

Storm Data and Unusual Weather Phenomena - August 2011

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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NORTH DAKOTA, Central and West

BURLEIGH COUNTY --- BISMARCK [46.80, -100.77], 1.6 NNE (BIS)BISMARCK MUNI A [46.80, -100.73], 0.5 NNE (BIS)BISMARCK MUNI A [46.79, -100.75], 0.9 W (BIS)BISMARCK MUNI A [46.78, -100.77], 0.9 WSW BISMARCK [46.80, -100.79]

08/01/11 00:00 CST	5K	Flash Flood (due to Heavy Rain)
08/01/11 02:00 CST	0	Source: Amateur Radio

Numerous roads were reported to have over one foot of water on them.

MORTON COUNTY --- MANDAN [46.83, -100.90], 1.6 E MANDAN [46.83, -100.87], 1.5 E MANDAN [46.83, -100.87], 0.4 S MANDAN [46.82, -100.90]

08/01/11 00:00 CST	5K	Flash Flood (due to Heavy Rain)
08/01/11 02:00 CST	0	Source: NWS Employee

Very heavy rain was creating flash flood conditions in Mandan.

FOSTER COUNTY --- 0.9 E BARLOW [47.57, -99.13]

08/01/11 00:08 CST	0.50K	Thunderstorm Wind (EG 61 kt)
08/01/11 00:14 CST	0	Source: Broadcast Media

A large tree was blown down by the strong winds.

STUTSMAN COUNTY --- KENSAL [47.30, -98.73]

08/01/11 00:30 CST	75K	Thunderstorm Wind (EG 70 kt)
08/01/11 00:39 CST	0	Source: Fire Department/Rescue

Numerous trees were uprooted in the city of Kensal. Two grain hoppers were blown over at the Kensal Farmers Elevator.

MCINTOSH COUNTY --- 8.2 W WISHEK [46.26, -99.72]

08/01/11 01:13 CST	0	Thunderstorm Wind (EG 52 kt)
08/01/11 01:17 CST	0	Source: Trained Spotter

Strong winds were reported.

Tornado Watch Number 706 and Severe Thunderstorm Watch Number 707 were in effect during these events which continue from July into August.

A strong capping inversion initially prevented convection from developing across North Dakota. Eventually, severe storms over northwest South Dakota continued to propagate northeast into far southwest and south central North Dakota during the mid to late evening as a surface warm front lifted northward. These storms continued east and north into the early morning hours of August 1st, with additional development across the south central and southeast due to a strengthening low level jet.

Most significant was the strong winds associated with thunderstorms.

See the July 31 Storm Data entries.

BURLEIGH COUNTY --- 36.6 WNW WILTON [47.43, -101.48], 28.3 N WILTON [47.58, -100.78], 47.2 S MOFFIT [46.00, -100.37], 50.4 SSW MOFFIT [46.02, -100.73]

08/01/11 00:00 CST	0	Flood (due to Heavy Rain / Snow Melt)
08/18/11 23:59 CST	0	Source: Other Federal Agency

See the event episode narrative for details.

MCLEAN COUNTY --- 7.1 SW RIVERDALE [47.43, -101.48], 7.0 NE TURTLE LAKE [47.58, -100.78], 83.4 SSE WILTON [46.00, -100.37], 79.5 S WILTON [46.02, -100.73]

08/01/11 00:00 CST	0	Flood (due to Heavy Rain / Snow Melt)
08/18/11 23:59 CST	0	Source: Other Federal Agency

See the event episode narrative for details.

MERCER COUNTY --- 6.2 S PICK CITY [47.43, -101.48], 32.4 E PICK CITY [47.58, -100.78], 103.0 SSE STANTON [46.00, -100.37], 95.0 SSE STANTON [46.02, -100.73]

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	08/01/11 00:00 CST		0	Flood (due to Heavy Rain / Snow Melt)
	08/18/11 23:59 CST		0	Source: Other Federal Agency

See the event episode narrative for details.

MORTON COUNTY --- 40.2 N NEW SALEM [47.43, -101.48], 52.1 N MANDAN [47.58, -100.78], 37.3 SSE FT RICE [46.00, -100.37], 26.6 SSE BREIEN [46.02, -100.73]

	08/01/11 00:00 CST		0	Flood (due to Heavy Rain / Snow Melt)
	08/18/11 23:59 CST		0	Source: Other Federal Agency

See the event episode narrative for details.

OLIVER COUNTY --- 17.5 NW FT CLARK [47.43, -101.48], 26.8 NNE HENSLER [47.58, -100.78], 79.5 SSE PRICE [46.00, -100.37], 74.0 S PRICE [46.02, -100.73]

	08/01/11 00:00 CST		0	Flood (due to Heavy Rain / Snow Melt)
	08/18/11 23:59 CST		0	Source: Other Federal Agency

See the event episode narrative for details.

SIOUX COUNTY --- 78.7 NNW SOLEN [47.43, -101.48], 82.2 N SOLEN [47.58, -100.78], 13.6 ESE FT YATES [46.00, -100.37], 6.3 SW FT YATES [46.02, -100.73]

	08/01/11 00:00 MST		0	Flood (due to Heavy Rain / Snow Melt)
	08/18/11 23:59 MST		0	Source: Other Federal Agency

See the event episode narrative for details.

This was part of historic flooding in North Dakota with statewide costs estimated around 1.5 billion dollars. Flooding was the result of significant winter snows and significant spring rains, not only in North Dakota but in Montana as well. Rocky Mountain snowpack was four to six times normal. Flooding was along the Missouri River from the Garrison Dam to the South Dakota border. Dams were overwhelmed by the amount of water. Flooding included river, ground, and overland types. Estimated damages were in the hundreds of millions of dollars and that is not all inclusive. There was a significant loss to agriculture by not being able to plant. A tremendous flood fight was waged against the river, and that cost is not included here. Storm Data cannot reflect the scope of this event. Information is what was available at the time of this writing. Refer to newspaper articles and other federal, state, and local sources for detailed information.

Here are some facts about the flooding in North Dakota provided by North Dakota Emergency Management. The total estimated flood cost was around \$1.5 billion. Individual and housing assistance was \$323 million; small business \$248 million; home and business reconstruction \$452 million; public response, recovery, and mitigation \$480 million; disaster unemployment for 866 claims was \$2.3 million; and the public finance authority disaster loan program approved \$56.6 million. Public infrastructure costs were \$320 million. Of the state's 53 counties, 48 were impacted, along with three tribal nations.

The Missouri River was in flood in every state in the United States of America that it runs through. This was a multi-state disaster.

DUNN COUNTY --- 62.6 WNW KILLDEER [47.75, -103.99], 23.2 N WERNER [47.70, -102.38], 58.8 N WERNER [48.21, -102.27], 79.5 NW KILLDEER [48.17, -104.00]

	08/01/11 00:00 MST		0	Flood (due to Heavy Rain / Snow Melt)
	08/22/11 23:59 MST		0	Source: Other Federal Agency

See the event episode narrative for details.

MCKENZIE COUNTY --- 7.2 SSE FAIRVIEW [47.75, -103.99], 14.0 E MANDAREE [47.70, -102.38], 29.3 ENE CHARLSON [48.21, -102.27], 22.1 N FAIRVIEW [48.17, -104.00]

	08/01/11 00:00 MST		0	Flood (due to Heavy Rain / Snow Melt)
	08/22/11 23:59 MST		0	Source: Other Federal Agency

See the event episode narrative for details.

MOUNTRAIL COUNTY --- 67.7 WSW SANISH [47.75, -103.99], 19.7 SW PARSHALL ARPT [47.70, -102.38], 3.9 NE BELDEN ARPT [48.21, -102.27], 58.4 WSW WHITE EARTH [48.17, -104.00]

	08/01/11 00:00 CST		0	Flood (due to Heavy Rain / Snow Melt)
	08/22/11 23:59 CST		0	Source: Other Federal Agency

See the event episode narrative for details.

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
WILLIAMS COUNTY --- 17.3 S BUFORD [47.75, -103.99], 54.6 SSE TIOGA [47.70, -102.38], 33.0 ESE TIOGA [48.21, -102.27], 9.8 NW TRENTON [48.17, -104.00]				
	08/01/11 00:00 CST		0	Flood (due to Heavy Rain / Snow Melt)
	08/22/11 23:59 CST		0	Source: Other Federal Agency
See the event episode narrative for details.				
<p>This was part of historic flooding in North Dakota with statewide costs estimated around 1.5 billion dollars. Flooding was the result of significant winter snows and significant spring rains, not only in North Dakota but in Montana as well. Rocky Mountain snowpack was four to six times normal. Flooding was along the Missouri River from the Montana border to Garrison Dam. Dams were overwhelmed by the amount of water. Flooding included river, ground, and overland types. Oil wells were shuttered. Estimated damages were around \$400,000 and that is not all inclusive. There was a significant loss to agriculture by not being able to plant. A tremendous flood fight was waged against the river, and that cost is not included here. Storm Data cannot reflect the scope of this event. Information is what was available at the time of this writing. Refer to newspaper articles and other federal, state, and local sources for detailed information.</p> <p>Here are some facts about the flooding in North Dakota provided by North Dakota Emergency Management. The total estimated flood cost was around \$1.5 billion. Individual and housing assistance was \$323 million; small business \$248 million; home and business reconstruction \$452 million; public response, recovery, and mitigation \$480 million; disaster unemployment for 866 claims was \$2.3 million; and the public finance authority disaster loan program approved \$56.6 million. Public infrastructure costs were \$320 million. Of the state's 53 counties, 48 were impacted, along with three tribal nations.</p> <p>The Missouri River was in flood in every state in the United States of America that it runs through. This was a multi-state disaster.</p>				
WILLIAMS COUNTY --- 9.3 W BONETRAILL [48.44, -104.05]				
	08/02/11 19:05 CST		0	Hail (1.00 in)
	08/02/11 19:15 CST		0	Source: Trained Spotter
WILLIAMS COUNTY --- 4.3 NE (ISN)SLOULIN FLD WIL [48.22, -103.58]				
	08/02/11 20:00 CST		0	Thunderstorm Wind (EG 56 kt)
	08/02/11 20:10 CST		0	Source: Public
Pea size hail accompanied the strong winds.				
An isolated severe thunderstorm over Williams County in northwest North Dakota produced large hail and a severe thunderstorm wind gust.				
GOLDEN VALLEY COUNTY --- BEACH [46.92, -104.00]				
	08/04/11 17:05 MST		25K	Thunderstorm Wind (EG 59 kt)
	08/04/11 17:15 MST		0	Source: Emergency Manager
The strong winds blew the roof off of a lumberyard building.				
GOLDEN VALLEY COUNTY --- BEACH [46.92, -104.00]				
	08/04/11 17:12 MST		0	Thunderstorm Wind (MG 53 kt)
	08/04/11 17:17 MST		0	Source: AWOS
GOLDEN VALLEY COUNTY --- BEACH [46.92, -104.00]				
	08/04/11 17:17 MST		20K	Thunderstorm Wind (MG 63 kt)
	08/04/11 17:22 MST	3	0	Source: AWOS
Tree damage occurred in Beach. Three injuries occurred at the Golden Valley County Fairgrounds when part of a stage being set up was blown over. The injuries were minor.				
GOLDEN VALLEY COUNTY --- 0.5 W SENTINEL BUTTE [46.92, -103.84]				
	08/04/11 17:25 MST		15K	Thunderstorm Wind (MG 66 kt)
	08/04/11 17:35 MST		0	Source: Newspaper
The strong winds blew over a small shed and a camper causing damage. A flagpole was bent over and an old farm building was destroyed.				
MCLEAN COUNTY --- MAX [47.82, -101.30]				
	08/04/11 22:59 CST		10K	Hail (1.75 in)
	08/04/11 23:06 CST		0	Source: Other Federal Agency

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Windows were broken.

Severe Thunderstorm Watch number 728 was in effect for this event. Two separate severe storms formed during this event. The first storm impacted Golden Valley County in southwest North Dakota producing severe thunderstorm wind gusts, and the second storm impacted McLean County in central North Dakota with a report of large hail. Both storms developed near a surface boundary and were supported by a short wave upper trough over south central Canada.

BOWMAN COUNTY --- 21.3 SW RHAME [46.01, -103.96]

08/05/11 12:36 MST	0	Hail (0.75 in)
08/05/11 12:41 MST	0	Source: Trained Spotter

BOWMAN COUNTY --- 4.8 W RHAME [46.24, -103.75]

08/05/11 12:54 MST	0	Thunderstorm Wind (EG 52 kt)
08/05/11 12:59 MST	0	Source: Trained Spotter

Nickel size hail accompanied the strong winds.

STARK COUNTY --- 0.7 N BELFIELD [46.89, -103.20]

08/05/11 13:35 MST	0	Heavy Rain
08/05/11 14:20 MST	0	Source: Public

A heavy rain report of 2.90 inches was received from Belfield. This led to flash flooding. See the flash flood entry for Stark County.

STARK COUNTY --- 0.7 N BELFIELD [46.89, -103.20]

08/05/11 13:35 MST	0	Heavy Rain
08/05/11 14:20 MST	0	Source: Public

A heavy rainfall report of 2.90 inches was reported at Belfield.

STARK COUNTY --- 0.7 N BELFIELD [46.89, -103.20]

08/05/11 13:54 MST	0	Hail (0.75 in)
08/05/11 13:59 MST	0	Source: Amateur Radio

STARK COUNTY --- 0.7 N BELFIELD [46.89, -103.20]

08/05/11 13:58 MST	0	Hail (1.00 in)
08/05/11 14:07 MST	0	Source: Public

STARK COUNTY --- 0.5 ESE SOUTH HEART [46.87, -102.99], 1.2 NNE SOUTH HEART [46.89, -102.99], 0.9 N BELFIELD [46.89, -103.20], 1.1 SSE BELFIELD [46.86, -103.19]

08/05/11 14:00 MST	15K	Flash Flood (due to Heavy Rain)
08/05/11 17:00 MST	0	Source: Public

Four inches of rain in this area flash flooded parts of Highway 10 near South Heart forcing the closure of the road. Deep water was also reported just outside of Belfield.

STARK COUNTY --- 0.7 N BELFIELD [46.89, -103.20]

08/05/11 14:20 MST	0	Hail (1.25 in)
08/05/11 14:28 MST	0	Source: Public

STARK COUNTY --- (DIK)DICKINSON MUNI [46.80, -102.80]

08/05/11 14:47 MST	0	Thunderstorm Wind (MG 50 kt)
08/05/11 14:53 MST	0	Source: ASOS

STARK COUNTY --- 3.3 E DICKINSON [46.88, -102.71]

08/05/11 14:54 MST	0	Thunderstorm Wind (EG 65 kt)
08/05/11 14:59 MST	0	Source: Law Enforcement

Strong winds were reported on Interstate 94 east of Dickinson.

STARK COUNTY --- 0.8 NE BELFIELD [46.89, -103.19]

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	08/05/11 16:00 MST		0	Heavy Rain
	08/05/11 16:00 MST		0	Source: Trained Spotter

A storm total rainfall amount of 4 inches was reported at Belfield. This resulted in flash flooding. See the flash flood entry for Stark County.

GRANT COUNTY --- 0.8 SW ELGIN [46.39, -101.86]

	08/05/11 16:20 MST		0	Hail (1.75 in)
	08/05/11 16:27 MST		0	Source: Trained Spotter

MORTON COUNTY --- GLEN ULLIN [46.82, -101.83]

	08/05/11 16:45 CST		50K	Thunderstorm Wind (EG 61 kt)
	08/05/11 16:50 CST		0	Source: COOP Observer

Trees six to eight inches in diameter were snapped in Glen Ullin. Damage also occurred to several buildings and other structures.

MORTON COUNTY --- 0.5 W HEBRON [46.90, -102.04]

	08/05/11 16:50 CST		15K	Thunderstorm Wind (EG 61 kt)
	08/05/11 16:58 CST		0	Source: Trained Spotter

Trees were blown over by the strong winds in Hebron.

MORTON COUNTY --- GLEN ULLIN [46.82, -101.83]

	08/05/11 16:53 CST		0	Thunderstorm Wind (EG 52 kt)
	08/05/11 16:59 CST		0	Source: Trained Spotter

Very heavy rain accompanied the strong winds.

MORTON COUNTY --- 0.5 E NEW SALEM [46.85, -101.41]

	08/05/11 17:15 CST		0	Thunderstorm Wind (EG 52 kt)
	08/05/11 17:19 CST		0	Source: Trained Spotter

Strong winds were reported at New Salem.

BURLEIGH COUNTY --- 3.9 NNW BISMARCK [46.85, -100.80]

	08/05/11 18:32 CST		0	Thunderstorm Wind (EG 52 kt)
	08/05/11 18:37 CST		0	Source: Amateur Radio

Strong winds were reported at Horizon Middle School in north Bismarck.

Surface low pressure over southwest North Dakota combined with a lead short wave impulse to trigger thunderstorms across southwest and south central North Dakota through the afternoon hours and into the evening of August 5th. Severe Thunderstorm Watch number 729 and 731 were in effect for this event. One particularly strong bowing storm produced most of the large hail and high wind reports as it tracked from west of Dickinson across Morton and Burleigh counties before weakening.

FOSTER COUNTY --- 7.5 ESE BORDULAC [47.34, -98.82], 6.9 ESE BORDULAC [47.33, -98.84], 7.6 SE BORDULAC [47.32, -98.84], 8.3 ESE BORDULAC [47.32, -98.82]

	08/06/11 07:30 CST		1M	Flash Flood (due to Heavy Rain)
	08/06/11 10:00 CST		0	Source: Emergency Manager

Very heavy rain washed out a culvert under the Canadian Pacific railroad tracks near Kensal at a bridge crossing the James River. The washout caused two locomotives and approximately 25 cars to derail.

Thunderstorms with very heavy rain resulted in flash flood conditions over portions of Foster County in east central North Dakota. The flooding damaged rail tracks over the James River, causing a train derailment. No injuries were reported with this accident.

WELLS COUNTY --- 2.0 ESE HAMBERG [47.76, -99.46]

	08/12/11 12:20 CST		0	Hail (0.75 in)
	08/12/11 12:24 CST		0	Source: Mesonet

WELLS COUNTY --- BOWDON [47.47, -99.57], SYKESTON [47.47, -99.38], 6.9 S SYKESTON [47.37, -99.39], 7.3 SSE CHASELEY [47.36, -99.72]

	08/12/11 12:20 CST		5K	Flash Flood (due to Heavy Rain)
	08/12/11 15:00 CST		0	Source: COOP Observer

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Thunderstorms produced around two inches of rain in this area leading to flash flooding along low water crossings. Damage was minimal and confined to eroded road shoulders. One report was that most of the rain fell in a 20 minute period.

STUTSMAN COUNTY --- 7.5 NNW CLEVELAND [46.98, -99.18]

	08/12/11 13:25 CST		2K	Hail (1.00 in)
	08/12/11 13:29 CST		0	Source: Trained Spotter

Very heavy rain and strong winds up to 50 miles per hour accompanied the large hail.

STUTSMAN COUNTY --- 4.0 NE SYDNEY [46.77, -98.71]

	08/12/11 13:31 CST		0	Hail (1.00 in)
	08/12/11 13:36 CST		0	Source: Trained Spotter

STUTSMAN COUNTY --- 1.7 SW YPSILANTI [46.76, -98.57]

	08/12/11 13:55 CST		0	Hail (0.88 in)
	08/12/11 13:59 CST		0	Source: Broadcast Media

STUTSMAN COUNTY --- 10.6 NNW WOODWORTH [47.30, -99.35], 5.6 WSW KENSAL [47.27, -98.84], 2.6 SW BUCHANAN [47.05, -98.87], 7.1 S WOODWORTH [47.05, -99.29]

	08/12/11 14:00 CST		5K	Flash Flood (due to Heavy Rain)
	08/12/11 16:30 CST		0	Source: COOP Observer

Thunderstorms produced around two inches of rain in this area leading to flash flooding along low water crossings. Damage was minimal and confined to eroded road shoulders. Most of the rain fell in less than one hour.

STUTSMAN COUNTY --- 4.2 S MONTPELIER [46.64, -98.59]

	08/12/11 14:13 CST		0	Hail (1.00 in)
	08/12/11 14:19 CST		0	Source: Trained Spotter

LA MOURE COUNTY --- 2.0 NNW ADRIAN [46.63, -98.57]

	08/12/11 14:25 CST		0	Hail (0.88 in)
	08/12/11 14:29 CST		0	Source: Trained Spotter

STUTSMAN COUNTY --- 0.5 W MONTPELIER [46.70, -98.59]

	08/12/11 14:25 CST		0	Hail (1.00 in)
	08/12/11 14:29 CST		0	Source: COOP Observer

LA MOURE COUNTY --- 4.2 S BERLIN [46.32, -98.49]

	08/12/11 14:38 CST		0	Hail (1.00 in)
	08/12/11 14:44 CST		0	Source: Emergency Manager

LA MOURE COUNTY --- 0.8 NE LA MOURE [46.36, -98.29]

	08/12/11 14:45 CST		0	Hail (1.00 in)
	08/12/11 14:51 CST		0	Source: Emergency Manager

LA MOURE COUNTY --- 6.5 ESE MARION [46.57, -98.20]

	08/12/11 15:00 CST		0	Hail (1.00 in)
	08/12/11 15:06 CST		0	Source: Public

A potent short wave trough moving across North Dakota combined with moderate instability to create an environment favorable for multicellular thunderstorms during the afternoon hours of the 12th. Above average precipitable water values ahead of the trough also increased the rainfall with the thunderstorms. Severe Thunderstorm Watch number 771 was in effect for this event.

MCKENZIE COUNTY --- 10.2 W KEENE [47.94, -103.17]

	08/15/11 00:02 MST		0	Hail (0.88 in)
	08/15/11 00:08 MST		0	Source: COOP Observer

DUNN COUNTY --- 0.5 W HALLIDAY [47.35, -102.34]

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	08/15/11 02:20 MST		0	Hail (0.88 in)
	08/15/11 02:25 MST		0	Source: COOP Observer
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MERCER COUNTY --- 13.3 N ZAP [47.47, -101.87]				
	08/15/11 03:26 CST		0	Hail (0.88 in)
	08/15/11 03:31 CST		0	Source: CoCoRaHS
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MERCER COUNTY --- 2.7 ESE HAZEN [47.28, -101.58]				
	08/15/11 03:56 CST		0	Thunderstorm Wind (MG 56 kt)
	08/15/11 04:02 CST		0	Source: AWOS
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MERCER COUNTY --- 5.2 E HAZEN [47.31, -101.52]				
	08/15/11 03:56 CST		0	Thunderstorm Wind (EG 52 kt)
	08/15/11 04:03 CST		0	Source: Trained Spotter
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Pea size hail accompanied the strong winds.				
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MERCER COUNTY --- 1.6 WNW BEULAH [47.28, -101.81]				
	08/15/11 04:00 CST		0	Hail (1.25 in)
	08/15/11 04:15 CST		0	Source: COOP Observer
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Strong winds accompanied the large hail and damaged the farm. The dollar damage estimate was placed with the high thunderstorm wind Storm Data entry.				
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MERCER COUNTY --- 2.0 NW BEULAH [47.29, -101.81]				
	08/15/11 04:00 CST		10K	Thunderstorm Wind (EG 70 kt)
	08/15/11 04:15 CST		0	Source: COOP Observer
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Large hail accompanied the strong winds and damaged property on the farm.				
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<p>Steep lapse rates and moderate elevated instability developed during the early morning of the 15th north of a surface warm front stretched from northeast Montana through western North Dakota and into South Dakota. An isolated strong to severe thunderstorm developed and tracked southeast along this boundary from near McKenzie County to near Bismarck before dissipating. Several severe thunderstorm warnings were issued for this storm.</p>				
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DUNN COUNTY --- 2.4 W EMERSON [47.18, -102.70]				
	08/15/11 15:05 MST		35K	Hail (1.75 in)
	08/15/11 15:15 MST		75K	Source: Public
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The large hail resulted in broken windows and damage to a vehicle.				
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STARK COUNTY --- 0.5 W TAYLOR [46.90, -102.43]				
	08/15/11 15:45 MST		0	Thunderstorm Wind (EG 59 kt)
	08/15/11 15:52 MST		0	Source: COOP Observer
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Strong winds were reported.				
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SLOPE COUNTY --- 15.9 SE AMIDON [46.32, -103.08]				
	08/15/11 15:55 MST		0	Hail (0.88 in)
	08/15/11 16:15 MST		0	Source: Trained Spotter
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STARK COUNTY --- 5.5 N RICHARDTON [46.96, -102.32]				
	08/15/11 15:57 MST		0	Hail (1.75 in)
	08/15/11 16:10 MST		0	Source: CoCoRaHS
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ADAMS COUNTY --- 4.7 NE REEDER [46.16, -102.87]				
	08/15/11 16:25 MST		0	Thunderstorm Wind (EG 52 kt)
	08/15/11 16:33 MST		0	Source: Trained Spotter
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Strong winds were reported.				
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HETTINGER COUNTY --- 10.3 SW REGENT [46.32, -102.71]				

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	08/15/11 17:05 MST		0	Thunderstorm Wind (EG 56 kt)
	08/15/11 17:10 MST		0	Source: Public
Pea size hail accompanied the strong winds.				
BOWMAN COUNTY --- 0.5 W BUFFALO SPGS [46.17, -103.24]				
	08/15/11 17:52 MST		0	Hail (1.00 in)
	08/15/11 17:58 MST		0	Source: Trained Spotter
BOWMAN COUNTY --- 1.2 NE BUFFALO SPGS [46.18, -103.21]				
	08/15/11 17:58 MST		0	Hail (1.00 in)
	08/15/11 18:06 MST		0	Source: Trained Spotter
MORTON COUNTY --- 7.6 N GLEN ULLIN [46.93, -101.83]				
	08/15/11 18:00 CST		0	Hail (1.00 in)
	08/15/11 18:08 CST		0	Source: Trained Spotter
BOWMAN COUNTY --- 0.5 W SCRANTON [46.15, -103.14]				
	08/15/11 18:15 MST		0	Hail (2.00 in)
	08/15/11 18:21 MST		0	Source: Public
GRANT COUNTY --- NEW LEIPZIG [46.37, -101.95]				
	08/15/11 18:25 MST		0	Hail (0.88 in)
	08/15/11 18:31 MST		0	Source: Trained Spotter
GRANT COUNTY --- 8.5 SSE LEITH [46.23, -101.59]				
	08/15/11 19:05 MST		0	Hail (1.00 in)
	08/15/11 19:10 MST		0	Source: Trained Spotter
MORTON COUNTY --- MANDAN MUNI ARPT [46.77, -100.90]				
	08/15/11 19:44 CST		0	Thunderstorm Wind (MG 76 kt)
	08/15/11 19:49 CST		0	Source: AWOS
BURLEIGH COUNTY --- 0.8 NW BISMARCK [46.81, -100.78]				
	08/15/11 19:45 CST		0	Heavy Rain
	08/15/11 20:45 CST		0	Source: NWS Employee
Heavy rain measuring 2.9 inches fell in one hour.				
BURLEIGH COUNTY --- 0.8 NW BISMARCK [46.81, -100.78]				
	08/15/11 19:53 CST		0	Thunderstorm Wind (MG 52 kt)
	08/15/11 19:58 CST		0	Source: Amateur Radio
BURLEIGH COUNTY --- (BIS)BISMARCK MUNI A [46.78, -100.75]				
	08/15/11 20:10 CST		0	Thunderstorm Wind (MG 62 kt)
	08/15/11 20:20 CST		0	Source: ASOS
BURLEIGH COUNTY --- 5.5 N BISMARCK [46.88, -100.78]				
	08/15/11 20:10 CST		0	Hail (0.75 in)
	08/15/11 20:16 CST		0	Source: NWS Employee
BURLEIGH COUNTY --- 7.2 N BISMARCK [46.90, -100.76]				
	08/15/11 20:15 CST		0	Hail (1.00 in)
	08/15/11 20:20 CST		0	Source: NWS Employee
BURLEIGH COUNTY --- 8.8 SW BALDWIN [46.93, -100.88], 8.2 SE BALDWIN [46.94, -100.66], 4.4 ESE (BIS)BISMARCK MUNI A [46.75, -100.67], 4.0 WSW (BIS)BISMARCK MUNI A [46.75, -100.82]				

Storm Data and Unusual Weather Phenomena - August 2011

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	08/15/11 20:20 CST		0.10M	Flash Flood (due to Heavy Rain)
	08/16/11 00:45 CST		0	Source: Amateur Radio
Flooded roads were reported throughout Bismarck with water as much as two feet deep on streets. Water was running over curbs and through yards. Ditches in rural north Bismarck were full to overflowing and threatening homes. Two to three inches of rain fell on Bismarck. Rain at the airport measured 2.48 inches.				
BURLEIGH COUNTY --- 2.0 WSW FT LINCOLN [46.81, -100.64]				
	08/15/11 20:30 CST		0	Thunderstorm Wind (EG 61 kt)
	08/15/11 20:35 CST		0	Source: Public
Heavy rain accompanied the strong winds.				
BURLEIGH COUNTY --- 6.2 N ARENA [47.22, -100.16]				
	08/15/11 20:50 CST		0	Hail (1.00 in)
	08/15/11 20:55 CST		0	Source: Trained Spotter
ADAMS COUNTY --- 0.5 W HETTINGER [46.00, -102.64]				
	08/15/11 21:15 MST		0	Thunderstorm Wind (MG 55 kt)
	08/15/11 21:20 MST		0	Source: ASOS
A severe weather outbreak unfolded during the late afternoon and evening of the 15th as thunderstorms developed and intensified along several boundaries over southwest and south central North Dakota. Supercell storms formed initially over the west central and southwest, then formed into an organized bowing segment as the storms progressed eastward into the south central. Severe Thunderstorm Watch number 782 was in effect for this event. Numerous warnings were issued.				
SIOUX COUNTY --- 8.9 SSW FT YATES [45.96, -100.70]				
	08/18/11 14:45 MST		0	Hail (1.00 in)
	08/18/11 14:50 MST		0	Source: Public
A severe thunderstorm moving near the North Dakota and South Dakota border produced one report of large hail in Sioux County. Severe Thunderstorm Watch number 786 was in effect for this event.				
BURLEIGH COUNTY --- 8.5 NNW ARENA [47.25, -100.21]				
	08/22/11 19:20 CST		0	Hail (1.50 in)
	08/22/11 19:25 CST		0	Source: Trained Spotter
BURLEIGH COUNTY --- 2.7 ESE (BIS)BISMARCK MUNI A [46.76, -100.70]				
	08/22/11 19:23 CST		0	Hail (0.75 in)
	08/22/11 19:33 CST		0	Source: Trained Spotter
BURLEIGH COUNTY --- 3.1 SE (BIS)BISMARCK MUNI A [46.75, -100.70]				
	08/22/11 19:23 CST		0	Hail (1.00 in)
	08/22/11 19:28 CST		0	Source: NWS Employee
KIDDER COUNTY --- 4.2 SE TUTTLE [47.10, -99.93]				
	08/22/11 20:20 CST		0	Hail (1.00 in)
	08/22/11 20:25 CST		0	Source: Trained Spotter
KIDDER COUNTY --- 4.2 NW TAPPEN [46.92, -99.67]				
	08/22/11 20:26 CST		0	Hail (0.88 in)
	08/22/11 20:28 CST		0	Source: Public
STUTSMAN COUNTY --- 3.4 NW MEDINA [46.92, -99.34]				
	08/22/11 20:42 CST		0	Thunderstorm Wind (EG 52 kt)
	08/22/11 20:52 CST		0	Source: Trained Spotter
Heavy rain accompanied the strong winds.				
STUTSMAN COUNTY --- 2.8 W SYDNEY [46.73, -98.83]				

Storm Data and Unusual Weather Phenomena - August 2011

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	08/22/11 20:54 CST		0	Hail (0.88 in)
	08/22/11 20:59 CST		0	Source: Trained Spotter
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KIDDER COUNTY --- PETTIBONE [47.12, -99.52]	08/22/11 21:05 CST		0	Hail (0.88 in)
	08/22/11 21:08 CST		0	Source: Trained Spotter
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STUTSMAN COUNTY --- 0.7 N MEDINA [46.89, -99.30]	08/22/11 21:34 CST		0	Hail (1.00 in)
	08/22/11 21:39 CST		0	Source: Trained Spotter
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LA MOURE COUNTY --- 1.0 N EDGELEY [46.38, -98.70]	08/22/11 22:28 CST		0	Hail (1.00 in)
	08/22/11 22:33 CST		0	Source: Public
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LA MOURE COUNTY --- 1.0 W EDGELEY [46.37, -98.72]	08/22/11 22:28 CST		0	Thunderstorm Wind (EG 61 kt)
	08/22/11 22:33 CST		0	Source: Public
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Large hail accompanied the strong winds.				
A mid level short wave trough digging southeast across the Northern Plains triggered scattered thunderstorms over the south central and southeastern portions of North Dakota. Combined with moderate instability and sufficient deep layer shear the storms became severe.				
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DIVIDE COUNTY --- 8.4 N ALKABO [48.99, -103.90]	08/27/11 21:09 CST		0	Hail (1.00 in)
	08/27/11 21:15 CST		0	Source: Trained Spotter
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Strong winds up to 55 miles per hour were also reported.				
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STARK COUNTY --- 4.9 N DICKINSON [46.95, -102.79]	08/28/11 00:05 MST		0	Hail (1.75 in)
	08/28/11 00:10 MST		0	Source: Public
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STARK COUNTY --- 2.8 N DICKINSON [46.92, -102.79]	08/28/11 00:09 MST		0	Hail (0.88 in)
	08/28/11 00:14 MST		0	Source: Law Enforcement
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GRANT COUNTY --- 4.0 SSW LARK [46.40, -101.44]	08/28/11 02:30 MST		0	Hail (0.88 in)
	08/28/11 02:34 MST		0	Source: COOP Observer
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EMMONS COUNTY --- 4.0 NW WESTFIELD [46.07, -100.26]	08/28/11 03:00 CST		0	Hail (1.50 in)
	08/28/11 03:10 CST		0	Source: Trained Spotter
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EMMONS COUNTY --- 1.0 SW WESTFIELD [46.02, -100.21]	08/28/11 03:20 CST		0	Thunderstorm Wind (EG 52 kt)
	08/28/11 03:30 CST		0	Source: Trained Spotter
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Large hail accompanied the strong winds.				
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EMMONS COUNTY --- 1.2 SW WESTFIELD [46.02, -100.22]	08/28/11 03:20 CST		0	Hail (1.50 in)
	08/28/11 03:30 CST		0	Source: Trained Spotter

A northwest to southeast advecting short wave trough combined with over 50 knots of effective shear and modest instability to develop severe thunderstorms during the late evening of the 27th and early morning of the 28th. Thunderstorms formed on a northwest to southeast oriented moisture and instability axis and tracked along that axis.

Storm Data and Unusual Weather Phenomena - August 2011

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
SLOPE COUNTY --- 6.2 W MARMARTH [46.29, -104.03]				
	08/31/11 19:22 MST		15K	Hail (1.75 in)
	08/31/11 19:26 MST		0	Source: Public
The large hail broke windows.				
MCKENZIE COUNTY --- 3.5 N FAIRVIEW [47.90, -104.02]				
	08/31/11 19:25 MST		0	Hail (1.00 in)
	08/31/11 19:31 MST		0	Source: County Official
BOWMAN COUNTY --- 3.5 N RHAME [46.28, -103.65], 0.2 WNW RHAME [46.23, -103.65]				
	08/31/11 19:40 MST		0	Hail (1.75 in)
	08/31/11 19:50 MST		0	Source: Public
SLOPE COUNTY --- 15.8 NE MARMARTH [46.45, -103.65]				
	08/31/11 19:40 MST		5K	Lightning
	08/31/11 19:40 MST		0	Source: Emergency Manager
A lightning strike triggered a large grass fire in southern Slope County that burned into the next day. The fire spread through rows of hay bales.				
STARK COUNTY --- 2.0 N SOUTH HEART [46.90, -103.00]				
	08/31/11 19:50 MST		5K	Lightning
	08/31/11 19:50 MST		0	Source: Newspaper
A lightning strike triggered a large grass fire near South Heart in western Stark County. The fire also burned around fifty hay bales.				
BOWMAN COUNTY --- 0.5 E BOWMAN [46.18, -103.39]				
	08/31/11 19:51 MST		0	Thunderstorm Wind (EG 50 kt)
	08/31/11 19:56 MST		0	Source: Mesonet
A report of a severe wind gust was received.				
STARK COUNTY --- 0.5 E (DIK)DICKINSON MUNI [46.80, -102.79]				
	08/31/11 20:04 MST		0	Thunderstorm Wind (MG 52 kt)
	08/31/11 20:09 MST		0	Source: ASOS
BOWMAN COUNTY --- 0.5 W SCRANTON [46.15, -103.14]				
	08/31/11 20:07 MST		0	Thunderstorm Wind (MG 56 kt)
	08/31/11 20:14 MST		0	Source: Mesonet
HETTINGER COUNTY --- 1.2 NW NEW ENGLAND [46.54, -102.87]				
	08/31/11 20:20 MST		0	Hail (1.00 in)
	08/31/11 20:24 MST		0	Source: Trained Spotter
STARK COUNTY --- 0.5 W TAYLOR [46.90, -102.43]				
	08/31/11 20:26 MST		0	Thunderstorm Wind (MG 54 kt)
	08/31/11 20:31 MST		0	Source: COOP Observer
HETTINGER COUNTY --- 12.6 N MOTT [46.56, -102.36]				
	08/31/11 20:35 MST		0	Hail (1.50 in)
	08/31/11 20:37 MST		0	Source: Trained Spotter
WILLIAMS COUNTY --- 0.5 W WILLISTON [48.15, -103.63]				
	08/31/11 20:43 CST		45K	Thunderstorm Wind (MG 53 kt)
	08/31/11 20:53 CST		0	Source: ASOS
Tree branches were broken off at the Williston airport and a new hanger was damaged.				

Storm Data and Unusual Weather Phenomena - August 2011

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
STARK COUNTY --- 2.3 SW ANTELOPE [46.83, -102.24]				
	08/31/11 21:00 MST		0	Thunderstorm Wind (EG 52 kt)
	08/31/11 21:05 MST		0	Source: Mesonet
Pea size hail accompanied the strong winds.				
MOUNTRAIL COUNTY --- 3.3 NNW STANLEY [48.36, -102.42]				
	08/31/11 21:50 CST		0	Thunderstorm Wind (EG 52 kt)
	08/31/11 21:55 CST		0	Source: COOP Observer
Strong winds were reported.				
MOUNTRAIL COUNTY --- 6.1 SE LOSTWOOD [48.41, -102.34]				
	08/31/11 22:10 CST		0	Thunderstorm Wind (EG 56 kt)
	08/31/11 22:15 CST		0	Source: Public
Strong winds were reported.				
MERCER COUNTY --- 1.6 ESE HAZEN [47.29, -101.60]				
	08/31/11 22:20 CST		0	Thunderstorm Wind (MG 53 kt)
	08/31/11 22:25 CST		0	Source: AWOS
MORTON COUNTY --- 6.2 NNW SIMS [46.85, -101.56]				
	08/31/11 22:20 CST		65K	Thunderstorm Wind (EG 61 kt)
	08/31/11 22:28 CST		0	Source: Fire Department/Rescue
Straight line wind damage occurred near New Salem. A barn roof was destroyed, an auger was tipped over, and debris was thrown into the side of a home.				
MCLEAN COUNTY --- 1.2 SE COLEHARBOR [47.54, -101.20]				
	08/31/11 22:50 CST		0	Thunderstorm Wind (MG 56 kt)
	08/31/11 22:55 CST		0	Source: Trained Spotter
MORTON COUNTY --- 5.1 ENE SWEET BRIAR [46.87, -101.09]				
	08/31/11 22:51 CST		0	Thunderstorm Wind (EG 52 kt)
	08/31/11 22:57 CST		0	Source: Trained Spotter
Strong winds were reported.				
MCLEAN COUNTY --- 1.0 N MERCER [47.49, -100.72]				
	08/31/11 23:00 CST		18K	Thunderstorm Wind (EG 61 kt)
	08/31/11 23:10 CST		0	Source: Public
Several trees were snapped or uprooted.				
SHERIDAN COUNTY --- MCCLUSKY [47.48, -100.45]				
	08/31/11 23:13 CST		0	Thunderstorm Wind (EG 56 kt)
	08/31/11 23:18 CST		0	Source: Public
Brief power outages were reported with the strong winds.				
WELLS COUNTY --- HARVEY [47.77, -99.90]				
	08/31/11 23:54 CST		2K	Thunderstorm Wind (EG 52 kt)
	08/31/11 23:59 CST		0	Source: Broadcast Media
Small tree limbs were broken.				

Increasing warm air advection ahead of a short wave impulse combined with a moderately unstable and strongly sheared environment to result in severe thunderstorms over much of west and portions of central North Dakota in the evening of the 31st. Severe Thunderstorm Watch number 819 was in effect for this event.