

Storm Data and Unusual Weather Phenomena - November 2008

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
NORTH DAKOTA, Central and West				
STUTSMAN COUNTY --- 3.4 SE YPSILANTI [46.74, -98.51]				
	11/05/08 15:30 CST		0	Hail (0.75 in)
	11/05/08 15:35 CST		0	Source: Trained Spotter
(ND-Z003) RENVILLE, (ND-Z004) BOTTINEAU, (ND-Z005) ROLETTE, (ND-Z010) MOUNTRAIL, (ND-Z011) WARD, (ND-Z012) MCHENRY, (ND-Z013) PIERCE, (ND-Z025) FOSTER, (ND-Z032) BILLINGS				
	11/05/08 21:00 CST		50K	Heavy Snow
	11/07/08 09:00 CST		0	
(ND-Z018) DUNN, (ND-Z019) MERCER, (ND-Z020) OLIVER, (ND-Z021) MCLEAN, (ND-Z022) SHERIDAN, (ND-Z023) WELLS, (ND-Z033) STARK, (ND-Z034) MORTON, (ND-Z035) BURLEIGH, (ND-Z036) KIDDER, (ND-Z040) SLOPE, (ND-Z041) HETTINGER, (ND-Z042) GRANT, (ND-Z043) BOWMAN, (ND-Z044) ADAMS, (ND-Z045) SIOUX, (ND-Z046) EMMONS, (ND-Z047) LOGAN				
	11/05/08 22:00 CST		0.14M	Blizzard
	11/07/08 10:30 CST		0	
(ND-Z023) WELLS, (ND-Z036) KIDDER				
	11/06/08 06:00 CST		0	Winter Storm
	11/06/08 18:00 CST		0	

A significant and complex winter storm impacted much of western and central North Dakota beginning Wednesday, November 5th, and lasting into Friday, November 7th. Winter storm warnings and blizzard warnings were posted well in advance of the storm. Warning lead time averaged nearly 27 hours. The warnings encompassed the entire National Weather Service Bismarck County Warning Area, 36 counties, though not all counties had events or reached warning criteria. Counties in the Williston area and the Jamestown area were basically missed by the storm.

Blizzard conditions, or significant snow with near blizzard conditions, forced many schools and businesses to close and stranded travelers. Numerous roads were closed or no travel was advised due to the conditions. In addition, numerous power outages were reported across central North Dakota due to a wintry mix of rain, freezing rain, and sleet that fell Wednesday night and early Thursday morning, preceding the stronger winds and change over to heavy snow.

On November third and fourth, an open wave upper level trough moving east across the central Rocky Mountains became a closed upper level low pressure system, and triggered lee-side cyclogenesis across the high plains of Wyoming. By Wednesday morning and afternoon, November fifth, the surface low moved into central and eastern parts of South Dakota, with a TROWAL (trough of warm air aloft) feature developing across the northern plains, along with plenty of moisture advection from the Gulf of Mexico. Warm air advection ahead of the surface low wrapped around into western and central North Dakota, producing moderate to heavy rain Wednesday, setting daily rainfall records. An addition, scattered thunderstorms in east-central North Dakota prompted one severe thunderstorm warning and yielded a report of large hail in Stutsman County. Farther west, rain quickly changed over to all snow Wednesday evening as colder air was pulled into the system.

Moderate to heavy snow continued across western North Dakota Wednesday night into Thursday morning, coinciding with increasing northwesterly winds which produced widespread blizzard conditions over the southwest part of the state. A band of thundersleet developed early Thursday morning over central areas. Later Thursday morning the storm system's dry slot worked into the Bismarck area cutting off precipitation altogether, at least temporarily.

By daybreak Thursday morning, as the initial TROWAL feature was dissipating across western North Dakota, a secondary TROWAL developed over southern Alberta and advancing south into north central North Dakota. Colder air aloft had also advected across the entire area by mid morning Thursday. By early Thursday afternoon, this secondary TROWAL continued to advance south, producing a band of heavy snow which lasted through Thursday night, and finally decreased Friday morning.

Additionally, strong north to northwest winds accompanying the snow produced widespread blizzard conditions central, with blizzard conditions continuing southwest due to the strong winds and existing heavy snow cover.

Conditions slowly improved statewide Friday as areas of snow dissipated and the strong northwest winds diminished. Storm total snowfall ranged from one to three inches around Williston and Jamestown, to six to twelve inches southwest through central, to a maximum of twenty inches in McHenry County. The strong wind resulted in blowing and drifting snow and so amounts had to be estimated. Snow drifts were four to six feet deep.