

Storm Data and Unusual Weather Phenomena - July 2011

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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IOWA, Southwest

FREMONT COUNTY --- 1.8 NW BARTLETT [40.90, -95.80], 0.7 WSW PERCIVAL [40.74, -95.81], 2.3 ENE HAMBURG REIDS ARPT [40.59, -95.61], 7.7 SW PAYNE [40.58, -95.84], 6.4 W PERCIVAL [40.74, -95.92], 5.5 WNW BARTLETT [40.90, -95.88]

07/01/11 00:00 CST	0.15M	Flood (due to Heavy Rain / Snow Melt)
07/31/11 23:59 CST	0	Source: Official NWS Observations

Flooding along the Missouri River gradually worsened over the area during June as record releases from Gavins Point Dam and periodic heavy rain brought widespread flooding along the River. The river at Nebraska City reached a record crest a little over 28 feet by the end of the June before falling through early July as levees in the area were breached and widened by flood waters. However, significant flooding persisted through much of July and August. A levee west and southwest of Hamburg failed by the middle of June causing extensive flooding of farmland, roads and a few roads or highways near Hamburg, including 10 miles of Interstate 29. By mid July around 24 miles of Interstate 29 was closed, from around Bartlett to the Missouri border. Highway 2 that led into Nebraska City also closed by the middle of June due to flood waters and remained closed in July. By the middle of June just under 1,000 people had been evacuated along the river in the Hamburg area and at least 10 businesses had closed. Sandbagging and development of a second levee near Hamburg kept much of the flood waters out of that town during July. Around 600 people in Percival, Bartlett and Paul were evacuated toward the end of June and on June 30th the levee near Percival failed causing additional flooding and closing of more of Interstate 29. By the end of July the levee breach near Percival expanded from 200 feet in late June to around 1,000 feet by the end of July.

HARRISON COUNTY --- 4.6 NW RIVER SIOUX [41.84, -96.12], 5.2 W MODALE [41.63, -96.12], 6.5 SW MODALE [41.56, -96.11], 7.8 SSW MODALE [41.51, -96.07], 5.3 S MODALE [41.54, -96.03], 1.4 N LITTLE SIOUX [41.82, -96.03]

07/01/11 00:00 CST	10K	Flood (due to Heavy Rain / Snow Melt)
07/31/11 23:59 CST	0	Source: Official NWS Observations

Flooding along the Missouri River gradually worsened over the area during June and continued into July as record releases from Gavins Point Dam brought widespread flooding along the River. The river near Blair climbed to a little under 33 feet by the end of June before falling slightly during July. However, moderate flooding persisted through July and into late August before river levels began to fall. County roads and at least one highway and parts of Interstate 29 were flooded as were several parks and recreation areas near the river. Sand bag operations were used near Missouri Valley, Modale and Mondamin where at least 100 to 200 voluntary evacuations of residences occurred. The flooding forced the post office in Modale to move operations to a nearby town. Highway 30 west of Missouri Valley had to have a temporary barrier of large sandbags installed on both sides to keep flood waters at bay that reached the area from a downstream breach. However, anytime heavy rain would fall in that area water would pond on the highway causing a temporary closure.

MILLS COUNTY --- 5.5 NW FOLSOM [41.16, -95.89], 3.8 WSW FOLSOM [41.08, -95.89], 4.4 WSW PACIFIC JCT [41.00, -95.88], 8.8 W TABOR [40.89, -95.84], 6.1 W TABOR [40.90, -95.79], 4.5 N FOLSOM [41.17, -95.82]

07/01/11 00:00 CST	25K	Flood (due to Heavy Rain / Snow Melt)
07/31/11 23:59 CST	0	Source: Official NWS Observations

Flooding along the Missouri River gradually worsened over the area during June into July as record releases from Gavins Point Dam brought widespread flooding along the River. At Plattsmouth the river started June around 30 feet, flood stage is 26 feet, and eventually reached a little over 36 feet by the end of the month before falling a little in July. However, at least moderate flooding persisted well into August. The flooding affected farmland along the river along with roads and recreational areas. The water treatment plant and wellheads near Glenwood were sandbagged to prevent flood waters from reaching it. By the middle of June about 125 of the 500 residences along the river had left their dwellings, some due to mandatory evacuations west of I-29 since rising ground water caused impassable county roads blocking possible evacuation routes.

MONONA COUNTY --- 4.2 NW ALBATON [42.22, -96.37], 5.7 S ALBATON [42.10, -96.31], 7.0 WSW ONAWA MUNI ARPT [41.97, -96.22], 7.4 SSW BLENCOE [41.83, -96.13], 3.9 S BLENCOE [41.87, -96.09], 4.6 NNE ALBATON [42.24, -96.28]

07/01/11 00:00 CST	50K	Flood (due to Heavy Rain / Snow Melt)
07/31/11 23:59 CST	0	Source: Official NWS Observations

Flooding along the Missouri River gradually worsened over Monona county during June and continued through July as record releases from Gavins Point Dam brought widespread flooding along the River. Flooding in Monona county initially was mainly confined to agricultural lowlands, recreation areas and roads near the river but then started threatening Blencoe which started sandbag operations in June as did other businesses from Blencoe to Onawa. The flooding forced the post office in Blencoe to move operations to a nearby town and closed 2 casinos. Late in June the Highway 175 bridge over the Missouri between Decatur and Onawa was closed due to erosion of the abutment on the Iowa side of the bridge. The flooding persisted into August.

POTTAWATTAMIE COUNTY --- 6.1 WNW GRABLE [41.49, -96.03], 3.6 WNW ASCOT [41.37, -95.97], 2.3 WNW CARTER LAKE [41.31, -95.91], 3.2 W ISLAND PARK [41.17, -95.88], 0.5 E DUMFRIES [41.18, -95.77], 2.2 N HONEY CREEK [41.46, -95.87], 4.3 NW LOVELAND [41.55, -95.96]

07/01/11 00:00 CST	3M	Flood (due to Heavy Rain / Snow Melt)
07/31/11 23:59 CST	0	Source: Official NWS Observations

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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Flooding along the Missouri River gradually worsened over Pottawattamie county during June and persisted into July as record releases from Gavins Point Dam brought widespread flooding along the River. The river near Omaha climbed to a little under 36 feet by the end of June before falling slightly early in July before reaching a second peak around 36 feet in late July before falling slightly by early August. The flooding in Pottawattamie county closed 16 miles of Interstate 29 north of Council Bluffs and also closed I680 from the Mormon Bridge to its junction with I29 near Crescent. Several parks and recreation areas were also flooded along with the parking lots and parts of the parking garage of 2 riverboat casinos. Other county roads and farm land near the river were also flooded. At least 100 homes in Council Bluffs were evacuated and about 10 businesses were closed. Tens of thousands of sandbags were filled and deployed to help shore up weak spots in the federal levee in the Council Bluffs area. Some homes near the river experienced seepage into basements from high ground water levels. The flooding continued into August. As of early July the city of Council Bluffs had spent or committed over 5.5 million dollars for flood relief/prevention.

A record rain event in May in eastern Montana combined with other storms in April and May plus early spring snow melt and brought record high water to the Missouri River chain of reservoirs. Heavy rain events and late season snow melt contributed to record runoffs above Sioux City in June of 13.8 million acre feet, and in July of 10 million acre feet. These all contributed to record releases from the Missouri River Reservoirs. Releases from Gavins Point Dam, which is the last in the chain, increased to around 160,000 cfs by the middle of June and remained that high through July. The previous record release was 70,000 cfs. The high releases and periodic rains produced flooding which gradually worsened from May into June and then continued through July and into August. The river near Nebraska City, which is normally a little over 1,000 feet wide, widened to a channel of more than 2.6 miles with some holes over 60 feet deep. The flooding closed around 40 miles of Interstate 29 in western Iowa and also several other highways and highway bridges along the river.

(IA-Z055) HARRISON, (IA-Z056) SHELBY, (IA-Z069) POTTAWATTAMIE, (IA-Z079) MILLS, (IA-Z080) MONTGOMERY, (IA-Z090) FREMONT, (IA-Z091) PAGE

07/10/11 13:00 CST	0	Heat
07/10/11 19:00 CST	0	

High temperatures reached the lower to mid 90s over southwest Iowa on July 10th as dew point temperatures rose well into the 70s, and in some cases 80 or 81. The combination of the heat and humidity produced heat index values of 105 to a little over 110 during the afternoon and early evening of July 10th. Thunderstorms which raced across the area that night brought slightly cooler readings the next day.

(IA-Z043) MONONA, (IA-Z055) HARRISON, (IA-Z056) SHELBY, (IA-Z069) POTTAWATTAMIE, (IA-Z079) MILLS, (IA-Z080) MONTGOMERY, (IA-Z090) FREMONT, (IA-Z091) PAGE

07/15/11 11:00 CST	0	Excessive Heat
07/23/11 18:00 CST	0	

An upper level ridge of high pressure built across the central United States and brought a prolonged period of excessive heat across eastern Nebraska and southwest Iowa. High temperatures during this stretch reached the 90s to a little over 100 degrees and dew point temperatures were in the 70s and in some cases the lower 80s. This brought heat index values into the 105 to 115 degree or even higher range during the afternoon and early evening hours during this time. Low temperatures provided little relief dropping only into the 70s to around 80. A weak cold front that pushed into the region late on the 20th brought some relief to parts of the area. However, the front stalled northwest of far southwest Iowa so excessive heat index values persisted for several days longer across that area.

POTTAWATTAMIE COUNTY --- 2.1 E WALNUT [41.48, -95.16]

07/16/11 00:20 CST	0	Thunderstorm Wind (EG 55 kt)
07/16/11 00:20 CST	0	Source: Trained Spotter

Thunderstorms wind gusts estimated at over 60 mph uprooted several trees and destroyed a barn east of Walnut. Corn was flattened in the area as well.

Scattered thunderstorms developed in the early evening hours in Nebraska on the edge of extremely hot, humid and unstable conditions. The storms produced areas of strong winds and very heavy rain, and at least one storm brought severe wind gusts to southwest Iowa.

(IA-Z069) POTTAWATTAMIE, (IA-Z079) MILLS, (IA-Z080) MONTGOMERY, (IA-Z090) FREMONT, (IA-Z091) PAGE

07/26/11 16:00 CST	0	Heat
07/27/11 20:00 CST	0	

Heat index values climbed to around 105 degrees in the late afternoon of July 26th as temperatures reached the lower 90s and dew point temperatures warmed into the mid to upper 70s.

POTTAWATTAMIE COUNTY --- 0.5 E UNDERWOOD [41.38, -95.67]

07/28/11 03:40 CST	0	Thunderstorm Wind (EG 50 kt)
07/28/11 03:40 CST	0	Source: Emergency Manager

Thunderstorm wind gusts estimated at close to 60 mph downed a large tree onto a road southeast of Underwood.

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
SHELBY COUNTY --- 0.7 S SHELBY [41.51, -95.45]				
	07/28/11 04:13 CST		0	Thunderstorm Wind (EG 50 kt)
	07/28/11 04:13 CST		0	Source: Law Enforcement

Thunderstorm wind gusts estimated at around 60 mph caused a semi to jackknife near Shelby.

A small thunderstorm complex turned severe with areas of damaging winds as it tracked from around Seward through the Omaha area and into southwest Iowa during the early morning hours of July 28th. The thunderstorms were fed by high levels of instability as temperatures were around 80 and dew point temperatures were in the mid and upper 70s ahead of the storms.

NEBRASKA, East

BURT COUNTY --- 2.8 NNW DECATUR [42.04, -96.27], 6.5 SSE TEKAMAH ARPT [41.68, -96.13], 8.2 ESE TEKAMAH ARPT [41.71, -96.04], 7.0 NE DECATUR MAJOR ARPT [42.00, -96.11], 3.3 NNE DECATUR [42.05, -96.23]				
	07/01/11 00:00 CST		50K	Flood (due to Heavy Rain / Snow Melt)
	07/31/11 23:59 CST		0	Source: Official NWS Observations

Flooding along the Missouri River gradually worsened over the area during June and continued into July as record releases from Gavins Point Dam brought widespread flooding along the River. In Burt county the flooding generally began during the first week of June as the gauge at Decatur didn't surpass flood stage until around June 6th. The level climbed to around 40 feet by the end of June and remained around that level through July. Flood stage at Decatur is 35 feet. Flooding in Burt county especially affected agricultural lowlands, recreation areas and roads near the river but also forced evacuation of 150 to 200 homes. Late in June the Highway 175 bridge over the Missouri between Decatur and Onawa was closed due to erosion of the abutment on the Iowa side of the bridge. The flooding persisted into August.

CASS COUNTY --- 2.3 N PLATTSMOUTH [41.05, -95.90], 3.6 SE UNION [40.78, -95.86], 5.0 ESE UNION [40.79, -95.81], 7.0 E MURRAY [40.91, -95.79], 3.9 NE PLATTSMOUTH [41.06, -95.85]				
	07/01/11 00:00 CST		50K	Flood (due to Heavy Rain / Snow Melt)
	07/31/11 23:59 CST		0	Source: Official NWS Observations

Flooding along the Missouri River gradually worsened during June as record releases from Gavins Point Dam brought widespread flooding along the River. The river at Plattsmouth gradually rose through June reaching a little over 36 feet by the end of the month. The river remained in major flood stage into early July slowly dropped into the moderate category by the middle of the month. The high water flooded farmland along the river along with a few roads and recreation areas, including a road to the Plattsmouth water treatment plant. Some businesses and homes were also flooded, and most of the 210 dwellings around Lake Waconda in the area were evacuated.

CEDAR COUNTY --- 3.9 NNW ATEN [42.85, -97.50], 2.6 ENE OBERT [42.70, -96.99], 8.2 NE OBERT [42.77, -96.93], 9.3 N ATEN [42.93, -97.45]				
	07/01/11 00:00 CST		20K	Flood (due to Heavy Rain / Snow Melt)
	07/31/11 23:59 CST		0	Source: Official NWS Observations

Flooding along the Missouri River gradually worsened over the area during June and continued through July as record releases from Gavins Point Dam brought lowland flooding along the River. In Cedar county the flooding generally began during the first week of the June as flows out of Gavins Point Dam reached and exceeded 100,000 cfs. The flooding grew worse as the discharge reached 160,000 cfs by the end of June and these high releases continued through July before moderating a bit. A few seasonal or permanent homes were threatened by the flood waters, but in general the flooding was confined to low areas and farmland along the river. The flooding continued into August.

DOUGLAS COUNTY --- 1.8 NNW EAST OMAHA [41.39, -95.96], 2.0 SE ALBRIGHT [41.20, -95.94], 3.6 ESE SOUTH OMAHA [41.21, -95.89], 2.1 E (OMA)EPPLEY FLD OMAH [41.30, -95.86], 2.5 NE EAST OMAHA [41.39, -95.91]				
	07/01/11 00:00 CST		0.50M	Flood (due to Heavy Rain / Snow Melt)
	07/31/11 23:59 CST		0	Source: Official NWS Observations

Flooding along the Missouri River gradually worsened during June and persisted into July as record releases from Gavins Point Dam brought widespread flooding along the River. At Omaha the river climbed to around its 29 foot flood stage late in May and rose steadily through June reaching around 35 feet late in the month, briefly crossed 36 feet in early July before settling back to around 35 feet except for a second peak of around 36 feet around July 24th. The flooding in Douglas county along the Missouri River closed several parks, boating accesses, and recreational areas. Low areas around downtown on the river side of the federal levee were flooded. The south Omaha waste water treatment plant was forced to send 6 million gallons of waste water daily into the river beginning early in June due to flood waters affecting the facility. The high water and persistent pressure on levees forced Eppley airfield and other businesses to constantly monitor the situation and have pumps on standby as either rains, storm sewer backups or minor boils near the levee would force pumping of the water back over the levee. By June 22nd Eppley had already spent 2.5 million dollars on flood prevention. Burlington Northern had to shut down one of its tracks to allow it to be used as a levee, this forced Amtrak to close that link of service. The flooding persisted into August.

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
KNOX COUNTY --- 7.5 WNW VERDEL [42.88, -98.33], 3.8 WNW NIOBRARA [42.77, -98.10], 4.3 E NIOBRARA [42.75, -97.95], 1.2 ENE SANTEE [42.84, -97.80]				
	07/01/11 00:00 CST		50K	Flood (due to Heavy Rain / Snow Melt)
	07/31/11 23:59 CST		0	Source: Official NWS Observations
<p>Flooding along the Missouri River gradually worsened over the area during June and persisted through July as record releases from Ft. Randal Dam brought widespread flooding along the River. In Knox county the flooding closed Highway 12 between Verdel and Niobrara and east of Niobrara and also closed Highway 14/37 north of Niobrara. The flooding also forced the evacuation of 50 to 60 residences including the Lazy River Acres area in between Niobrara and Verdel. The flooding carried over into August.</p>				
NEMAHA COUNTY --- 2.9 N PERU [40.52, -95.72], 3.1 W NEMAHA [40.33, -95.73], 9.6 SE NEMAHA [40.24, -95.54], 8.2 E NEMAHA [40.32, -95.52], 7.5 NE PERU [40.56, -95.63]				
	07/01/11 00:00 CST		20K	Flood (due to Heavy Rain / Snow Melt)
	07/31/11 23:59 CST		0	Source: Official NWS Observations
<p>Flooding along the Missouri River gradually worsened during June as record releases from Gavins Point Dam and periodic heavy rains brought widespread flooding along the River. The river at Brownville, started June around 39 feet, flood stage is 33 feet. The river gradually climbed to a record crest around 45 feet by the end of the June before falling as downstream levees were breached and widened by flooding. However, significant flooding persisted through July and continued into August. Roads, including Highway 136 in Missouri, and the access road to a nuclear power plant, flooded as did recreation areas and farmland along the river. The flooding of Highway 136 prompted the closure of the Brownville, Nebraska bridge over the Missouri River. Over 8,000 acres were covered in flood waters.</p>				
OTOE COUNTY --- 110.6 SE MADISON [40.78, -95.87], 110.9 SE MADISON [40.73, -95.91], 114.4 SE MADISON [40.69, -95.87], 118.0 SE MADISON [40.66, -95.82], 126.1 SE MADISON [40.53, -95.77], 126.8 SE MADISON [40.54, -95.73], 120.8 SE MADISON [40.67, -95.73], 112.1 SE MADISON [40.79, -95.82]				
	07/01/11 00:00 CST		20K	Flood (due to Heavy Rain / Snow Melt)
	07/31/11 23:59 CST		0	Source: Official NWS Observations
<p>Flooding along the Missouri River gradually worsened during June and early July as record releases from Gavins Point Dam brought widespread flooding along the River. The river at Nebraska City, which climbed above its 18 foot flood stage in mid April, eventually reached a record crest of around 28 feet by the end of June before falling several feet in July as downstream levees were breached and widened. However, the flooding continued into August. In Otoe county farmland, roads and recreation areas near the river flooded as did some cabins and a grain elevator near in the area. Flood waters crossed Highway 2 in Fremont county Iowa prompting its closure on both sides of the river.</p>				
RICHARDSON COUNTY --- 2.7 N BARADA [40.26, -95.58], 1.6 WNW RULO [40.06, -95.46], 4.8 SE RULO [40.00, -95.37], 8.3 ESE RULO [40.00, -95.28], 7.2 NNE RULO [40.15, -95.39], 6.3 NE BARADA [40.29, -95.50]				
	07/01/11 00:00 CST		0.10M	Flood (due to Heavy Rain / Snow Melt)
	07/31/11 23:59 CST		0	Source: Official NWS Observations
<p>Flooding along the Missouri River gradually worsened during June as record releases from Gavins Point Dam brought widespread flooding along the River. The river at Rulo rose to a record crest around 27 feet by the end of the June before falling slightly as levees were breached and widened by the flood waters. Flood stage is 17 feet. The flooding persisted into August. The high water flooded farmland along the river, along with roads, cabins, recreation areas and a few businesses. Highway 159 in Holt county Missouri flooded by the middle of the June prompting the closure of the Rulo, Nebraska bridge over the Missouri River for the summer. Over \$100 thousand had already been spent by early July shoring up pump houses and wells in the Falls City area to protect the water supply.</p>				
SARPY COUNTY --- 1.5 N AVERY [41.19, -95.94], 1.7 SSW ST COLUMBANS [41.06, -95.90], 2.1 SE ST COLUMBANS [41.06, -95.85], 3.4 NE BELLEVUE [41.15, -95.85], 4.6 NE AVERY [41.21, -95.86]				
	07/01/11 00:00 CST		25K	Flood (due to Heavy Rain / Snow Melt)
	07/31/11 23:59 CST		0	Source: Official NWS Observations
<p>Flooding along the Missouri River gradually worsened during June and persisted into July as record releases from Gavins Point Dam brought widespread flooding along the River. The river near Omaha climbed to around its 29 foot flood stage late in May and steadily rose through June reaching around 36 feet toward the end of the month. The river fell slightly during the first week of July but continued around 35 feet the rest of the month. The flooding persisted into August. Flooding in Sarpy county spread into at least one park causing its closure. Boating and other recreational areas were also either flooded or closed. A section of the rail track that Amtrak used had to be closed to allow for its use as a levee.</p>				
THURSTON COUNTY --- 3.5 NNW MACY [42.17, -96.38], 6.8 SE MACY [42.04, -96.28], 5.8 ESE MACY [42.10, -96.24], 8.7 ENE WINNEBAGO [42.28, -96.31], 6.3 NE WINNEBAGO [42.29, -96.37]				
	07/01/11 00:00 CST		5K	Flood (due to Heavy Rain / Snow Melt)
	07/31/11 23:59 CST		0	Source: Official NWS Observations

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
<p>Flooding along the Missouri River continued across the area during July as record releases from Gavins Point Dam brought widespread flooding along the River. Releases from Gavins Point Dam reached around 160,000 cfs after mid June and the high flows continued through July before decreasing some. The gauge at Sioux City, upstream of the county, and Decatur, downstream, were in a moderate flooding category during the month. Flooding in Thurston county was mostly confined to agricultural lowlands, recreation areas and roads near the river, but the flooding did force the evacuation of 12 people near Macy. The flooding persisted into late August.</p>				
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WASHINGTON COUNTY --- 7.4 NNE BLAIR ARPT [41.68, -96.14], 2.1 E BLAIR [41.55, -96.11], 0.3 ENE NASHVILLE [41.42, -95.99], 5.1 E NASHVILLE [41.41, -95.90], 5.9 NE DE SOTO [41.56, -95.98], 8.2 NNE BLAIR ARPT [41.68, -96.08]				
	07/01/11 00:00 CST		0.50M	Flood (due to Heavy Rain / Snow Melt)
	07/31/11 23:59 CST		0	Source: Official NWS Observations

Flooding along the Missouri River gradually worsened during June and continued through July as record releases from Gavins Point Dam brought widespread flooding along the River. The river near Blair climbed to around its 26.5 foot flood stage late in May, and then steadily rose in June reaching a little over 32 feet during the last week or so of the month. The river fell slightly during July but remained in the moderate category into August. The flooding in Washington county was especially felt in the Fort Calhoun area where at least 60 homes or cabins were flooded or cutoff by flood waters. At least 200 residences in the county were evacuated leaving at least 500 people displaced. This prompted the city to open the high school up for flood victims. Blair spent \$500,000 to build up a levee surrounding its water treatment plant which held through June. The Ft. Calhoun Nuclear power plant was in refueling shut-down when the flooding started in April and because of the high waters remained shut down through the summer as flood waters surrounded the plant prompting emergency sand bagging. In addition, recreation areas and roads along the river were flooded. The flooding persisted into August.

A record rain event in May in eastern Montana, other storms in April and May, and snow melt all combined to bring record high water to the Missouri River chain of reservoirs. The high water levels plus a record 13.8 million acre feet of runoff in June (combined rain and snow melt from an unusually high snow pack in the Rockies) and a record 10 million acre feet runoff in July over the Missouri River Basin above Sioux City all contributed to record releases from the Missouri River Reservoirs. Releases from Gavins Point Dam, which is the last in the chain, increased to around 160,000 cfs by mid June and remained around that level through July. The previous record release was 70,000 cfs. The high releases produced moderate to major flooding along the Missouri River which gradually worsened from May into June and then continued through July and into August. The river near Nebraska City, which is normally a little over 1,000 feet wide, widened to a channel of more than 2.6 miles with some holes over 60 feet deep. OPPD reported that costs associated with the flooding totaled 44.5 million dollars as of August 11th, \$28.7 million for flood-protection and \$15.8 million for power replacement due to the continued shutdown of the Ft. Calhoun Nuclear Station. As of early July a total of 134 Nebraska homes and private buildings had been destroyed by flood waters of the Missouri while an additional 142 had sustained major damage.

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SEWARD COUNTY --- FLYING V ARPT [40.87, -97.35]				
	07/05/11 16:25 CST		0	Thunderstorm Wind (EG 52 kt)
	07/05/11 16:25 CST		0	Source: Public

The public estimated that 60 mph winds accompanied half inch hail a little south of Utica.

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SEWARD COUNTY --- 3.0 SSE FLYING V ARPT [40.83, -97.33]				
	07/05/11 16:40 CST		0	Hail (1.00 in)
	07/05/11 16:40 CST		0	Source: Public

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SALINE COUNTY --- 2.6 E FRIEND [40.65, -97.23]				
	07/05/11 17:00 CST		0	Thunderstorm Wind (MG 56 kt)
	07/05/11 17:00 CST		0	Source: Emergency Manager

Home weather equipment measured a thunderstorm wind gust of 65 mph. The report was relayed by emergency management.

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SALINE COUNTY --- 1.3 WSW WESTERN [40.39, -97.22]				
	07/05/11 17:25 CST		0	Thunderstorm Wind (EG 52 kt)
	07/05/11 17:25 CST		0	Source: Emergency Manager

Thunderstorm winds were estimated at around 60 mph near Western.

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LANCASTER COUNTY --- 2.2 WNW PRINCETON [40.58, -96.74]				
	07/05/11 17:40 CST		0	Thunderstorm Wind (EG 52 kt)
	07/05/11 17:40 CST		0	Source: Public

Thunderstorm winds reached around 60 mph a little northeast of Hallam.

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JEFFERSON COUNTY --- 1.6 E PLYMOUTH [40.30, -96.95]				
	07/05/11 17:44 CST		0	Thunderstorm Wind (MG 58 kt)
	07/05/11 17:44 CST		0	Source: Trained Spotter

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
A spotter measured a thunderstorm wind gust of 67 mph on home weather equipment near Plymouth.				
GAGE COUNTY --- 3.6 S HOAG [40.27, -96.83], (BIE)BEATRICE ARPT [40.30, -96.75]				
	07/05/11 17:55 CST		0	Thunderstorm Wind (MG 56 kt)
	07/05/11 18:05 CST		0	Source: AWOS
The Awos at Beatrice measured a thunderstorm wind gust of 64 mph at 655 pm CDT. These winds downed at least 1 tree blocking a road in Beatrice a few minutes later and also caused a large tree limb to fall onto a house west of town.				
GAGE COUNTY --- (BIE)BEATRICE ARPT [40.30, -96.75]				
	07/05/11 18:00 CST		0	Heavy Rain
	07/05/11 19:00 CST		0	Source: Newspaper
Heavy rain in a short time period brought areas of street flooding in the Beatrice area.				
GAGE COUNTY --- 0.7 S BLUE SPGS [40.12, -96.67]				
	07/05/11 18:15 CST		0	Thunderstorm Wind (EG 55 kt)
	07/05/11 18:15 CST		0	Source: Emergency Manager
Thunderstorm winds estimated at over 60 mph downed trees and power lines in the Wymore area causing power outages.				
PAWNEE COUNTY --- 0.7 S BURCHARD RINNE ARPT [40.12, -96.35]				
	07/05/11 18:47 CST		0	Thunderstorm Wind (EG 61 kt)
	07/05/11 18:47 CST		0	Source: Law Enforcement
Law enforcement estimated thunderstorm wind gusts reached 70 mph south of Burchard.				
<p>A broken line of thunderstorms developed along a slow moving cold front that was pressing southeast across the region. Temperatures ahead of the front climbed to around 90 with dew point temperatures in the lower 70s. This created very unstable conditions and allowed a few super cell thunderstorms to develop in the broken line. The stronger of these storms produced damaging winds and a few hail reports.</p>				
OTOE COUNTY --- 4.6 ESE PAUL [40.54, -95.80], 4.9 ESE PAUL [40.53, -95.80], 5.4 ESE PAUL [40.54, -95.79], 5.2 ESE PAUL [40.54, -95.79]				
	07/07/11 08:00 CST		0	Flash Flood (due to Heavy Rain)
	07/07/11 11:00 CST		0	Source: Newspaper
Up to 4 inches of rain caused isolated flash flooding in extreme southern Otoe county naer county roads R and 70 during the morning of 7/7. Little damage was noted.				
Scattered thunderstorms developed north of a nearly stationary front that was near southeast Nebraska. The storms produced areas of heavy rain in southeast Nebraska and at least one reported of flash flooding.				
BUTLER COUNTY --- 2.5 W SURPRISE [41.11, -97.37], 0.5 ESE SURPRISE [41.10, -97.31], 2.1 E SURPRISE [41.09, -97.28], 2.6 ESE SURPRISE [41.09, -97.27], 1.1 NNE ULYSSES [41.09, -97.22], 2.5 NNW ULYSSES [41.10, -97.24], 2.3 WNW SURPRISE [41.12, -97.36]				
	07/09/11 19:00 CST		1K	Flood (due to Heavy Rain)
	07/10/11 22:00 CST		0	Source: Official NWS Observations
Rainfall of 3 to 5 inches fell across sections of the upper Big Blue River west of Surprise. The heavy rain caused the Big Blue River near Surprise to exceed its 7 foot flood stage for a little over 24 hours. The flooding affected mainly agricultural lowlands along the river.				
Rainfall of 3 to 5 inches fell in several hours on the upper reaches of the Big Blue River. This caused minor lowland flooding along the Big Blue River near Surprise.				
(NE-Z044) DODGE, (NE-Z045) WASHINGTON, (NE-Z050) BUTLER, (NE-Z051) SAUNDERS, (NE-Z052) DOUGLAS, (NE-Z053) SARPY, (NE-Z066) LANCASTER, (NE-Z067) CASS, (NE-Z068) OTOE, (NE-Z078) SALINE, (NE-Z088) JEFFERSON, (NE-Z089) GAGE, (NE-Z090) JOHNSON, (NE-Z091) NEMAHA, (NE-Z092) PAWNEE, (NE-Z093) RICHARDSON				
	07/10/11 11:00 CST		0	Heat
	07/10/11 19:00 CST		0	
High temperatures reached the lower to upper 90s over eastern Nebraska on July 10th as dew point temperatures rose well into the 70s, and in some cases 80 or 81. The combination of the heat and humidity produced heat index values of 105 to a little over 110 during the afternoon and early evening of July 10th. Thunderstorms which raced across the area that night brought slightly cooler readings the next day.				

Storm Data and Unusual Weather Phenomena - July 2011

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
BOONE COUNTY --- PRIMROSE [41.63, -98.23], 5.1 SSW BOONE [41.57, -97.98]				
	07/10/11 22:20 CST		0	Thunderstorm Wind (EG 55 kt)
	07/10/11 22:30 CST		0	Source: Newspaper
<p>The northeast extent of about a 150 mile path of wind damage to mainly corn crops extended from around Primrose to southeast and east of Albion . The winds were estimated at over 60 mph. The damage was noted by area agronomists flying over the area and is known as "green snap", or stalk breakage due to winds during a fast growing stage right before tasseling.</p>				
BOONE COUNTY --- 2.1 S ALBION [41.67, -98.00]				
	07/10/11 22:22 CST		0	Thunderstorm Wind (EG 52 kt)
	07/10/11 22:22 CST		0	Source: Law Enforcement
<p>Thunderstorms wind gusts estimated at around 60 mph split a large tree in the Albion area and also knocked over a communication tower that damaged a vehicle. Significant damage to corn fields were noted east and west of Albion as well .</p>				
PLATTE COUNTY --- 0.5 SSE COLUMBUS [41.42, -97.37], 1.5 ESE COLUMBUS [41.43, -97.34]				
	07/10/11 22:36 CST		0	Thunderstorm Wind (EG 55 kt)
	07/10/11 22:46 CST		0	Source: Law Enforcement
<p>Thunderstorm wind gusts estimated at over 60 mph downed numerous large tree limbs and a few trees, mostly on the south part of town along 8th and 9th streets. The fallen trees damaged some homes and vehicles.</p>				
MADISON COUNTY --- NORFOLK [42.03, -97.42]				
	07/10/11 22:56 CST		0	Thunderstorm Wind (MG 59 kt)
	07/10/11 23:13 CST		0	Source: ASOS
<p>A thunderstorm wind gust of 68 mph was measured by the Norfolk Asos at 1156 pm CDT and a gust of 59 mph was measured at 1213 am CDT. The winds caused some tree damage in town.</p>				
BUTLER COUNTY --- 2.3 NNW DAVID CITY [41.28, -97.15]				
	07/10/11 23:01 CST		0	Thunderstorm Wind (EG 52 kt)
	07/10/11 23:01 CST		0	Source: Fire Department/Rescue
<p>A thunderstorm wind gust was estimated at around 60 mph near David City by the fire chief.</p>				
MADISON COUNTY --- TILDEN [42.05, -97.83]				
	07/10/11 23:05 CST		0	Thunderstorm Wind (EG 50 kt)
	07/10/11 23:05 CST		0	Source: Newspaper
<p>Thunderstorm wind gusts estimated at around 60 mph caused tree damage in the Tilden area. Some of the fallen trees caused damage to at least one home.</p>				
PIERCE COUNTY --- 1.2 SW OSMOND [42.36, -97.60]				
	07/10/11 23:05 CST		0	Thunderstorm Wind (EG 55 kt)
	07/10/11 23:05 CST		0	Source: Trained Spotter
<p>Thunderstorm wind gusts estimated at over 60 mph downed numerous large tree limbs, some up to 8 inches in diameter. The fallen trees downed some power lines causing power outages in the area.</p>				
STANTON COUNTY --- 2.9 NW STANTON [41.98, -97.27]				
	07/10/11 23:05 CST		0	Thunderstorm Wind (MG 63 kt)
	07/10/11 23:07 CST		0	Source: Emergency Manager
<p>The emergency manager measured a thunderstorm wind gust a little over 70 mph for 1.5 minutes near Stanton. The strong winds caused tree damage and knocked out power for 3,000 to 4,000 people in the county.</p>				
BUTLER COUNTY --- DAVID CITY [41.25, -97.13]				
	07/10/11 23:13 CST		0	Hail (1.00 in)
	07/10/11 23:13 CST		0	Source: Public
WAYNE COUNTY --- 0.7 N WAYNE [42.24, -97.02]				

Storm Data and Unusual Weather Phenomena - July 2011

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	07/10/11 23:24 CST		0	Thunderstorm Wind (MG 52 kt)
	07/10/11 23:24 CST		0	Source: AWOS

The Awos in Wayne measured a thunderstorm wind gust of 60 mph. The strong winds brought down a number of large tree branches in the area.

THURSTON COUNTY --- 2.1 SSW PENDER MUNI ARPT [42.09, -96.74]				
	07/10/11 23:32 CST		0	Thunderstorm Wind (EG 52 kt)
	07/10/11 23:32 CST		0	Source: Emergency Manager

Emergency management estimated thunderstorm winds gusted to around 60 mph.

DOUGLAS COUNTY --- 2.2 NW BOYS TOWN [41.29, -96.16], 1.3 NNW NORTH OMAHA [41.35, -95.98]				
	07/11/11 00:09 CST		0	Thunderstorm Wind (MG 54 kt)
	07/11/11 00:14 CST		0	Source: Public

A thunderstorm wind gust of 62 mph was measured on home weather equipment near 156th and Maple Streets. The strong winds caused scattered tree damage, mainly across the northern sections of town from around Irvington through Florence. The fallen trees caused some vehicle and home damage and also knocked the power out to around 8,000 OPPD customers across the northern sections of town.

Thunderstorms that developed near a weak cold front in western Nebraska during the late afternoon of July 10th. The thunderstorms then moved across eastern Nebraska fed by high levels of instability due to temperatures in the 80s and dew point temperatures in the 70s. The storms produced areas of damaging winds as the moved across eastern Nebraska, with most of the damage reported in northeast Nebraska.

STANTON COUNTY --- 5.2 NE STANTON [42.01, -97.17]				
	07/12/11 03:31 CST		0	Thunderstorm Wind (EG 60 kt)
	07/12/11 03:31 CST		0	Source: Emergency Manager

Thunderstorm wind gusts estimated at around 70 mph snapped a power pole and uprooted some trees northeast of Stanton.

DODGE COUNTY --- FREMONT [41.45, -96.50]				
	07/12/11 05:30 CST		75K	Lightning
	07/12/11 05:30 CST		0	Source: Newspaper

Lightning from a thunderstorm caused a fire which in turn caused significant damage to a house in Fremont including burning most of the roof away.

Thunderstorms that developed just north of a slow moving cold front in central and western Nebraska during the afternoon and early evening of 7/11 raced east across northeast Nebraska during the overnight hours. At least one storm produced isolated wind damage near Stanton, while another storm produced a lightning strike which caused a fire which heavily damaged a house in Fremont.

(NE-Z011) KNOX, (NE-Z012) CEDAR, (NE-Z015) THURSTON, (NE-Z016) ANTELOPE, (NE-Z017) PIERCE, (NE-Z018) WAYNE, (NE-Z030) BOONE, (NE-Z031) MADISON, (NE-Z032) STANTON, (NE-Z033) CUMING, (NE-Z034) BURT, (NE-Z042) PLATTE, (NE-Z043) COLFAX, (NE-Z044) DODGE, (NE-Z045) WASHINGTON, (NE-Z050) BUTLER, (NE-Z051) SAUNDERS, (NE-Z052) DOUGLAS, (NE-Z053) SARPY, (NE-Z065) SEWARD, (NE-Z066) LANCASTER, (NE-Z067) CASS, (NE-Z068) OTOE, (NE-Z078) SALINE, (NE-Z088) JEFFERSON, (NE-Z089) GAGE, (NE-Z090) JOHNSON, (NE-Z091) NEMAHA, (NE-Z092) PAWNEE, (NE-Z093) RICHARDSON				
	07/15/11 12:00 CST		0	Excessive Heat
	07/23/11 18:00 CST		0	

An upper level ridge of high pressure built across the central United States and brought a prolonged period of excessive heat to eastern Nebraska and southwest Iowa. High temperatures during this stretch reached the 90s to a little over 100 degrees and dew point temperatures were in the 70s and in some cases the lower 80s. This brought heat index values into the 105 to 115 degree or even higher range during the afternoon and early evening hours during this time. Low temperatures provided little relief dropping only into the 70s to around 80. Some relief spread across much of the area late on the 20th as thunderstorms developed along a slow moving weak cold front which stalled in southeast Nebraska. However, 105 to 115 degree heat index values continued across far southeast Nebraska for several days longer until a little strong southeast push to the front occurred.

NEMAHA COUNTY --- 4.4 SSE NEMAHA [40.27, -95.64]				
	07/22/11 15:10 CST		0	Thunderstorm Wind (EG 55 kt)
	07/22/11 15:10 CST		0	Source: Public

Thunderstorm wind gusts estimated at over 60 mph nearly destroyed one machine shed and damaged another one.

NEMAHA COUNTY --- 5.0 SE NEMAHA [40.28, -95.60]				
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Storm Data and Unusual Weather Phenomena - July 2011

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	07/22/11 15:10 CST		0	Thunderstorm Wind (EG 52 kt)
	07/22/11 15:10 CST		0	Source: Public

Thunderstorm wind gusts estimated at around 60 mph downed tree limbs in the area.

RICHARDSON COUNTY --- 2.9 NNE BARADA [40.26, -95.57]

07/22/11 15:15 CST	0	Hail (0.75 in)
07/22/11 15:15 CST	0	Source: Park/Forest Service

The hail was reported at Indian Cave State Park.

PAWNEE COUNTY --- 0.7 S STEINAUER [40.21, -96.23]

07/22/11 15:55 CST	0	Hail (1.00 in)
07/22/11 15:55 CST	0	Source: Public

The hail was accompanied by thunderstorms winds near 60 mph.

PAWNEE COUNTY --- 4.0 ENE STEINAUER [40.24, -96.16]

07/22/11 15:55 CST	0	Thunderstorm Wind (EG 50 kt)
07/22/11 15:55 CST	0	Source: Public

Thunderstorm winds were estimated at around 60 mph. The winds were accompanied by hail around quarter-size.

Scattered thunderstorms developed along a weak front in southeast Nebraska in the afternoon of July 22. Moderately strong instability developed along the boundary as temperatures south of the front climbed to around 100 with dew point temperatures in the lower to mid 70s. A few of the storms produced damaging winds and large hail.

OTOE COUNTY --- SYRACUSE [40.65, -96.18]

07/23/11 15:55 CST	0	Hail (1.00 in)
07/23/11 15:55 CST	0	Source: Trained Spotter

Mostly dime-size.

OTOE COUNTY --- 0.9 NE NEBRASKA CITY ARPT [40.68, -95.86]

07/23/11 16:35 CST	0	Thunderstorm Wind (MG 60 kt)
07/23/11 16:35 CST	0	Source: AWOS

The Awos at Nebraska City measured a thunderstorm wind gust of 69 mph.

CASS COUNTY --- 0.9 SE PLATTSMOUTH [41.01, -95.89]

07/23/11 16:45 CST	0	Thunderstorm Wind (EG 55 kt)
07/23/11 16:45 CST	0	Source: Trained Spotter

Tree damage was observed with thunderstorm wind gusts that were in excess of 60 mph.

For the second consecutive day scattered thunderstorms developed along a weak boundary in southeast Nebraska that separated temperatures and dew points around 100 and in the mid 70s respectively from readings around 90. A few of the storms produced either large hail or strong winds.

JEFFERSON COUNTY --- 2.4 NNE THOMPSON [40.10, -97.24], 1.1 NNW ENDICOTT [40.09, -97.11]

07/24/11 17:56 CST	0	Thunderstorm Wind (MG 56 kt)
07/24/11 18:16 CST	0	Source: Emergency Manager

Thunderstorm wind gusts were measured at a mesonet site just southwest of Fairbury at 62 mph at 656 pm CDT and at 65 mph at 716 pm. The strong winds blew a semi off the road on Highway 8 southwest of Fairbury and did considerable tree damage, mainly south of town. The fallen trees damaged power poles and transformers, mainly south of Fairbury but also into that town. Power was knocked out to many people across the area.

A small cluster of thunderstorms that developed in south central Nebraska during the afternoon bowed into southeast Nebraska southwest of Lincoln bringing areas of wind damage mainly to Jefferson county early in the evening of July 24th. The storms were fed by unstable conditions due to temperatures in the lower 90s and dew point temperatures in the lower to mid 70s.

(NE-Z052) DOUGLAS, (NE-Z053) SARPY, (NE-Z065) SEWARD, (NE-Z067) CASS, (NE-Z068) OTOE, (NE-Z078) SALINE, (NE-Z088) JEFFERSON, (NE-Z089) GAGE, (NE-Z090) JOHNSON, (NE-Z091) NEMAHA, (NE-Z092) PAWNEE, (NE-Z093) RICHARDSON

Storm Data and Unusual Weather Phenomena - July 2011

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	07/26/11 16:00 CST		0	Heat
	07/27/11 20:00 CST		0	

Heat index values climbed to around 105 to 108 degrees in the late afternoon of July 26th as temperatures reached the lower 90s and dew point temperatures warmed into the mid 70s to around 80.

SEWARD COUNTY --- SEWARD [40.90, -97.10]

07/28/11 02:05 CST	0	Thunderstorm Wind (EG 50 kt)
07/28/11 02:05 CST	0	Source: Law Enforcement

Thunderstorm wind gusts estimated at around 60 mph downed large tree limbs across the Seward area.

SAUNDERS COUNTY --- WAHOO [41.22, -96.62]

07/28/11 02:55 CST	0	Thunderstorm Wind (EG 56 kt)
07/28/11 02:55 CST	0	Source: AWOS

A thunderstorm wind gust of 65 mph was recorded by the Awos near Wahoo.

DOUGLAS COUNTY --- 0.8 WNW BOYS TOWN [41.27, -96.14], 0.6 WSW ALBRIGHT [41.22, -95.98]

07/28/11 03:12 CST	0	Thunderstorm Wind (EG 50 kt)
07/28/11 03:15 CST	0	Source: NWS Employee

Thunderstorm winds estimated at around 60 mph caused scattered tree damage in the Omaha area which knocked out power to around 11,000 OPPD customers. Known tree damage included an eight inch in diameter tree limb downed near 144th and Blondo, a large limb down on a road near 45th and H Streets and a large tree downed on 55th Street just south of Dodge Street. A measured wind gust of 56 mph was recorded at the NWS office with this storm at 358 am CDT. Heavy rain in a short time also caused some minor street flooding east of 42nd Street.

A small thunderstorm complex turned severe with areas of damaging winds as it tracked from around Seward through the Omaha area and into southwest Iowa during the early morning hours of July 28th. The thunderstorms were fed by high levels of instability as temperatures were around 80 and dew point temperatures were in the mid and upper 70s ahead of the storms.

(NE-Z050) BUTLER

07/29/11 02:30 CST	0	Dense Fog
07/29/11 07:00 CST	0	

Dense fog that formed over parts of eastern Nebraska during the morning hours of July 29th dropped visibilities to near zero across counties the bordered the Platte and Loup Rivers west of Fremont. The dense fog contributed to a fatal vehicle accident in Butler county.

(NE-Z031) MADISON, (NE-Z032) STANTON, (NE-Z033) CUMING, (NE-Z034) BURT, (NE-Z042) PLATTE, (NE-Z043) COLFAX, (NE-Z044) DODGE, (NE-Z045) WASHINGTON, (NE-Z050) BUTLER, (NE-Z051) SAUNDERS, (NE-Z052) DOUGLAS, (NE-Z053) SARPY, (NE-Z065) SEWARD, (NE-Z066) LANCASTER, (NE-Z067) CASS, (NE-Z068) OTOE, (NE-Z078) SALINE, (NE-Z088) JEFFERSON, (NE-Z089) GAGE, (NE-Z090) JOHNSON, (NE-Z091) NEMAHA, (NE-Z092) PAWNEE, (NE-Z093) RICHARDSON

07/31/11 12:00 CST	0	Heat
07/31/11 23:59 CST	0	

High heat values again returned to eastern Nebraska on the last day of July. Temperatures climbed into the 90s and dew points reached the 70s. This produced heat index values of 105 to 110 degrees during the afternoon. The high heat values continued into the first or second of August.