

Storm Data and Unusual Weather Phenomena - December 2010

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

(ND-Z037) STUTSMAN, (ND-Z048) LA MOURE, (ND-Z051) DICKEY

12/03/10 09:00 CST	0	Heavy Snow
12/04/10 01:00 CST	0	

A large area of low pressure originating over the northern Rockies, moved southeast into the central plains and brought widespread light to moderate snow across all of west and central North Dakota Friday, December 3rd, into the early morning hours of Saturday, December 4th. An enhanced area of forcing near an inverted surface trough brought a narrow band of heavy snow to portions of south central North Dakota during this event. Up to 11 inches of snow fell in and around the James River Basin.

(ND-Z009) WILLIAMS, (ND-Z010) MOUNTRAIL, (ND-Z011) WARD, (ND-Z012) MCHENRY, (ND-Z013) PIERCE, (ND-Z017) MCKENZIE, (ND-Z018) DUNN, (ND-Z019) MERCER, (ND-Z021) MCLEAN, (ND-Z022) SHERIDAN, (ND-Z023) WELLS, (ND-Z025) FOSTER, (ND-Z036) KIDDER, (ND-Z037) STUTSMAN

12/10/10 11:00 CST	0	Heavy Snow
12/11/10 05:00 CST	0	

An area of low pressure moving east across North Dakota brought a band of heavy snow from the northwest through central portions of the state Friday, December 10th through early Saturday, December 11th. Six inches up to over a foot of snow fell within this heavy band, with lesser amounts to the north and south. Winds up to 25 mph also creating area of blowing and drifting snow, prompting the North Dakota Department of Transportation to issue a no travel advisory for northwest and central portions of North Dakota.

(ND-Z002) BURKE, (ND-Z003) RENVILLE, (ND-Z004) BOTTINEAU, (ND-Z010) MOUNTRAIL, (ND-Z011) WARD, (ND-Z012) MCHENRY

12/14/10 23:00 CST	0	Ice Storm
12/15/10 06:00 CST	0	

Weak to moderate low level frontogenetical forcing, combined with forcing aloft ahead of a mid level trough, moved across western North Dakota during the evening of the 14th, and became stalled over central North Dakota during the overnight hours of the 15th. Mid level warm air advection ahead of surface warm front, coupled with below freezing surface temperatures, combined with the forcing to result in an extensive area of freezing rain and sleet which fell through the morning hours of the 15th. The heaviest precipitation fell across north central North Dakota, where very hazardous travel conditions developed.

(ND-Z005) ROLETTE, (ND-Z012) MCHENRY, (ND-Z013) PIERCE, (ND-Z022) SHERIDAN, (ND-Z023) WELLS, (ND-Z025) FOSTER, (ND-Z036) KIDDER, (ND-Z037) STUTSMAN, (ND-Z048) LA MOURE, (ND-Z051) DICKEY

12/15/10 14:00 CST	0	Heavy Snow
12/16/10 08:00 CST	0	

Low and mid level forcing which brought freezing rain during the early morning hours of the 15th to much of central North Dakota, continued to push slowly east. An enhanced area of frontogenetical forcing, combined with upper level support, eventually set up along a stationary boundary situated north to south across portions of central and eastern North Dakota from the morning of the 15th, lasting into the morning hours of the 16th. Heavy snow resulted, with over one foot reported just west of the Devils Lake Basin, continuing south into the James River Basin.

(ND-Z001) DIVIDE, (ND-Z002) BURKE, (ND-Z003) RENVILLE, (ND-Z004) BOTTINEAU, (ND-Z005) ROLETTE, (ND-Z009) WILLIAMS, (ND-Z010) MOUNTRAIL, (ND-Z011) WARD, (ND-Z012) MCHENRY, (ND-Z013) PIERCE, (ND-Z017) MCKENZIE, (ND-Z018) DUNN, (ND-Z019) MERCER, (ND-Z020) OLIVER, (ND-Z021) MCLEAN, (ND-Z022) SHERIDAN, (ND-Z023) WELLS, (ND-Z025) FOSTER, (ND-Z032) BILLINGS, (ND-Z036) KIDDER, (ND-Z037) STUTSMAN, (ND-Z048) LA MOURE, (ND-Z051) DICKEY

12/20/10 07:00 CST	0	Heavy Snow
12/21/10 04:00 CST	0	

A large area of surface low pressure ejecting northeast into the Northern Plains brought widespread moderate to heavy snow to much of west and central North Dakota Monday, December 20th through early morning Tuesday, December 21st. The heaviest snow fell across the northern half of North Dakota, where nine to twelve inches occurred. Lesser amount fell across the southwest and south central.

In addition to the snow, gusty northwest winds up to 25 mph across the south, created areas of blowing and drifting snow. This resulted in travel hazards and eventually led to travel advisories issued by state and county officials. Patchy freezing drizzle around the James River Basin also contributed to some travel hazards during this episode.

(ND-Z009) WILLIAMS, (ND-Z010) MOUNTRAIL, (ND-Z011) WARD, (ND-Z012) MCHENRY, (ND-Z013) PIERCE, (ND-Z017) MCKENZIE, (ND-Z018) DUNN, (ND-Z021) MCLEAN

Storm Data and Unusual Weather Phenomena - December 2010

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	12/29/10 11:00 CST		0	Heavy Snow
	12/30/10 09:00 CST		0	

(ND-Z023) WELLS, (ND-Z025) FOSTER, (ND-Z036) KIDDER, (ND-Z037) STUTSMAN, (ND-Z045) SIOUX, (ND-Z046) EMMONS, (ND-Z047) LOGAN, (ND-Z048) LA MOURE, (ND-Z050) MCINTOSH, (ND-Z051) DICKEY

12/30/10 12:00 CST	0	Blizzard
12/31/10 23:59 CST	0	

An inverted trough extending north from an area of surface low pressure over the central plains, brought heavy snow to portions of west and central North Dakota from Wednesday, December 29th until early Thursday, December 30th. Short wave impulses originating from an upper trough enhanced the snowfall, and led to storm total amounts up to seven inches over some areas.

Forcing for snow eventually pushed further east, with an enhanced area of snow developing over the southern James River Basin from Thursday, December 30th through Friday, December 31st. Up to near fourteen inches of snow was reported.

In addition to the heavy snow, as the surface low over the central plains lifted northeast into the Upper Mississippi Valley December 30th and 31st, a strong pressure gradient developed over central South Dakota and eastern North Dakota. A prolonged period of strong winds over 40 mph, combined with continued snowfall and fresh snow cover on the ground, resulted in blizzard conditions over portions of south central North Dakota from Thursday December 30th through the morning hours of Saturday, January 1st.

Numerous travel advisories were issued by state and county officials during this event. Several road closures also occurred, including Interstate 94 from Jamestown to Fargo for several days, and Bismarck to Jamestown New Year's Eve Night through the morning hours of New Year's Eve Day (See Storm Data for January 2011).