	3.22	100	0	0	30.00K	0.00K	Tornado (EF1)

This tornado touched down on C McDonald Rd and tracked northeast into Noxubee County. Multiple trees were blown down just after touchdown and as it crossed Jr Boy Goodin Rd. One home had a large tree on it, two mobile homes had skirting blown out and a large tractor shed was demolished. The tornado peaked as it crossed Ebenezer Church Rd. Here a few dozen trees were snapped/uprooted. One mobile home was heavily damaged and some power lines were down. The tornado continued northeast into a heavily wooded area and moved into Noxubee County. A tornadic debris signature was noted during this time. Several trees were snapped as it crossed Butler Rd. The tornado dissipated just to the northeast of that location. The maximum estimated winds were 105 mph. Total path length of the tornado was 4.6 miles. Maximum path width was 170 yards, which occurred in Winston County.

### Oktibbeha County

9 SSW Sessums	29	1752CST							
		1758CST	3.59	150	0	0	45.00K	0.00K	Tornado (EF1)

The tornado started near Skinner Road and traveled 3.5 miles north northeast before lifting after crossing Robinson Road. Minor to moderate tree damage was mixed with a few instances of minor structural and roof damage to residences along its path. The worst damage was north of Oktoc, near Browning Creek Road and Robinson Road. The maximum estimated winds were 110mph.

### Clay County

2 NE Abbott	29	1812CST							
		1815CST	2.92	50	0	0	20.00K	0.00K	Tornado (EF1)

The tornado traveled roughly three miles northeast through northern Clay County before exiting into Monroe County at 6:15pm. The tornado tracked for a total of 9 miles. Mostly minor to moderate tree damage occurred with one structure having suffered roof damage near the county line. The maximum estimated wind speed was 110mph. The total path width was 200 yards, which occurred in Monroe County.

### Attala County

3 SSE Williamsville	29	1823CST			0	0	0.00K	0.00K	Hail (1.00)
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Nickel to quarter size hail fell.

### Yazoo County

2 WNW Enola	29	1855CST			0	0	25.00K	0.00K	Thunderstorm Wind (50EG)
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A tree fell on a home which caused some roof and structural damage.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MISSISSIPPI, Central

### **Lowndes County**

4 N Trinity	29	2012CST							
4 SSW Columbus		2019CST	3.48	100	0	0	50.00K	0.00K	Tornado (EF1)

This tornado traveled north northeast just southwest of Columbus for a distance of 3.5 miles, mostly doing minor to moderate tree damage. One farm pivot was heavily damaged near the intersection of Limerock Road and Sally Freeman Road. The maximum estimated winds were 105mph.

### **Warren County**

1 SW Haynes Bluff	29	2135CST			0	0	7.00K	0.00K	Thunderstorm Wind (50EG)
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Powerlines were blown down along Highway 3.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Holmes County**

1 NE Gwin	29	2215CST			0	0	8.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were blown down just east of Tchula.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Clay County**

1 E Abbott	29	2300CST			0	0	5.00K	0.00K	Thunderstorm Wind (53EG)
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The porch of a home was damaged and a trampoline and large playset in the yard were destroyed.

Note: The estimated wind gust of 53 knots is equivalent to 61 mph.

### **Winston County**

3 SSW Noxapater	29	2349CST			0	0	15.00K	0.00K	Thunderstorm Wind (53EG)
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Multiple trees were blown down along Highway 15 between Noxapater and the Neshoba/Winston county line.

Note: The estimated wind gust of 53 knots is equivalent to 61 mph.

### **Hinds County**

1 E Bolton	30	0006CST			0	0	0.00K	0.00K	Hail (0.75)
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### **Noxubee County**

Brooksville	30	0034CST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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A large highway sign was broken off just north of the Shell station on US Highway 45.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Oktibbeha County**

1 N Starkville Bryan Arp	30	0054CST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Siding was blown off of a home on the west side of Starkville.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Rankin County**

2 ESE Greenfield	30	0300CST			0	0	30.00K	0.00K	Lightning
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Lightning struck a house on Greenfield Ridge Drive, which resulted in a small fire in the attic.

### **Jones County**

2 NNE Tuckers	30	0707CST			0	0	5.00K	0.00K	Thunderstorm Wind (45EG)
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Trees were blown down near the bridge on Bush Road.

Two separate bouts of severe weather impacted a large portion of the ArkLaMiss region over a two day period in late November. The first event began on the afternoon of Monday, November 28th and ended around midnight on Tuesday, November 29th. A potent upper level low pressure system spinning over the Northern Plains caused a strong surface low pressure system to develop and rapidly race northeast from the Central Plains to the Great Lakes region. This resulted in a strong cold front racing east into and through the ArkLaMiss region. As it did so, it encountered a strongly wind-sheared and marginally unstable air mass over the area. This equated to a line of storms racing east across the ArkLaMiss, that downed numerous trees and powerlines across the area. Numerous trees were also reported down well ahead of the front due to widespread sustained gradient winds between 25-35 mph, gusting between 40-50 mph at times over the ArkLaMiss. After this cold front pushed through the region, it stalled near the central gulf coast Tuesday morning, aiding in setting the stage for the second bout of severe weather that would affect the region from Tuesday afternoon into the early morning hours of Wednesday, November 30th.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MISSISSIPPI, Central

Another piece of upper level energy associated with the low pressure system aloft over the Northern Plains, approached the Southeast United States Tuesday afternoon. As this happened, it caused the front stalled south of the area to begin lifting north through the area as a warm front. As warm moist unstable air overspread the region from the south, both wind shear and forcing over the region became adequate, such that supercell thunderstorms began developing and moving northeast through the area. Numerous storms became severe and produced damaging wind gusts and large hail, primarily ranging from quarter to golfball size. Hen egg size hail was reported in Leake County, while baseball size hail was reported from storms in Sunflower and Neshoba counties. A total of five tornadoes were also confirmed with supercells across the ArkLaMiss. All five of these tornadoes were rated EF1, with one such tornado cutting a 23.6 mile damage path from NE Rankin County through Scott & Leake counties. Another tornado affected Winston and Noxubee counties. Three more tornado damage paths were found in Oktibbeha, Clay, and Lowndes counties.

As a cold front finally pushed east and through the ArkLaMiss early Wednesday morning, severe weather finally came to an end across the entire area around sunrise. Note: The estimated wind gust of 45 knots is equivalent to 52 mph.

## MISSISSIPPI, North

**MSZ002>004-009>  
017-020>024**

**Benton - Calhoun - Chickasaw - Coahoma - Itawamba - Lafayette - Lee - Marshall - Monroe - Panola - Pontotoc - Prentiss - Quitman - Tallahatchie - Tippah - Union - Yalobusha**

01	0000CST								
30	2359CST			0	0				Drought

Abnormally dry weather continued during the month of November and fueled the spread of at least moderate (D2) drought conditions over most portions of the Mid-South. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. Dry conditions negatively impacted pastures, triggering more feeding of hay, and causing concern for hay shortages for the winter months. The drought caused river and lake levels to be at low levels.

**MSZ005**

**Alcorn**

08	0600CST								
30	2359CST			0	0				Drought

Abnormally dry weather continued during the month of November and fueled the spread of at least moderate (D2) drought conditions over most portions of the Mid-South. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. Dry conditions negatively impacted pastures, triggering more feeding of hay, and causing concern for hay shortages for the winter months. The drought caused river and lake levels to be at low levels.

**MSZ001-007-008**

**De Soto - Tate - Tunica**

15	0600CST								
30	2359CST			0	0				Drought

Abnormally dry weather continued during the month of November and fueled the spread of at least moderate (D2) drought conditions over most portions of the Mid-South. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. Dry conditions negatively impacted pastures, triggering more feeding of hay, and causing concern for hay shortages for the winter months. The drought caused river and lake levels to be at low levels.

**Monroe County**

**5 NE Amory  
2 SSW Smithville**

28	1645CST								
	1650CST			0	0	0.00K			Thunderstorm Wind (50EG)

Multiple trees down between Amory and Smithville.

A potent late fall storm brought warm air northward into Northeast Mississippi triggering a lone severe thunderstorm during the late afternoon hours of November 28th. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

**Tallahatchie County**

**Cascilla**

29	1610CST								
	1620CST			0	0	0.00K			Hail (1.25)

Hail covered the ground in Cascilla. Hail was up to half dollar size.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MISSISSIPPI, North

### **Calhoun County** 7 WSW Pittsboro

29	1700CST 1720CST				0	0	20.00K	0.00K	Thunderstorm Wind (50EG)
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Power lines reported down across Calhoun County.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Chickasaw County** 3 WSW Houka

29	1725CST 1735CST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Trees down in Houka.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Lee County** 5 SW (TUP)Lemons Arprt Tup

29	1753CST 1758CST				0	0			Hail (1.00)
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### **Monroe County** 3 W Muldon 3 WNW Binford

29	1815CST 1825CST	5.98	200		0	0	200.00K		Tornado (EF1)
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This tornado started in Clay County Mississippi and tracked into Monroe County at 615pm. Shortly there after it took a chimney off a house, damaged two outbuildings moving them off their foundation, and twisted and snapped trees. The tornado then moved across Highway 45 alternate where a semi truck was blown over and several power poles were damaged. Near the end of the track the tornado damaged multiple cars and trucks, damaged a barn roof and two farmsteads, and several trees all along highway 25 near Homestead and Binford roads before dissipating at 625pm.

### **Calhoun County** Pittsboro

29	1821CST 1823CST				0	0			Hail (1.25)
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Hail ranged in size from a quarter to a half dollar.

### **Itawamba County** 2 N Fulton

29	1823CST 1828CST				0	0	30.00K	0.00K	Thunderstorm Wind (50EG)
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Roof blown off at a discount grocery store near the dock.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Tishomingo County** Belmont

29	1830CST 1835CST				0	0			Hail (0.88)
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A strong late fall storm system tracked across the Midsouth during the late afternoon and early evening hours of November 29th. The most intense thunderstorms with all modes of severe weather occurred across North Mississippi.

## MISSISSIPPI, Southeast

### **MSZ067-075-078> 079**

### **George - Greene - Perry - Stone - Wayne**

01	0000CST				0	0	0.00K	0.00K	Drought
30	2359CST				0	0	0.00K	0.00K	Drought

An extensive period of dry weather resulted in worsening drought conditions, with extreme drought conditions developing over all of southeast Mississippi.



# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MISSOURI, Lower

### MOZ113-115

### Dunklin - Pemiscot

22	0600CST								
30	2359CST				0	0			Drought

Abnormally dry weather continued during the month of November and fueled the spread of at least moderate (D2) drought conditions over most portions of the Mid-South. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. Dry conditions negatively impacted pastures, triggering more feeding of hay, and causing concern for hay shortages for the winter months. The drought caused river and lake levels to be at low levels.

## MISSOURI, Northwest

### Clay County

2 SE North Kansas City	02	1402CST			0	0	0.00K	0.00K	Hail (0.88)
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### Platte County

1 E Parkville	02	1402CST			0	0	0.00K	0.00K	Hail (0.75)
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### Clay County

2 NE Bigham Hgt	02	1407CST			0	0	0.00K	0.00K	Hail (1.00)
		1408CST			0	0	0.00K	0.00K	Hail (1.00)

### Clay County

1 WNW Claycomo	02	1407CST			0	0	0.00K	0.00K	Hail (1.50)
		1408CST			0	0	0.00K	0.00K	Hail (1.50)

Report received from Twitter from 64th and Antioch Road.

### Clay County

1 E Linden	02	1408CST			0	0	0.00K	0.00K	Hail (1.00)
		1410CST			0	0	0.00K	0.00K	Hail (1.00)

### Clay County

1 E Linden	02	1410CST			0	0			Hail (1.25)
		1413CST			0	0			Hail (1.25)

### Clay County

2 E Bigham Hgt	02	1413CST			0	0	0.00K	0.00K	Hail (0.88)
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### Clay County

1 W Glenaire	02	1417CST			0	0			Hail (2.00)
		1421CST			0	0			Hail (2.00)

Report received via Twitter.

### Clay County

1 SW Liberty Mitchell Arp	02	1423CST			0	0	0.00K	0.00K	Hail (1.75)
		1426CST			0	0	0.00K	0.00K	Hail (1.75)

Report via video sent to office Twitter account.

### Clay County

1 E Liberty	02	1425CST			0	0			Hail (1.50)
		1428CST			0	0			Hail (1.50)

### Clay County

1 E Liberty	02	1426CST			0	0	0.00K	0.00K	Hail (1.00)
		1427CST			0	0	0.00K	0.00K	Hail (1.00)

### Clay County

1 SW Liberty	02	1427CST			0	0	0.00K	0.00K	Hail (1.25)
		1429CST			0	0	0.00K	0.00K	Hail (1.25)

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MISSOURI, Northwest

### **Clay County**

**1 E Liberty**

02	1429CST 1430CST				0	0	0.00K	0.00K	Hail (1.00)
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Report came from the corner of Jewell and Kansas Streets.

### **Clay County**

**1 NW Gladstone**

02	1430CST 1431CST				0	0	0.00K	0.00K	Hail (1.00)
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### **Clay County**

**1 NE Missouri City**

02	1445CST 1448CST				0	0			Hail (1.75)
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Report came from Missouri Highway 210 east of Missouri City.

On the afternoon of November 2, 2016 a lone supercell formed just west of the Kansas City Metro area and moved eastward into the far northern part of the city. The storm intensified as it went through the Liberty and Gladstone areas, and it produced golf ball to tennis ball sized hail. As it moved through Missouri City it gradually weakened. Later in the evening another storm formed in Johnson County, Kansas and moved eastward into southern Jackson County producing some minor wind and small hail.

## MISSOURI, Southeast

**MOZ076-086-100-107>112-114**

### **Bollinger - Butler - Cape Girardeau - Carter - Mississippi - New Madrid - Perry - Ripley - Scott - Stoddard - Wayne**

01	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Severe drought conditions spread into extreme southeast Missouri, southeast of a line from Cape Girardeau to Poplar Bluff. Moderate drought conditions encompassed the remainder of southeast Missouri. A lack of precipitation caused soil moisture to decrease rapidly. Pasture land deteriorated, causing some farmers to begin feeding hay to livestock. Stock ponds began to run low. Some farmers began hauling in water for their livestock. Across the Mississippi River, Paducah, Kentucky recorded its driest September-October combination on record. Only about one-quarter inch of rain fell during the first few weeks of November. This lack of precipitation, combined with above normal temperatures, contributed to the rapid onset of drought conditions. At Paducah, 1.28 inches of rain fell from September 1 to November 18. This was 8.69 inches below normal for that period. Small streams as well as larger rivers were running well below normal. A heavy rainfall event late in the month brought some improvement in the drought.

13	0000CST 0800CST				0	0	0.00K	0.00K	Frost/Freeze
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**MOZ086-100-107>112-114**

### **Bollinger - Butler - Cape Girardeau - Carter - Mississippi - New Madrid - Ripley - Scott - Stoddard - Wayne**

13	0000CST 0800CST				0	0	0.00K	0.00K	Frost/Freeze
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The first widespread freeze of the season ended the growing season across southeast Missouri. Low temperatures were in the mid to upper 20's. Widespread heavy frost was observed. A sprawling high pressure system moved southeast from the northern Plains to the Ohio Valley, bringing unseasonably cold air.

**MOZ100-107>111-114**

### **Butler - Carter - New Madrid - Ripley - Scott - Stoddard - Wayne**

27	0000CST 0900CST				0	0	0.00K	0.00K	Dense Fog
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Widespread dense fog blanketed parts of southeast Missouri, mainly south and west of Cape Girardeau. Visibility was reduced to one-quarter mile or less during the overnight hours and the early morning. High pressure over the middle Mississippi Valley and Lower Ohio Valley during the evening resulted in light winds and clear skies. These conditions were favorable for dense fog.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## MONTANA, Central

### MTZ011

#### Hill

06	1453MST				0	0	0.00K	0.00K	High Wind
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A cold front moved through the area during the afternoon hours and was accompanied by a short period of strong winds.

### MTZ009-048-050

#### Eastern Glacier - Judith Basin - North Rocky Mountain Front - Southern Rocky Mountain Front

14	0022MST				0	0	0.00K	0.00K	High Wind
	1742MST								

Strong winds aloft mixed down to the surface creating a period of strong winds across parts of central Montana.

### MTZ055

#### Gallatin

16	1630MST				0	0	0.00K	0.00K	Winter Storm
	2030MST								

A band of heavy snow developed over far Southwest Montana, putting down several inches of snow in a short amount of time. Impacts were greatest in the West Yellowstone area.

### MTZ051

#### Fergus

28	1324MST				0	0	0.00K	0.00K	High Wind
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A surface low over the Dakotas produced gusty northwest winds over eastern sections of central Montana with a few gusts close to 60 mph reported.

## MONTANA, East

### MTZ024-025

#### Dawson - Richland

28	2200MST				0	0	0.00K	0.00K	Winter Storm
30	1200MST								

A wet and progressive storm system from the Pacific Northwest combined with a push of colder air from the Canadian Rockies to produce accumulating and blowing snow across portions of northeast Montana.

## MONTANA, South

### MTZ034-039-056-067

#### Absarokee/Beartooth Mountains - Eastern Carbon - Northern Stillwater - Red Lodge Foothills

16	1500MST				0	0	0.00K	0.00K	Winter Storm
18	1216MST								

A cold front moved across the Billings Forecast Area during the late afternoon into the evening hours on the 16th. This resulted in a cold, moist easterly upslope flow over the Beartooth/Absaroka Mountains and adjacent foothills. At the same time, an upper low moved across southern Wyoming providing additional upslope flow to the mountain locations. As a result, significant snow accumulations occurred over the Beartooth/Absaroka Mountains and adjacent foothills.

### MTZ032-036>037

#### Carter - Custer - Fallon - Powder River

28	1300MST				0	0	0.00K	0.00K	Winter Storm
29	1700MST								

A very strong surface low moved northeast out of Colorado into the eastern Dakotas and western Minnesota. This low pulled moisture northward from the Gulf of Mexico and wrapped it around the low westward into the western Dakotas and the far eastern counties of Montana. In addition, tight pressure gradients across eastern Montana resulted in very gusty northwest winds. As a result, heavy snow along with blowing and drifting snow, as well as significantly reduced visibilities were reported across portions of southeast Montana.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## NEBRASKA, Central

**NEZ005>007-023>  
025-035>036-059**

**Arthur - Boyd - Eastern Cherry - Grant - Hooker - Keya Paha - Lincoln - McPherson - Thomas**

17	1500CST				0	0	0.00K	0.00K	Winter Storm
18									

A winter storm produced heavy snowfall beginning in the afternoon hours on November 17th continuing into the morning hours on November 18th across portions of western and north central Nebraska. Snowfall amounts ranged from 4 to 7 inches across much of the area. Northwest winds increased to 25 to 35 mph with some gusts to 40 mph during the evening and overnight hours. This caused areas of blowing and drifting with visibility as low as a quarter mile at times.

## NEBRASKA, East

**NEZ011**

**Knox**

18	0200CST				0	0	0.00K	0.00K	Heavy Snow
	1700CST								

An intense cyclone moved from the high Plains through the central Plains and into the upper Mississippi River Valley. This brought strong winds and the first snow of the season to parts of northeast Nebraska. Rain spread into the area during the early morning on the 18th and quickly changed to snow. The snow continued through the morning hours before tapering to flurries by afternoon on the 18th. A period of heavy snow was observed during the early morning on the 18th. The system also brought strong winds to the area, with many gusts over 50 mph for a time on the 18th. The blowing and drifting snow was significantly limited though due to the heavy wet nature of the snowfall.

## NEBRASKA, Extreme Northeast

**NEZ013**

**Dixon**

18	0500CST				0	0	0.00K	0.00K	Winter Weather
	1500CST								

Wet snow accumulated 1 to 3 inches in Dixon County of far northeast Nebraska. Northwest winds gusting as high as 50 mph combined with the falling snow to lower visibilities to around a half mile at times. Wind chills were driven down into the teens to lower 20s, not an unusual level for mid November. However, the change to colder weather was sudden, as unseasonably warm weather had brought daytime temperatures as warm as the 60s and 70s within the previous five days.

## NEBRASKA, South Central

**Dawson County  
3 SE Darr**

27	1542CST				0	0	0.00K	0.00K	Hail (0.88)
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Hail was reported by a truck driver on Interstate 80 near mile marker 230.

**Franklin County  
3 WSW Upland**

27	1602CST				0	0	0.00K	0.00K	Tornado (EF0)
	1604CST	0.53	20						

A combination of reports and a search for damage were used to determine that a short, roughly one minute long tornado occurred. The maximum wind speed was estimated to be 70 MPH.

**Howard County  
St Paul**

27	1616CST				0	0	0.00K	0.00K	Hail (0.88)
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**Webster County  
Red Cloud**

27	1625CST				0	0	0.00K	0.00K	Hail (1.00)
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**Webster County  
2 WSW Amboy**

27	1632CST				0	0	150.00K	0.00K	Tornado (EF1)
	1639CST	3.79	60						

This tornado uprooted trees, destroyed an outbuilding, upset 2 irrigation pivots and caused other minor damage along its path. The maximum wind speed was estimated to be 95 MPH.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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## NEBRASKA, South Central

### **Nuckolls County**

**6 NW Nelson**

**6 WNW Angus**

27	1700CST								
	1705CST	4.2	50	0	0	3.00K	0.00K		Tornado (EF0)

This tornado caused very minor damage along its short path through rural areas. The maximum wind speed was estimated to be 75 MPH.

Rare November tornadoes touched down in parts of Franklin, Webster, and Nuckolls Counties late on this Sunday afternoon. This was the second year in a row in which a tornado touched down in south central Nebraska during the month of November. This was only the fourth time since 2000 that a tornado occurred in the state of Nebraska during the month of November. Additionally, this event marked the second latest calendar day in which tornadoes touched down in Nebraska. The latest was December 13, 1975, when tornadoes occurred in Thayer and Pawnee Counties.

Low stratus enveloped the region on this day, with patches of light rain moving southwest to northeast from Kansas. The largest area of rain moved across all of south central Nebraska between 11 am and 3 pm CST. The passage of its back edge brought an end to the steady rain. Behind this area of rain, scattered convective showers began developing within the dry slot, where the stratus was beginning to break-up, between the cloudy area to the northeast and the clear area to the southwest. From 3 to 5 pm CST, a few showers evolved into thunderstorms. The storms that eventually produced the tornadoes began as showers over north central Kansas, between Norton and Hayes. These cells intensified after 3:30 pm CST, and became low-top mini-supercells. The first tornado was over northeast Franklin County, just after 4 pm CST. The other two tornadoes occurred between 4:30 pm and 5:05 pm over east-central Webster and northwest Nuckolls Counties, and they were on the ground for several minutes, each with path lengths around 4 miles. The Webster County tornado produced EF-1 damage. The other two tornadoes were EF-0. Both of those tornadoes occurred in areas with very few objects to damage. Elsewhere, thunderstorms produced nickel size hail in a couple spots within Dawson and Howard Counties. One inch hail also occurred with the storm that produced the EF-1 tornado, just east of Red Cloud.

An occluded low pressure system emerged from the lee side of the Rockies through the day. The primary low crossed southeast Montana into North Dakota, while the triple point low matured over northeast Colorado and deepened from 996 mb at 6 am CST to 985 mb by 6 pm, as it crossed the western part of Nebraska on its way to near O'Neill. The stratiform rain occurred north of the warm front which began the day along the southern Nebraska border. This front lifted north along with the triple point low. The low-top convection formed along and ahead of the cold front, within the warm sector. In the upper-levels, a deep trough was over the western U.S., with two embedded well-defined shortwave troughs. The lead trough was over Utah and Arizona at 6 am CST. It exhibited negative tilt and was associated with the severe weather. By 6 pm CST, this trough had nearly formed a closed mid-level low along the Nebraska-South Dakota border. At that time, this low was in the left exit region of a 150 kt jet streak at 300 mb. Even with the extensive cloud cover, warm air advection had propelled surface temperatures into the middle and upper 50s, with dewpoints in the middle 50s. Mid-level lapse rates increased as the dry slot moved in, with values as high as 7.5 deg C/km. This resulted in sufficient instability, with MUCAPE at least 500 J/kg, but not as high as 1000 J/kg. Very strong and veering low-level winds resulted in 0-1 km SRH between 400 and 500 m<sup>2</sup>/s<sup>2</sup>. SRH of that strength was able to overcome the weak instability to result in a Supercell Composite Index in excess of 4, and a 0-1 Energy-Helicity Index in excess of 1.

## NEBRASKA, West

### **NEZ002-095**

#### **Dawes - North Sioux**

17	0900MST								
	2200MST			0	0	0.00K	0.00K		Winter Storm

The season's first winter storm brought moderate snowfall and gusty northwest winds of 25 to 35 mph across the northern Nebraska panhandle. Snow totals ranged from three to six inches. Low visibilities and snow-covered roadways created hazardous travel conditions.

### **NEZ003-054-096**

#### **Box Butte - Cheyenne - Kimball - South Sioux**

17	0900MST								
	2200MST			0	0	0.00K	0.00K		Winter Weather

A low pressure system brought the season's first snowfall to much of the western Nebraska panhandle. Snow totals ranged from two to five inches.

### **NEZ002-019>021-054>055-095>096**

#### **Banner - Box Butte - Cheyenne - Dawes - Kimball - Morrill - North Sioux - Scotts Bluff - South Sioux**

29	0634MST								
	1450MST			0	0	0.00K	0.00K		High Wind

A period of high winds developed across the western Nebraska Panhandle.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## NEVADA, South

### NVZ014-020

#### Esmeraldo/Central Nye - Las Vegas Valley

16	1653PST 1915PST				0	0	0.00K	0.00K	High Wind
16	2130PST 2230PST				0	0	15.0K	0.00K	Strong Wind

A Pacific trough swinging through the area brought locally high winds to the Mojave Desert.

## NEVADA, West

### NVZ003

#### Greater Reno/Carson City/Minden Area

19	0530PST 1400PST				0	0		0.00K	High Wind
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An approaching cold front brought high winds to portions of far western Nevada on the 19th.

## NEW HAMPSHIRE, North and Central

### NHZ014

#### Coastal Rockingham

16	1200EST 1445EST				0	0	15.0K	0.00K	Coastal Flood
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A weak area of low pressure slowly intensified as it moved over coastal Maine on November 16th. Ahead of the system a northerly wind of 20 to 25 knots developed over the coastal waters, before becoming light from the south near the time of high tide. This coastal flood event coincided with the day after the King Tide, which brought some of the highest astronomical tides since 1948.

## NEW JERSEY, Northeast

### Essex County

#### 1 NW Belwood Park

15	1153EST 1353EST				0	0	0.00K	0.00K	Flood
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John F. Kennedy Drive was closed in both directions due to flooding between Hoover Avenue and Belleville Avenue in Bloomfield.

### Essex County

#### 1 NNW Silver Lake 1 WNW Forest Hill

15	1155EST 1353EST				0	0	0.00K	0.00K	Flood
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Watessing Avenue was closed due to flooding between Grove Street and Franklin Street in Bloomfield.

### Essex County

#### 1 SE Silver Lake

15	1323EST 1353EST				0	0	0.00K	0.00K	Flood
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NJ 21 was closed northbound at East 3rd Avenue due to flooding with all lanes detoured.

Low pressure moving north along the east coast of the United States resulted in a widespread 1-3 inch rainfall event across northeast New Jersey. Isolated flooding was observed across parts of Essex County, NJ as a result of this rainfall. Newark Airport received 2.79 inches of rain.

### NJZ104

#### Eastern Bergen

20	1500EST 2100EST				0	0	50.0K	0.00K	Strong Wind
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Strong winds occurred behind a deepening area of low pressure.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## NEW JERSEY, South and Northwest

### **NJZ009**

#### **Hunterdon**

01	0000EST								
30	2359EST				0	0	0.00K	0.00K	Drought

Drought conditions worsened across most of the state. The Raritan headwater association requested a drought emergency be declared. In Hunterdon county, the reservoir dropped to only 68.5% full. Much of the state remains in a drought warning. Several other reservoirs are nearing the lowest points in years. A drought emergency was issued most of northern New Jersey.

### **NJZ001**

#### **Sussex**

20	0900EST				0	0			Heavy Snow
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An area of low pressure near James Bay Canada lead to a strong cold frontal passage across the middle Atlantic Saturday evening November 19. Northwesterly winds increased substantially immediately following the cold frontal passage, with several reports of gusts generally in the 45 to 55 mph range over New Jersey. These strong wind gusts persisted around 48 hours, through Monday November 21. The High Point, NJ mesonet site recorded a peak wind gust of 60 mph at 14:40EST on November 21.

Following the cold frontal passage Saturday evening November 19, low pressure developed over New England, and provided a sufficiently cold and moist air mass to produce the seasons first significant snowfall. Snow overspread portions of the middle Atlantic late Saturday evening November 19, shortly after the cold frontal passage. By 01:00EST Sunday November 20, some of the higher terrain of northern New Jersey received around two inches of snowfall. The highest amount as of this time was 2.0 inches in Highland Lakes, New Jersey.

The snow continued to fall into Sunday morning November 20. Around 08:00EST, amounts up to around 6 inches were observed across the higher terrain of Sussex county New Jersey. From here, snowfall amounts tapered to a dusting toward the northern New Jersey coast and the Interstate 95 urban corridor. The highest snowfall amount was 6.7 inches near Highland Lakes, New Jersey, as reported by a co-op observer.

### **NJZ020**

#### **Western Ocean**

20	1100EST				0	0			High Wind
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A two passenger plane traveling from Maryland to New Jersey crashed in the Bass River State Forest around 11 am on the border of Ocean and Burlington counties. It was windy at the time of the crash and likely was a factor. One death occurred in the crash.

### **NJZ018**

#### **Camden**

22	0000EST				0	0	0.00K	0.00K	Wildfire
	2359EST								

Dry conditions and wind helped spread a 200 acre wildfire in the Wharton State Forest on 11/22. Wildfires were nearby in Somerset county as well. A 11 acre blaze was ongoing around 11/14 in Wawayanda State Park.

## NEW MEXICO, Central and North

### **Socorro County**

#### **3 S Alamo**

04	1851MST				0	0	50.00K	0.00K	Flash Flood
	2151MST								

NM 169 closed at the Rio Salado Bridge. Flood waters undermined roadway and bridge.

### **Bernalillo County**

#### **4 NE Kirtland Afb**

05	1616MST				0	0	0.00K	0.00K	Hail (0.75)
	1619MST								

Hail up to the size of pennies at Copper and Wyoming.

### **Bernalillo County**

#### **4 NE Kirtland Afb**

05	1617MST				0	0	0.00K	0.00K	Hail (0.88)
	1620MST								

Nickel size hail at Indian School and Wyoming.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## NEW MEXICO, Central and North

**Bernalillo County**  
4 WNW Carnuel

05	1618MST 1620MST				0	0	0.00K	0.00K	Hail (0.88)
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Nickel size hail at I-40 and Eubank.

**Bernalillo County**  
4 E Albuquerque

05	1622MST 1626MST				0	0	0.00K	0.00K	Hail (1.25)
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Employee at KOAT reported hail between quarter and half dollar size at Indian School and Louisiana.

**Bernalillo County**  
4 ENE Albuquerque

05	1626MST 1630MST				0	0	0.00K	0.00K	Hail (1.00)
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Hail up to the size of quarters at Montgomery and Wyoming.

**Bernalillo County**  
7 NE Albuquerque

05	1631MST 1634MST				0	0	0.00K	0.00K	Hail (1.00)
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Dime to quarter size hail at Paseo del Norte and Barstow.

**Bernalillo County**  
6 NE Albuquerque

05	1640MST 1642MST				0	0	0.00K	0.00K	Hail (0.88)
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Nickel size hail at Paseo del Norte and Eubank.

**Cibola County**  
2 N Correo

05	1855MST 1910MST				0	0	0.00K	0.00K	Hail (1.00)
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Penny to quarter size hail along I-40 near mile marker 127.

**Chaves County**  
15 NNW Roswell

06	1516MST 1519MST				0	0	0.00K	0.00K	Hail (1.00)
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CCNM media in Roswell relayed a report of pea to quarter size hail.

A slow-moving upper level low pressure over the Four Corners region and persistent, moist, low level easterly flow over New Mexico created an active weather pattern over the region for several days. Precipitation amounts over a four day period ranged from 1 to 4 inches across much of northern and central New Mexico. High elevation areas above 11,000 feet even saw several inches of wet snow. The Continental Divide and northeast plains picked up the heaviest rainfall amounts of 3 to 4 inches. Flooding undermined NM 169 near Alamo late on the 4th. Many of the thunderstorms that pushed through the state also produced hail. The strongest thunderstorm impacted the Albuquerque east side with large hail up to the size of half dollars. This was the largest diameter hail stone reported during the month of November, as well as the latest a severe-sized hailstone had been reported, in the Albuquerque Metro Area since 1959. Accumulations of hail and heavy rain wreaked havoc on motorists across the city well into the evening hours. Many folks reported entire trees stripped of their late season leaves. However, no significant damage was reported to vehicles or residences.

**NMZ511>515-518-  
521>524-526>530-  
533>534-538>539**

**Central Highlands - Chaves County Plains - East Slopes Of The Sangre De Cristo Mountains - Eastern Lincoln County - Estancia Valley - Far Northeast Highlands - Guadalupe County - Jemez Mountains - Northeast Highlands - Northern Sangre De Cristo Mountains Above 9500 Feet/red River - Quay County - Raton Ridge/johnson Mesa - Sandia/manzano Mountains - Santa Fe Metro Area - South Central Highlands - South Central Mountains - Southern Sangre De Cristo Mountains Above 9500 Feet - Union County - West Slopes Of The Sangre De Cristo Mountains**

17	0800MST 1500MST				0	0	1.0K	0.00K	High Wind
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# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## NEW MEXICO, Central and North

The first significant storm system of the fall season raced across New Mexico with high winds, blowing dust, and much colder temperatures. Winds increased quickly after sunrise then peaked by early afternoon as a strong cold front raced eastward across the state. The strongest winds impacted eastern New Mexico where widespread gusts of 60 to 70 mph were common. A peak wind of 94 mph was reported at the top of the Sandia Peak Tram. The Rio Grande Valley also experienced strong winds with some minor damage reported around Santa Fe and Albuquerque. This storm system also brought an end to the fifth longest growing season with the third latest freeze on record in Albuquerque.

**NMZ505-523-526-529-539**

### **Central Highlands - Eastern Lincoln County - Northeast Highlands - South Central Mountains - West Central Plateau**

27	0411MST 1030MST				0	0	5.0K	0.00K	High Wind
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A large scale pattern shift across the western U.S. brought the first significant blast of cold and snowy conditions of the season to New Mexico. The extended period of record warmth over the state through the fall season came to an end as a strong upper level trough forced cold, west to northwest winds into the area. The strongest winds occurred over central and western New Mexico during the morning hours as a potent cold front ripped through the area. Gallup reported a peak wind of 63 mph. As the front surged through eastern New Mexico several locations along the east slopes and the high plains reported peak winds near 60 and 65 mph. Many areas picked up the first snow of the season. Dismal snowpack across the mountains also improved to near normal by the end of this active weather period.

## NEW MEXICO, South Central and Southwest

### **Grant County**

**1 SSW Vanadium**

04	0200MST 0500MST				0	0	0.00K	0.00K	Heavy Rain
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A 3 hour rainfall total of 4.50 inches was reported in Bayard.

### **Grant County**

**1 SSW Vanadium**

04	0312MST				0	0	0.00K	0.00K	Hail (0.88)
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### **Grant County**

**3 NW Silver City**

**1 SE Slvr City Turner Arp**

04	0346MST 0830MST				0	0	0.00K	0.00K	Flash Flood
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Numerous roads were closed along and near Highway 180 in Silver City due to flash flooding. Other cities affected by the flooding included Santa Clara around Twin Sisters Peak Road and numerous roads around Bayard and Hurley. Rainfall amounts around this area averaged 1 to 2 inches in a couple of hours with a maximum of 4.50 inches in Bayard.

### **Sierra County**

**3 S Williamsburg**

**1 NW Las Palomas**

04	0746MST 1045MST				0	0	0.00K	0.00K	Flash Flood
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Highway 187 at mile marker 35 south of Williamsburg was closed due to flash flooding.

### **Sierra County**

**1 WNW Hillsboro**

04	1012MST 1200MST				0	0	0.00K	0.00K	Flash Flood
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All the low water crossings south of Hillsboro were flowing across Highway 27.

### **Sierra County**

**13 NW Winston**

**9 W Hermosa**

04	1200MST 1315MST				0	0	0.00K	0.00K	Flash Flood
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Water and debris were flowing across Highways 52 and 59. Hermosa Road was also closed.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## NEW MEXICO, South Central and Southwest

### **Grant County**

5 SE Faywood	04	1540MST 1545MST			0	0		0.00K	Hail (2.00)
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Numerous cars damaged along Highway 180 near Highway 61 exit. Hail covering the ground.

### **Dona Ana County**

2 ESE Hill	04	1824MST			0	0	0.00K	0.00K	Hail (1.00)
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### **Dona Ana County**

1 WNW University Park	04	2034MST			0	0		0.00K	Hail (1.00)
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### **Dona Ana County**

1 E Ft Fillmore	04	2042MST			0	0		0.00K	Hail (1.25)
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A broad area of high pressure was located through the central part of the country with easterly winds tapping low level moisture from the Gulf of Mexico. Upper level moisture was tapped from an upper low moving out of the Baja region. These two features combined to create unusually high amounts of moisture in the atmosphere for early November and resulted in some localized rainfall amounts over 4 inches in Grant County which resulted in flash flooding. A few severe storms were also able to develop in the afternoon and evening which produced hail up to 2 inches in diameter.

## NEW MEXICO, Southeast

### **NMZ027**

### **Guadalupe Mountains of Eddy County**

17	1100MST 1600MST				0	0	0.00K	0.00K	High Wind
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Strong west winds occurred at the base of a passing upper trough, and resulted in high winds in the Guadalupe Mountains.

27	0755MST				0	0	0.00K	0.00K	High Wind
28	0530MST				0	0	0.00K	0.00K	High Wind

Strong westerly winds occurred in the Guadalupe Mountains as the base of an upper trough translated eastward over the region.

## NEW YORK, Central

### **NYZ009-015>018-023-025-036>037-044>046-055>057**

### **Broome - Chenango - Cortland - Delaware - Madison - Northern Oneida - Onondaga - Otsego - Schuyler - Seneca - Southern Cayuga - Southern Oneida - Tioga - Tompkins - Yates**

19	1700EST				0	0	0.00K	0.00K	Lake-Effect Snow
22	1300EST				0	0	0.00K	0.00K	Lake-Effect Snow

A strong cold front crossed central New York on Saturday afternoon the 19th. Much colder air followed this front and was accompanied by several inches of snow, especially over the higher terrain. A slow-moving upper air low, which followed this front, slowly tracked across New York into northern New England from Sunday the 20th to Tuesday the 22nd. A northwest flow of cold moist air around this upper level low combined with moisture from the Great Lakes leading to a prolonged period of heavy lake effect snow. The lake effect snow affected an unusually large part of central New York including the southern tier counties, which typically do not see heavy lake effect snow. Hardest hit areas in central New York saw between 2 and 3 feet of snow over a 4 day period between November 19th and 22nd. At the Greater Binghamton Airport, 27.6 inches of snow fell in this period which was a record snowstorm. The heaviest lake effect snow affected the southern tier region on Sunday afternoon and night and then affected areas between Binghamton and Syracuse Monday into Monday night. All the snow tapered down on Tuesday the 22nd by midday.

## NEW YORK, Coastal

### **NYZ079**

### **Northeast Suffolk**

11	1400EST 1700EST				0	0	20.0K	0.00K	Strong Wind
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Strong winds occurred ahead of and behind a cold front.

20	0900EST 2300EST				0	0	50.0K	0.00K	Strong Wind
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# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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## NEW YORK, Coastal

### **NYZ080**

#### **Southwest Suffolk**

20	1600EST				0	0	50.0K	0.00K	Strong Wind
	1800EST								

Strong winds occurred behind a deepening area of low pressure.

### **NYZ081-177-178**

#### **Northern Nassau - Southeast Suffolk - Southern Queens**

21	0300EST				0	0	150.0K	0.00K	Strong Wind
	2300EST								

Strong winds occurred behind a deepening area of low pressure.

### **NYZ176**

#### **Northern Queens**

22	0800EST				0	0	50.0K	0.00K	Strong Wind
	1000EST								

Strong winds occurred behind a deepening area of low pressure.

## NEW YORK, East

### **NYZ058**

#### **Western Greene**

20	0100EST								
21	1800EST				0	0			Heavy Snow

### **NYZ032-038-047**

#### **Northern Herkimer - Schoharie - Southern Herkimer**

20	0100EST								
21	1800EST				0	0			Lake-Effect Snow

### **NYZ063**

#### **Western Ulster**

20	0100EST								
21	1800EST				0	0			Winter Weather

### **NYZ033-082**

#### **Hamilton - Northern Fulton**

20	0200EST								
21	1800EST				0	0			Lake-Effect Snow

### **NYZ039-048-051-066**

#### **Eastern Dutchess - Southern Fulton - Western Albany - Western Schenectady**

20	0200EST								
21	1800EST				0	0			Winter Weather

### **NYZ054-061**

#### **Eastern Columbia - Eastern Rensselaer**

20	0300EST								
21	1800EST				0	0			Heavy Snow

### **NYZ043-053-084**

#### **Northern Washington - Southern Washington - Western Rensselaer**

20	0300EST								
21	1800EST				0	0			Winter Weather

A strong frontal boundary crossed the region during the early morning hours on Sunday, November 20th. Precipitation initially begin as rain or a mix of rain and snow, but quickly transitioned over to just snow as colder air quickly worked its way into the region.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## NEW YORK, East

Although precipitation only lasted a few hours across valley areas, the snowfall continued through the entire day on Sunday November 20th and into the day on Monday November 21st across the higher elevations, as the persistent westerly flow caused upslope flow into the higher terrain of the Taconics and eastern Catskills. In addition, the very cold air moving into aloft behind the storm allowed for lake-effect snow to occur across the western Adirondacks, western Mohawk Valley and Schoharie County. While valley areas only saw a few inches of snowfall, high terrain areas saw upwards of 10 inches, with some localized totals near two feet within the highest terrain of the northern Taconics in eastern Rensselaer County.

This heavy snowfall, accompanied by gusty winds, caused some power outages across the higher terrain. Media reported statewide outages totaled at 52,000 customers by Monday afternoon, with many of these located across the northern and central Taconics.

## NEW YORK, North

**NYZ027-029>031-034-087**

**Northern Franklin - Southeastern St. Lawrence - Southern Franklin - Southwestern St. Lawrence - Western Clinton - Western Essex**

20	0600EST								
21	1200EST				0	0	60.0K	0.00K	Winter Storm

Low pressure across the Great Lakes on November 19th moved across Ontario province while a secondary area of low pressure developed and moved across New England on the 20th and 21st. Snow began during the morning of November 20th and continued off/on through the morning hours of November 21st. This event was highly dependent on elevation. The heaviest snowfall was across the Adirondacks and St. Lawrence River valley where 10 to 20 inches fell, meanwhile the Champlain Valley only witnessed 2 to 4 inches.

## NEW YORK, West

**NYZ001>003-010>014-085**

**Genesee - Livingston - Monroe - Niagara - Northern Erie - Ontario - Orleans - Southern Erie - Wyoming**

01	0000EST								
10	0900EST				0	0			Drought

A weather pattern supporting dry conditions that was prevalent across western New York was relieved by a wetter autumnal pattern. Drought conditions were eased somewhat by mid-month with the entire region improving to Moderate Drought or less.

**NYZ019-085**

**Cattaraugus - Chautauqua - Southern Erie**

19	1900EST								
21	0900EST				0	0	70.0K	0.00K	Lake-Effect Snow

**NYZ003>008-011>014**

**Genesee - Jefferson - Lewis - Livingston - Monroe - Northern Cayuga - Ontario - Oswego - Wayne - Wyoming**

20	0054EST								
22	0300EST				0	0	330.0K	0.00K	Lake-Effect Snow

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## NEW YORK, West

A strong cold front crossed the Lower Great Lakes from west to east during the day of the 19th. The airmass was only marginally cold by late in the day on the 19th, with lake effect rain mixed with wet snow developing off Lake Erie near Buffalo, changing to all snow across the higher terrain south of the city during the evening. The heavier snow did not develop until a secondary cold front crossed the area on the morning of the 20th, bringing a strong push of arctic air into the region. A strong area of low pressure developed over New England on the 20th and moved very slowly north into southern Quebec on the 21st. Abundant moisture and lift associated with the strong low pressure system produced widespread light to moderate snow across much of the region from the Genesee Valley into Central and Northern New York. Lake enhanced snow covered a much larger area than in our typical lake effect snow events that feature very narrow bands of heavy snow. The most persistent lake enhanced snow was found east and southeast of Lake Ontario with storm totals of over one foot in a large area from Rochester eastward to the Tug Hill region and Watertown. Upstream connections to lake effect snow off Georgian Bay also enhanced snowfall across parts of Central New York. Very persistent upslope flow into the higher terrain of the Tug Hill Plateau played a critical role in producing the highest totals from this event, with a few locations seeing three to four feet of snow over a three day period. This event also produced unusually heavy amounts of lake effect snow outside of our area across the Finger Lakes. Off Lake Erie, the northwest wind direction through the bulk of the event greatly limited the fetch across the short axis of the lake, and produced much lower snowfall totals. Upslope flow into the higher terrain of the Chautauqua Ridge and portions of Southern Erie and Wyoming counties helped to enhance snowfall amounts to some extent, and a few brief upstream connections to Lake Huron also developed. Total amounts over the 3 day period were generally in the 8-12 inch range across the higher terrain east and southeast of Lake Erie. Specific snowfall reports off Lake Erie included: 12 inches at Warsaw and East Concord, 11 inches at Colden, and 9 inches at Jamestown. Off Lake Ontario, reports included: 55 inches at Redfield, 48 inches at Osceola, 30 inches at Lorraine, 24 inches at Croghan, 18 inches at Watertown and Lyons, 17 inches at Geneva, 16 inches at Fairport, 15 inches at Rochester, 10 inches at Lima and 9 inches at Stafford.

## NORTH CAROLINA, Northwest and North Central

**NCZ018**

**Watauga**

15	0800EST								
30	2359EST			0	0				Drought

Very dry conditions existed across much of the region from early October through much of November. The Boone COOP (Cooperative Observer) in Watauga County measured only 0.40 from October 10 through November 27. The weekly U.S. Drought Monitor introduced D2 or Severe Drought on the November 17 issuance (valid November 15). A late month rainfall event brought substantial rain November 28-30 but did not change the depicted drought conditions.

**NCZ001**

**Ashe**

19	2045EST								
20	0615EST			0	0	1.0K	0.00K		High Wind

**NCZ018**

**Watauga**

20	0000EST								
	0415EST			0	0	1.5K	0.00K		High Wind

A strong upper level disturbance rotating around an upper level low pressure system over the Great Lakes region brought 45 to 55 knot winds across the central Appalachians. Dry air associated with this system and a low inversion height exposed the higher terrain to gusts which reached 60 mph or more.

## NORTH CAROLINA, Southwest

**NCZ051>053-058>  
059-062>065-507>  
510**

**Buncombe - Eastern Polk - Graham - Greater Rutherford - Haywood - Henderson - Macon - Northern Jackson - Polk Mountains - Rutherford Mountains - Southern Jackson - Swain - Transylvania**

01	0000EST								
30	2359EST			0	0	0.00K			Drought

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## NORTH CAROLINA, Southwest

Abnormally dry weather that began early in 2016 and continued through the spring, summer, and early fall resulted in establishment of extreme to exceptional drought conditions across the across the southern and central mountains and southern foothills of North Carolina by November. Total rainfall deficits for the period from July until the end of November were as much as 18 inches below normal, while annual rainfall deficits were two feet or more below normal. The drought conditions worsened farther to the southwest across the state. Drought conditions were exacerbated by an unusually warm late summer and early fall, when it is not unusual to see temperatures 10 to 15 degrees above normal. Stream flows and reservoir levels were well below normal across the area, while the very dry vegetation resulted in volatile wildfire conditions. A strong cold front brought much needed rainfall to the area during the last couple of days of the month, spelling the start of a wetter period that brought an end to the more extreme drought conditions.

03	1500EST								
30	2359EST				0	0	0.00K		Wildfire

### **NCZ062**

#### **Macon**

03	1500EST								
30	2359EST				0	0	0.00K		Wildfire

### **NCZ058**

#### **Graham**

04	0800EST								
30	2359EST				0	0	0.00K		Wildfire

### **NCZ507**

#### **Rutherford Mountains**

05	1300EST								
30	0700EST				0	0	0.00K		Wildfire

An extended period of abnormally dry weather and drought conditions that began in late winter of 2016, and continued through the year resulted in very dry vegetation across western North Carolina by mid-autumn. This was exacerbated by an unusually warm late summer and fall, when temperatures averaged as much as 5 degrees above normal. In these conditions, multiple wildfires ignited and spread during the first week of November, culminating in one of the worst wildfire episodes in recent western North Carolina history. Multiple large fires burned, mainly across the southern mountains, and most of these fires were not completely contained until a cold front brought much-needed rain to the area at the end of the month.

### **Burke County**

#### **3 SW Burke Chapel**

30	1730EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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Media reported multiple trees blown down on Highway 18 near the Catawba County line.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Alexander County**

#### **1 SW Millersville 3 WNW Paynes Store**

30	1735EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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Media reported multiple trees blown down in the area around Highway 16 and Friendship Church Rd and another tree down across Landfill Rd.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Iredell County**

#### **2 SSW Houstonville**

30	1753EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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EM reported an outbuilding resting on concrete blocks was lifted and tossed about 30 yards. Spotter reported multiple trees blown down on highway 21 in the same area.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Mecklenburg County**

#### **3 SSE Shopton 3 SSW Yorkmont Park**

30	1826EST								
	1829EST	2.37	150	0	0	100.00K	0.00K		Tornado (EF1)

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## NORTH CAROLINA, Southwest

This weak tornado touched down along John Price Rd near Steele Creek. The tornado moved northeast along an intermittent path, downing numerous trees, moving a mobile home from its foundation, and overturning a tractor trailer on Westinghouse Blvd. Some siding and shingles were removed from various buildings, and a few homes in the Ayrley community (along S Tryon St just west of I-485) suffered broken windows. The tornado may have lifted briefly at this point. The damage path was picked up again east of I-485 along Microsoft Way. Multiple trees were felled, and several buildings received minor damage before the tornado dissipated near the intersection of Microsoft Way and W Arrowhead Rd. The path of this tornado was within a quarter mile of the last tornado that impacted the Charlotte area (May 2014).

A strong cold front brought a line of showers and strong to severe thunderstorms to western North Carolina during the afternoon and evening, mainly to the eastern foothills and the Piedmont. Although severe weather was primarily in the form of sporadic straight-line wind damage, one weak tornado tracked across south Charlotte.

## NORTH DAKOTA, Central and West

**NDZ020-034>036-042-045>047-050**

**Burleigh - Emmons - Grant - Kidder - Logan - McIntosh - Morton - Oliver - Sioux**

27	2200CST				0	0	0.00K	0.00K	Heavy Snow
29									

**NDZ001>005-009>013-017>019-021>023-031>033-040>041-044**

**Adams - Billings - Bottineau - Burke - Divide - Dunn - Golden Valley - Hettinger - McHenry - McKenzie - McLean - Mercer - Mountrail - Pierce - Renville - Rollette - Sheridan - Slope - Stark - Ward - Wells - Williams**

28	0100CST								
29	2200CST				0	0	0.00K	0.00K	Heavy Snow

A slow moving deep low pressure system lifted into the Northern Plains with a moisture rich atmosphere. Rain preceded the snow over many locations, with a gradual transition to snow during the late evening of November 27 into the early morning of November 28. Snow then continued through November 28 into November 29. The snowfall was very heavy and wet due to a relatively warm atmosphere which led to low snow-to-liquid ratios. Snow amounts ranged from nine to 24 inches with the highest amounts between Williston and Bismarck. The James River Valley area missed out on the heavy snow.

## NORTH DAKOTA, East

**NDZ052-053**

**Richland - Sargent**

18	0000CST								
	1227CST				0	0			Blizzard

A Colorado Low moved into the Central Plains during the evening of November 17th, eventually tracking through central Iowa and into western Wisconsin on the 18th. This set up a strong southwest to northeast temperature gradient and even resulted in a few strong thunderstorms over southern Minnesota. Three to five inches of snow fell across the southern Red River Valley in combination with very gusty north winds, which resulted in whiteout conditions. A 48 mph wind gust was reported at the Wahpeton airport. Several vehicles slid into ditches and a few schools closed for the day. As the snow ended, visibilities quickly improved.

## OHIO, Southeast

**OHZ087**

**Lawrence**

30	1930EST								
	2030EST				0	0	5.0K	0.00K	Strong Wind

Showers along a cold front moved eastward across southern Ohio and northern Kentucky during the early evening. The showers strengthened as they crossed Lawrence County, Ohio, where a mostly dead tree fell onto a mobile home. Strong winds aloft were mixed down in the showers, leading to gusty outflow winds. No lightning was detected. Generally 35 to 45 mph winds were recorded by automated weather sensors.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## OKLAHOMA, Eastern

**OKZ049-053-070-072>076**

**Choctaw - Haskell - Latimer - Le Flore - Muskogee - Pittsburg - Pushmataha - Sequoyah**

01	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Precipitation across eastern Oklahoma was below average during the month of November 2016, with most of the region receiving less than half the normal average precipitation for the month. These unusually dry conditions followed a long period of below normal precipitation that began in late summer. Much of the region was classified as Abnormally Dry (D0) or in Moderate Drought (D1) since July. This month's precipitation deficits pushed much of southeastern Oklahoma into Severe Drought (D2) conditions, with Choctaw and Pushmataha Counties going into Extreme Drought (D3) by the end of the month. Monetary damage estimates resulting from the drought were not available.

**OKZ069-074**

**Adair - Haskell**

17	1100CST								
18	2100CST				0	0	0.00K	0.00K	Wildfire

Unseasonably warm temperatures, strong gusty wind, low relative humidity, and very dry vegetation promoted the rapid spread of several wildfires in eastern Oklahoma on the 17th. The largest fires were in Haskell and Adair Counties, where fires burned about 300 acres each before they were contained. Other notable fires were in Sequoyah and Cherokee Counties, where fires burned about 150 acres. None of these fires damaged any property. The fires were contained on the 18th.

## OKLAHOMA, Extreme Southeast

**OKZ077**

**McCurtain**

01	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Severe drought conditions (D2) continued across McCurtain County Oklahoma to start November, as monthly temperatures remained two to four degrees above normal. Below normal rainfall also continued throughout the month, with extreme (D3) drought conditions developing across the county on November 15th. Beneficial rains finally fell by the final week of the month, with drought having been reduced to severe to start December.

## OKLAHOMA, Panhandle

**OKZ001-002**

**Cimarron - Texas**

17	1440CST								
	1607CST				0	0			High Wind

A strong cold front moving south across the Panhandles produce some high wind gusts across the OK Panhandle. 500 MB charts illustrated a strong disturbance at the base of an upper level, negative tilted, trough moving due east across the northern Panhandles during the second half of the day. In-conjunction, lower level 850 MB and 700 MB analysis showed strong frontal genesis as the surface cold front moved south. Illustrated by the 28 November 2016 upper air data out of Amarillo, deep mixing brought down winds aloft at 55-60 kts to the surface. Hence, a few high wind reports were observed in the OK Panhandle.

**OKZ002**

**Texas**

27	1031CST				0	0			High Wind
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A developing upper level trough and surface cold front extending south from a developing surface low pressure over western Kansas brought windy conditions to the region. A north-south front was moving due east across the Panhandles during the late morning/early afternoon hours. The strong lower and mid level winds helped to compact surface isobars to make for windy conditions ahead of and along the main cold front, especially as skies began to clear and the Panhandles region; then mixed out very well ahead of the main surface feature. This resulted in a handful of high wind reports across the Panhandles.

**OKZ003**

**Beaver**

27	1245CST								
	1830CST				0	0	0.00K	0.00K	Wildfire



# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## OKLAHOMA, Panhandle

The Beaver County wildfire began around 1354CST about nine miles west northwest of Slapout Oklahoma in Beaver County. The wildfire started south of Hollow E0215 or north of Hollow E0220 and east of Hollow N1530. The wildfire consumed approximately twenty-five hundred acres and was caused by downed power lines. There were three homes and two other structures which were threatened, but all were saved. There were no homes or other structures damaged or destroyed. There were also no reports of any injuries or fatalities. The wildfire was contained around 1830CST and approximately five fire departments or other fire agencies responded to the wildfire including the Texas County Fire Strike Team which is comprised of the fire departments of Guymon, Hooker, Hardesty and Adams.

## OKLAHOMA, Western Central and Southeast

**OKZ031-041>043-  
047>048-052**

**Atoka - Bryan - Coal - Hughes - Johnston - Murray - Pontotoc - Seminole**

01	0000CST								
30	2359CST				0	0			Drought

With a lack of any significant rainfall, severe drought conditions continued over south central Oklahoma through the month of November. Atoka county and southeast Coal county intensified to extreme drought.

### **Harmon County**

**Hollis**

02	1625CST				0	0	2.00K	0.00K	Thunderstorm Wind (56EG)
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Power poles were downed on the west side of town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

### **Caddo County**

**Hinton**

02	1929CST				0	0	0.00K	0.00K	Hail (1.00)
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### **Stephens County**

**1 S Duncan**

02	2030CST 2330CST				0	0	0.00K	0.00K	Flash Flood
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Water reported over highway 81 near Haliburton field just south of Duncan.

Storms fired along a southeastward moving cold front on afternoon of the 2nd, spreading northeastward along the front and moving eastward across southern Oklahoma through the evening.

### **Bryan County**

**4 WSW Blue**

28	0235CST				0	0	10.00K	0.00K	Thunderstorm Wind (56EG)
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Winds caused damage to an outbuilding and overturned an unsecured semi trailer, as well as tree damage.

Overnight on the 27th past midnight into the 28th, a line of storms formed ahead of a cold front from central Texas and stretched into south Central Oklahoma. Some of these storms became marginally severe. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

## OREGON, Central and East

**ORZ507**

**Foothills Of The Northern Blue Mountains Of Oregon**

24	0630PST				0	0	0.00K	0.00K	High Wind
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Local strong wind and gusts along the Blue Mountain Foothills in Oregon. Most locations were in the advisory category. Wind advisory was in effect.

## OREGON, Northwest

**ORZ001**

**Northern Oregon Coast**

12	0334PST 0519PST				0	0	0.00K	0.00K	High Wind
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A low pressure system tracking northeastward off the Coast brought high winds to the far North Oregon Coast, with sustained winds up to 45 mph observed at the Astoria/Megler bridge.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## OREGON, Northwest

### Clatsop County 2 S Bradwood

24	0120PST 2200PST				0	0	13.00K	0.00K	Heavy Rain
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A total of 3.52 inches of rain was recorded at the Astoria Airport weather station from 1 AM to 10 PM. A landslide was reported on Highway 30, blocking one lane and damaging a car. Another landslide was reported on US Highway 103 near milepost 7.

A moist Pacific front moving slowly across the area produced heavy rainfall, resulting in flooding of several rivers across Northwest Oregon and at least two landslides.

### ORZ001-002

#### Central Oregon Coast - Northern Oregon Coast

24	0234PST 1908PST				0	0	0.00K	0.00K	High Wind
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A strong cold front moving southeastward onto the Coast brought high winds to the Northwest Oregon Coast.

### Columbia County 3 W Braun

24	2115PST								
25	0418PST				0	0	0.00K	0.00K	Flood

Heavy rain resulted in flooding of the Nehalem River near Vernonia. The Nehalem River reached flood stage at 915 PM on November 24th, and crested at 12.5 feet at 1246 AM on November 25th. The river dropped below flood stage at 418 AM on November 25.

### Tillamook County 5 E Juno

24	2253PST								
25	0428PST				0	0	0.00K	0.00K	Flood

Heavy rain resulted in flooding of the Wilson River near Tillamook. The Wilson River reached flood stage at 1053 PM on November 24th, and crested at 12.5 feet at 130 AM on November 25th. The river dropped below flood stage at 428 AM on November 25.

### Tillamook County 2 SSW Batterson

25	0100PST 0750PST				0	0	0.00K	0.00K	Flood
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Heavy rain resulted in flooding of the Nehalem River near Foss. The Nehalem River reached flood stage at 100 AM on November 25th, and crested at 15.2 feet at 300 AM on November 25th. The river dropped below flood stage at 750 AM on November 25.

### Lincoln County 1 ESE Siletz

25	0115PST 0715PST				0	0	0.00K	0.00K	Flood
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Heavy rain resulted in flooding of the Siletz River at Siletz. The Siletz River reached flood stage at 115 AM on November 25th, and crested at 16.5 feet at 345 AM on November 25th. The river dropped below flood stage at 715 AM on November 25.

### Benton County 2 S Conroy

25	0205PST								
26	0800PST				0	0	0.00K	0.00K	Flood

Heavy rain resulted in flooding of the Marys River near Philomath. The Marys River reached flood stage at 205 AM on November 25th, and crested at 21.2 feet at 1030 AM on November 25th. The river dropped below flood stage at 800 AM on November 26.

### Washington County Seghers Dilley

25	0730PST 1840PST				0	0	0.00K	0.00K	Flood
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Heavy rain resulted in flooding of the Tualatin River at Dilley. The Tualatin River reached flood stage at 730 AM on November 25th, and crested at 17.7 feet at 1215 PM on November 25th. The river dropped below flood stage at 640 PM on November 25.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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## OREGON, Northwest

### **Polk County**

**2 WNW Parker**

25	1225PST								
26	1827PST				0	0	0.00K	0.00K	Flood

Heavy rain resulted in flooding of the Luckiamute River near Suver. The Luckiamute River reached flood stage at 1225 PM on November 25th, and crested at 28.8 feet at 830 PM on November 25th. The river dropped below flood stage at 627 PM on November 26.

### **Yamhill County**

**1 SE McMinnville**

26	0053PST								
27	1855PST				0	0	0.00K	0.00K	Flood

Heavy rain resulted in flooding of the South Yamhill River at McMinnville. The South Yamhill River reached flood stage at 1253 AM on November 26th, and crested at 51.8 feet at 700 AM on November 26th. The river dropped below flood stage at 655 PM on November 27.

A moist Pacific front moving slowly across the area produced heavy rainfall, resulting in flooding of several rivers across Northwest Oregon and at least two landslides.

## **ORZ011**

### **Northern Oregon Cascades**

27	2000PST								
28	1800PST				0	0	0.00K	0.00K	Heavy Snow

## **ORZ013**

### **Cascades in Lane County**

27	2000PST								
28	1800PST				0	0	0.00K	0.00K	Winter Weather

A series of disturbances under west-northwesterly flow brought several rounds of snow showers to the North Oregon Cascades, totaling 8-18 inches of snow with highest amounts around Mt Hood.

## OREGON, Southwest

## **ORZ024**

### **Eastern Curry & Josephine**

16	2300PST								
17	0900PST				0	0	0.00K	0.00K	Frost/Freeze

Clearing skies and a cold air mass allowed temperatures to drop below freezing over some areas in southwest Oregon.

## **ORZ022-028-030-031**

### **Central & Eastern Lake - Coastal Curry - Northern & Eastern Klamath & Western Lake - Siskiyou Mountains & Southern Oregon Cascades**

18	1620PST								
	2238PST				0	0	0.00K	0.00K	High Wind

An incoming front brought high winds to portions of southwest and south central Oregon.

## **ORZ021-022**

### **Coastal Curry - South Central Oregon Coast**

24	1631PST								
	1813PST				0	0	0.00K	0.00K	High Wind

An incoming front brought high winds to parts of southwest and south central Oregon.

## **ORZ028**

### **Siskiyou Mountains & Southern Oregon Cascades**

25	2340PST								
26	0339PST				0	0	0.00K	0.00K	High Wind

## **ORZ031**

### **Central & Eastern Lake**

26	0839PST								
	0938PST				0	0	0.00K	0.00K	High Wind

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## OREGON, Southwest

An incoming front brought a brief period of strong winds to some south central Oregon locations.

27	2239PST								
28	0038PST				0	0	0.00K	0.00K	High Wind

Another in a series of fronts brought high winds to a few locations in south central Oregon.

## PENNSYLVANIA, Central

### **PAZ004**

#### **Warren**

19	0500EST								
21	0616EST				0	0	0.00K	0.00K	Lake-Effect Snow

The first significant lake-effect snowfall of the year brought several inches of accumulation to northern and western parts of Warren County from November 19-21, 2016.

## PENNSYLVANIA, East

### **PAZ054**

#### **Carbon**

01	0000EST								
30	2359EST				0	0	0.00K	0.00K	Drought

The Beltzville reservoir has fallen to only 68% below capacity. Dry conditions have allowed the salt line on the Delaware River to move further north from Delaware Bay. Drought watch continues Chester, Bucks, Montgomery, Delaware River Basin and a drought warning for Berks and Lehigh Counties. Water restrictions in place for north Heidelberg, Blue Marsh Reservoir and Beltzville. Water conservation is also encouraged in Bucks County.

### **PAZ055**

#### **Monroe**

20	0900EST								Heavy Snow
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An area of low pressure near James Bay Canada lead to a strong cold frontal passage across the middle Atlantic Saturday evening November 19. Northwestern winds increased substantially immediately following the cold frontal passage, with several reports of gusts generally in the 45 to 55 mph range over New Jersey. These strong wind gusts persisted around 48 hours, through Monday November 21. The Northeast Philadelphia ASOS site recorded a peak wind gust of 51 mph at 13:40EST on November 21.

Following the cold frontal passage Saturday evening November 19, low pressure developed over New England, and provided a sufficiently cold and moist air mass to produce the seasons first significant snowfall. Snow overspread portions of the middle Atlantic late Saturday evening November 19, shortly after the cold frontal passage. By 01:00EST Sunday November 20, some of the higher terrain of northeast Pennsylvania received around two inches of snowfall. The highest amount as of this time was 2.2 inches in Salisbury Township (Lehigh county), Pennsylvania.

The snow continued to fall into Sunday morning November 20. Around 08:00EST, amounts up to around 6 inches were observed across the higher terrain of Carbon and Monroe counties. From here, snowfall amounts tapered to a dusting toward the Delaware Valley. The highest snowfall amount was 5.5 inches near Blakeslee, Pennsylvania, as reported by a trained spotter.

Some power outages were recorded from downed trees as well in Northeast Pennsylvania with PP&L doing cleanup.

## PENNSYLVANIA, Northeast

### **PAZ039-040**

#### **Northern Wayne - Susquehanna**

19	1900EST								
22	1300EST				0	0	0.00K	0.00K	Lake-Effect Snow

A strong cold front crossed Pennsylvania on Saturday afternoon the 19th. Much colder air poured into the Commonwealth behind this front, which was accompanied by several inches of snow, especially over the higher terrain areas. A slow-moving upper air low, which followed this front, slowly tracked across upstate New York into northern New England from Sunday the 20th to Tuesday the 22nd. A northwest flow of cold moist air around this upper level low combined with moisture from the Great Lakes leading to a prolonged period of heavy lake effect snow. The lake effect snow affected an unusually large part of central New York and made it down to extreme northeast Pennsylvania which typically doesn't see heavy lake effect snowfall. The heaviest lake effect snow affected extreme northeast Pennsylvania on Sunday afternoon and night where around a foot or more of snow.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## PENNSYLVANIA, Northwest

### PAZ002-003

#### Crawford - Southern Erie

19	1900EST								
20	1800EST				0	0	300.0K	0.00K	Lake-Effect Snow

Unusually cold northwest winds blowing across Lake Erie caused lake effect snow showers to develop during the evening of the 19th. The snow showers picked up in intensity during the early morning hours of the 20th. Snowfall rates were in excess of an inch per hour at times. Westerly winds gusted to as much as 35 mph during this event causing much blowing and drifting. Visibilities in the heavier squalls were near zero. The snow showers began to taper off late in the evening of the 20th. The heaviest snow fell over eastern Erie and Crawford Counties. In Erie County a peak total of 17.5 inches was reported at Cory. In Crawford County, a peak of 15.0 inches was measured at Centerville with 13.1 inches at Canadohta Lake, 9.0 inches at Titusville and 8.0 inches at Meadville. For most areas this was the first significant snow of the season. Some accidents were reported.

## PENNSYLVANIA, West

### PAZ008

#### Venango

20	0100EST								
21	0400EST				0	0	0.00K	0.00K	Lake-Effect Snow

Cold northwest flow behind the passage of a strong front brought a period of upslope/lake enhanced snow to the counties north of interstate 80 and in the high terrain of West Virginia and Maryland. Snow totals ranged from 3-6 inches in most cases, but a persistent band of snow over northern PA resulted in 8-10 inches in Venango County. In addition, 10.5 inches of snow was reported in the highest elevations of eastern Tucker County.

## RHODE ISLAND

### RIZ001>008

#### Block Island - Bristol - Eastern Kent - Newport - Northwest Providence - Southeast Providence - Washington - Western Kent

01	0000EST								
30	2359EST				0	0	0.00K	0.00K	Drought

Rainfall was below normal for all of Rhode Island during November, with amounts ranging from near an inch below normal along the south coast to near two inches below normal in the far north and west.

A Drought Advisory continued statewide in Rhode Island during the month of November. The advisory encouraged voluntary water conservation and adherence to any local water restrictions.

November average streamflows and groundwater levels showed some improvement, except in the southern and eastern regions where they were below normal. Reservoir levels were reported normal for Newport and above normal for Providence Water.

### RIZ008

#### Block Island

20	1725EST								
	1825EST				0	0	0.00K	0.00K	High Wind

### RIZ006

#### Washington

21	0031EST								
	0131EST				0	0	0.00K	0.00K	High Wind

### RIZ001-006

#### Northwest Providence - Southeast Providence - Washington

21	1000EST								
	1500EST				0	0	1.1K	0.00K	Strong Wind

A surface low pressure area tracked across northeast MA late on Nov. 20 and moved northeast of the region on Nov. 21. A potent upper level disturbance moved across southern New England on the 20th. Gusty southwest winds occurred on the 20th, followed by strong west winds with a few pockets of high winds behind the system on the 21st, causing some damage.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## SOUTH CAROLINA, Central

### **Newberry County**

#### **Taylors Xrds**

30	1747EST				0	0			Thunderstorm Wind (50EG)
	1755EST								

Newberry County 911 Dispatch reported several downed trees along St. Phillips Church Road and at the intersection of Bachman Chapel Road and Jollystreet Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Fairfield County**

#### **3 W Blackjack**

30	1820EST				0	0			Thunderstorm Wind (52EG)
	1825EST								

Fairfield County DOT reported numerous trees down on SC Highway 213 near Jackson Creek Road.

A plume of unseasonably warm, moist Gulf of Mexico air streaming northeast ahead of a vigorous cold front sparked numerous strong and severe thunderstorms across South Carolina. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

## SOUTH CAROLINA, Northwest

### **SCZ001>007-010> 012**

#### **Abbeville - Anderson - Greater Greenville - Greater Oconee - Greater Pickens - Greenville Mountains - Laurens - Oconee Mountains - Pickens Mountains - Spartanburg**

01	0000EST								
30	2359EST				0	0	0.00K		Drought

Unseasonably dry and warm conditions continued across western portions of Upstate South Carolina through much of November, until a cold front brought good rainfall to the area during the last couple of days of the month. Up until that point, most locations had little more than a half inch of rain for the month, and this resulted in expansion and deterioration of drought conditions farther northeast into the remainder of the mountains, foothills, and northern Piedmont. Total rainfall from May until the end of November ranged only from 12-15 inches across this area, which is less than half of the normal amount. Being that the growing season was more or less over by this point, agricultural impacts were not as great as earlier in the year. Nevertheless, water levels on area reservoirs and stream flows on waterways remained well below normal, and voluntary water restrictions remained in place in some communities.

### **SCZ002**

#### **Pickens Mountains**

09	2030EST								
30	2359EST				0	0	0.00K		Wildfire

An extended period of abnormally dry weather and drought conditions that began in late winter of 2016, and continued through the year resulted in very dry vegetation across the South Carolina mountains and foothills by mid-autumn. These conditions were exacerbated by an unusually warm summer and fall, when temperatures averaged as much as 5 degrees above normal. In these conditions, a large wildfire ignited and spread during early November, and was not completely contained until a cold front brought much-needed rain to the area at the end of the month.

### **Anderson County**

#### **Denver**

#### **3 WNW Cheddar**

30	1610EST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
	1616EST								

Public reported (via Social Media) roof damage and power lines down in the Denver Downs area. Multiple sources reported trees and large limbs blown down in the same area, including on Lebanon Rd, Hickory Ln, and Mountain Springs Rd, with at least one additional tree blown down along Highway 29 closer to Williamston.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

### **Anderson County**

#### **2 E Gluck**

#### **5 SSE Toxaway**

30	1624EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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Media reported a tree blown down on Hickory Ln and another tree down on Martin Rd.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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## SOUTH CAROLINA, Northwest

### **Greenville County**

2 N Woodville	30	1641EST							
4 NNE Gaylord Xrds		1658EST	14.71	150	0	0	500.00K	0.00K	Tornado (EF1)

This tornado touched down in the vicinity of Sandy Springs Rd, just north of the Preston Rd intersection and tracked east/northeast along an intermittent path. Initial damage was limited to downed large limbs and trees, although some greenhouses were damaged to Woodmont High School (intersection of W Georgia Rd and Reedy Fork Rd. The most significant damage, rated EF1 occurred along a 2.5 mile stretch from near the Fork Shoals Rd/W Georgia Rd intersection, along W Georgia Rd to just outside the city limits of Simpsonville. A garage attached to a frame home collapsed near the intersection of W Georgia Rd and Sullivan Rd. Two frame homes near the intersection of Rivereen Way and Riverchase Ct, and three houses on Leafmore Ct had large sections of roofing removed, as did a home on Plamondon Dr. A house on Glenbow Ct had one side of the exterior wall of its second story and attic removed. At least a dozen additional houses and mobile homes received mostly minor roof damage in this area. The tornado appeared to weaken as it moved into the city of Simpsonville, although numerous large trees were uprooted and large limbs downed across the city. One tree fell on a carport. The tornado continued east/northeast from Simpsonville, roughly paralleling E Georgia Rd. Numerous trees and large limbs were blown down east of the city, while minor structural damage to homes and outbuildings was reported. The tornado crossed into Spartanburg County near the confluence of Gilder Creek with the Enoree River.

### **Spartanburg County**

2 WNW Crescent	30	1659EST							
2 S Cashville		1702EST	1.73	100	0	0	0.00K	0.00K	Tornado (EF0)

A weak tornado crossed into Spartanburg from Greenville County near the confluence of Gilder Creek with the Enoree River. Damage in Spartanburg County was limited to the downing of a few trees and numerous large limbs.

### **Greenwood County**

1 ENE Wade Hgts	30	1703EST							Thunderstorm Wind (50EG)
2 NNE Ninety Six									

County comms reported power lines blown down on Emerald Farm Rd near Cambridge Ave. Highway Patrol reported a tree blown down at Wilson Bridge Rd and Highway 702.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **York County**

4 N Bullock Creek	30	1752EST							Thunderstorm Wind (55EG)
									NWS storm survey found straight line wind damage, with multiple trees blown down along Highway 97.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### **York County**

1 WNW Clover	30	1759EST							Thunderstorm Wind (50EG)
		1803EST			0	0	0.00K	0.00K	

County comms reported multiple trees blown down in and around Clover.

A strong cold front brought a line of showers and strong to severe thunderstorms to Upstate South Carolina during the afternoon. Although severe weather was primarily in the form of sporadic straight-line wind damage, one tornado tracked across southern Greenville and part of Spartanburg County. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

## SOUTH DAKOTA, Central and North

### **SDZ048**

#### **Lyman**

05	1400CST								
	2200CST			0	0				Wildfire

Very warm, dry, and breezy conditions contributed to a wildfire five miles northeast of Reliance. This fire developed due to a spark from a car fire on November 3rd. The fire burned 750 acres or almost a full square mile. It started around 2 pm and was not completely put out until 10 pm. Fifty firefighters from seven fire departments along with several farmers helped extinguish the fire. Some structures were threatened. The fire did force the closure of a 3-mile stretch of South Dakota Highway 47 for over five hours.

### **SDZ008**

#### **Roberts**

12	0221CST								
	0431CST			0	0	0.00K	0.00K		High Wind

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## SOUTH DAKOTA, Central and North

High sustained winds of 40 to 50 mph with gusts to 60 mph occurred during the early morning hours southwest of Peever on Interstate-29.

**SDZ007-011-019>  
023**

**Clark - Codington - Day - Deuel - Grant - Hamlin - Marshall - Roberts**

18	0300CST 1400CST				0	0	0.00K	0.00K	Blizzard
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A strong surface low pressure area moved northeast across the region and brought snowfall from 2 to 7 inches to northeast South Dakota. Along with the snow, strong northwest sustained winds of 30 to 40 mph with gusts to 60 to 70 mph brought blizzard conditions to all of the region from the morning into the afternoon hours. The highest snowfall amount was near Watertown with 7 inches and the highest wind gusts were 61 mph near Estelline and 71 mph at Summit. There was a No Travel Advisory issued for a few counties with whiteout conditions reported along I-29. Many schools were also cancelled. The snowfall began between 4 and 6 in the morning and ended by 4 in the afternoon.

## SOUTH DAKOTA, Southeast

**SDZ038-050-052-  
057>059-063>064**

**Aurora - Beadle - Brule - Charles Mix - Davison - Douglas - Gregory - Jerauld - Sanborn**

17	2200CST								
18	1200CST				0	0	0.00K	0.00K	Winter Storm

**SDZ039**

**Kingsbury**

18	0300CST 1500CST				0	0	0.00K	0.00K	Blizzard
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**SDZ054-065-068**

**Bon Homme - Hutchinson - Miner**

18	0300CST 1500CST				0	0	0.00K	0.00K	Winter Storm
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**SDZ040**

**Brookings**

18	0400CST 1500CST				0	0	0.00K	0.00K	Blizzard
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**SDZ055-060>062-  
066>067-069**

**Hanson - Lake - Lincoln - McCook - Minnehaha - Moody - Turner - Yankton**

18	0400CST 1500CST				0	0	0.00K	0.00K	Winter Storm
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**SDZ070-071**

**Clay - Union**

18	0500CST 1500CST				0	0	0.00K	0.00K	Winter Weather
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Rain changed to snow late on November 17th, and wet snow accumulated up to 9.5 inches through November 18th. Northwest winds gusting as high as 56 mph combined with the falling snow to lower visibilities to below a quarter mile at times, making travel difficult, especially since most of the storm occurred at night. Wind chills were driven down into the teens, not an unusual level for mid November. However, the change to colder weather was sudden, as unseasonably warm weather had brought daytime temperatures as warm as the 60s and 70s within the previous five days.



# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## SOUTH DAKOTA, West

**SDZ024-028**

**Central Black Hills - Northern Black Hills - Northern Foot Hills**

17	0500MST								
	2300MST				0	0	0.00K	0.00K	Winter Storm

**SDZ012-041-072>  
073**

**Butte - Fall River - Shannon - Southern Meade Co Plains - Sturgis/Piedmont Foothills**

17	0600MST								
18	0000MST				0	0	0.00K	0.00K	Winter Weather

**SDZ043**

**Jackson**

17	1500MST								
18	0300MST				0	0	0.00K	0.00K	Winter Storm

**SDZ044**

**Bennett**

17	1500MST								
18	0300MST				0	0	0.00K	0.00K	Winter Weather

**SDZ046-049**

**Mellette - Todd - Tripp**

17	1900CST								
18	0900CST				0	0	0.00K	0.00K	Winter Storm

A strong storm system moved quickly across the region, producing accumulating snow across all of western and south central South Dakota. The heaviest snow fell across the northern Black Hills area, where four to eight inches of snow was reported. Three to five inches of snow fell across portions of southwestern and south central South Dakota, with visibilities below a quarter mile at times due to blowing snow.

**SDZ001-012-014-  
024>025-028-072**

**Butte - Central Black Hills - Harding - Northern Black Hills - Northern Foot Hills - Perkins - Sturgis/Piedmont Foothills - Ziebach**

28	1200MST								
30	2300MST				0	0	0.00K	0.00K	Winter Storm

**SDZ042-044**

**Bennett - Shannon**

28	2300MST								
30	0500MST				0	0	0.00K	0.00K	Winter Weather

**SDZ013-031-043-  
073**

**Jackson - Northern Meade County Plains - Pennington Co Plains - Southern Meade Co Plains**

29	0100MST								
30	0400MST				0	0	0.00K	0.00K	Winter Weather

A strong low pressure system moved into eastern portions of the Northern Plains and stalled out for nearly 48 hours. Wrap-around moisture behind the low brought snow to much of western and south central South Dakota. The heaviest snow fell across the northern Black Hills as significant upslope snowfall developed and persisted for 36 hours. Snowfall amounts of one to two feet were common across the northern Black Hills, with localized amounts to three feet west of Lead. Snow amounts on the northwestern to west central South Dakota plains ranged from three to seven inches, with little to no snowfall from the Rapid City area to far southwestern South Dakota. Strong northwesterly winds caused significant blowing and drifting snow and visibilities below a quarter mile in many areas. Interstate 90 was closed from Piedmont to Spearfish on the afternoon of the 29th to the morning of the 30th.

**SDZ026**

**Rapid City**

29	0430MST								
	1000MST				0	0	0.00K		High Wind

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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## SOUTH DAKOTA, West

A strong low pressure system east of the region produced strong winds over portions of western South Dakota, with the strongest winds in the Rapid City area. Northwesterly winds of 30 to 45 mph with a few gusts around 60 mph were recorded from Rapid City to Hermosa.

### **SDZ046-047**

#### **Mellette - Todd**

29	0700CST				0	0	0.00K	0.00K	Winter Weather
30									

A strong low pressure system moved into eastern portions of the Northern Plains and stalled out for nearly 48 hours. Wrap-around moisture behind the low brought snow to much of western and south central South Dakota. The heaviest snow fell across the northern Black Hills as significant upslope snowfall developed and persisted for 36 hours. Snowfall amounts of one to two feet were common across the northern Black Hills, with localized amounts to three feet west of Lead. Snow amounts on the northwestern to west central South Dakota plains ranged from three to seven inches, with little to no snowfall from the Rapid City area to far southwestern South Dakota. Strong northwesterly winds caused significant blowing and drifting snow and visibilities below a quarter mile in many areas. Interstate 90 was closed from Piedmont to Spearfish on the afternoon of the 29th to the morning of the 30th.

### **SDZ074**

#### **Hermosa Foothills**

29	1100MST				0	0		0.00K	High Wind
	1500MST								

A strong low pressure system east of the region produced strong winds over portions of western South Dakota, with the strongest winds in the Rapid City area. Northwesterly winds of 30 to 45 mph with a few gusts around 60 mph were recorded from Rapid City to Hermosa.

### **SDZ049**

#### **Tripp**

29	1100CST				0	0	0.00K	0.00K	Winter Weather
30	0700CST								

A strong low pressure system moved into eastern portions of the Northern Plains and stalled out for nearly 48 hours. Wrap-around moisture behind the low brought snow to much of western and south central South Dakota. The heaviest snow fell across the northern Black Hills as significant upslope snowfall developed and persisted for 36 hours. Snowfall amounts of one to two feet were common across the northern Black Hills, with localized amounts to three feet west of Lead. Snow amounts on the northwestern to west central South Dakota plains ranged from three to seven inches, with little to no snowfall from the Rapid City area to far southwestern South Dakota. Strong northwesterly winds caused significant blowing and drifting snow and visibilities below a quarter mile in many areas. Interstate 90 was closed from Piedmont to Spearfish on the afternoon of the 29th to the morning of the 30th.

## TENNESSEE, Central

**TNZ005>011-023>  
034-056>066-075-  
077>080-093>095**

**Bedford - Cannon - Cheatham - Clay - Coffee - Cumberland - Davidson - Dekalb - Dickson - Fentress - Giles - Grundy - Hickman - Houston - Humphreys - Jackson - Lawrence - Lewis - Macon - Marshall - Maury - Montgomery - Overton - Perry - Pickett - Putnam - Robertson - Rutherford - Smith - Stewart - Sumner - Trousdale - Van Buren - Warren - Wayne - White - Williamson - Wilson**

01	0000CST				0	0			Drought
30	2359CST								

A continued significant lack of rainfall across Middle Tennessee during November 2016 led to worsening drought conditions throughout the region and the driest start to the fall season since 1953. Most of Middle Tennessee received less than one half of an inch of rain through November 22, which is only around 5% of the normal rainfall. As a result, severe (D2) drought conditions spread across all of Middle Tennessee by the middle of the month, with extreme (D3) drought conditions affecting most southern and eastern counties, and even exceptional (D4) drought conditions reaching Cumberland County. Effects of these drought conditions led to many forest, grass and brush fires throughout Middle Tennessee, although no homes, businesses, or other buildings were reportedly burned. Agriculture also continued to suffer losses, and many area lakes and rivers were at unusually low levels for the time of year.

On November 23 and again on November 29-30, separate storm systems brought several inches of significant rainfall to the region, which began to ease drought conditions in many areas.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## TENNESSEE, Central

### Montgomery County 2 NNW Shady Grove

28	1717CST				0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
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A Facebook report indicated a tree was blown down on Highway 41 South near Bagwell Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Montgomery County 2 NE Hampton Station

28	1729CST				0	0	1.00K	0.00K	Thunderstorm Wind (43EG)
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Public reports that a tree was blown down on Port Royal Rd at the TN/KY state line.

Note: The estimated wind gust of 43 knots is equivalent to 49 mph.

### Dickson County 2 SSE Charlotte

28	1735CST				0	0	1.00K	0.00K	Thunderstorm Wind (43EG)
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A twitter report was received showing a tree blown down at Franklin Rd near Long Rd in Charlotte.

Note: The estimated wind gust of 43 knots is equivalent to 49 mph.

### Robertson County 1 NW Coopertown

28	1754CST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Trees and power lines were blown down in Coopertown with power outages across town.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Davidson County 1 ENE Oak Hill

28	1815CST				0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
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A twitter report indicated a tree down on Belmont Blvd between Glen Echo Rd and Woodmont Blvd.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Sumner County 1 NNE Cedar Grove

28	1832CST				0	0	2.00K	0.00K	Thunderstorm Wind (52EG)
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A 45 foot concrete wall was blown down at a construction site at Airport Rd and South Water Ave.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### Davidson County 1 NW Glenclyff 2 SE Nashville

28	1840CST				0	0	10.00K	0.00K	Flood
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Amateur radio and local media reported minor roadway flooding at Thompson Ln at Nolensville Rd, Murfreesboro Rd at Thompson Ln, and Harding Pl at Antioch Pk in southeast Nashville. In addition, Orr Ave was partially flooded, and a car became stranded with a water rescue performed.

## TNZ033

### Overton

28	1900CST				0	0	3.0K	0.00K	Strong Wind
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A QLCS moved across Middle Tennessee on November 28 causing several reports of wind damage and some minor flooding in Nashville. Strong southerly winds out ahead of the QLCS also caused some minor wind damage.

### Coffee County 1 SW Tullahoma 1 SSE Mountain View

29	2105CST						750.00K	0.00K	Tornado (EF1)
	2115CST	7.99	300	0	1				

An EF-1 tornado touched down just inside the Coffee County line west of Tullahoma. This tornado tracked through the northside of Tullahoma crossing over State Route 16/Jackson Street damaging several businesses with mostly roof damage observed. The tornado then moved across the Lakewood Golf and Country Club and Lake Tullahoma Estates neighborhoods where several hundred trees were uprooted and snapped. Almost all of the structural damage in these neighborhoods were due to downed trees. One person sustained a minor injury when a tree fell on their car. Once the tornado crossed the lake, it lifted just before Cherry Springs Road.

### Coffee County 1 NNW Red Hill 1 SE Ragsdale

29	2124CST						250.00K	0.00K	Tornado (EF1)
	2129CST	3.51	200	0	0				

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## TENNESSEE, Central

A new circulation formed east-southeast of the Tullahoma tornado and touched down just southeast of Manchester. Although not on the ground for long, several dozen trees were snapped and uprooted and several barns and outbuildings were heavily damaged along the path. A one story log cabin style house was picked up off of the foundation and moved 6-8 feet off of center with most of the house still fully intact. Unfortunately, this house was not properly attached to the foundation hence the EF-1 rating.

### **Grundy County** **1 NNE Gruetli**

29	2333CST				0	0	1.00K	0.00K	Thunderstorm Wind (52EG)
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Power lines were blown down on 20th Ave North near Bouldin Rd.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

### **Grundy County** **1 SE Monteagle**

30	0213CST				0	0	10.00K	0.00K	Thunderstorm Wind (61EG)
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A carport was blown off into power lines at Mountain Auto Sales on Highway 41 just east of Monteagle. In addition, several trees and power lines were blown down along Highway 41 and Dubose Street in the same area with both roadways blocked and closed. Grundy County schools were closed 11/30 due to the storm damage between Monteagle and Tracy City.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

### **Grundy County** **1 NNW White City**

30	0218CST				0	0	1.00K	0.00K	Thunderstorm Wind (52EG)
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Power lines were blown down on Lakes Rd east of Tracy City.

A large upper level trough of low pressure combined with a northward moving warm front to spawn numerous supercells and tornadoes across the southeastern US from the afternoon hours on November 29, 2016 through the night and into the next day on November 30. Numerous tornado touched down in Louisiana, Mississippi, Alabama, Middle and Eastern Tennessee, Georgia, Florida, and South Carolina, resulting in 5 deaths and dozens of injuries. Across Middle Tennessee, two tornadoes touched down in Coffee County in Tullahoma and near Manchester, damaging many homes and causing one minor injury.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

## TENNESSEE, East

### **TNZ041**

#### **Cocke/Smoky Mountains**

28	0745EST				0	0	0.00K	0.00K	High Wind
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### **Bledsoe County** **1 N Pikeville**

29	2245CST				0	0			Thunderstorm Wind (55EG)
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A few trees and large tree limbs were reported down.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### **Marion County** **1 E Morganville**

29	2303CST								
	2304CST	0.56	350	0	0				Tornado (EF2)

A tornado formed in far northern Marion County, about one half mile from the Sequatchie County border and quickly intensified to a strong EF-2 tornado with winds of 130 mph as it crossed into Sequatchie County. A double wide mobile home was completely destroyed and an adjacent church roof was heavily damaged. The tornado passed through a grove of trees snapping nearly all of them halfway up the trunk. The strong tornado passed through a farm and caused significant damage to a two story family home. This part of the tornado path was determined to be at the high end of the EF-2 rating. As the tornado continued along a northeasterly track, two additional homes were heavily damaged before moving along an unpopulated ridge. The tornado likely skipped along this ridge as it crossed Highway 127 and then crossed Highway 111. A mobile home roof was completely removed near the corner of Shell Road and Tri Mile Road along with numerous trees that were either uprooted or snapped. The damage track seemed to end near Snow Bird Lane and Raven Cliff Road. Rear flank downdraft damage was noted farther east along Lewis Chapel Road to about Laurelwood Trail. Major roof damage was seen along Natures Trail and Lewis Chapel Road where winds were estimated around 100 mph.

### **Sequatchie County** **2 ESE Cartwright** **1 WSW Lewis Chapel**

29	2304CST								
	2312CST	7.59	350	0	2				Tornado (EF2)

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## TENNESSEE, East

A tornado formed in far northern Marion County, about one half mile from the Sequatchie County border and quickly intensified to a strong EF-2 tornado with winds of 130 mph as it crossed into Sequatchie County. A double wide mobile home was completely destroyed and an adjacent church roof was heavily damaged. The tornado passed through a grove of trees snapping nearly all of them halfway up the trunk. The strong tornado passed through a farm and caused significant damage to a two story family home. This part of the tornado path was determined to be at the high end of the EF-2 rating. As the tornado continued along a northeasterly track, two additional homes were heavily damaged before moving along an unpopulated ridge. The tornado likely skipped along this ridge as it crossed Highway 127 and then crossed Highway 111. A mobile home roof was completely removed near the corner of Shell Road and Tri Mile Road along with numerous trees that were either uprooted or snapped. The damage track seemed to end near Snow Bird Lane and Raven Cliff Road. Rear flank downdraft damage was noted farther east along Lewis Chapel Road to about Laurelwood Trail. Major roof damage was seen along Natures Trail and Lewis Chapel Road where winds were estimated around 100 mph.

### **Marion County** 2 E Morganville

29	2310CST				0	0			Thunderstorm Wind (50EG)
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A roof was blown off a home and windows were blown out at 5071 Alvin York Highway at Powell Crossroads area. Minor damage was reported at another home where some power lines were downed at two chicken houses were destroyed.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Marion County** 2 ESE Condra

29	2310CST				0	0			Thunderstorm Wind (55EG)
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A few trees were reported down in the New Hope community.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### **Marion County** 1 ESE Glover Hill

29	2315CST				0	0			Thunderstorm Wind (55EG)
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Trees and power lines were reported down.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### **Bledsoe County** 1 E New Harmony

29	2330CST				0	0			Thunderstorm Wind (55EG)
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Two semi truck trailers were overturned. Also, several structures were damaged and there were trees downed across the county.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### **Marion County** 2 NNE Oak Grove

29	2345CST				0	0			Thunderstorm Wind (55EG)
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Trees and power lines were reported down.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### **Hamilton County** 2 NNW Snow Hill

30	0040EST				0	0			Thunderstorm Wind (55EG)
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Trees and power lines were reported down.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### **Hamilton County** 2 NNW Snow Hill

30	0048EST				0	0			Thunderstorm Wind (55EG)
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Trees and power lines were reported down.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### **Bradley County** 1 SSW Eureka

30	0100EST				0	0			Thunderstorm Wind (55EG)
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Doors were blown off a church building and power lines were reported down.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### **McMinn County** 1 ENE Poplar Hill 3 N Manila

30	0120EST				0	20	0.00K	0.00K	Tornado (EF2)
	0130EST	11.33	200		0	20	0.00K	0.00K	

The tornado developed near the intersection of county road 700 and 705 where some minor tree damage was observed. The tornado maintained its intensity as it paralleled Cedar Springs Road and damaged a covered walkway just to the south of Athens along South Jackson Street. It continued to the northeast with the most catastrophic damage along its path occurring along Old Athens Madisonville Road where a few mobile homes were destroyed. The tornado weakened as it moved to the northeast with mostly tree damage; eventually lifting around the intersection of TN-307 and County Road 350. Two people were killed and twenty were injured as the tornado moved across the County.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<b>TENNESSEE, East</b>									
<b>McMinn County</b> Athens	30	0121EST			0	0			Thunderstorm Wind (55EG)
									At the intersection of state road 30 and 39 in Athens, a roof was blown off a building, other structures were damaged, trees were downed and roads were blocked south of Athens. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.
<b>McMinn County</b> 2 NNE Fairview	30	0130EST			0	0			Thunderstorm Wind (55EG)
									Several homes were destroyed in Deerfield Estates. Injuries were reported. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.
<b>McMinn County</b> 2 N Athens	30	0130EST			0	0			Thunderstorm Wind (60EG)
									Damage was reported extending along a line from County Road 700 across Athens along Highway 307. Multiple reports of trees, downed power lines, and damage to homes were received. Note: The estimated wind gust of 60 knots is equivalent to 69 mph.
<b>McMinn County</b> 2 NE Fairview	30	0142EST			0	0			Thunderstorm Wind (60EG)
									Trees were uprooted and a hole was punched in the roof of a residence. Note: The estimated wind gust of 60 knots is equivalent to 69 mph.
<b>Loudon County</b> 1 W Jena	30	0208EST			0	0			Thunderstorm Wind (50EG)
									Power lines were reported down. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
<b>Bradley County</b> 2 S Cleveland	30	0225EST			0	0			Thunderstorm Wind (52EG)
									A wind gust of 59 miles an hour was reported. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
<b>Polk County</b> 1 S Ocoee 1 S Benton	30	0228EST 0233EST	4.6	155	2	0			Tornado (EF3)
									The tornado formed south of Ocoee with several large trees snapped. It strengthened to an EF-2 and moved north northeast and collapsed a cell phone tower. It quickly increased to an EF-3 and heavily damaged a post office. Several more buildings were heavily damaged along with some manufactured homes. Two fatalities occurred in the manufactured housing. Twenty other people were injured in this area. The tornado weakened to an EF-0 as it moved northeast towards Benton. It snapped off the tops of a few pine trees. M?MH, F?MH
<b>Polk County</b> 1 W Benton Station	30	0230EST			0	0			Thunderstorm Wind (70EG)
									Structural damage was reported to several buildings along highway 411 and Stump Street. Note: The estimated wind gust of 70 knots is equivalent to 81 mph.
<b>Sequatchie County</b> 1 E Cagle	30	0230CST			0	0			Thunderstorm Wind (60EG)
									Several trees and power lines were reported down. Note: The estimated wind gust of 60 knots is equivalent to 69 mph.
<b>Sequatchie County</b> 1 SW Dunlap	30	0250CST			0	0			Thunderstorm Wind (60EG)
									Trees and power lines were reported down. Note: The estimated wind gust of 60 knots is equivalent to 69 mph.
<b>TNZ074</b> <b>Sevier/Smoky Mountains</b>	30	0300EST			0	0	0.00K	0.00K	High Wind
<b>Jefferson County</b> 2 W Dandridge	30	0300EST			0	0			Thunderstorm Wind (50EG)
									Several trees were reported down. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## TENNESSEE, East

### Knox County

#### West Knoxville

30	0320EST				0	0			Thunderstorm Wind (50EG)
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A building was damaged at Knox Glass Company.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Hamilton County

#### 1 W Chickamauga

30	0430EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees were reported down.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Meigs County

#### 1 NE Decatur

30	0430EST				0	0			Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees were reported down in the Decatur area.  
Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

### McMinn County

#### Athens

30	0500EST				0	0			Thunderstorm Wind (60EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees and power lines were downed in the Athens area. Widespread power outages were reported.  
Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

### Johnson County

#### 1 SW Mountain City

30	0515EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Several trees were downed and a utility building was blown over.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Monroe County

#### 1 SSW McGhee

30	0520EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees were reported down.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Hamilton County

#### 1 W Chickamauga

30	0525EST				0	0			Thunderstorm Wind (60EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees were reported down.  
Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

### Knox County

#### West Knoxville

30	0530EST				0	0			Thunderstorm Wind (50EG)
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Several trees were reported down in Knoxville.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Bradley County

#### 1 S Eureka

30	0535EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

One roof was removed completely from a home. Roof damage was reported at a nearby home and barn.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Blount County

#### Maryville

30	0545EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Numerous trees were reported down across the county.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Hawkins County

#### 1 NW Rogersville

30	0620EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Several trees were reported down across the county.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Grainger County

#### 1 N Bean Station

30	0625EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A few trees were reported down.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### Hamilton County

#### 1 W Chickamauga

30	0630EST				0	0			Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A few trees were reported down on the west side of Chattanooga.  
Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## TENNESSEE, East

### **Sullivan County**

**1 WSW Bristol**

30	0700EST				0	0			Thunderstorm Wind (50EG)
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A few trees were reported down on roadways.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Hamilton County**

**1 W Chickamauga**

30	0945EST				0	0	0.00K	0.00K	Flash Flood
----	---------	--	--	--	---	---	-------	-------	-------------

A few roads were covered by water and partially closed.

### **Monroe County**

**1 N Madisonville**

30	1015EST				0	0	0.00K	0.00K	Flash Flood
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Several roads partially closed due to water.

### **Sullivan County**

**Blountville**

30	1030EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Several trees were reported down.  
A strong upper level system moved through the Eastern United States late Tuesday into early Wednesday. The associated surface low pressure system pressed north northeast from the Lower Mississippi across the Mid South on its way across the Lower Ohio Valley. While there were reports of damaging straight line wind with some of the thunderstorms generated ahead of the system cold front, the main and concentrated areas of damage were associated with tornadic supercell thunderstorms. The supercell storms developed in an area of strong shear and sufficient; albeit weak instability. Tornadoes formed in a zone favorable to rotating thunderstorm updrafts just north of a warm frontal boundary across the Tennessee Valley of Alabama northeast through Southeast Tennessee. Three tornadoes developed during the early morning hours on Wednesday, November 30th; impacting McMinn, Polk, Marion, and Sequatchie Counties. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

## TENNESSEE, South Central

### **TNZ076-096-097**

#### **Franklin - Lincoln - Moore**

01 15	0000CST				0	0	0.00K	0.00K	Drought
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The worst drought conditions are ongoing since the last major drought in 2007. With no appreciable rainfall in sight, conditions will further deteriorate, with the dry conditions complicating several factors, mainly that of farming and water conservation in the near future.

10	0200CST				0	0			Astronomical Low Tide
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### **TNZ096-097**

#### **Franklin - Lincoln**

10	0200CST				0	0			Frost/Freeze
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Freezing temperatures of 30-32 degrees were experienced in southern middle Tennessee on the morning of the 10th.

### **Lincoln County**

**1 SE Mulberry**

29	2235CST				0	0			Thunderstorm Wind (60EG)
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A large tree was knocked down onto an abandoned home causing significant damage. Power lines were also reported down in the area.  
A tornado outbreak occurred during the evening hours of the 29th into the early morning hours of the 30th just to the south in north Alabama. Only one report of thunderstorm wind damage occurred in Lincoln County Tennessee. A very mild and unstable air mass was in place along with a strong southwesterly upper level jet. These ingredients combined with a cold front and pre-frontal trough sweeping from west to east across the area sparked scattered supercell thunderstorms during the evening, a few of which were tornadic. This was followed by a quasi-linear convective system (QLCS) that occurred with the trough, which also was responsible for severe weather. Beneficial rainfall occurred with this system with 2-5 inches reported. Note: The estimated wind gust of 60 knots is equivalent to 69 mph.



# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## TENNESSEE, West

**TNZ053>055-089>  
092**

### Chester - Decatur - Fayette - Hardeman - Hardin - Henderson - McNairy

08	0600CST								
30	2359CST				0	0			Drought

Abnormally dry weather continued during the month of November and fueled the spread of at least moderate (D2) drought conditions over most portions of the Mid-South. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. Dry conditions negatively impacted pastures, triggering more feeding of hay, and causing concern for hay shortages for the winter months. The drought caused river and lake levels to be at low levels.

**TNZ002>004-020>  
022-048>052-088**

### Benton - Carroll - Crockett - Gibson - Haywood - Henry - Lauderdale - Madison - Obion - Shelby - Tipton - Weakley

15	0600CST								
30	2359CST				0	0			Drought

Abnormally dry weather continued during the month of November and fueled the spread of at least moderate (D2) drought conditions over most portions of the Mid-South. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. Dry conditions negatively impacted pastures, triggering more feeding of hay, and causing concern for hay shortages for the winter months. The drought caused river and lake levels to be at low levels.

## Haywood County

**Stanton  
1 E Ko Ko**

18	1750CST								
	1805CST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)

Multiple trees down across Highway 70 in Stanton and Highway 76 in Koko.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

## Madison County

**1 S Leighton**

18	1815CST								
	1820CST				0	0	50.00K	0.00K	Thunderstorm Wind (50EG)

Trees fell on houses along Highway 138 in Madison County.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

## Madison County

**1 NNW Jackson**

18	1825CST								
	1830CST				0	0	20.00K	0.00K	Thunderstorm Wind (50EG)

Fallen trees and limbs caused power lines to be down around Russell and Forest Avenues in Jackson.

An upper level disturbance and an associated cold front brought an isolated severe thunderstorm to portions of West Tennessee during the late afternoon and early evening hours of November 18th. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

**TNZ001-019**

### Dyer - Lake

22	0600CST								
30	2359CST				0	0			Drought

Abnormally dry weather continued during the month of November and fueled the spread of at least moderate (D2) drought conditions over most portions of the Mid-South. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. Dry conditions negatively impacted pastures, triggering more feeding of hay, and causing concern for hay shortages for the winter months. The drought caused river and lake levels to be at low levels.

**TNZ049-088-089**

### Fayette - Shelby - Tipton

28	1200CST								
	1400CST				0	0	45.0K	0.00K	Strong Wind

A potent late fall storm system brought strong southerly winds to portions of southeast Tennessee that knocked a few trees and power lines down during the early afternoon hours of November 28th.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## TEXAS, Central

### **Haskell County** 2 NNE Weinert

02	1834CST				0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
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The West Texas Mesonet near Weinert measured a 62 mph wind gust from a thunderstorm.

A line of thunderstorms moving southeast through the Big Country resulted in a severe thunderstorm wind gust near Weinert. One of the thunderstorms along the line resulted in a severe wind gust about 2 miles north northeast of Weinert. Note: The measured wind gust of 54 knots is equivalent to 62 mph.

## TEXAS, Extreme West

### **El Paso County** 1 SE Smelertown

04	1648MST				0	0	0.00K	0.00K	Hail (0.88)
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Hail covered the ground.

### **El Paso County** 5 N Socorro

04	1713MST				0	0		0.00K	Hail (1.00)
	1739MST								

### **El Paso County** 6 ENE Socorro

04	1749MST				0	0	300.00M	0.00K	Hail (1.75)
	1755MST								

Supercell thunderstorms (very rare for November in this area) affected much of El Paso. The strongest, which actually weakened before moving into the United States, produced golf ball hail over far east El Paso into Horizon City. This caused record breaking insurance claims for a single hail event with a total of \$200 million damage to vehicles and \$100 million to homes. This doubled the previous record from 9-16-09. Flooding also occurred due to excessive hail amounts plugging up drains.

### **Hudspeth County** 1 ESE Cornudas

04	1956MST				0	0	0.00K	0.00K	Hail (1.00)
	2006MST								

Hail reported at the Cornudas Cafe. Hail fell for 10 minutes.

A broad area of high pressure was located through the central part of the country with easterly winds tapping low level moisture from the Gulf of Mexico. Upper level moisture was tapped from an upper low moving out of the Baja region. These two features combined to create sufficient shear for severe thunderstorms over El Paso county with up to golf ball sized hail and hundreds of millions of dollars in damage across eastern El Paso County. Severe hail was also reported in Hudspeth County.

## TEXAS, Mid-South

### **Goliad County** 2 NNW Charco

07	1635CST				0	0	0.00K	0.00K	Hail (1.00)
	1641CST								

Observer reported quarter sized hail.

### **McMullen County** 13 S Wantz

07	1736CST				0	0	10.00K	0.00K	Thunderstorm Wind (52EG)
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Trees were blown down by winds estimated to be around 60 mph.

An upper level disturbance moving out of northeast Mexico interacted with a moderately unstable air mass to produce isolated severe storms over the northern Coastal Bend during the late afternoon hours of November 7th. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

## TEXAS, North

### **TXZ094-106>107- 122-135-148**

#### **Anderson - Delta - Fannin - Henderson - Hopkins - Lamar - Van Zandt**

01	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Below-normal rainfall led to a continuation of drought conditions across East Texas in November. These conditions reached as far west as the eastern counties of North and Central Texas. Conditions began to improve by the end of the month due to some beneficial rainfall that fell during the last week.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## TEXAS, North

### Coryell County

#### 2 WSW Whitson

05	0755CST				0	0	0.00K	0.00K	Flash Flood
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Several FM and CR were closed due to water over roadway. Some roads had 2 feet of flowing water. The intersection of HWY 236 and FM 107 was closed off, as well as portions of CR 338, 315 and Neff Park Rd.

### McLennan County

#### 3 SSE McGregor

07	1715CST 1930CST				0	0	0.00K	0.00K	Flash Flood
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Broadcast media reported that water was running over Mother Neff Parkway at Ag Farm Road.

### McLennan County

#### 1 WNW Moody

07	1730CST 1930CST				0	0	1.00K	0.00K	Flash Flood
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Broadcast media reported that Highway 107 west of the town of Moody was closed due to flooding.

### Dallas County

#### 2 NNW Coppell

07	1852CST 2200CST				0	0	0.00K	0.00K	Flash Flood
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Emergency management reported multiple stranded vehicles in the Sandy Lake and Highway 121 areas of Coppell.

### Tarrant County

#### 5 NNE Grapevine

07	1901CST 2200CST				0	0	0.00K	0.00K	Flash Flood
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Tarrant County Sheriff's Department reported flash flooding on FM 2499 between Grapevine Mills Blvd and Gerault Rd.

### Bell County

#### 2 NW Stampede

07	2230CST				0	0	1.00K	0.00K	Flood
08	0130CST				0	0	1.00K	0.00K	Flood

Bell County Sheriff's Department reported that asphalt had been washed off of Dove Road south of Highway 107, and Dove Rd will remain closed.

### Coryell County

#### 3 NW Pecan Grove Mound

07	2236CST				0	0	0.00K	0.00K	Flood
08	0030CST				0	0	0.00K	0.00K	Flood

Coryell County Sheriff's Department reported that several rural roads remain closed due to high water in the southeastern part of the County.

An upper level low located over the four corners slowly traversed eastward bringing with it a band of heavy rain for several days. The rain even started Nov. 5 and rain bands continued to affect the region through Nov 8.

### Montague County

#### 2 WNW Bowie

28	0110CST 0400CST				0	0	0.00K	0.00K	Flood
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Emergency management reported flooding on Hwy 174 near Bowie, TX.

Showers and thunderstorms moved across North and Central Texas late Sunday night into Monday morning associated with a cold front and an upper level trough. A few produced minor flooding and minor damage, but all storms remained below severe limits.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## TEXAS, North Panhandle

### TXZ016

#### Deaf Smith

17	1109CST				0	0			High Wind
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A developing upper level trough and surface cold front extending south from a developing surface low pressure over western Kansas brought windy conditions to the region. A north-south front was moving due east across the Panhandles during the late morning/early afternoon hours. The strong lower and mid level winds helped to compact surface isobars to make for windy conditions ahead of and along the main cold front, especially as skies began to clear and the Panhandles region; then mixed out very well ahead of the main surface feature. This resulted in a handful of high wind reports across the Panhandles.

## TEXAS, Northeast

### TXZ096-108>110-112-124>126-136>138-151>153-165>167

#### Angelina - Bowie - Camp - Cass - Franklin - Gregg - Harrison - Marion - Nacogdoches - Panola - Red River - Sabine - San Augustine - Shelby - Smith - Titus - Upshur - Wood

01	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Severe drought conditions (D2) continued across portions of Northeast Texas during November 2016, as monthly temperatures remained two to four degrees above normal and below normal rainfall continued. Widespread monthly rainfall amounts of only one to three inches fell across much of Northeast Texas, although isolated higher amounts exceeding four inches did fall during the final week of November across portions of Red River, Northern Franklin, Northern Titus, and Bowie Counties. This occurred a couple of weeks after extreme (D3) drought conditions developed over these areas by mid-month as much below normal rainfall has been observed since September.

### Smith County 1 S Gresham

28	1105CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Several trees were snapped northwest of Flint near County Road 140 and Silver Leaf Drive.

A vigorous upper level storm system moved out of the Inter-Mountain West and into the Southern Plains during the morning hours of November 28th. This system was very dynamic in nature as it was associated with an upper level jet of over 150kts with a low level jet in excess of 60kts across the Lower Mississippi Valley. Despite the very strong jet dynamics associated with the system, surface based instability was severely lacking across much of the region. For this reason, strong storms were mostly sub-severe but an isolated severe wind and small hail report were produced by thunderstorms in Northeast Texas and Northwest Louisiana. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

### TXZ149

#### Cherokee

29	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Severe (D2) drought conditions developed across Cherokee County Texas during the final week of November, as monthly temperatures remained two to four degrees above normal and below normal rainfall continued. Widespread monthly rainfall amounts of only two to three inches fell across the County during November, in addition to the much below normal rainfall that had fallen since September.

### Angelina County 1 NW (LFK)Angelina Co Arp

29	0857CST				0	0	0.00K	0.00K	Hail (1.00)
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A picture of quarter size hail was posted to the KTRE-TV Facebook page.

### Shelby County 1 NE Jordons Store

29	1015CST				0	0	0.00K	0.00K	Hail (1.25)
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Quarter to Half-dollar size hail was reported in the Jordans Store community.

A warm front shifted north across portions of Deep East Texas and Northcentral Louisiana during the morning and mid-afternoon hours on November 29th, well ahead of an upper level low pressure system over Westcentral Texas. This warm front transported much warmer, more humid, and unstable air northward, with impulses in the southwest flow aloft ahead of the upper low lifting northeast across the area along the warm front. Very strong wind shear was also present within the increasingly unstable air mass, resulting in scattered strong to severe thunderstorm development from the mid-morning hours across portions of Deep East Texas, which shifted northeast into the southern and eastern sections of Northcentral Louisiana during the afternoon and evening. These storms produced multiple reports of hail and damaging winds which downed trees across Shelby and Angelina Counties in Deep East Texas, as well as Grant, La Salle, and Caldwell Parishes in Northcentral Louisiana. A couple reports of funnel clouds were also received from Caldwell Parish, but no tornado touchdowns were determined from National Weather Service damage surveys.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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## TEXAS, South Central

### **Maverick County**

<b>2 SSE Eagle Pass Muni Arpt</b>	04	0610CST 0845CST			0	0	0.00K	0.00K	Flash Flood
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Thunderstorms produced heavy rain that caused flash flooding closing El Indio Highway between Memo Robinson Dr. and Las Quintas Blvd.

### **Maverick County**

<b>7 SE Eagle Pass Muni Arpt</b>	04	0845CST 1115CST			0	0	0.00K	0.00K	Flash Flood
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Thunderstorms produced heavy rain that caused flash flooding closing FM2030 between El Indio Hwy and Pioneer Rd. along Rosita Creek.

### **Maverick County**

<b>2 NNE Eagle Pass Muni Arpt</b>	04	0850CST 1115CST			0	0	0.00K	0.00K	Flash Flood
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Thunderstorms produced heavy rain that caused flash flooding sending significant water from Seco Creek over the road near the Ford dealership on Hwy 57 northeast of Eagle Pass.

Thunderstorms developed along a cold front in northern Mexico and moved across the Rio Grande into Maverick County. Some of these storms produced heavy rain that led to flash flooding.

### **Burnet County**

<b>2 S Burnet</b>	06	1440CST 1530CST			0	0	0.00K	0.00K	Flood
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Thunderstorms produced heavy rain that caused minor flooding sending water over the road at the intersection of CR340 and CR340A east of Hamilton Creek.

### **Travis County**

<b>3 SSW Manda</b>	06	1515CST 1800CST			0	0	0.00K	0.00K	Flood
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Thunderstorms produced heavy rain that caused minor flooding closing FM1100 between Elgin and Hwy 290. The west bound lane of Hwy 290 west of Elgin was also closed due to water over the road.

### **Bastrop County**

<b>2 W Paige Goober Arpt</b>	06	1600CST 1830CST			0	0	0.00K	0.00K	Flood
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Thunderstorms produced heavy rain that caused minor flooding sending water through a camping area at the Sound on Sound Festival on Old Hwy 20 northwest of Paige.

A series of upper level short wave troughs moved through the long wave pattern and produced thunderstorms across South Central Texas. A very moist boundary layer allowed some of these storms to produce heavy rain that led to some minor flooding.

## TEXAS, South Panhandle

### **Childress County**

<b>1 E (CDS)Childress Arpt</b>	02	1529CST			0	0	0.00K	0.00K	Thunderstorm Wind (57MG)
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The Childress ASOS measured a peak gust to 66 mph.

Note: The measured wind gust of 57 knots is equivalent to 66 mph.

### **Lynn County**

<b>1 WSW O'Donnell 4 SW Draw</b>	02	1531CST 1550CST			0	0	30.00K	300.00K	Hail (1.75)
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A swath of destructive hail up to golf ball size passed directly over O'Donnell accompanied by heavy rain and strong winds. The size of this hail swath was about 1.5 miles in width by 7 miles in length. This wind-driven hail damaged or destroyed an estimated 800 acres of cotton in far southern Lynn County in addition to damaging cars and breaking some windows in homes. Large numbers of fowl, primarily doves, were killed from this barrage of hail that lasted for several minutes.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## TEXAS, South Panhandle

### **Crosby County**

**3 S Ralls**

02	1617CST 1800CST				0	0	0.00K	0.00K	Flood
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Law enforcement reported that a section of Highway 207 south of Ralls was closed due to water of several inches covering the road.

### **Childress County**

**2 WNW Childress**

02	1632CST 1730CST				0	0	20.00K	0.00K	Flood
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Flooding closed the Highway 83 underpass southwest of Childress. A low profile car attempted to drive through these floodwaters, but became stranded after stalling out.

### **Kent County**

**1 E Jayton**

02	1700CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Downburst winds downed a large tree limb in Jayton.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

### **Stonewall County**

**2 NE Aspermont**

02	1905CST				0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
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Measured by a Texas Tech University West Texas mesonet.

Rich moisture with dewpoints in the 60s streamed north ahead of a cold front this afternoon. Around 1400 CST, scattered multicell thunderstorms developed from the southwest South Plains northeast through the far southeast Panhandle and moved east into the Rolling Plains through the late evening. Some of these storms produced destructive wind gusts, hail as large as golf ball size, and two instances of flooding from torrential downpours of nearly one half inch in just five minutes. The most destructive storm tracked from northwest of Lamesa to O'Donnell where very large hail decimated large quantities of cotton fields primed for harvest. Note: The measured wind gust of 54 knots is equivalent to 62 mph.

## TEXAS, West

### **Dawson County**

**2 N Hindman**

02	1524CST 1530CST				0	0			Hail (0.88)
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### **Andrews County**

**3 SSE Andrews**

02	1525CST 1530CST				0	0			Hail (1.75)
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### **Andrews County**

**Andrews**

02	1529CST 1535CST				0	0			Hail (1.00)
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### **Scurry County**

**3 SSW Snyder**

02	1940CST				0	0			Thunderstorm Wind (51MG)
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A thunderstorm moved across Scurry County and produced a 59 mph wind gust near Snyder.

An upper level trough was over Arizona, and an upper level disturbance moved over West Texas which provided an increase in lift. There was convergence along a surface trough across the Permian Basin which provided additional lift. Good moisture and instability were also present across the area. These conditions contributed to storms with large hail and strong winds across West Texas. Note: The measured wind gust of 51 knots is equivalent to 59 mph.

## TXZ258

### **Guadalupe Mountains of Culberson County**

03	1202MST								
04	2350MST				0	0	0.00K	0.00K	High Wind

Strong northeast winds occurred through Guadalupe Pass behind a cold front.

17	1138MST 1638MST				0	0	0.00K	0.00K	High Wind
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17	1151MST 1551MST				0	0	0.00K	0.00K	High Wind
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# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## TEXAS, West

Strong west winds occurred at the base of a passing upper trough, and resulted in high winds in the Guadalupe Mountains.

25	0551MST	0851MST			0	0	0.00K	0.00K	High Wind
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Strong northeast winds occurred through Guadalupe Pass behind a cold front.

27	0538MST				0	0	0.00K	0.00K	High Wind
28	1538MST								

27	1051MST				0	0	0.00K	0.00K	High Wind
28	0251MST								

Strong westerly winds occurred in the Guadalupe and Davis Mountains as the base of an upper trough translated eastward over the region.

## TEXAS, Western North

### **Baylor County 3 ENE Bomarton**

06	1003CST	1303CST			0	0	0.00K	0.00K	Flash Flood
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Highway 277 at County Road 436 was closed due to flooding.

Showers and storms associated with a upper low produced some flash flooding in western north Texas. on the morning of the 6th.

## UTAH, East

### **UTZ022-027**

#### **Grand Flat and Arches - Southeast Utah**

17	1900MST				0	0	0.00K	0.00K	Frost/Freeze
18	0930MST								

An upper trough and associated surface cold front brought widespread freezing temperatures to most lower elevation areas of southeast Utah.

## UTAH, West and Central

### **UTZ002**

#### **Northern Wasatch Front/Brigham City/Ogden Bountiful**

16	1615MST	1645MST			0	0	0.00K	0.00K	High Wind
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### **UTZ004**

#### **Southern Wasatch Front/Lehi/Provo/Nephi**

16	1900MST	2100MST			0	0	5.0K	0.00K	Strong Wind
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### **UTZ021**

#### **Glen Canyon Recreation Area/Lake Powell**

17	0330MST				0	0	0.00K	0.00K	High Wind
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A large Pacific storm system moved through Utah in mid-November, with strong gusty winds both ahead of and immediately behind the associated cold front.

### **Tooele County**

#### **16 ESE Gold Hill**

#### **11 WSW (DPG)Michael Aaf Dug**

23	1445MST	1525MST			0	0	0.00K	0.00K	Thunderstorm Wind (62MG)
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A thunderstorm produced strong winds across the western portions of the U.S. Army Dugway Proving Ground mesonet, with peak recorded wind gusts in this area of 71 mph at Causeway, 68 mph at the Salt Flats sensor, 64 mph at Juliet Road, and several other recorded wind gusts of 58 to 61 mph.

Note: The measured wind gust of 62 knots is equivalent to 71 mph.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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## UTAH, West and Central

### **Juab County**

**20 E Callao** 23 1520MST 0 0 0.00K 0.00K Thunderstorm Wind (52MG)  
The Fish Springs mesonet sensor reported a maximum wind gust of 60 mph.

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

### **Tooele County**

**6 SSW (DPG)Michael Aaf Dug** 23 1535MST 0 0 0.00K 0.00K Thunderstorm Wind (53MG)  
1550MST

A strong line of thunderstorms moved through the U.S. Army Dugway Proving Ground mesonet, with peak recorded wind gusts of 61 mph at White Sage and Camel Back Mountain, 60 mph at Simpson Springs, Durand Road, and Tower Grid, 59 mph at Ditto, and 58 mph at Baker Lab.

Note: The measured wind gust of 53 knots is equivalent to 61 mph.

### **Tooele County**

**17 SSE Gold Hill** 23 1610MST 0 0 0.00K 0.00K Thunderstorm Wind (56MG)  
A 64 mph wind gust was recorded at the Callao sensor in the U.S. Army Dugway Proving Ground mesonet.

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

### **Tooele County**

**2 WNW Pehrson Station** 23 1630MST 0 0 0.00K 0.00K Thunderstorm Wind (56MG)  
The Vernon Hill sensor recorded a peak wind gust of 65 mph.

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

### **Utah County**

**1 W Springdell** 23 1740MST 0 0 0.00K 0.00K Thunderstorm Wind (51MG)  
The US-189 at Lower Provo Canyon sensor recorded a maximum wind gust of 59 mph.

A strong storm system moved across the Great Basin on November 23 and severe thunderstorms developed immediately ahead of the associated cold front, with many strong wind gusts reported across northern Utah. Note: The measured wind gust of 51 knots is equivalent to 59 mph.

### **UTZ006>010-517>518**

#### **Central Mountains - Southern Mountains - Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains 180 North - Wasatch Mountains South of 180 - Wasatch Plateau/Book Cliffs - Western Unita Mountains**

27 0400MST  
29 0800MST 0 0 0.00K 0.00K Winter Storm

### **UTZ002>004**

#### **Northern Wasatch Front/Brigham City/Ogden Bountiful - Salt Lake and Toole Valleys - Southern Wasatch Front/Lehi/Provo/Nephi**

28 0300MST  
2300MST 0 0 0.00K 0.00K Winter Storm

Utah experienced its first major snowstorm of the 2016-17 winter at the end of November, with both the mountains and valleys receiving significant amounts of snow over a 2-3 day period.

## VERMONT, North and Central

### **VTZ006-008-011-016>019**

#### **Eastern Addison - Eastern Chittenden - Eastern Franklin - Eastern Rutland - Lamoille - Washington - Western Rutland**

20 1000EST  
21 1800EST 0 0 0.00K 0.00K Winter Storm

Low pressure across the Great Lakes on November 19th moved across Ontario province while a secondary area of low pressure developed and moved across New England on the 20th and 21st. Snow began during the afternoon of November 20th and continued off/on through the morning hours of November 21st. This event was highly dependent on elevation. The heaviest snowfall was across the higher elevations (>1500') of the Green Mountains and NE Vermont with 6 to 12 inches, elsewhere snowfall amounts were generally 2 to 5 inches.

### **VTZ003-006>008-010-012-019**

#### **Caledonia - Eastern Rutland - Essex - Lamoille - Orange - Orleans - Washington - Windsor**

29 0600EST  
1100EST 0 0 130.0K 0.00K Winter Weather



# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## VERMONT, North and Central

A warm front moved across Vermont during the morning hours of November 29th bringing light amounts of precipitation. Precipitation in the form of freezing rain moved into central and eastern VT around daybreak and lasted for several hours with less than one tenth ice accretion. There were dozens of vehicle accidents and thousands of commuters stranded/impacted as state roads and Interstates 89/91 were closed or impassable in spots. One vehicle accident in Bridgewater along Route 4 resulted in a fatality.

## VERMONT, South

### **VTZ013**

#### **Bennington**

20	0400EST							
21	1800EST				0	0		Heavy Snow

### **VTZ014**

#### **Western Windham**

20	0500EST							
21	1800EST				0	0		Winter Weather

A strong frontal boundary crossed the region during the early morning hours on Sunday, November 20th. Precipitation initially begin as rain or a mix of rain and snow, but quickly transitioned over to just snow as colder air quickly worked its way into the region.

Although precipitation only lasted a few hours across valley areas, the snowfall continued through the entire day on Sunday November 20th and into the day on Monday November 21st across the higher elevations of the southern Green Mountains, as the persistent westerly flow caused upslope flow. While valley areas only saw a few inches of snowfall, the highest elevations around Woodford saw up to 26 inches.

As a result of the snowfall, travel was severely hampered across the high terrain. In addition, the snowfall combined with gusty winds caused some power outages across southern Vermont as well.

## VIRGINIA, Extreme Southwest

### **Washington County 1 SSE White Mill**

30	1100EST				0	0		Thunderstorm Wind (50EG)
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Several trees were reported down.

A strong upper level system moved through the Eastern United States late Tuesday into early Wednesday. The associated surface low pressure system pressed north northeast from the Lower Mississippi across the Mid South on its way across the Lower Ohio Valley. Damaging straight line wind with some of the thunderstorms generated ahead of the system cold front resulted in downed trees. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

## VIRGINIA, North

### **VAZ025-038>039- 050-502-507>508**

#### **Augusta - Central Virginia Blue Ridge - Greene - Madison - Northern Virginia Blue Ridge - Orange - Rockingham - Southern Fauquier**

05	0200EST 0800EST				0	0		Frost/Freeze
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High pressure overhead caused mainly clear skies and light winds. Radiational cooling led to a freeze across central Virginia.

### **VAZ036-052-055- 057**

#### **Albemarle - King George - Nelson - Prince William - Stafford**

08	0200EST 0800EST				0	0		Frost/Freeze
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High pressure overhead caused mainly clear skies and light winds. Radiational cooling led to a freeze across the Virginia Piedmont.

### **VAZ053-054**

#### **Arlington - Fairfax**

13	0200EST 0800EST				0	0		Frost/Freeze
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# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## VIRGINIA, North

High pressure overhead caused mainly clear skies and light winds. Radiational cooling led to a freeze in the suburbs of Washington D.C.

### VAZ503

#### Western Highland

19	1700EST								
20	2200EST				0	0			Winter Weather

Snow developed due to cold and moist air flowing over the mountains.

19	1827EST				0	0			High Wind
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### VAZ504-507-508

#### Central Virginia Blue Ridge - Eastern Highland - Northern Virginia Blue Ridge

19	1827EST				0	0			High Wind
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A strong cold front passed through on the 19th. Strong pressure rises along with cold advection caused high winds from aloft to mix down.

### VAZ506

#### Eastern Loudoun

20	1233EST				0	0			High Wind
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Strong low pressure intensified over New England. A strong pressure gradient between the low and high pressure over the Midwest led to high winds.

## VIRGINIA, Southwest

### VAZ017

#### Floyd

19	2330EST								
20	0500EST				0	0	0.00K	0.00K	High Wind

### VAZ015

#### Grayson

20	0400EST								
	0600EST				0	0	1.0K	0.00K	High Wind

A strong upper level disturbance rotating around an upper level low pressure system over the Great Lakes region brought 45 to 55 knot winds across the central Appalachians. Dry air associated with this system and a low inversion height exposed the higher terrain to gusts which reached 60 mph or more.

## WASHINGTON, Northeast

### WAZ037-042

#### East Slopes Northern Cascades - Northeast Mountains - Okanogan Highlands

24	0000PST								
25	0800PST				0	0	0.00K	0.00K	Heavy Snow

A moist pacific storm system brought heavy snow to the mountains of Northeast Washington.

## WASHINGTON, Northwest

### WAZ568

#### Cascades Of Snohomish And King Counties

15	1700PST								
16	0200PST				0	0			Heavy Snow

A post-frontal Puget Sound convergence zone brought heavy snow to Stampede Pass.

### WAZ513

#### Olympics

23	1800PST								
25	0400PST				0	0			Heavy Snow

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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## WASHINGTON, Northwest

A Pacific frontal system brought heavy snow to the Olympics and North Cascades. For all but the Stevens Pass area, this was the first winter storm of the season.

### WAZ503

#### Western Whatcom

23	2244PST								
24	1000PST				0	0	0.00K	0.00K	High Wind

### WAZ001

#### San Juan

24	0117PST								
	0937PST				0	0	0.00K	0.00K	High Wind

There was brief high wind in a few zones of the northwest interior.

### WAZ567>569

#### Cascades Of Pierce And Lewis Counties - Cascades Of Snohomish And King Counties - Cascades Of Whatcom And Skagit Counties

24	0200PST								
25	0400PST				0	0			Heavy Snow

A Pacific frontal system brought heavy snow to the Olympics and North Cascades. For all but the Stevens Pass area, this was the first winter storm of the season.

27	1300PST								
28	0100PST				0	0			Heavy Snow

A Pacific frontal system brought heavy snow to the North Cascades.

## WASHINGTON, Southwest

### WAZ021

#### South Coast

12	0334PST								
	0519PST				0	0	0.00K	0.00K	High Wind

A low pressure system tracking northeastward off the Coast brought high winds to the South Washington Coast, with sustained winds up to 45 mph observed at the Astoria/Megler bridge.

### WAZ020

#### Southwest Interior

24	0201PST								
	0901PST				0	0	0.00K	0.00K	High Wind

A strong cold front moving southeastward onto the Coast brought high winds to the South Washington Coast and Coastal Mountains.

### WAZ019

#### West Slopes Southern Cascades and Passes

24	0500PST								
25	0700PST				0	0	0.00K	0.00K	Heavy Snow

A cold front moving across the area brought heavy snow to the South Washington Cascades. Snow along the front and post frontal showers brought 12-20 inches of snow to multiple locations around 4000 feet and higher.

### Wahkiakum County 1 ENE Grays River

24	1021PST								
25	0850PST				0	0	0.00K	0.00K	Flood

Heavy rain resulted in flooding of the Grays River near Rosburg. Grays River reached flood stage at 1021 AM on November 24th, and crested at 13.9 feet at 1215 AM November 25th. The river dropped below flood stage at 850 AM November 25th.

A moist Pacific front moving slowly across the area produced heavy rainfall which caused local river flooding along the Grays River near Rosburg.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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## WASHINGTON, Southwest

### WAZ021

#### South Coast

24	1615PST				0	0	0.00K	0.00K	High Wind
	2115PST								

A strong cold front moving southeastward onto the Coast brought high winds to the South Washington Coast and Coastal Mountains.

### WAZ019

#### West Slopes Southern Cascades and Passes

27	1600PST				0	0	0.00K	0.00K	Heavy Snow
28	0900PST								

A series of disturbances under west-northwesterly flow brought several rounds of snow showers to the South Washington Cascades, totaling 8-14 inches at most of the SNOTEL sites. Winds gusting up to 55 mph also caused blowing snow.

## WEST VIRGINIA, East

### WVZ501-505

#### Western Grant - Western Pendleton

19	1700EST				0	0			Winter Weather
20	2200EST								

Snow developed due to cold and moist air flowing over the mountains.

### WVZ503-505-506

#### Eastern Pendleton - Western Mineral - Western Pendleton

19	1827EST				0	0			High Wind
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A strong cold front passed through on the 19th. Strong pressure rises along with cold advection caused high winds from aloft to mix down.

### WVZ052-502

#### Berkeley - Eastern Grant

20	1135EST				0	0			High Wind
	1608EST								

Strong low pressure intensified over New England. A strong pressure gradient between the low and high pressure over the Midwest led to high winds.

## WEST VIRGINIA, North

### WVZ514

#### Eastern Tucker

19	1300EST				0	0	0.00K	0.00K	Heavy Snow
21	0400EST								

Cold northwest flow behind the passage of a strong front brought a period of upslope/lake enhanced snow to the counties north of interstate 80 and in the high terrain of West Virginia and Maryland. Snow totals ranged from 3-6 inches in most cases, but a persistent band of snow over northern PA resulted in 8-10 inches in Venango County. In addition, 10.5 inches of snow was reported in the highest elevations of eastern Tucker County.

## WEST VIRGINIA, West

### WVZ006-015

#### Cabell - Kanawha

30	1945EST				0	0	15.0K	0.00K	Strong Wind
	2145EST								

Showers along a cold front moved eastward across southern Ohio and northern Kentucky during the early evening. The showers strengthened as they crossed the Ohio River into West Virginia. Strong winds aloft were mixed down in the showers, leading to gusty outflow winds. There was some minor damage from the strong winds, including a newly installed roof blown from a brick building in Huntington. The debris fell onto a house and car next door. In Kanawha County, a number of trees were downed. Several fell across roads and power lines. Nearly 2000 folks lost power. No lightning was detected. Generally 35 to 45 mph winds were recorded by automated weather sensors across western and central West Virginia.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## WISCONSIN, Northeast

### **WIZ048-049**

#### **Calumet - Winnebago**

18	1619CST				0	0	13.5K	0.00K	Strong Wind
	1739CST								

An intense low pressure system produced strong south-southwest winds across Wisconsin as it moved from the Plains, across northern Wisconsin, to Ontario. The strong winds caused isolated damage, downing some trees and knocking out power, across parts of central and east central Wisconsin. The strongest recorded gusts included 56 mph near Howard (Brown Co.), 54 mph at New Holstein (Calumet Co.), 53 mph at Chilton (Calumet Co.) and Oshkosh (Winnebago Co.), 52 mph near Plover (Portage Co.), and 50 mph near Zittau (Winnebago Co.).

## WISCONSIN, Northwest

### **WIZ004**

#### **Iron**

18	2300CST				0	0			
19	1200CST								Lake-Effect Snow

Parts of northern Iron County received heavy lake effect snow. An observer in Gile reported of 7.3 of snowfall.

## WYOMING, Central and West

### **WYZ003**

#### **Cody Foothills**

14	0400MST				0	0	0.00K	0.00K	High Wind
	2218MST								

Strong mid level winds mixing down to the surface produced some very strong winds in the Cody foothills. The strongest winds were around the Clark area where several wind gusts of hurricane force were recorded, including a maximum of 107 mph. Strong winds even extended toward more populated areas, where a 63 mph wind gust was reported in the west side of Cody.

### **WYZ002-015**

#### **Absaroka Mountains - Wind River Mountains East**

16	1900MST				0	0	0.00K	0.00K	Winter Storm
17	1100MST								

### **WYZ010**

#### **Northeast Johnson County**

16	2000MST				0	0	0.00K	0.00K	Winter Weather
17									

### **WYZ004>006-017>018**

#### **Lander Foothills - North Big Horn Basin - Southeast Big Horn Basin - Southwest Big Horn Basin - Wind River Basin**

16	2100MST				0	0	0.00K	0.00K	Winter Storm
17	1300MST								

### **WYZ028**

#### **Rock Springs & Green River**

17	0300MST				0	0	0.00K	0.00K	Winter Storm
	1900MST								

A Pacific low pressure system moved into the area and brought the first widespread snowstorm of the season. The heaviest snow fell in the favored east to northeast upslope flow areas. The east slopes of the Wind River Mountains had the most snow with 20 inches reported at the Hobbs Park SNOTEL. The Lander foothills had between 13 to 15 inches of snow with up to 9 inches near Thermopolis in Hot Springs County. Other snowfall totals included 8 to 11 inches in Rock Springs and Green River in Sweetwater County, 9 inches in Hyattville in Big Horn County, 10 inches near Ten Sleep in Washakie County, 9 inches in Buffalo in Johnson County and 7 inches in downtown Riverton.

### **WYZ012-024**

#### **Jackson Hole - Salt River & Wyoming Ranges - Teton & Gros Ventre Mountains**

27	0300MST				0	0	0.00K	0.00K	Heavy Snow
28	1700MST								

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## WYOMING, Central and West

Low pressure passing through the area followed by a persistent, unstable northwest flow brought heavy snow to portions of the western mountains. Much of the snow fell in bands, leading to big changes in accumulation across short distances. The heaviest amounts fell at Jackson Hole where 2 feet of new snow was reported and in the Salt and Wyoming Ranges where 23 inches fell at Commissary Ridge. In the valleys, the most snow fell in the Jackson Valley where 11.5 inches fell near Wilson.

### WYZ010

#### Northeast Johnson County

28	2346MST								
29	1219MST			0	0	0.00K	0.00K	High Wind	

An area of low pressure strengthening over the northern plains brought a tight pressure gradient to the area. Combined with strong mid level winds and favored northwest flow high winds occurred over northern Johnson County. The strongest gust was 67 mph at the Buffalo airport.

## WYOMING, North Central

### WYZ098-099

#### Northeast Bighorn Mountains - Sheridan Foothills

16	1800MST								
17				0	0	0.00K	0.00K	Winter Storm	

A cold front moved across northern Wyoming during the late afternoon into the evening hours on the 16th. This resulted in a cold, moist easterly upslope flow over the Big Horn Mountains and adjacent foothills. At the same time, an upper low moved across southern Wyoming providing additional upslope flow to the mountain locations. As a result, significant snow accumulations occurred over the Big Horn Mountains and adjacent foothills.

## WYOMING, Northeast

### WYZ054-058

#### Northern Campbell - South Campbell - Western Crook - Weston - Wyoming Black Hills

17	0100MST								
	2000MST			0	0	0.00K	0.00K	Winter Weather	

A quick-moving storm system brought accumulating snow to all of northeastern Wyoming. The heaviest snow generally fell over the Bear Lodge Mountains area, where three to six inches were reported.

### WYZ056-057

#### Western Crook - Wyoming Black Hills

28	1800MST								
29	0200MST			0	0	0.00K	0.00K	Winter Storm	

### WYZ058

#### Weston

28	2100MST								
29				0	0	0.00K	0.00K	Winter Weather	

A strong low pressure system moved into eastern portions of the Northern Plains and stalled out for nearly 48 hours. Wrap-around moisture behind the low brought snow to far northeastern Wyoming. The heaviest snow fell over the Bear Lodge Mountains and the Four Corners area north of Newcastle, where eight to 15 inches of snow was reported. Elsewhere, two to six inches were reported across the rest of northeastern Wyoming. Gusty winds produced blowing and drifting snow, reducing visibilities below a quarter mile, especially in the Sundance area.

## WYOMING, Southeast

### WYZ107-116-118

#### Central Laramie County - East Platte County - South Laramie Range

17	0700MST								
	2200MST			0	0	0.00K	0.00K	Winter Weather	

A low pressure system brought the season's first snowfall to much of southeast Wyoming. Snow totals ranged from two to six inches.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## WYOMING, Southeast

**WYZ101-103-106-109>110-115-118>119**      **Central Carbon County - Central Laramie County - Central Laramie Range And Southwest Platte County - Converse County Lower Elevations - East Laramie County - East Platte County - Laramie Valley - North Laramie Range - North Snowy Range Foothills**

21	2000MST								
22	0700MST				0	0	0.00K	0.00K	Winter Weather

A fast moving Pacific low pressure system brought light to moderate snowfall to much of southeast Wyoming. Snow amounts ranged from three to seven inches, highest over the northern Laramie Range.

**WYZ110-116**      **North Snowy Range Foothills - South Laramie Range**

24	0300MST								
	0700MST				0	0	0.00K	0.00K	High Wind

A period of high winds developed for the Interstate 80 wind corridors between Laramie and Rawlins, as well as the south Laramie Range.

**WYZ112-114**      **Sierra Madre Range - Snowy Range**

27	0500MST								
29	1900MST				0	0	0.00K	0.00K	Winter Storm

A slow moving Pacific storm produced a prolonged period of moderate to heavy snow, strong and gusty west winds, and poor visibilities in falling and blowing snow over the Snowy and Sierra Madre mountains. Snow totals were estimated between one and five feet, highest above 10000 feet.

**WYZ110**      **North Snowy Range Foothills**

27	0900MST								
28	0200MST				0	0	0.00K	0.00K	Blizzard

The combination of falling snow and strong west winds gusting to 60 mph produced blizzard conditions through the Arlington and Elk Mountain areas. Interstate 80 was closed as visibilities were reduced to near zero at times in blowing and falling snow.

**WYZ106-115>118**      **Central Laramie County - Central Laramie Range And Southwest Platte County - East Platte County - Laramie Valley - South Laramie Range - South Laramie Range Foothills**

27	1330MST								
	2125MST				0	0	0.00K	0.00K	High Wind

**WYZ106-116**      **Central Laramie Range And Southwest Platte County - South Laramie Range**

28	0430MST								
	0827MST				0	0	0.00K	0.00K	High Wind

A tight surface pressure gradient ahead of an approaching Pacific storm produced high winds through the wind corridors of southeast Wyoming.

**WYZ101-107>108-119**      **Converse County Lower Elevations - East Laramie County - East Platte County - Goshen County - Niobrara County**

29	0719MST								
	1600MST				0	0	0.00K	0.00K	High Wind

A period of high winds developed east of Interstate 25 in southeast Wyoming.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## GULF OF MEXICO

**GMZ043**

### **Hawk Channel From Craig Key To West End Of Seven Mile Bridge Out To The Reef**

05	1600EST				0	0	0.00K	0.00K	Waterspout
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Northeast lower tropospheric flow and modest buoyancy below 11,000 feet brought scattered, shallow convective showers to the middle Florida Keys. And isolated waterspout occurred southwest of Marathon, Florida.

## GULF OF MEXICO

**GMZ335**

### **Galveston Bay**

07	0148CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Thunderstorms along a cold front produced a marine thunderstorm wind gust in Galveston Bay.

## GULF OF MEXICO

**GMZ042-052**

### **Hawk Channel From Ocean Reef To Craig Key Out To The Reef - Ocean Reef to Craig Key FL out 20nm**

15	1000EST				0	0	0.00K	0.00K	Waterspout
	1234EST								

Scattered showers embedded in light winds within the lower troposphere produced an isolated waterspout near Islamorada, Florida.

## GULF OF MEXICO

**GMZ230**

### **Corpus Christi to Baffin Bay**

18	1012CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
	1013CST								

Isolated storms produces wind gusts to 40 knots over Nueces Bay during the morning of November 18th.

## GULF OF MEXICO

**GMZ355**

### **High Island to Freeport TX out 20nm**

18	1655CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Thunderstorms that developed ahead of a strong cold front produced a marine thunderstorm wind gust.

## GULF OF MEXICO

**GMZ130-135-175**

### **Baffin Bay to Point Mansfield TX Ext from 20 to 60nm - Laguna Madre from 5nm North of Point Mansfield to Baffin Bay TX - Laguna Madre from Port of Brownsville to Arroyo Colorado**

18	1912CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
	2124CST								

Showers and thunderstorms developed ahead of and along a cold front that pushed across the Laguna Madre and Gulf of Mexico waters during the evening hours. Some of these storms became strong and produced gale force wind gusts over the lower Texas coastal waters.

## GULF OF MEXICO

**GMZ635-655**

### **Choctawhatchee Bay - Destin to Pensacola FL out 20nm**

30	1136CST				0	0	0.00K	0.00K	Waterspout
	1149CST								

Isolated supercells developed ahead of a cold front and produced waterspouts across the western Florida Panhandle coastal waters.



# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## GULF OF MEXICO

### GMZ750

#### Apalachicola to Destin FL out 20nm

30	1237EST				0	0	0.00K	0.00K	Waterspout
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Strong to severe thunderstorms affected the coastal waters during the day on November 30th. One supercell produced a waterspout south of Destin that was observed on a webcam.

## GULF OF MEXICO

### GMZ634

#### Pensacola Bay Area Including Santa Rosa Sound

30	1637CST				0	0	0.00K	0.00K	Waterspout
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Isolated supercells developed ahead of a cold front and produced waterspouts across the western Florida Panhandle coastal waters.

## ATLANTIC, Caribbean Sea and Tropical Atlantic

### AMZ650

#### Jupiter Inlet to Deerfield Beach FL out 20nm

04	1304EST				0	0			Waterspout
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Showers were located in the Atlantic waters in the afternoon. One of the stronger showers was able to produce a water spout offshore Palm Beach County.

## LAKE HURON

### LHZ441

#### Point Austin to Harbor Beach MI

18	2119EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A thunderstorm moving into Lake Huron produced a 38 knot thunderstorm wind gust.

## LAKE MICHIGAN

### LMZ248

#### Seul Choix Point to Point Detour MI

18	1942EST				0	0	0.00K	0.00K	Marine High Wind
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South storm force wind gusts developed at Parent Bay on the evening of the 18th ahead of a strong low pressure system tracking into western Lake Superior.

## LAKE SUPERIOR

### LSZ244-263

#### Lake Superior East of line from Saxon Harbor WI to Grand Portage MN to line Manitou Island MI northward beyond 5nm and South of Intl Border - Manitou Island to Lower Entrance Light to Portage Lake MI

12	0700EST				0	0	0.00K	0.00K	Marine High Wind
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As a high pressure ridge passed east of the region, southwest storm force winds developed over the west half of Lake Superior on the 12th.

### LSZ263-264

#### Lake Superior East of line from Saxon Harbor WI to Grand Portage MN to line Manitou Island MI northward beyond 5nm and South of Intl Border - Lake Superior east of line from Manitou Island MI northward and south of Intl Border

18	1000EST				0	0	0.00K	0.00K	Marine High Wind
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### LSZ248-265-266

#### Grand Marais to Whitefish Point MI - Manitou Island To Marquette Mi Beyond 5nm From Shore - Manitou Island to Marquette Mi and W of Grand Marais Mi to Us/Canadian Border beyond 5nm of shore

19	0110EST				0	0	0.00K	0.00K	Marine High Wind
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# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## LAKE SUPERIOR

A strong low pressure system tracking over the Upper Great Lakes produced storm force winds over portions of Lake Superior from the evening of the 18th into the 19th.

## PUERTO RICO

### **Arroyo**

#### **1 NNE Arroyo**

04	2147AST 2230AST				0	0	0.00K	0.00K	Flood
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Urban flooding was reported at cuatro calles sector and Barrio Ancones.

### **Naranjito**

#### **Naranjito**

04	2204AST				0	0	1.00K	0.00K	Thunderstorm Wind (35EG) Public reported a fallen tree over electric cables in road PR-811, km 3.7 at Barrio Cedro Abajo in Naranjito municipality.
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The presence of a very strong upper level trough, and very deep tropical moisture and very light low level winds to produced numerous showers with strong thunderstorms mainly across the eastern half of Puerto Rico. Note: The estimated wind gust of 35 knots is equivalent to 40 mph.

### **Guaynabo**

#### **9 NW Guaynabo**

07	1429AST 1659AST				0	0	0.00K	0.00K	Flood
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Urban flooding next to Federal prison in Guaynabo. Car was stranded and all occupants were rescued.

### **San Juan**

#### **5 NNW San Juan**

07	1442AST 1659AST				0	0	0.00K	0.00K	Flood
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Urban flooding in Dos Hermanos street near La Placita de Santurce.

### **San Juan**

#### **4 NW San Juan**

07	1506AST 1659AST				0	0	0.00K	0.00K	Flood
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Urban flooding was reported on De Diego Avenue with the intersection with Highway PR-22.

A shear line moved across the local area. This feature in combination with daytime heating, deep tropical moisture and local effects produced scattered to numerous showers with thunderstorms across the San Juan metropolitan area.

### **Bayamon**

#### **3 NNE Bayamon**

08	1402AST 2245AST				0	0	0.00K	0.00K	Flood
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House affected by urban flooding in Urb. Santa Rosa, street 10, Bloq 14 house 7. House next door was also affected.

### **Bayamon**

#### **4 NNE Bayamon**

08	1415AST 2245AST				0	0	0.00K	0.00K	Flood
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House affected by urban flooding in Urb. Santa Cruz Ave. Ongay House 21 near Hospital San Pablo. No one inside house.

### **Guaynabo**

#### **7 WSW Guaynabo**

08	1427AST 2245AST				0	0	0.00K	0.00K	Flood
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Elderly home affected by urban flooding in Urb. Santa Rosa 3 Road PR-833 km 12.2.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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## PUERTO RICO

### Catano

2 W Catano

08	1428AST 2245AST				0	0	0.00K	0.00K	Flood
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House affected by urban flooding in Urb. Las Vegas Calle Amapola B6.

Moist and unstable weather conditions affected Puerto Rico. Very heavy rainfall was observed in the vicinity of the San Juan metropolitan area. Some flooding occurred with mudslides also reported as soils were very saturated due to previous heavy rainfall events.

### PRZ001

#### San Juan and Vicinity

12	1600AST				2	0	0.00K	0.00K	Rip Current
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Hazardous marine conditions due to northerly swells affecting the north coast of Puerto Rico. Dangerous Rip current were observed along the north facing beaches of Puerto Rico. M14IW

### San Juan

2 NW San Juan

13	1346AST 1515AST				0	0	0.00K	0.00K	Flood
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Emergency Manager reported urban flooding at Street 1 in Villa Nevares.

### San Sebastian

3 NW San Sebastian

13	1607AST 2045AST				0	0	0.00K	0.00K	Flash Flood
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Road PR-125 near intersection with road PR-446 was reported flooded due to Rio Guatemala out of its banks.

### San Sebastian

1 WNW San Sebastian

13	1607AST 2045AST				0	0	0.00K	0.00K	Flash Flood
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Road PR-119 at Barrio Calabazas was reported flooded due to Rio Culebrinas out of its banks.

### San Sebastian

1 WNW San Sebastian

13	1623AST 2045AST				0	0	0.50K	0.00K	Flash Flood
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Residents at Villa Sofia sector were evacuated due to flood waters.

### San Sebastian

1 WNW San Sebastian

13	1630AST 2045AST				0	0	0.50K	0.00K	Flash Flood
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Rio Culebrinas went out of its banks at Barrio El Culebrinas. Residents in this area were evacuated.

### San Sebastian

3 NW San Sebastian

13	1630AST 2045AST				0	0	1.00K	0.00K	Heavy Rain
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A mudslide was reported at PR-445, KM 1.2. The road was closed which gives access to Barrios Salto Uno and Salto Dos.

### San Sebastian

2 W San Sebastian

13	1648AST 2045AST				0	0	0.00K	0.00K	Flash Flood
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Road PR-497 was reported flooded and closed due to Rio Sonador out of its banks.

A light southeast wind flow combined with deep tropical moisture to produce scattered to numerous showers with thunderstorms across the western interior section of Puerto Rico. Torrential rainfall was observed with rainfall accumulations between 4 to 5 inches in two hours reported in the municipality of San Sebastian. Several creeks and rivers were out of its banks producing several damages to houses and commercial buildings.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<b>PUERTO RICO</b>									
<b>Aguada</b>									
19 N Aguada	14	0851AST			0	0	0.50K	0.00K	Flood
Person trapped in their car by water from the Culebrinas river on highway PR-418 in Coloso Adentro.									
<b>Juana Diaz</b>									
5 NW Juana Diaz	14	1530AST			0	0	1.00K	0.00K	Heavy Rain
Mudslide along PR-512 in sector Guaraguao and sector El Palmar.									
<b>Ponce</b>									
6 NE Ponce	14	1531AST			0	0	0.50K	0.00K	Heavy Rain
Mudslide along road PR-511, km 16.2 in Barrio Anon, Las Mesas sector.									
<b>Lajas</b>									
Lajas	14	1655AST			0	0	0.00K	0.00K	Flood
Urban flooding was reported along road PR-116, km 8.4.									
<b>Juana Diaz</b>									
6 NW Juana Diaz	14	1730AST			0	0	0.00K	0.00K	Flash Flood
Guayo river was reported out of its banks near sector Agustinillo.									
<b>Lajas</b>									
1 ESE Lajas	14	1748AST			0	0	0.50K	0.00K	Heavy Rain
Mudslide was reported along road PR-116, km 9.6.									
<b>Juana Diaz</b>									
4 WSW Juana Diaz	14	1900AST			0	0	0.00K	0.00K	Flash Flood
River out of its banks in sector Arus. Two families were affected by this event. The houses were located in Street 2 and street 1, km 118.8 respectively.									
Local and diurnal effects produced another significant round of shower and thunderstorm activity mainly across western and southern PR. This activity lead to river and small stream flooding, which resulted in several rivers going out of its banks producing flash flooding and mudslides.									
<b>San Juan</b>									
3 NNW San Juan	17	1308AST			0	0	0.00K	0.00K	Flood
Urban flooding was observed between Muoz Rivera avenue and Roosevelt Avenue.									
<b>Jayuya</b>									
Jayuya	17	1630AST			0	0	1.00K	0.00K	Heavy Rain
Periods of heavy rainfall led to several mudslides and fallen trees due to close and saturated terrain along road PR-528, sector Santa Rosa in Barrio Zuma. Mudslides were also reported along road PR-144 in Barrio Collores.									
Moist and unstable weather conditions affected Puerto Rico. Very heavy rainfall felt over Puerto Rico with some flooding occurred with mudslides also reported as soils were very saturated due to previous heavy rainfall events.									
<b>Yabucoa</b>									
3 E Yabucoa	18	0651AST			0	0	0.00K	0.00K	Flash Flood
Highway PR-906 was closed due to flooding on the Guayanes river.									

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## PUERTO RICO

### Maunabo

5 NE Maunabo

18	0651AST				0	0	0.50K	0.00K	Heavy Rain
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A mudslide was reported at Highway PR-3, KM 111.2.

### Naguabo

3 W Naguabo

18	0653AST 1030AST				0	0	0.00K	0.00K	Flash Flood
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Highway PR-31 was closed due to flooding on the Blanco river.

### Salinas

Salinas

18	1100AST				0	0	0.50K	0.00K	Heavy Rain
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Minor mudslide over Highway PR-1 in Parcel Vazquez sector.

Moist and unstable weather conditions affected Puerto Rico. Very heavy rainfall felt over the southeast sections of Puerto Rico. Some flooding occurred with mudslides also reported as soils were very saturated due to previous heavy rainfall events.

### Manati

1 NNW Manati

18	1510AST 1520AST	0.62	1091.2	0	0	10.00K	0.00K	Tornado (EF0)
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A Tornado was reported at the urban area of Manati. Among the structural damages identified were weak structures in a highly populated area, structural damages due to flying debris, galvanized roofs and medium to large size trees were ripped off.

Copious amount of tropical moisture trailing a tropical wave, moving across the Mona Passage along with a pre-frontal trough and a frontal boundary just to the Northwest of the region, allowed for deep pooling of moisture across the region. A polar trough moving across the Western Atlantic continued to erode ridge aloft as it moved eastward across the region today. This scenario allowed for favorable upper level dynamics and strong divergent aloft. The combination of a humid environment, a Southeast steering flow and surface convergence were more than enough to provide support for enhanced and near severe convection across portions of the islands. The prevailing S-SE steering flow with a S-SW shear aloft provided the forcing and lift needed to create the convective eddies (rotation) over the Mountain Range and into the low to mid levels of the atmosphere. This led to the horizontal rotating column of air to combine with the increasing updraft from the Squall line activity, which eventually led to the funnel cloud formation and finally to a Touchdown funnel rotation Tornado in the Manat urban area.

Preliminary information from the NWS indicates that the tornado that tore through the municipality of Manat was an EF-0 tornado. This tornado hit the ground at some point in the urbanization of Flamboyn around 3:10 p.m. and moved northwest through Road #2 with flying debris and strong winds reported over the urbanization of Atenas. The tornado dissipated about 10 minutes later, leaving minor damages through its path.

After the survey was done, the area most affected by the strong winds associated to this tornado was over the urbanization of Flamboyn, where several downed trees were reported. Large trees were reported fallen on Calle 2, and another at Calle Marginal. Also, on road 669, a cyclone fence was torn down by the strong winds and a building lost the roof. On Calle 22, two houses lost their tin roof porches. There were several damage reports over vehicles due to the flying debris associated with the tornado, affecting mainly the urban area of Atenas.

Based on damages and actual reports, the NWS survey team believes winds associated to this tornado could have reached 50 to 75 miles per hour.

### Lajas

6 WNW Lajas

19	1604AST				0	0	0.50K	0.00K	Heavy Rain
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Mudslide reported in Barrio Paris, La Cuchilla sector at road PR-306. Debris blocking the road with no passage. No one was injured.

### Hormigueros

Hormigueros

19	1840AST				0	0	0.00K	0.00K	Flood
20	0300AST				0	0	0.00K	0.00K	Flood

Urban flooding was reported near Cabo Rojo Gas in Hormigueros at road PR-114 with intersection with PR-319 at Kilometer 7.0. In addition, flooding was also reported due to Guanajibo river.

Moist and unstable weather conditions affected Puerto Rico. Very heavy rainfall fell over the southwest sections of Puerto Rico. Some flooding occurred with mudslides also reported as soils were very saturated due to previous heavy rainfall events.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
<b>PUERTO RICO</b>									
<b>Caguas</b> 6 N Caguas	20	1525AST 1830AST			0	0	0.00K	0.00K	Flood
									Highway PR-1 was closed in both directions due to flooding at KM 27.2.
<b>Ciales</b> 3 ESE Ciales	20	1612AST 1845AST			0	0	0.50K	0.00K	Heavy Rain
									Mudslide was reported at barrio Pozas on the Pozas Highway.
<b>Utua</b> 2 SE Utua	20	1657AST			0	0	1.00K	0.00K	Heavy Rain
									Mudslide was reported on Highway PR-605, KM 3.3 at Barrio Vivi Arriba affecting a home.
<b>Yabucoa</b> 2 SSW Yabucoa	20	1658AST			0	0	0.50K	0.00K	Heavy Rain
									Mudslide on Highway PR-900 Km, 9.3 sector Playita arriba in front of a home.
<b>Utua</b> 2 NNW Utua	20	1700AST 1815AST			0	0	0.00K	0.00K	Flood
									Highway PR 123 crossing Rio Grande de Arecibo at Salto Arriba, flooded.
<b>San Juan</b> 2 NNW San Juan	20	1737AST 2130AST			0	0	0.00K	0.00K	Flood
									Intersection of Calle Colombia and Notredame flooded in the urbanization University Gardens.
<b>Guanica</b> Guanica	20	1815AST 1930AST			0	0	0.00K	0.00K	Flood
									Highway 332, in Guanica was flooded at sector Puig.
<b>Vega Alta</b> 1 E Vega Alta	20	1902AST 1909AST			0	0	5.00K	0.00K	Flash Flood
									Home flooded in Urbanization Cielo Dorado, on Highway 693, house 125K.
<b>San Juan</b> 2 WNW San Juan	20	1916AST 2130AST			0	0	0.00K	0.00K	Flood
									Route 21 in Barrio Obrero, flooded, street in front of Centro Medico.
<b>San Juan</b> 3 N San Juan	20	1919AST 2130AST			0	0	0.00K	0.00K	Flood
									Street flooded in front of Lila building entering Barbosa Avenue, Barriada Israel, Hato Rey.
									Moist and unstable weather conditions affected Puerto Rico. Very heavy rainfall felt across Puerto Rico. Some flooding occurred with mudslides also reported as soils were very saturated due to previous heavy rainfall events.

# Storm Data and Unusual Weather Phenomena

November 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## PUERTO RICO

### **San Juan**

**3 NW San Juan**

21	1535AST 2330AST				0	0	0.00K	0.00K	Flood
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Flooding reported at calle 18 in Urbanization Puerto Nuevo.

Moist and unstable weather pattern continued across the local region as a broad trough aloft along with low level moisture prevailed across the northeastern Caribbean. A flash flood watch was in effect.

### **Rio Grande**

**7 NNW Rio Grande**

22	1450AST 1730AST				0	0	0.00K	0.00K	Flood
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Urban flooding was reported at street 2, number 30 in Rio Grande Estates.

### **Caguas**

**3 NNW Caguas**

22	1542AST 2130AST				0	0	0.00K	0.00K	Flood
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Urban flooding was reported at Valle Tolima street 7.

### **Gurabo**

**2 WSW Gurabo**

22	1542AST 1900AST				0	0	0.00K	0.00K	Flood
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Urb. Santa Barbara was reported flooded at the end of street 3, at Selectos Supermarket entrance.

### **Caguas**

**3 WNW Caguas**

22	1650AST 2130AST				0	0	0.00K	0.00K	Flood
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Urban flooding was reported at Barrio Canaboncito at road PR-172.

### **Carolina**

**1 ENE Carolina**

22	1651AST 1851AST				0	0	0.00K	0.00K	Flood
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Urban flooding was reported at road PR-857 km. 6.5 near Antiguo Parador at Barrio Canovanillas.

### **San Juan**

**5 N San Juan**

22	1651AST 1830AST				0	0	0.00K	0.00K	Flood
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Villa Palmeras sector was reported flooded at Intersection with Ismael Rivera and Baldorioty de Castro.

### **Caguas**

**2 WSW Caguas**

22	1711AST 1930AST				0	0	0.00K	0.00K	Flood
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Three boys were swept away by Charco El Cantil at road 765, km 5.3. They were rescued.

As a trough and lingering moisture affected the local area, showers and thunderstorms developed. Due to saturated soils, urban and small stream flooding affected the area.

# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## ADDITIONS

### INDIANA, Northeast

#### **Pulaski County**

**1 E Denham**

17	1412CST								
	1413CST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)

The public reported multiple center pivots being flipped.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **White County**

**2 SSW Smithson**

**5 W Chalmers**

17	1451EST								
	1457EST	4.15	300	0	0	0.00K	0.00K	Tornado (EF2)	

A NWS survey of damage revealed damage consistent with an EF2 tornado. The tornado touched down in an open field 4 miles west of Chalmers, northwest of the intersection of County Road 600 South and 450 West. The tornado crossed County Road 300 West, south of County Road 500 South where four 18 inch diameter power poles were snapped at the base (DI: ETL DOD: 4). Minor damage to siding and roofing was also observed at a home northeast of this location. A large pole barn in the same yard lost half of its roof while a barn next door to this residence was destroyed (DI: SBO DOD: 8) with debris from both locations being carried up to a mile to the northeast. One final barn suffered minor roof damage before the tornado lifted two miles north of Chalmers east of County Road 75 West and south of County Road 350 S. Maximum wind speeds were estimated around 120 mph.

Deep low pressure moved across the northern Great Lakes, with a strong cold front trailing well south into Arkansas. A 50 to 60 knot low level jet aided in advecting in dewpoints greater than 60 degrees. 0-1km storm relative helicity values of 400 to 600 m2/s2 setup the perfect environment for individual thunderstorms to rapidly rotate. Numerous circulations were noted during the event, some significant, which produced swaths of wind damage as well as several weak to strong tornadoes. Given forward speed of 60 mph or more, the convection quickly translated across the area in a matter of hours.



# Storm Data and Unusual Weather Phenomena

March 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ADDITIONS

### COLORADO, West

**COZ001-004>005-009>010-012>014-017>018**

**Central Yampa River Basin - Elkhead And Park Mountains - Flattop Mountains - Gore And Elk Mountains/central Mountain Valleys - Grand And Battlement Mesas - Lower Yampa River Basin - Northwestern San Juan Mountains - Uncompahgre Plateau And Dallas Divide - Upper Gunnison River Valley - Upper Yampa River Basin - West Elk And Sawatch Mountains**

22	1600MST								
24	0300MST			0	0	0.00K	0.00K		Winter Weather

**COZ008**

**Central Colorado River Basin**

23	0000MST								
	1800MST			0	0	0.00K	0.00K		Winter Weather

A moist Pacific storm system and associated cold front moved across the region and produced significant to locally heavy snowfall in most mountain areas and in some higher elevation valleys.

### UTAH, East

**UTZ023**

**Eastern Uinta Mountains**

22	0700MST								
23	1500MST			0	0	0.00K	0.00K		Winter Weather

A moist Pacific storm system and associated cold front moved across the region and produced significant snowfall in the eastern Uinta Mountains.

# Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## ADDITIONS

### COLORADO, West

#### COZ018

#### Northwestern San Juan Mountains

18	0900MST				0	0	0.00K	0.00K	Winter Weather
	2000MST								

A broad area of low pressure lingered over southwest Colorado and brought significant snowfall to the northwest San Juan Mountains, especially at elevations above 9000 feet.

#### COZ022

#### Animas River Basin

23	1200MST				0	0	20.0K		Strong Wind
	1400MST								

Strong winds developed across portions of southwest Colorado ahead of an approaching Pacific storm system.

#### COZ023

#### San Juan River Basin

25	1500MST				0	0	1.0K	0.00K	Strong Wind
	1600MST								

Strong southwesterly winds developed across portions of southwest Colorado ahead of an approaching low pressure storm system and cold front.

# Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## ADDITIONS

### COLORADO, West

**COZ002-005**

**Central Yampa River Basin - Upper Yampa River Basin**

10	0100MST 0800MST				0	0	0.00K	0.00K	Frost/Freeze
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Following a cold frontal passage, temperatures dropped below freezing across portions of the Central and Upper Yampa River Basins.

17	0300MST 0800MST				0	0	0.00K	0.00K	Frost/Freeze
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A cold air mass in the wake of a strong upper trough and dry cold front resulted in temperatures that dropped below freezing across portions of the Central Yampa River Basin.

# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### INDIANA, Northeast

#### **INZ003-004**

#### **La Porte - St. Joseph**

12	0000CST				0	0	0.00K	0.00K	Lake-Effect Snow
	1300CST								

#### **INZ012**

#### **Starke**

12	0000EST				0	0	0.00K	0.00K	Winter Weather
	1300EST								

An intense lake effect snow band set up over northwest Indiana during the morning hours of Nov 12th. Localized snowfall amounts as high as 9 inches were reported.

#### **La Porte County**

#### **1 SSE Michigan City Arprt**

17	1236CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
	1237CST								

A trained spotter estimated wind gusts to 60 mph with trees and power lines down in the area.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

#### **La Porte County**

#### **1 S Westville**

17	1337CST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
	1338CST								

The public reported a large tree fell onto State Route 421.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### **La Porte County**

#### **1 S Michigan City**

17	1337CST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
	1338CST								

The public reported a two foot diameter tree was uprooted and fell onto a home.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **Pulaski County**

#### **Medaryville 3 ENE Denham**

17	1403CST				0	0	0.00K	0.00K	Tornado (EF1)
	1413CST	13.18	100						

A survey of damage in northern Pulaski County by emergency management and NWS officials revealed damage consistent with a EF1 tornado. The tornado touched down just southwest of U.S. 421 and Delaware Street in Medaryville. Several large, healthy trees suffered damage ranging from broken limbs to trees being snapped at the base (DI: TS DOD: 4). The tornado exited the town and remained over mainly rural areas moving across harvested fields and occasionally impacting groves of trees or center pivot irrigation systems. A barn was completely destroyed (DI: SBO DOD: 8) on North County Road 1050 West. The tornado entered the town of Denham impacting a grain bin, which was moved off its foundation and then flattened. The tornado cause minor tree damage and then lifted just before crossing into Starke County. The maximum wind speed is estimated at 110 mph..

#### **La Porte County**

#### **1 NNE Wanatah**

17	1418CST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
	1419CST								

A trained spotter reported a one foot diameter branch blown down near the intersection of County Road 1100 South and US-421.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### **White County**

#### **8 W Badger Grove**

17	1443EST				0	0	0.00K	0.00K	Tornado (EF2)
	1455EST	9.1	1200						

# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### INDIANA, Northeast

A survey of damage by NWS officials indicated that a tornado touched down in eastern Benton County and continued northeast into White County, likely reaching a peak intensity of EF2. Exact determination of maximum intensity was difficult due to vastly open country and lack of trees and other objects. The tornado moved into southwestern White County south of County Road 1200 South, where the garage door of a west facing pole barn was pushed in and some minor tree limb damage was noted. The tornado continued rapidly northeast and impacted a residence on 900 West where the chimney (above the roof) was knocked down with shingle damage noted to the home. In addition, a large propane tank and camper were rolled or pushed roughly 150 feet away with the camper being destroyed. The tornado moved into open fields where it remained for roughly four miles, crossing Interstate 65 between mile markers 188 and 190. The tornado briefly strengthened after crossing the interstate, snapping 10 18-24 inch diameter power poles (DI: ETL DOD: 4) at the ground along County Road 500 West, either side of State Route 18. A home on the intersection of these roads suffered minor window and roof damage. Just east of the intersection, a pole barn was destroyed (DI: SBO DOD: 8) with debris thrown upwards of three-quarters of a mile. The tornado finally lifted west of County Road 300 West and north of State Route 18. The tornado was on the ground for a combined distance of 12 miles from eastern Benton County into White County. A maximum width of roughly 1200 yards was determined with maximum wind speeds around 120 mph.

#### White County

2 SSW Smithson  
5 W Chalmers

17	1451EST								
	1457EST	4.15	300	0	0	0.00K	0.00K	Tornado (EF2)	

A NWS survey of damage revealed damage consistent with an EF2 tornado. The tornado touched down in an open field 4 miles west of Chalmers, northwest of the intersection of County Road 600 South and 450 West. The tornado crossed County Road 300 West, south of County Road 500 South where four 18 inch diameter power poles were snapped at the base (DI: ETL DOD: 4). Minor damage to siding and roofing was also observed at a home northeast of this location. A large pole barn in the same yard lost half of its roof while a barn next door to this residence was destroyed (DI: SBO DOD: 8) with debris from both locations being carried up to a mile to the northeast. One final barn suffered minor roof damage before the tornado lifted two miles north of Chalmers east of County Road 75 West and south of County Road 350 S. Maximum wind speeds were estimated around 120 mph.

#### White County

7 W Badger Grove

17	1452EST								
	1501EST	9.23	900	0	0	0.00K	0.00K	Tornado (EF2)	

A review of radar data and damage details near the southwestern White County tornado revealed a separate tornado, which also reached EF2 intensity, occurred roughly 10 minutes behind the first tornado. The tornado touched down west of County Road 1100 West and north of the White/Tippecanoe county line where it impacted a farm, destroying two barns (one large and one small) with debris being thrown more than a half mile away from the location. In addition, several healthy pine trees lost branches with a few being snapped at the trunk and then launched or dragged several hundred feet to the east. The tornado moved northeast and impacted a residence on US 231, south of County Road 1200 South. The entire roof of a one story home (DI: FR12 DOD: 6) was removed and thrown northeast into a field. Two by four boards were driven into the field up to 250 yards away. The tornado eventually crossed Interstate 65 hitting yet another farm with extensive barn and shed damage on County Road 500 West, south of State Route 18. Power pole damage was noted in this area as well, but was not clear if this was from the prior tornado just to the north. Northeast of this location, it appears that the tornado quickly dissipated or became harder to detect based on the earlier damage. Maximum winds are estimated at 120 mph.

#### White County

1 WSW Chalmers

17	1455EST								
	1500EST			0	0	0.00K	0.00K	Thunderstorm Wind (60EG)	

Emergency management officials reported widespread wind damage across the southern part of the County, mainly from Brookston to Chalmers to the Cass County line.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### White County

1 W Monticello

17	1500EST								
	1501EST			0	0	0.00K	0.00K	Thunderstorm Wind (60EG)	

The public reported a tree was uprooted in Monticello.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### White County

4 NNW Burnettsville  
3 NNE Idaville

17	1507EST								
	1508EST	0.81	150	0	0	0.00K	0.00K	Tornado (EF1)	

# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### INDIANA, Northeast

A survey of damage in northeastern White County revealed damage consistent with a brief EF1 touchdown. The tornado touched down in an open field northeast of the intersection of County Road 400 North and 1350 East before flipping 4 sections of a center pivot irrigation system. As the tornado moved northeast a trailer was impacted removing the roof and taking down half of the walls (DI: MHSW DOD: 4). A woman was in the trailer home at the time it hit but made it to the bathroom as it was falling apart and survived with no injury. Debris from the trailer was thrown north and northwest into an adjacent field. The tornado continued northeast into a grove of trees where it continued less than 50 feet before lifting one quarter mile southwest of the intersection of County Roads 500 North and 1450 East. The maximum wind speed is estimated at 100 mph.

#### **St. Joseph County** **1 N South Bend**

17	1510EST 1511EST						0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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A trained spotter reported a 16 inch tree down onto an car.  
Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **St. Joseph County** **3 SSE South Bend**

17	1510EST 1511EST						0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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A trained spotter reported a tree was uprooted and fell onto a house on the south side of the 4-H fairgrounds.  
Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **St. Joseph County** **1 E (SBN)Michiana Arpt S**

17	1511EST 1512EST						0	0	0.00K	0.00K	Thunderstorm Wind (59MG)
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A 68 mph wind gust was recorded by the automated weather sensor at the South Bend Regional Airport.  
Note: The measured wind gust of 59 knots is equivalent to 68 mph.

#### **St. Joseph County** **1 N South Bend**

17	1511EST 1512EST						0	0	0.00K	0.00K	Thunderstorm Wind (57MG)
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A trained spotter measure a 66 mph wind gust near the South Bend airport.  
Note: The measured wind gust of 57 knots is equivalent to 66 mph.

#### **Cass County** **1 WSW Young America Lincoln**

17	1517EST 1527EST	9.38	100	0	0	0.00K	0.00K	Tornado (EF3)
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An extensive NWS damage survey indicated a tornado briefly reached low end EF-3 intensity southeast of Lafayette continued through Tippecanoe and Carroll counties (see Storm Data for Central Indiana), crossing into Cass County just north of the intersection of County Road 1400 South and the Carroll/Cass County line. The tornado remained over mainly open fields until moving near a residence on County Road 150 East, south of 1250 South where a home had its chimney blown off and a barn on the property suffered a blown out wall. The tornado continued northeast and cause minor shingle damage to three homes on County Road 1250, west of County Road 300 East. A small barn was destroyed with debris thrown into an adjacent field. The tornado briefly intensified as it entered a grove of trees north of County Road 1200 South and west of 400 East where every tree for the first 100 feet was snapped five to ten feet above the base (DI: TH DOD: 4). The tornado remained over mainly open fields, occasionally causing minor tree damage until crossing US 35 north of County Road 1000 S where power poles were broken (DI: ETL DOD: 4). The tornado quickly lifted a few miles southwest of the Grissom Air Reserve Base. A maximum intensity of EF2 was reached while in Cass County, with estimated winds of 120 mph.

#### **St. Joseph County** **1 SE Mishawaka**

17	1518EST 1519EST						0	0	0.00K	0.00K	Thunderstorm Wind (58MG)
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A measured wind gust of 67 mph was reported by the public.  
Note: The measured wind gust of 58 knots is equivalent to 67 mph.

# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### INDIANA, Northeast

#### St. Joseph County 2 SSW Mishawaka

17	1519EST 1520EST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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Emergency management officials reported eight inch pine trees down on the east side of Marion High School.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### Cass County 1 NW Logansport Muni Arpt

17	1520EST 1522EST	1.13	150	0	0	0.00K	0.00K	Tornado (EF0)
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A survey of damage in the Logansport area indicated that a EF0 tornado touched down west of Logansport Bypass Road and north of County Road 250 South. The tornado moved northeast and did minor damage to the roof of a local warehouse before crossing the bypass. A home on West Clinton Street suffered complete loss of its roof from the tornado (DI: FR12 DOD: 4). However, impact occurred on a sun room that had structural issues and aided in the wind being able to lift the roof of the house. Minor tree damage was found along the remainder of the tornado track until it lifted northeast of the intersection of Lincoln and South Cicott Streets. The maximum wind speed was estimated at 85 mph.

#### Cass County 1 S Galveston

17	1523EST 1524EST			0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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The public reported the Bob Evans billboard sign was ripped in half by strong winds.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### Fulton County 1 NW Rochester

17	1524EST 1525EST			0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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Emergency management officials reported a 30 foot high pine tree snapped four feet above the base.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### Miami County 1 NW Bennetts

17	1526EST 1527EST			0	0	0.00K	0.00K	Thunderstorm Wind (70EG)
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Emergency management officials reported the McClures gas station awning was removed. Stop lights were ripped from their mounts.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

#### Whitley County 1 SSE Etna

17	1527EST 1528EST			0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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Emergency management officials reported a tree down across a road with power lines down.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### Whitley County 1 SW Columbia City

17	1528EST 1529EST			0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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Emergency management officials reported numerous trees down across the County, many onto roadways. A few barns also suffered roof damage.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### Marshall County Argos

17	1529EST 1530EST			0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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Emergency management officials reported trees was blown down across Yearick and 1st Streets.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### INDIANA, Northeast

#### Blackford County

##### Hartford City

17	1530EST 1531EST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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Emergency management officials reported trees and power lines down across the County. No significant damage was reported.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### Miami County

##### 1 N (GUS)Grissom Afb Per

17	1530EST 1531EST				0	0	0.00K	0.00K	Thunderstorm Wind (73MG)
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A 84 mph wind gust was recorded by automated weather equipment at the Grissom Air Reserve Base.

Note: The measured wind gust of 73 knots is equivalent to 84 mph.

#### Miami County

##### 2 NW Bunker Hill

17	1530EST 1533EST	2.87	250	0	0	0.00K	0.00K	Tornado (EF1)
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A survey of damage by NWS and emergency management officials indicated a EF1 tornado occurred northeast of the Grissom Air Reserve base. The tornado touched down in a field southeast of the intersection of US 31 and County Road 500 South and then took the roof off of a hog barn. The tornado continued to travel east where it hit another hog barn and took off the roof and collapsed the walls (DI: SBO DOD: 6). One piece of wall (estimated near 1/2 ton) was thrown back into the eastern side of the building and smashed the exhaust system. The tornado then turned NE and did extensive tree damage to a grove of trees on County Road 50 West before hitting a trailer home where half of the walls were collapsed (DI: MHSW DOD:4) and insulation and pieces of debris were strewn out for a half mile to the NE. The tornado then lifted about a third of a mile northeast of the trailer. Maximum winds are estimated around 110 mph. Although the distance between the 2 points was around 2.6 miles, a somewhat wavy track caused the actual distance to be closer to 2.9 miles long.

#### Kosciusko County

##### 1 N Barbee

17	1532EST 1533EST				0	0	0.00K	0.00K	Thunderstorm Wind (55MG)
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An off duty NWS employee reported extensive tree damage in North Webster, with several trees onto roadways.

Note: The measured wind gust of 55 knots is equivalent to 63 mph.

#### Miami County

##### Peru

17	1535EST 1536EST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Emergency management officials estimated wind gusts of at least 60 mph with multiple power outages in the area.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

#### Kosciusko County

##### 2 NNW Burket

##### 1 WNW Palestine

17	1538EST 1540EST	1.05	250	0	0	0.00K	0.00K	Tornado (EF1)
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A survey of damage east of Mentone by a NWS Survey team revealed that a EF1 tornado produced damage along a roughly 1 mile path. Touchdown occurred southwest of the intersection of State Route 25 and County Road 800 West with the tornado quickly moving northeast and impacting a residence and barn on the southeast corner of the same intersection. A few small hardwood trees were snapped with the adjacent residence suffering minor shingle damage. An adjacent barn was shifted off its foundation with the north facing doors and wall buckled. As the tornado crossed State Route 25 it clipped a residence, causing roughly 75 percent of the roof and trusses to be ripped off and thrown to the north northwest about 250 yards. Power poles on the north side of the road were also blown down. As the tornado continued northeast it cause widespread tree damage in a wooded area, as well as minor structural damage to a home along South Tinkey Road. The tornado lifted shortly after this point, southeast of the intersection of Tinkey and Shilling Roads. Maximum wind speeds with the tornado are estimated at 100 mph.



# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### INDIANA, Northeast

#### Elkhart County 1 W Elkhart

17	1540EST 1541EST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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The public reported multiple trees down in the city.  
Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### Elkhart County 1 S Wakarusa

17	1542EST 1543EST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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The public reported trees down, as well as silo and outbuilding damage on County Road 1 near Wakarusa.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### Wabash County Wabash

17	1542EST 1543EST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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Damage was observed to cars and homes in the city. A home suffered partial roof damage with windows being blown out of a second story floor.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### Grant County 1 SSW Mier 5 ENE Jalapa

17	1542EST 1552EST	11.62	700	0	0	0.00K	0.00K	Tornado (EF2)
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A NWS survey of damage in Grant County indicated a tornado, reaching a maximum intensity of EF2, impacted a several mile long path. The tornado touched down on County Road 00 South, west of County Road 900 West where a hog barn suffered some roof damage. The tornado moved quickly northeast and intensified where it caused damage to two residences near the intersection of County Roads 300 North and 600 West. A large portion of the front wall of a one story home to collapse with subsequent removal of adjacent roof. A nearby home lost its entire roof (DI: MHSW DOD: 6). The tornado continued to intensify further approaching EF2 intensity as it cause extensive damage to a garage with the roof being removed and walls pushed down. Projectiles from the garage were found in the roof of the residence. EF2 intensity was reached around the intersection of County Road 325 West and Frances/Slocum Road where the top of a two story home was nearly removed (DI: FR12 DOD: 6). The tornado slowly weakened the remainder of its track impacting other residences with decreasing amounts and intensity of roof damage. Trees also suffered varying degrees of damage. The tornado cross briefly into Wabash County west of Grant County Road 00 West/Wabash County Road 600 East. The tornado was on the ground for over 11.5 miles with winds reaching a maximum intensity of around 125 mph.

#### Wabash County 4 NE Disko

17	1543EST 1544EST	0.67	150	0	0	0.00K	0.00K	Tornado (EF2)
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A survey of damage in Wabash County by a NWS Survey team revealed that a tornado that would eventually reach EF2 intensity produced damage starting just south of the Wabash/Kosciusko County line just west of State Route 15. The tornado destroyed a small shed (DI: SBO DOD:6) and caused minor roof damage to a residence before going over open fields. The tornado crossed into Kosciusko County approximately 4 tenths of a mile east of State Route 15, where it continued for an additional 3.5 miles. While in Wabash County, the tornado produced maximum wind speeds of around 85 mph (EF0) in Wabash County and was on the ground for about 7 tenths of a mile.

#### Elkhart County 1 N Wakarusa

17	1544EST 1545EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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The public reported a shed was thrown into a tree with a swing-set being blown over.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### Kosciusko County 2 S Silver Lake

17	1544EST 1548EST	3.47	150	0	0	0.00K	0.00K	Tornado (EF2)
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# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### INDIANA, Northeast

A survey of damage in Wabash and Kosciusko counties by a NWS Survey team revealed that a tornado, which reached a maximum intensity of EF2, touched down just south of the Wabash/Kosciusko County line, west of State Route 15. The tornado crossed into Kosciusko County approximately 4 tenths of a mile east of State Route 15 and continued to the northeast over mainly open fields, occasionally causing tree damage until it hit a farm on CR 300 W approximately half a mile south of SR 14. At this location, there were 4 cattle barns completely destroyed with their contents thrown east-northeast into the field (DI:SBO DOD: 8). There were 600 cattle at the farm at the time the tornado hit and 10 of them were killed with another 10 injured. There was a two story home on this property that had part of the second story roof removed and the second story bedroom shifted as the east wall buckled outward. The debris field from this tornado continued to the NE and power poles were snapped at the base along SR 14. The tornado dissipated shortly after this as it crossed S County Farm Rd. The total path length across both counties was around 4.2 miles with a maximum estimated wind speed of 115 mph.

#### **Grant County**

1 N Swayzee

17	1547EST								
	1548EST				0	0	0.00K	0.00K	Thunderstorm Wind (74EG)

A trained spotter estimated wind gusts to 85 mph along with quarter size hail.

Note: The estimated wind gust of 74 knots is equivalent to 85 mph.

#### **Wabash County**

1 NNE Wabash

17	1548EST								
	1549EST				0	0	0.00K	0.00K	Thunderstorm Wind (60MG)

A mesonet site recorded at 69 mph wind gust.

Note: The measured wind gust of 60 knots is equivalent to 69 mph.

#### **Kosciusko County**

1 E Pierceton

17	1550EST								
	1551EST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)

A state official reported a tree down south of Pierceton.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **Grant County**

1 SE Shady Hills

17	1551EST								
	1552EST				0	0	0.00K	0.00K	Thunderstorm Wind (70EG)

A trained spotter reported 50 to 60 trees down across the city. A semi was overturned near Meyer Road in southern Marion. The armory on State Route 18 suffered roof damage.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

#### **Wabash County**

3 ESE La Fontaine

17	1552EST								
	1553EST	0.13	700	0	0	0.00K	0.00K	Tornado (EF2)	

A tornado which produced EF2 damage in Grant County briefly entered southern Wabash County, causing damage some minor damage to the roof and metal panels on a pole barn before quickly dissipating. The tornado intensity in Wabash County was on the lower end of EF0 and lasted roughly a minute at best.

#### **Elkhart County**

New Paris

17	1553EST								
	1554EST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)

Amateur radio operators reported a 10 to 12 inch diameter tree was blown down across the road.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### **Kosciusko County**

2 SSW Oswego

17	1554EST								
	1556EST	1.65	275	0	0	0.00K	0.00K	Tornado (EF1)	

# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### INDIANA, Northeast

A survey of damage southwest of Oswego by a NWS Survey team revealed that a EF1 tornado produced damage along a roughly 1.7 mile path. Touchdown occurred in a harvested field southwest of the intersection of County Roads 450 North and 250 East. Several segments of a center pivot were flipped in this area. The tornado continued northeast crossing County Road 450 North, severely damaging 7 power poles, which were either snapped or bent at more than a 45 degree angle. One pole had 3 large transformers for the center pivot on it, with these being pushed on to the roadway. The tornado then impacted the Pines subdivision, northeast of 450 North and 250 East. Two to three dozen healthy pine trees between 30 and 50 feet tall were snapped or uprooted (DI: TS DOD: 4). One house was impacted on both sides with the roof being penetrated. Two vehicles had trees fall onto them, crushing them. The tornado moved through the remainder of the subdivision and adjacent properties with varying degrees of mainly roof and tree damage. The last noted damage involved a home on County Road 300 East, just south of Rader Road where moderate roof damage occurred and a narrow path of trees snapped in an adjacent wooded area. The tornado lifted shortly after this point prior to crossing Armstrong Road. Maximum wind speeds with the tornado are estimated at 95 mph.

#### **Grant County** 1 SE Shady Hills

17	1555EST 1556EST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Trained spotters reported many trees and power lines down throughout the County.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **Grant County** 1 ENE Marion

17	1555EST 1556EST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

County officials reported the Summit Village Trailer park was heavily damaged, with some mobile homes on top of each other.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

#### **Grant County** 1 NE Gas City

17	1555EST 1556EST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A 50 foot section of wall and roof collapsed at the Dollar General Warehouse.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

#### **Kosciusko County** 3 NE Oswego

17	1555EST 1556EST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Half of the east facing side of a older barn roof was blown off into an field to the north. A center pivot irrigation system in the same field has 2 segments flipped.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **Kosciusko County** 1 NE Oswego

17	1555EST 1556EST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Several pine trees and other varieties of trees were snapped just south of the Lake Tippecanoe Country Club.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **Kosciusko County** 1 N Oswego

17	1555EST 1556EST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A off duty NWS employee reported a 12 inch diameter tree was twisted and split on the north side of Lake Tippecanoe. Other tree damage was found in the general area.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### **Grant County** 1 SSE Roseburg

17	1555EST 1556EST	0.04	20	0	0	0.00K	0.00K	Tornado (EF0)
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# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### INDIANA, Northeast

A survey of damage in west central Grant county revealed damage consistent with a brief EF0 touchdown. The tornado touched down a quarter mile east of the intersection of County Roads 300 South and 300 West. A storage shed on the property sustained some roof damage (DI: SBO DOD: 2) with extensive tree damage also noted. The tornado quickly lifted after crossing County Road 300 South. The maximum wind speed is estimated at 80 mph.

#### **Huntington County 2 SSE Makin**

17	1557EST 1558EST				0	0	40.00K	0.00K	Thunderstorm Wind (60EG)
----	--------------------	--	--	--	---	---	--------	-------	--------------------------

Emergency management officials reported a pole barn/garage was completely destroyed with two cars inside damaged.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **Huntington County 1 W Huntington**

17	1559EST 1600EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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The public reported several tree limbs down throughout the city.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Huntington County 3 NNE Roanoke**

17	1602EST 1603EST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported severe damage to a barn, with a large maple tree split on County Road 1200 North in Roanoke.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **Huntington County 1 SSW Markle**

17	1602EST 1603EST				0	0	0.00K	0.00K	Thunderstorm Wind (70MG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter measured a 81 mph wind gust. Several trees and tree limbs were blown down in the area with minor structural damage to homes.

Note: The measured wind gust of 70 knots is equivalent to 81 mph.

#### **Noble County Kimmell**

17	1602EST 1603EST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

The public estimated 60 to 70 mph thunderstorm wind gusts.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

#### **Whitley County 3 SE Raber**

17	1604EST 1605EST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Emergency management officials reported half of a barn roof was torn off.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **Huntington County 1 SSW Markle**

17	1607EST 1608EST				0	0	0.00K	0.00K	Thunderstorm Wind (70MG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported several trees and tree limbs down.

Note: The measured wind gust of 70 knots is equivalent to 81 mph.

#### **Noble County Albion**

17	1608EST 1609EST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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The public reported several trees down in the area, plus some damage to a local car wash.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### INDIANA, Northeast

#### **Allen County**

**1 WNW Waynedale**

17	1610EST 1611EST						0.00K	0.00K	Thunderstorm Wind (52EG)
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A trained spotter estimated wind gusts to 60 mph with tree limbs of unknown soze blown down in the area.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

#### **Huntington County**

**1 ESE Warren**

17	1610EST 1611EST						0.00K	0.00K	Thunderstorm Wind (51MG)
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A mesonet station recorded a 59 mph wind gust.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

#### **Wells County**

**4 NNW Uniondale**

17	1615EST 1616EST						0.00K	0.00K	Thunderstorm Wind (56MG)
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A mesonet station recorded a wind gust to 64 mph.

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

#### **Wells County**

**1 N Bluffton**

17	1615EST 1616EST						0.00K	0.00K	Thunderstorm Wind (51MG)
----	--------------------	--	--	--	--	--	-------	-------	--------------------------

A trained spotter reported a 59 mph wind gust.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

#### **Allen County**

**2 ENE (FWA)Baer Fld Ft Way**

17	1617EST 1618EST						0.00K	0.00K	Thunderstorm Wind (65EG)
----	--------------------	--	--	--	--	--	-------	-------	--------------------------

A trained spotter reported three pole barns were destroyed with a grain silo having its top removed at the intersection of Ferguson and Thiele Roads.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

#### **Noble County**

**2 E Wakefield Vlg**

17	1617EST 1618EST						0.00K	0.00K	Thunderstorm Wind (60EG)
----	--------------------	--	--	--	--	--	-------	-------	--------------------------

Emergency management officials reported severe structural damage to a residence.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **Wells County**

**2 S Vera Cruz**

17	1617EST 1618EST						0.00K	0.00K	Thunderstorm Wind (55MG)
----	--------------------	--	--	--	--	--	-------	-------	--------------------------

A trained spotter reported wind gusts to 63 mph along with power outages.

Note: The measured wind gust of 55 knots is equivalent to 63 mph.

#### **Allen County**

**1 E New Haven**

17	1622EST 1623EST						0.00K	0.00K	Thunderstorm Wind (55EG)
----	--------------------	--	--	--	--	--	-------	-------	--------------------------

The public reported several trees down.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### **Allen County**

**1 N Ft Wayne**

17	1625EST 1626EST						0.00K	0.00K	Thunderstorm Wind (55EG)
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Amateur radio operators reported a 24 foot trailer overturned on Interstate 469, west of State Route 1. Trees were also blown down in the area.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### INDIANA, Northeast

#### **Steuben County**

##### **Angola**

17	1625EST 1626EST						0.00K	0.00K	Thunderstorm Wind (56EG)
----	--------------------	--	--	--	--	--	-------	-------	--------------------------

Emergency management officials reported multiple structures were damaged in Pleasant Lake. Power lines were blown down across the area as well. Winds estimated to 65 mph.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

#### **Adams County**

##### **Decatur**

17	1626EST 1627EST						0.00K	0.00K	Hail (1.00)
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A trained spotter reported quarter size hail.

#### **Adams County**

##### **Decatur**

17	1626EST 1627EST						0.00K	0.00K	Thunderstorm Wind (52EG)
----	--------------------	--	--	--	--	--	-------	-------	--------------------------

A trained spotter reported wind gusts of at least 60 mph.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

#### **Allen County**

##### **1 S Monroeville**

17	1632EST 1633EST						0.00K	0.00K	Thunderstorm Wind (55EG)
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Law enforcement officials reported two-thirds of a roof from a 140 foot hog barn was blown off.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### **Adams County**

##### **1 SE Geneva**

17	1650EST 1651EST						0.00K	0.00K	Thunderstorm Wind (56MG)
----	--------------------	--	--	--	--	--	-------	-------	--------------------------

A trained spotter reported wind gusts to 64 mph.

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

#### **Jay County**

##### **Portland**

17	1655EST 1656EST						0.00K	0.00K	Thunderstorm Wind (55EG)
----	--------------------	--	--	--	--	--	-------	-------	--------------------------

Emergency management officials reported some trees and tree limbs were blown down across portions of the County. Reports of leaning power poles were also received.

Deep low pressure moved across the northern Great Lakes, with a strong cold front trailing well south into Arkansas. A 50 to 60 knot low level jet aided in advecting in dewpoints greater than 60 degrees. 0-1km storm relative helicity values of 400 to 600 m<sup>2</sup>/s<sup>2</sup> setup the perfect environment for individual thunderstorms to rapidly rotate. Numerous circulations were noted during the event, some significant, which produced swaths of wind damage as well as several weak to strong tornadoes. Given forward speed of 60 mph or more, the convection quickly translated across the area in a matter of hours. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### **INZ004-014**

##### **Marshall - St. Joseph**

26	2300EST								
27	2000EST						0.00K	0.00K	Lake-Effect Snow

#### **INZ005**

##### **Elkhart**

26	2300EST						0.00K	0.00K	Winter Weather
27	2000EST						0.00K	0.00K	

A band of heavy lake effect snow affected portions of north-central Indiana on November 27th. Snowfall totals of 5 to 10 inches occurred in a narrow band across St. Joseph County into northern Marshall County, with lighter snows on the periphery of this band.

# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### MICHIGAN, Extreme Southwest

#### **MIZ077**

#### **Berrien**

12	0000EST	1300EST			0	0	0.00K	0.00K	Lake-Effect Snow
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An intense lake effect snow band set up over far southwest Lower Michigan during the morning hours of November 12th. Localized snowfall totals in excess of a foot were common.

#### **1 S Stevensville**

17	1455EST	1456EST			0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
----	---------	---------	--	--	---	---	-------	-------	--------------------------

The public reported multiple trees were blown down on Red Arrow Highway. A tree was also down onto a local residence.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **Cass County**

#### **2 N La Grange**

17	1525EST	1526EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A trained spotter found tree limbs down. Damage to a building was reported by the spotter, but no details were given on the amount of damage.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Cass County**

#### **1 WSW Park Shr Resort**

17	1527EST	1529EST	0.38	50	0	0	0.00K	0.00K	Tornado (EF1)
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A survey of damage in the Cassopolis area by a NWS Survey team revealed that a EF1 tornado produced damage along a roughly four tenths of a mile path. Touchdown occurred on the southern outskirts of Cassopolis at a farm where a older two story barn was severely damaged with the entire second story of the barn being destroyed with damage thrown upward of 200 yards downstream (DI: SBO DOD 8). The tornado continued quickly northeast, passing across the northwestern part of the Ross Beatty Jr./Sr. High School property and impacting a detached two car garage, causing its total destruction (DI: SBO DOD: 6). Debris was thrown up to 500 yards northeast from the point of impact onto the Park Shore Golf Course, where several trees were snapped or uprooted. Maximum wind speeds with the tornado are estimated at 110 mph.

#### **Cass County**

#### **1 NNW Jones**

17	1533EST	1534EST			0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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A trained spotter reported seven power poles were snapped. Other damage included the roof torn off a small shed and several center pivots being damaged. A snowmobile trailer was lifted and then tossed 100 yards.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **St. Joseph County**

#### **Centreville**

17	1551EST	1552EST			0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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The public reported trees and power lines down throughout the entire County.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### **Branch County**

#### **1 SW Union City**

17	1610EST	1611EST			0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
----	---------	---------	--	--	---	---	-------	-------	--------------------------

The public reported several trees down near Union Lake.

Deep low pressure moved across the northern Great Lakes, with a strong cold front trailing well south into Arkansas. A 50 to 60 knot low level jet aided in advecting in dewpoints greater than 60 degrees. 0-1km storm relative helicity values of 400 to 600 m<sup>2</sup>/s<sup>2</sup> setup the perfect environment for individual thunderstorms to rapidly rotate with the lower values into far southern Lower Michigan. While favorable conditions existed, the area was just far enough north of the best conditions to keep the most severe weather away. However, isolated wind damage and one tornado was reported. Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
					Killed	Injured	Property		

## CORRECTIONS

### MICHIGAN, Extreme Southwest

#### MIZ077-078

#### Berrien - Cass

26	2300EST								
27	2000EST				0	0	0.00K	0.00K	Lake-Effect Snow

A band of heavy lake effect snow impacted portions of southwest Lower Michigan on November 27th. Snowfall totals of 8 to 16 inches occurred in a narrow band across eastern Berrien County and far western Cass County.

### OHIO, Northwest

#### Van Wert County

##### 1 W Van Wert

17	1642EST								
	1643EST				0	0	0.00K	0.00K	Thunderstorm Wind (54MG)

A 62 mph wind gust was recorded at the Van Wert Middle School.

Note: The measured wind gust of 54 knots is equivalent to 62 mph.

#### Defiance County

##### 2 WNW The Bend

17	1647EST								
	1648EST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)

Emergency management officials reported a CSX crossing gate was broken by the high winds. In addition, a power pole fell onto a house and car.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

#### Van Wert County

##### 2 NW Wetsel

17	1647EST								
	1649EST	2.14	150	0	0	0.00K	0.00K		Tornado (EF1)

A survey of damage in the northeastern part of Van Wert County by County Emergency Management officials and a NWS Survey team revealed that a EF1 tornado produced damage along a roughly two and one tenth mile long path. Touchdown occurred south of the intersection of Elm Sugar and Donner Road where several barns on two adjacent properties suffered damage. The northern most barn suffered extensive roof damage and loss of trusses (DI: SBO DOD: 4) with other barns suffering partial roof damage. The tornado continued northeast across open fields and occasional wooded areas, causing sporadic tree damage. A horse trailer was flipped over onto a truck at a residence on Middle Point Wetzel Road with a barn suffering minor roof damage. The tornado reached its end point at a business where some travel campers were flipped and some metal roofing was damaged. Maximum wind speeds with the tornado are estimated at 100 mph.

#### Van Wert County

##### 1 W Wetsel

17	1650EST								
	1651EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)

Emergency management officials reported three campers were rolled and several others knocked off their bases at a storage area. Power lines were also reported down in the area.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### Putnam County

##### 3 WNW Douglas

##### 3 WNW Muntanna

17	1652EST								
	1654EST	3.05	440	0	0	0.00K	0.00K		Tornado (EF1)

Damage consistent with a tornado, eventually reaching EF2 intensity, was found by a NWS survey team. The tornado touched down at a residence on Township Road 0, west of County Road 27 where a barn suffered some structural damage, with several hay wagons thrown or moved. The tornado continued rapidly northeast, impacting another barn on Route 66, north of Road N. The barn suffered more extensive damage with both wood rafters and lots of roof sheeting being torn off (DI: SBO DOD: 5) and carried through a field for nearly a mile. Maximum wind speeds were likely around 95 mph as the tornado crossed the Putnam/Paulding County line near the intersection of Road 12 and Road 25m.

#### Paulding County

##### 2 SSE Mandale

17	1654EST								
	1655EST	0.02	440	0	0	0.00K	0.00K		Tornado (EF1)



# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## CORRECTIONS

### OHIO, Northwest

A tornado which originally touched down in Putnam County briefly crossed into Paulding County, near the intersection of Road M and Road 25m. A mobile home near the county line was impacted by the tornado, causing it to shift off its foundation with minor siding damage (DI: MHSW, DOD: 3). A barn also suffered some minor siding damage. The tornado quickly re-entered Putnam County shortly after.

#### **Putnam County**

**3 WNW Muntanna  
3 SSW Kiefferville**

17	1655EST								
	1703EST	8.04	440	0	0	0.00K	0.00K		Tornado (EF2)

A tornado that originally touched down in Putnam County briefly crossed the Putnam/Paulding County line before re-entering Putnam County where it continued to move rapidly northeast over mainly open fields until entering the town of Cloverdale where EF2 damage was observed. Extensive tree damage as well as minor to moderate structural damage was noted across the town, with several power poles down. The greatest damage occurred to a church and a brick home. Both suffered extensive damages to some of the walls and the roof (DI: FR12 DOD: 7). A nearby home lost one of its walls (DI:FR12, DOD2) with adjacent hardwood trees suffering greater damage (DI: TH DOD: 4). The tornado exited town and continued northeast for several more miles over open fields and occasional wooded areas with sporadic tree damage noted until finally lifting five miles northeast of Cloverdale. Maximum winds are estimated at 130 mph with a total two county path length of around 11 miles.

#### **Paulding County**

**1 N Mandale**

17	1659EST								
	1700EST			0	0	0.00K	0.00K		Thunderstorm Wind (55EG)

Emergency management officials reported a trailer was destroyed on Township Highway 48, east of State Route 66.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### **Defiance County**

**1 N Defiance Meml Arpt**

17	1700EST								
	1701EST			0	0	0.00K	0.00K		Thunderstorm Wind (52MG)

A 60 mph wind gust was recorded by the automated sensor at the Defiance airport.

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

#### **Fulton County**

**2 ESE Pettisville**

17	1715EST								
	1716EST			0	0	0.00K	0.00K		Thunderstorm Wind (57MG)

A mesonet station recorded a 66 mph wind gust.

Note: The measured wind gust of 57 knots is equivalent to 66 mph.

#### **Henry County**

**3 E Texas**

17	1722EST								
	1723EST			0	0	0.00K	0.00K		Thunderstorm Wind (60EG)

Emergency management officials reported a semi was overturned by the strong winds on US 24, near the Henry/Lucas County line. Numerous reports of trees and power lines being blown down were received across the county.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

#### **Allen County**

**1 W Cairo**

17	1731EST								
	1732EST			0	0	0.00K	0.00K		Thunderstorm Wind (54MG)

A 62 mph wind gust was recorded by a mesonet station.

Note: The measured wind gust of 54 knots is equivalent to 62 mph.

#### **Allen County**

**1 SW Lima**

17	1800EST								
	1801EST			0	0	0.00K	0.00K		Thunderstorm Wind (55MG)

A mesonet station recorded a 63 mph wind gust.

# Storm Data and Unusual Weather Phenomena

November 2013

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### OHIO, Northwest

Deep low pressure moved across the northern Great Lakes, with a strong cold front trailing well south into Arkansas. A 50 to 60 knot low level jet aided in advecting in dewpoints greater than 60 degrees. 0-1km storm relative helicity values of 400 to 600 m<sup>2</sup>/s<sup>2</sup> setup the perfect environment for individual thunderstorms to rapidly rotate. Numerous circulations were noted during the event, some significant, which produced swaths of wind damage as well as several weak to strong tornadoes. Given forward speed of 60 mph or more, the convection quickly translated across northwestern Ohio over a few hour period. Note: The measured wind gust of 55 knots is equivalent to 63 mph.

# Storm Data and Unusual Weather Phenomena

January 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### LOUISIANA, Northeast

#### **Catahoula Parish**

**1 E Sicily Is**      21      0729CST                0      0      0.00K      0.00K      Hail (1.00)

#### **Madison Parish**

**4 NE Delta**      21      1015CST  
1017CST                0      0      0.00K      0.00K      Hail (0.88)

#### **Catahoula Parish**

**Jonesville**      21      1451CST                0      0      0.00K      0.00K      Hail (1.00)  
Abundant moisture and instability combined with a potent low pressure system and associated cold front. Storms developed ahead of the front and produced hail.

### MISSISSIPPI, Central

#### **Bolivar County**

**1 S Alligator**      09      0103CST                0      0      0.00K      0.00K      Hail (1.00)  
Nickel to quarter size hail fell near Alligator.  
An upper level low pressure system moved through the region. Cold temperatures aloft combined with warmer temperatures at the surface to bring the potential for hail.

#### **Jefferson County**

**Fayette**      21      0811CST                0      0      0.00K      0.00K      Hail (1.00)  
Hail up to quarter size fell along Highway 553 and covered the ground.

#### **Warren County**

**1 E Redwood**      21      1028CST  
**5 NE Oak Ridge**      1040CST                0      0      0.00K      0.00K      Hail (0.88)  
  
A swath of mainly nickel sized hail fell across Warren County.

#### **Yazoo County**

**2 N Crupp**      21      1423CST  
**1 WSW Benton**      1438CST                0      0      7.00K      0.00K      Thunderstorm Wind (55EG)  
  
A broad swath of sporadic tree damage occurred extending from southwest of Yazoo City to near Benton. A few sheds were destroyed and two windows were blown out of a school.  
Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

#### **Yazoo County**

**1 SW Yazoo City Barrier A**      21      1430CST                0      0      0.00K      0.00K      Hail (1.00)

#### **Adams County**

**1 NNE Sibley**      21      1504CST                0      0      2.00K      0.00K      Thunderstorm Wind (50EG)  
Powerlines were blown down along Highway 61 near White Apple.  
  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Adams County**

**2 SSE Natchez**      21      1520CST                0      0      0.00K      0.00K      Hail (0.88)

#### **Adams County**

**3 SSW Cranfield**      21      1522CST                0      0      5.00K      0.00K      Thunderstorm Wind (50EG)  
A few trees were blown down in the Cranfield/Liberty road area south of Cranfield.  
  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Hinds County**

**3 NNE Raymond Williams Arp**      21      1535CST                0      0      0.00K      0.00K      Hail (1.00)

#### **Adams County**

**2 W Foster**      21      1535CST                0      0      5.00K      0.00K      Thunderstorm Wind (50EG)  
Trees and powerlines were blown down along East Wilderness Road.  
  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

January 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### MISSISSIPPI, Central

#### Franklin County

5 NNW Bude

21	1555CST				0	0	0.10K	0.00K	Hail (1.75)
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Golfball size hail fell on Union Church Road.

#### Scott County

1 NW Harperville

2 NNE Horseshoe

21	1556CST				0	0	1.00K	0.00K	Hail (1.00)
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1610CST

Swath of quarter sized hail fell in Leake County.

#### Copiah County

2 NNE Crystal Spgs

21	1602CST				0	0	6.00K	0.00K	Hail (1.00)
----	---------	--	--	--	---	---	-------	-------	-------------

Quarter size hail fell in Crystal Springs, which dented some vehicles.

#### Claiborne County

2 ENE Pattison

21	1604CST				0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A large tree was blown down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### Hinds County

2 W Longaloo

21	1605CST				0	0	0.00K	0.00K	Hail (1.00)
----	---------	--	--	--	---	---	-------	-------	-------------

Quarter size hail fell near I-220 and Highland Colony Parkway.

#### Madison County

1 SE Madison

21	1607CST				0	0	7.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A tree fell on a powerline on North Azalea Drive and power was out in that area. Another tree blocked the road on Madison Avenue near Stonegate Drive. Another tree was blown down and blocked traffic on Rice Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### Leake County

3 W Salem

21	1610CST				0	0	1.50K	0.00K	Hail (1.50)
----	---------	--	--	--	---	---	-------	-------	-------------

1620CST

A swath of hail fell in southeast Leake County. The biggest hailstone was around 1.5 inches.

#### Lincoln County

1 E Caseyville

21	1610CST				0	0	0.00K	0.00K	Hail (1.00)
----	---------	--	--	--	---	---	-------	-------	-------------

Hail covered the ground.

#### Franklin County

1 W Meadville

21	1613CST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A few trees were blown down on Bunkley Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### Copiah County

3 SSW Beech Grove

21	1614CST				0	0	17.00K	0.00K	Tornado (EF0)
----	---------	--	--	--	---	---	--------	-------	---------------

1619CST

3.03

50

This weak tornado touched down along Bennett Road and tracked northeast along the northern portion of Burt-Loop Road. Here, a couple of trees were snapped along with several limbs broken off and some shingles peeled off the roof of a home. The tornado continued to Harmony Road, where a few more trees were snapped and some tin was peeled off the roof of a house. The tornado dissipated before it reached Highway 27. The maximum estimated wind speeds were 85mph.

#### Lincoln County

6 WNW New Sight

21	1625CST				0	0	10.00K	0.00K	Tornado (EF0)
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1626CST

1.01

50

This weak tornado touched down just north of the Old Red Star community along Old Red Star Rd just to the south of the Copiah/Lincoln County line. A shed was damaged with the roof blown off and a few trees damaged. As the tornado tracked northeast, it crossed Watson Rd and damaged a couple trees. The heaviest damage occurred just west of Lott Smith Rd. where dozens of pine trees were snapped and several hard woods were uprooted. A shed was damaged along with a small portion of a roof on a house. Another home had a larger section of the roof torn off. This area was rated EF1. The tornado continued northeast and lifted at Sylvarena Rd and Bayou Pierre. The maximum estimated winds were 100mph. The total track length was 5.4 miles and path width was 200 yards.

# Storm Data and Unusual Weather Phenomena

January 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## CORRECTIONS

### MISSISSIPPI, Central

#### Copiah County

3 ESE Peetsville

4 WNW Beauregard

21	1626CST								
	1633CST	4.33	200	0	0	155.00K	0.00K		Tornado (EF1)

This weak tornado touched down just north of the Old Red Star community along Old Red Star Rd just to the south of the Copiah/Lincoln County line. A shed was damaged with the roof blown off and a few trees damaged. As the tornado tracked northeast, it crossed Watson Rd and damaged a couple trees. The heaviest damage occurred just west of Lott Smith Rd where dozens of pine trees were snapped and several hard woods were uprooted. A shed was damaged along with a small portion of a roof on a house. Another home had a larger section of the roof torn off. This area was rated EF1. The tornado continued northeast and lifted at Sylvarena Rd and Bayou Pierre. The maximum estimated winds were 100mph. The total track length was 5.4 miles and path width was 200 yards.

#### Neshoba County

2 N Linwood

21	1637CST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Pinetop was blown out of a tree and blocked the road at Highway 15 South.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### Copiah County

1 SE Rockport

21	1715CST				0	0	0.00K	0.00K	Hail (1.00)
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#### Lincoln County

4 NE Heucks

5 NNW Woolworth

21	1715CST				0	0	0.00K	0.00K	Hail (1.00)
	1719CST				0	0	0.00K	0.00K	Hail (1.00)

Quarter size hail fell at Lake Lincoln State Park.

#### Simpson County

2 W Bush

2 NE Pinola

21	1720CST								
	1729CST	3.89	300	0	0	17.00K	0.00K		Tornado (EF1)

The tornado started off of Highway 472 where it snapped a few trees and then continued northeast along the highway where it took a large portion of the roof off of a mobile home. The tornado continued northeast and crossed Berta Mamgum Road, where it snapped a few trees along the way and blew some tin off the roof of a mobile home. The tornado continued across Railroad Lane and Highway 28, snapping several trees and ended just east of Old Westville Road. The maximum estimated wind speeds were 95mph.

#### Neshoba County

1 W Longino

21	1731CST				0	0	0.00K	0.00K	Hail (1.00)
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#### Scott County

1 NE Morton

21	1740CST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was blown down in town along with dime sized hail.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### Scott County

2 NNW Homewood

21	1746CST								
	1749CST	2.09	75	0	0	9.00K	0.00K		Tornado (EF0)

This weak tornado snapped a handful of large pine trees off of County Road 562 and 550. A few other large limbs were also broken off. This tornado dissipated just before it crossed Highway 35. The maximum estimated wind speeds were 70mph.

#### Smith County

4 NNE Cohay

4 N Sylvarena

21	1807CST								
	1830CST				0	0	8.00K	0.00K	Thunderstorm Wind (54EG)

Multiple trees were blown down throughout the county. One such tree was blown down on Highway 501.

Note: The estimated wind gust of 54 knots is equivalent to 62 mph.

#### Smith County

Raleigh

21	1815CST				0	0	0.00K	0.00K	Hail (1.00)
----	---------	--	--	--	---	---	-------	-------	-------------

Quarter size hail fell on Highway 540.

# Storm Data and Unusual Weather Phenomena

January 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### MISSISSIPPI, Central

#### **Jasper County**

##### **1 ENE Bay Spgs**

21	1835CST				0	0	4.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was blown down in Bay Springs.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Marion County**

##### **8 ENE Columbia Marion Arpt**

21	1840CST				0	0	0.00K	0.00K	Hail (1.25)
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#### **Lamar County**

##### **3 WNW Otob**

21	1849CST				0	0	65.00K	0.00K	Tornado (EF2)
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##### **2 NE Oloh**

	1856CST	6.46	530	0	0	65.00K	0.00K	Tornado (EF2)
--	---------	------	-----	---	---	--------	-------	---------------

The tornado started near Strickland Road, where it snapped a few trees. The tornado continued northeast to the intersection of Porter Hudson Road and North Slade Road. At this point, the tornado was the strongest with 115mph winds. The tornado destroyed a garage and took the roof off of a house. The tornado continued across Bob Graham Road, where it took some roof decking off of a home. The tornado continued across Sand Lane, where it caused some roof damage to a mobile home. The tornado crossed Old Salt Road and snapped a few trees and tipped over a mobile home. The tornado continued to move east across North Black Creek Road, snapping a few more trees along the way and ended just east of Black Creek Road.

#### **Clarke County**

##### **1 SE Enterprise**

21	1923CST				0	0	7.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Multiple trees were blown down around Enterprise.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Clarke County**

##### **1 W Stonewall**

21	1926CST				0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was blown down across County Road 320.  
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Lauderdale County**

##### **5 SSW Zero**

21	1942CST				0	0	8.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were blown down along Walker Bottom Road.  
Abundant moisture and instability combined with a potent low pressure system and associated cold front. Storms developed ahead of the front and produced hail, tornadoes and damaging winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

March 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### COLORADO, West

#### COZ004-013

#### Elkhead And Park Mountains - Flattop Mountains

13	2200MST								
15	0800MST			0	0	0.00K	0.00K	Winter Storm	

#### COZ012

#### West Elk And Sawatch Mountains

14	0200MST							
15	1400MST			0	0	0.00K	0.00K	Winter Weather

#### COZ010

#### Gore And Elk Mountains/central Mountain Valleys

14	0900MST							
15	0800MST			0	0	0.00K	0.00K	Winter Storm

A moist Pacific trough produced significant to heavy snowfall and strong winds to the higher mountain areas of northwest and west central Colorado.

#### COZ004-009-012> 013

#### Elkhead And Park Mountains - Flattop Mountains - Gore And Elk Mountains/central Mountain Valleys - Grand And Battlement Mesas - West Elk And Sawatch Mountains

15	0600MST							
16	1000MST			0	0	0.00K	0.00K	Winter Weather

A moist northwest flow with embedded disturbances produced significant snowfall and areas of blowing snow in the higher mountain areas of northwest and west central Colorado.

#### COZ006

#### Grand Valley

16	0600MST							
	0830MST			0	0	0.00K	0.00K	Dense Fog

Dense fog formed in the Grand Valley as low level moisture remained trapped under a shallow surface-based inversion.

#### COZ004

#### Elkhead And Park Mountains

16	0800MST							
18	0300MST			0	0	0.00K	0.00K	Winter Storm

#### COZ005-010

#### Gore And Elk Mountains/central Mountain Valleys - Upper Yampa River Basin

16	0800MST							
17	2300MST			0	0	0.00K	0.00K	Winter Weather

A moist northwest flow produced significant to heavy snowfall in portions of northwest Colorado.

#### COZ009-018-019

#### Grand And Battlement Mesas - Northwestern San Juan Mountains - Southwestern San Juan Mountains

29	0000MST							
30	0800MST			0	0	0.00K	0.00K	Winter Weather

#### COZ003

#### Roan And Tavaputs Plateaus

29	0600MST							
	1900MST			0	0	0.00K	0.00K	Winter Storm

# Storm Data and Unusual Weather Phenomena

March 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### COLORADO, West

**COZ004-010-013-017**

**Elkhead And Park Mountains - Flattop Mountains - Gore And Elk Mountains/central Mountain Valleys - Uncompahgre Plateau And Dallas Divide - Upper Yampa River Basin**

29	0600MST				0	0	0.00K	0.00K	Winter Weather
30									

A moist and nearly stationary upper low over the region resulted in significant to heavy snow and strong winds at higher elevations.

### UTAH, East

**UTZ023**

**Eastern Uinta Mountains**

28	2100MST								
30	0800MST				0	0	0.00K	0.00K	Winter Weather

**UTZ025**

**Tavaputs Plateau**

29	0300MST								
	1900MST				0	0	0.00K	0.00K	Winter Storm

**UTZ028**

**La Sal & Abajo Mountains**

29	0500MST				0	0	0.00K	0.00K	Winter Weather
30									

A moist and nearly stationary upper low over the region resulted in significant to heavy snow and strong winds at higher elevations.



# Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## CORRECTIONS

### COLORADO, West

#### COZ002

#### Central Yampa River Basin

14	1900MST								
15	0800MST				0	0	0.00K	0.00K	Heavy Snow

#### COZ004

#### Elkhead And Park Mountains

14	2000MST								
17	1300MST				0	0	0.00K	0.00K	Winter Storm

#### COZ005

#### Upper Yampa River Basin

14	2100MST								
15	1600MST				0	0	0.00K	0.00K	Heavy Snow

#### COZ003

#### Roan And Tavaputs Plateaus

14	2200MST								
17	1000MST				0	0	0.00K	0.00K	Winter Storm

#### COZ009-012>013-017>019

#### Flattop Mountains - Gore And Elk Mountains/central Mountain Valleys - Grand And Battlement Mesas - Northwestern San Juan Mountains - Southwestern San Juan Mountains - Uncompahgre Plateau And Dallas Divide - West Elk And Sawatch Mountains

15	0100MST								
17	1100MST				0	0	0.00K	0.00K	Winter Storm

A very slow moving moist upper low tracked across the central intermountain region and produced heavy snow with areas of blowing snow in the higher elevations of western Colorado and some lower elevation areas in northwest Colorado.

### UTAH, East

#### UTZ023

#### Eastern Uinta Mountains

14	1600MST								
16	1100MST				0	0	0.00K	0.00K	Winter Weather

#### UTZ025-028

#### La Sal & Abajo Mountains - Tavaputs Plateau

15	0700MST								
16	1000MST				0	0	0.00K	0.00K	Winter Storm

A very slow moving moist upper low tracked across the central intermountain region and produced heavy snow with areas of blowing snow in some higher elevation areas of eastern Utah.

# Storm Data and Unusual Weather Phenomena

June 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### ARKANSAS, East

#### **Lawrence County**

**1 NW Imboden**

15	1625CST 1630CST				0	0			Thunderstorm Wind (50EG)
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Estimated 50 to 60 mph gust.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Greene County**

**3 S Gainesville**

15	1723CST 1725CST				0	0			Hail (1.00)
----	--------------------	--	--	--	---	---	--	--	-------------

Estimated 1 inch hail.

#### **Mississippi County**

**1 SSE Chelford**

15	1822CST 1830CST				0	0	0.00K	0.00K	Thunderstorm Wind (56MG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A strong Upper disturbance triggered scattered severe thunderstorms across the Midsouth on the afternoon and evening of June 15th. Storms produced several damaging wind reports and a couple of large hail reports. Note: The measured wind gust of 56 knots is equivalent to 64 mph.

**ARZ008-017>018-  
026>028-035>036-  
048>049-058**

**Clay - Craighead - Crittenden - Cross - Greene - Lawrence - Lee - Mississippi - Phillips - Poinsett -  
Randolph - St. Francis**

16	1100CST 1700CST				0	0	0.00K	0.00K	Excessive Heat
----	--------------------	--	--	--	---	---	-------	-------	----------------

The combination of high humidity and hot temperatures provided for dangerous heat indices along and west of the Mississippi River.

### MISSISSIPPI, North

#### **Marshall County**

**Cayce**

15	1925CST 1930CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Trees and power lines down.

A strong Upper disturbance triggered scattered severe thunderstorms across the Midsouth on the afternoon and evening of June 15th. Storms produced several damaging wind reports and a couple of large hail reports. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

**MSZ001-007-010**

**Coahoma - De Soto - Tunica**

16	1100CST 1700CST				0	0	0.00K	0.00K	Excessive Heat
----	--------------------	--	--	--	---	---	-------	-------	----------------

The combination of high humidity and hot temperatures provided for dangerous heat indices along and west of the Mississippi River.

#### **Lee County**

**2 N Baldwyn**

17	1125CST 1135CST				0	0		0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	--	-------	--------------------------

Some trees and limbs down in Baldwyn.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Tishomingo County**

**2 NNW Tishomingo Co Arpt  
Belmont**

17	1200CST 1210CST				0	0		0.00K	Thunderstorm Wind (50EG)
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Large tree down in Belmont.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

June 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### MISSISSIPPI, North

**Pontotoc County**  
**Hurricane**  
**2 SSE Thaxton**

17	1210CST 1220CST				0	0	0.00K		Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	--	--------------------------

Trees and power lines down along Bray and White roads in the Thaxton area.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

**Pontotoc County**  
**Pontotoc**

17	1215CST 1220CST				0	0			Hail (1.00)
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Nickel to quarter size in Pontotoc.

**Prentiss County**  
**3 N Booneville**

17	1220CST 1230CST				0	0	0.00K		Thunderstorm Wind (50EG)
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Trees and powerlines down in Booneville.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

**Lafayette County**  
**Oxford**

17	1221CST 1225CST				0	0			Hail (0.88)
----	--------------------	--	--	--	---	---	--	--	-------------

Nickel to nearly quarter size hail in Oxford.

**Prentiss County**  
**Booneville**

17	1224CST 1230CST				0	0			Hail (1.00)
----	--------------------	--	--	--	---	---	--	--	-------------

Two reports of quarter size hail in Booneville.

**Monroe County**  
**Amory**

17	1305CST 1315CST				0	0			Thunderstorm Wind (50EG)
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Large pecan tree down in Amory.

An upper level disturbance passed through eastern portions of the Midsouth on June 17th. Severe storms developed in the early afternoon hours across North Mississippi producing damaging winds and large hail. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### MISSOURI, Lower

**Pemiscot County**  
**Swift**

15	1900CST 1905CST				0	0	0.00K	0.00K	Hail (0.88)
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A strong Upper disturbance triggered scattered severe thunderstorms across the Midsouth on the afternoon and evening of June 15th. Storms produced several damaging wind reports and a couple of large hail reports.

### **MOZ113-115**

**Dunklin - Pemiscot**

16	1100CST 1700CST				0	0	0.00K	0.00K	Excessive Heat
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The combination of high humidity and hot temperatures provided for dangerous heat indices along and west of the Mississippi River.

**1 NNW Clarkton**

28	1452CST 1457CST				0	0	0.00K		Thunderstorm Wind (50EG)
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Straight line winds knocked down a few trees and powerlines in Clarkton.

A cold front dropping south into the Missouri Bootheel triggered scattered thunderstorms during the afternoon hours. A severe storm knocked down some trees and powerlines in Dunklin County. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

June 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### TENNESSEE, West

#### Gibson County

##### 1 NNW Humboldt Arpt

01	1445CST				0	0	5.00K	0.00K	Flash Flood
	1645CST								

Esquire Peek Road partially washed out from heavy rains. Approximately 2 to 3 inches fell in less than an hour.

#### Fayette County

##### 1 SSW Piperton

01	1710CST				0	0	10.00K		Thunderstorm Wind (50EG)
	1720CST								

Multiple trees down on Commerce Road south of Highway 57. Also a few trees and a powerpole down on Fletcher Drive.

A weak upper level disturbance passed through the Midsouth during the afternoon and early evening of June 1st. An unstable airmass contributed to scattered thunderstorms of which a couple produced localized flash flooding and damaging winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### Shelby County

##### 1 NW Arlington

##### 2 WSW Arlington Muni Arpt

03	1510CST				0	0	1.50M	0.00K	Flash Flood
	1815CST								

Exit 25 ramp on Interstate 40 had 6 to 10 inches of water flowing across impeding traffic. Flooding of deep water also occurred on Hays Road in Arlington forcing a road closure and on Arlington Road at the Arlington Self Storage Business. In addition, the Broadcast media also reported several residential roads across Arlington were flooded as well as Arlington Trace Subdivision, Airline Road, Douglas Road and Fire Station 71.

#### Tipton County

##### 6 E Munford

##### 4 SSE Atoka

03	1522CST				0	0	0.00K	0.00K	Flash Flood
	1830CST								

County roads across Southeast Tipton County were flooded.

A very moist airmass across the Mississippi Delta provided for slow moving thunderstorm clusters capable of producing very high hourly rain rates. Localized flash flooding resulted across portions of Southwest Tennessee during the afternoon hours of June 3rd.

#### Obion County

##### 1 E Spout Spgs

15	1423CST				0	0			Hail (1.00)
	1430CST								

Trained spotter sent picture of quarter size hail on Twitter.

#### Benton County

##### 3 WSW Way

##### 2 SSW Eva

15	1430CST				0	0	50.00K		Thunderstorm Wind (50EG)
	1445CST								

Trees and power lines down between Camden and Eva.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### Obion County

##### Fremont

##### 2 N Gibbs

15	1435CST				0	0	50.00K		Thunderstorm Wind (50EG)
	1455CST								

Trees down all over Kenn-Tenn Highway, West Highway 22 and Shawtown Road in Union City.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### Weakley County

##### 1 SW Terrell

##### 1 SW Gardner

15	1450CST				0	0	150.00K		Thunderstorm Wind (50EG)
	1510CST								

Trees down on houses and cars at HWY 431 and Capps Road. In addition, multiple trees down on Cypress road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

June 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### TENNESSEE, West

#### Benton County

1 NW Lipe  
Sawyers Mill

15	1500CST 1510CST								Thunderstorm Wind (50EG)
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Trees blocking roadway at Divider, Natchez Trace, Stigall Road and Highway 70 and Flatwood roads west of Camden.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### Obion County

2 SE Fremont  
1 W McCutchen Hgts

15	1550CST 1600CST								Thunderstorm Wind (50EG)
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Many trees down across Obion County.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### Obion County

Troy  
1 NW Wolverine

15	1609CST 1700CST					0.00K	0.00K		Flash Flood
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Low lying fields flooded and water covering roads in and around Troy.

#### Shelby County

2 NE Germantown  
1 NNE Forest Hill

15	1915CST 1920CST					0.00K	0.00K		Thunderstorm Wind (50EG)
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Trees down in Germantown.

A strong Upper disturbance triggered scattered severe thunderstorms across the Midsouth on the afternoon and evening of June 15th. Storms produced several damaging wind reports and a couple of large hail reports. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### TNZ001-019-049-088

#### Dyer - Lake - Obion - Shelby - Tipton

16	1100CST 1700CST					0.00K	0.00K		Excessive Heat
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The combination of high humidity and hot temperatures provided for dangerous heat indices along and west of the Mississippi River.

#### TNZ088

#### Shelby

24	1000CST 1700CST			1	0	0.00K	0.00K		Heat
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High dewpoints pooled in advance of an approaching cold front. The combination of high dewpoints and temperatures in the mid and upper 90s produced heat index values above 105 degrees in the Memphis area. M47OU

#### Decatur County

1 N Parsons

27	1412CST 1500CST					0.00K	0.00K		Flash Flood
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Road flooded at the intersection of Maxwell Street and Tennessee Avenue North in the northern part of Parsons.

#### Fayette County

Oakland

27	1446CST 1451CST						0.00K		Hail (1.00)
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Quarter size hail was reported near the intersection of Highway 64 and Highway 194 in Oakland.

#### Fayette County

1 NNW Oakland

27	1446CST 1451CST						0.00K		Thunderstorm Wind (56EG)
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Straight line winds knocked down a few trees and many branches in Oakland.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

# Storm Data and Unusual Weather Phenomena

June 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## CORRECTIONS

### TENNESSEE, West

#### **Shelby County**

**2 WNW Germantown**

27	1538CST 1700CST				0	0	0.00K	0.00K	Flash Flood
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Intersection of Quince and Ridgeway roads flooded in Southeast Memphis.

The combination of a very humid airmass and a weak surface front allowed for thunderstorms to develop during the afternoon of June 27th. A few severe storms produced damaging winds, large hail and flash flooding.

# Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### ARKANSAS, East

#### **Randolph County**

**1 NE Lorine**

06	1100CST	1110CST			0	0	0.00K	Thunderstorm Wind (50EG)
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A large tree was down across Highway 90 and Springview road.

An upper level disturbance tracked across the northern Midsouth counties during the early and mid afternoon hours of July 6th. A few storms were capable of damaging winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Lawrence County**

**Sedgwick**

08	1500CST	1510CST			0	0	0.00K	Thunderstorm Wind (50EG)
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A few trees down and a pool damaged in Sedgwick.

An upper level disturbance generated a severe storm across northeast Arkansas during the late afternoon hours of July 8th. Storms were capable of producing damaging winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Mississippi County**

**Roseland**

15	1631CST	1640CST			0	0	0.00K	Thunderstorm Wind (50EG)
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A few tree limbs greater than 6 inches down on HWY 18 in Roseland.

A weak cold front triggered several severe thunderstorms across a large portion of the Midsouth during the late afternoon and early evening hours of July 15th. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

**ARZ008-017>018-026>028-035>036-048>049-058**

**Clay - Craighead - Crittenden - Cross - Greene - Lawrence - Lee - Mississippi - Phillips - Poinsett - Randolph - St. Francis**

22	1000CST	1400CST			0	0	0.00K	Excessive Heat
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High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of July 22nd.

### MISSISSIPPI, North

#### **Tate County**

**1 SSW Strayhorn**

04	1655CST	1700CST			0	0	0.00K	Thunderstorm Wind (50EG)
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Several trees and power lines down in Strayhorn.

A warm and humid airmass contributed to scattered thunderstorms during the late afternoon hours of July 4th. One of the storms pulsed up reaching a brief period of severity in northwest Mississippi. Damaging winds were the result. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

**MSZ006-017-020>024**

**Calhoun - Chickasaw - Itawamba - Monroe - Tallahatchie - Tishomingo - Yalobusha**

05	0600CST				0	0	0.00K	Drought
31	2359CST							

Abnormally dry conditions during the middle part of the summer led to moderate(D2) drought conditions over portions of North Mississippi through the month of July. A semi-permanent upper ridge of high pressure resulted in little rainfall which intensified the drought conditions to extreme (D3) in a few counties of North Mississippi by the end of July. The drought created stress on crops including corn and soybeans which led to lower yields. In addition, the drought caused river and lake levels to be at low levels.

**MSZ009-016**

**Lee - Prentiss**

12	0600CST				0	0	0.00K	Drought
31	2359CST							

# Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### MISSISSIPPI, North

Abnormally dry conditions during the middle part of the summer led to moderate(D2) drought conditions over portions of North Mississippi through the month of July. A semi-permanent upper ridge of high pressure resulted in little rainfall which intensified the drought conditions by the end of July. The drought created stress on crops including corn and soybeans which led to lower yields. In addition, the drought caused river and lake levels to be at low levels.

#### MSZ001-010

##### Coahoma - De Soto

22	0800CST				0	0	0.00K		Excessive Heat
	1700CST								

High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of July 22nd.

#### Lee County

6 SSE Plantersville  
2 N Nettleton

22	1610CST				0	0	0.00K		Thunderstorm Wind (50EG)
	1615CST								

Large tree down between Plantersville and Nettleton.

A weak surface cold front and an upper level disturbance provided the focus for a few severe thunderstorms during the afternoon and early evening hours of July 22nd. Damaging winds and flash flooding were the main threats. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### MSZ012-015

##### Panola - Pontotoc

26	0600CST				0	0	0.00K		Drought
31	2359CST								

Abnormally dry conditions during the middle part of the summer led to moderate(D2) drought conditions over portions of North Mississippi through the month of July. A semi-permanent upper ridge of high pressure resulted in little rainfall which intensified the drought conditions by the end of July. The drought created stress on crops including corn and soybeans which led to lower yields. In addition, the drought caused river and lake levels to be at low levels.

### MISSOURI, Lower

#### Dunklin County

2 W Malden Arpt

06	1155CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
	1200CST								

An upper level disturbance track across the northern Midsouth counties during the early and mid afternoon hours of July 6th. A few storms were capable of damaging winds. Note: The measured wind gust of 52 knots is equivalent to 60 mph.

#### Dunklin County

Clarkton

15	1428CST				0	0			Hail (0.88)
	1435CST								

#### Dunklin County

1 NNE Senath

15	1605CST				0	0	0.00K	0.00K	Flash Flood
	1730CST								

Main Street in Senath flooded.

A weak cold front triggered several severe thunderstorms across a large portion of the Midsouth during the late afternoon and early evening hours of July 15th.

#### MOZ113-115

##### Dunklin - Pemiscot

22	1000CST				0	0	0.00K		Excessive Heat
	1700CST								

High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of July 22nd.



# Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### MISSOURI, Lower

#### **Pemiscot County**

**Caruthersville  
2 NNE Kinfolk Ridge**

22	1705CST						5.00K	0.00K	Thunderstorm Wind (50EG)
	1715CST				0	0			

Large tree down on powerlines in Caruthersville.

A weak surface cold front and an upper level disturbance provided the focus for a few severe thunderstorms during the afternoon and early evening hours of July 22nd. Damaging winds and flash flooding were the main threats. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### TENNESSEE, West

#### **Benton County**

**3 NW Big Sandy**

06	1410CST							0.00K	Thunderstorm Wind (50EG)
	1415CST				0	0			

Multiple trees down near the southern edge of Kentucky Lake.

An upper level disturbance track across the northern Midsouth counties during the early and mid afternoon hours of July 6th. A few storms were capable of damaging winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Mcnairy County**

**1 N Michie**

14	1040CST							0.00K	Thunderstorm Wind (50EG)
	1045CST				0	0			

Three trees down on HWY 224.

A weak cold front produced showers and thunderstorms across west Tennessee during the late morning hours of July 14th. One storm reached severe limits producing damaging winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Shelby County**

**2 WSW Germantown**

15	1550CST						0.00K	0.00K	Hail (0.88)
	1555CST				0	0			

Nickel size hail at Apple Tree Center on Mount Moriah Road.

#### **Shelby County**

**1 SE Oakville  
2 NNE Capleville**

15	1603CST						20.00K	0.00K	Thunderstorm Wind (50EG)
	1610CST				0	0			

Awning blown off a building on Lamar Avenue. Multiple trees down near the intersection of Winchester and Perkins.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Shelby County**

**1 N Rosemark**

15	1727CST								Hail (1.00)
	1732CST				0	0			

Quarter size hail near Rosemark.

#### **Tipton County**

**1 SSW Idaville**

15	1745CST						20.00K	0.00K	Thunderstorm Wind (60EG)
	1750CST				0	0			

Tin roof ripped off house on Old Memphis Road near Billings Drive. Several large trees down in the area.

A weak cold front triggered several severe thunderstorms across a large portion of the Midsouth during the late afternoon and early evening hours of July 15th. Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

### **TNZ088**

#### **Shelby**

20	1000CST						0.00K	0.00K	Heat
	1300CST				1	0			

A large upper level high pressure system centered over the Southern Plains brought hot and humid conditions to the Mid-South. The combination of temperatures in the mid 90s and dewpoints in the upper 70s produced heat index values above 105 degrees in the Memphis area. M65PH

**(MEM)Memphis Intl Ar  
2 SE Oakville**

20	1325CST						5.00K	0.00K	Thunderstorm Wind (57MG)
	1330CST				0	0			

# Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### TENNESSEE, West

In addition to the measured gust at the airport, a large tree was down blocking the eastbound lanes on Winchester Road near the Getwell Road intersection. Report relayed by the broadcast media.

Note: The measured wind gust of 57 knots is equivalent to 66 mph.

<b>1 SSE Berclair</b> <b>1 NW White Station</b>	20	1345CST							
		1350CST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)

Powerlines down at Walnut Grove and Cherry Lane roads.

A weak upper level disturbance and unstable airmass produced a few severe storms capable of damaging winds on the afternoon of July 20th. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **TNZ001-019-048**

#### **Dyer - Lake - Lauderdale - Obion**

	22	0915CST							
		1315CST			0	0	0.00K		Excessive Heat

High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of July 22nd.

### **Henderson County**

<b>1 ENE Rock Spgs</b> <b>2 NNW Scotts Hill</b>	22	1330CST							
		1335CST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)

A few large trees down on Rock Springs Road and Houston Road across the county.

A weak surface cold front and an upper level disturbance provided the focus for a few severe thunderstorms during the afternoon and early evening hours of July 22nd. Damaging winds and flash flooding were the main threats. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **TNZ049-088**

#### **Shelby - Tipton**

	22	1400CST							
		1700CST			0	0	0.00K		Excessive Heat

High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of July 22nd.

### **Henderson County**

<b>2 E Timber Lake</b> <b>2 N Law</b>	22	1415CST							
		1730CST			0	0	30.00K	0.00K	Flash Flood

Stanfill Road was completely washed out due to flash flooding.

### **Tipton County**

<b>8 W Covington</b> <b>1 W Brighton Cates Arpt</b>	22	1845CST							
		1855CST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)

Trees reported down across the county.

A weak surface cold front and an upper level disturbance provided the focus for a few severe thunderstorms during the afternoon and early evening hours of July 22nd. Damaging winds and flash flooding were the main threats. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### **Dyer County**

<b>Templeton</b>	28	0800CST							
		0805CST			0	0		0.00K	Thunderstorm Wind (58MG)

Straight line wind knocked down two power poles on Highway 211 near Locust Grove Road. A spotter reported a measured wind gust of 66.9 mph.

An upper level disturbance moving through in northwest flow aloft triggered a few thunderstorms across Northwest Tennessee during the evening hours of July 28th. One storm produced damaging winds near Newbern. Note: The measured wind gust of 58 knots is equivalent to 67 mph.

# Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## CORRECTIONS

### TENNESSEE, West

#### **Shelby County**

**1 ESE Goodman**

**1 SW Persey**

	29	1635CST					20.00K	0.00K	Thunderstorm Wind (50EG)
		1645CST			0	0			

A large tree fell and broke through the roof of a home in the 700 block of Honduras Road.

A weak cold front was capable of producing an isolated severe thunderstorm across southwest Tennessee during the late afternoon of July 29th. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### ARKANSAS, East

**ARZ008-017>018-026>028-035>036-048>049-058**

**Clay - Craighead - Crittenden - Cross - Greene - Lawrence - Lee - Mississippi - Phillips - Poinsett - Randolph - St. Francis**

04	1100CST				0	0	0.00K	0.00K	Excessive Heat
	1700CST								

High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of August 4th.

**ARZ008-017>018-026>028-035>036-048>049-058**

**Clay - Craighead - Crittenden - Cross - Greene - Lawrence - Lee - Mississippi - Phillips - Poinsett - Randolph - St. Francis**

05	1000CST				0	0	0.00K	0.00K	Excessive Heat
	1800CST								

High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of August 5th.

### **Randolph County**

**5 SSE Dalton  
3 SSW Lorine**

14	1720CST				0	0	0.00K	0.00K	Flash Flood
	2020CST								

Multiple roads were closed due to flash flooding in and near Pochahontas. Country Club Road at the bridges, Pyburn Extended and Valley Chapel were all closed due to water. In addition broadcast media reported water across Highway 90 just east of McLroy Church of Christ.

### **Lawrence County**

**Lauratown  
1 E Old Clover Bend**

14	1910CST				0	0	0.00K	0.00K	Flash Flood
	2030CST								

County Road 528 at County Road 511 and County Road 527 at County Road 511 were impassable due to water covering the road. Both intersections are located adjacent to Big Running Creek.

The combination of an upper level disturbance and the approach of a weak cold front caused showers and thunderstorms that were capable of producing flash flooding across portions of northeast Arkansas during the early evening hours of August 14th.

### **Lawrence County**

**1 WSW Richwoods  
3 N Minturn**

19	0545CST				0	0	0.00K	0.00K	Flash Flood
	0845CST								

Water rose to near entrances into businesses in town. Midway Road near Hoxie flooded with many areas in and near Hoxie flooded. In addition a County Official reported numerous streets in Walnut Ridge were underwater.

An upper level disturbance brought heavy showers and embedded thunderstorms that produced flash flooding across portions of northeast Arkansas during the early morning hours of August 19th.

### MISSISSIPPI, North

**MSZ006-009-012-015>017-020>024**

**Calhoun - Chickasaw - Itawamba - Lee - Monroe - Panola - Pontotoc - Prentiss - Tallahatchie - Tishomingo - Yalobusha**

01	0000CST								
30	2359CST				0	0	0.00K		Drought

Abnormally dry weather continued into the month of August leading to moderate(D2) to extreme(D3) drought conditions over portions of North Mississippi. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. Some rainfall toward the end of the month started to alleviate drought conditions in several counties. The drought continued stress on crops including corn and soybeans which led to lower yields. In addition, the drought caused river and lake levels to be at low levels.

**MSZ001-007-010>012-020**

**Coahoma - De Soto - Panola - Quitman - Tallahatchie - Tate - Tunica**

04	1100CST								
	1700CST				0	0	0.00K	0.00K	Excessive Heat

# Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### MISSISSIPPI, North

High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of August 4th.

05	1000CST 1500CST				0	0	0.00K	0.00K	Excessive Heat
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### MSZ007-010>012-020

#### **Coahoma - Panola - Quitman - Tallahatchie - Tate - Tunica**

05	1000CST 1500CST				0	0	0.00K	0.00K	Excessive Heat
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High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of August 5th.

### Pontotoc County

#### **1 W Rough Edge 2 SSW Possum Trot**

05	1310CST 1320CST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Several trees down around Pontotoc. Main area of trees down was along Old Highway 6 west of town. Some trees fell on power lines. One home had roof partially peeled back from high winds.

A very humid airmass contributed to a few pulse severe storms capable of producing damaging winds during the afternoon and evening hours across portions of north Mississippi and west Tennessee. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

### MSZ013

#### **Lafayette**

09	0600CST								
31	2359CST				0	0	0.00K		Drought

Abnormally dry weather continued into the month of August leading to moderate(D2) to extreme(D3) drought conditions over portions of North Mississippi. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. Some rainfall toward the end of the month started to alleviate drought conditions in several counties. The drought continued stress on crops including corn and soybeans which led to lower yields. In addition, the drought caused river and lake levels to be at low levels.

### Yalobusha County

#### **6 S Bruce Jct**

26	1200CST 1205CST				1	1	0.00K	0.00K	Lightning
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A woman was killed by lightning at Grenada Lake near the Bryant boat landing. Another person was injured by the strike. F510U

A subtropical upper level disturbance produced a numerous thunderstorms over North Mississippi during the afternoon of August 26th. A woman was killed by lightning in Yalobusha County. F510U

### MISSOURI, Lower

### MOZ113-115

#### **Dunklin - Pemiscot**

04	1100CST 1700CST				0	0	0.00K	0.00K	Excessive Heat
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High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of August 4th.

05	1100CST 1800CST				0	0	0.00K	0.00K	Excessive Heat
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### MOZ115

#### **Pemiscot**

05	1100CST 1800CST				0	0	0.00K	0.00K	Excessive Heat
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High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of August 5th.

# Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### TENNESSEE, West

#### **Carroll County**

**2 WSW Marlborough**

01	1545CST 1550CST				0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
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Tree down on Marlboro Road one mile east of Barren Springs Road causing power outage.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Benton County**

**2 ESE Liberty**

**1 SE Eva**

01	1615CST 1625CST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Multiple trees down on Flatwoods Road and tree down on a power line on Reese Road in Benton County. Report of tree on Reese Road came in from Law Enforcement.

A weak cold front initiated a few severe thunderstorms that produced damaging winds across portions of northwest Tennessee during the late afternoon hours. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **TNZ088**

#### **Shelby**

02	1000CST 1700CST				1	0	0.00K	0.00K	Heat
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High heat and humidity combined to produced heat index values around 105 degrees in Memphis. M76VE

#### **Madison County**

**5 W Bemis**

**2 SSW Madison Hall**

02	1525CST 1535CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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Straight line winds knocked down many power lines and a few trees west of Bemis. A billboard was also damaged.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **Madison County**

**Bemis**

**1 SSW Malesus**

02	1552CST 1730CST				0	0	0.00K	0.00K	Flash Flood
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Significant street flooding in Bemis. Many roadways covered with water.

An upper level disturbance triggered storms with very heavy rainfall across portions of west Tennessee on the afternoon of August 2nd. A severe storm also occurred with damaging winds.

#### **TNZ001-019-048-088**

#### **Dyer - Lake - Lauderdale - Obion - Shelby**

04	1100CST 1700CST				0	0	0.00K	0.00K	Excessive Heat
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High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of August 4th.

#### **TNZ001-019-049-088**

#### **Dyer - Lake - Obion - Shelby - Tipton**

05	1100CST 1500CST				1	0	0.00K	0.00K	Excessive Heat
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High heat and humidity contributed to heat indices of 110 degrees or better across a large portion of the Midsouth from the late morning through the early evening hours of August 5th.

#### **Obion County**

**Fremont**

05	1740CST 1745CST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees and power lines knocked down causing power outages in the small community of Dixie.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## CORRECTIONS

### TENNESSEE, West

#### **Benton County 4 S Eagle Creek**

05	1850CST 1900CST				0	0	0.00K		Thunderstorm Wind (50EG)
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Numerous trees down near Birdsong Road and Mary Avenue due to a microburst.

A very humid airmass contributed to a few pulse severe storms capable of producing damaging winds during the afternoon and evening hours across portions of north Mississippi and west Tennessee. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

#### **TNZ088**

#### **Shelby**

25	1100CST 1400CST				0	0	0.00K	0.00K	Heat
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Upper level high pressure prevailed across the region. The combination of high heat and humidity produced dangerous heat index values in the Memphis area.

#### **Hardin County 1 N Olivehill**

26	1600CST 1605CST				0	0	0.00K		Thunderstorm Wind (50EG)
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One large tree down. Report and picture relayed by NWS Nashville.

A subtropical upper level disturbance produced a pulse severe thunderstorm capable of damaging winds across portions of southwest Tennessee during the late afternoon of August 26th. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

# Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## CORRECTIONS

### COLORADO, West

**La Plata County**  
**2 NE Bondad**

12	1430MST 1445MST				0	0	2.00K	0.00K	Thunderstorm Wind (52MG)
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Strong thunderstorm winds produced minor damage at a residence. The damage included a large trampoline which was anchored into the ground over a foot deep at all legs and was ripped out and totally demolished.

A strong thunderstorm produced damaging winds in La Plata County. Note: The measured wind gust of 52 knots is equivalent to 60 mph.

**Moffat County**  
**3 NW Elk Spgs**

14	1110MST 1115MST				0	0	0.00K	0.00K	Hail (1.25)
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Firefighters on the Calico Wildfire were pelted with large hailstones.

A strong thunderstorm produced large hail in Moffat County.