

Storm Data and Unusual Weather Phenomena - March 2009

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
NORTH DAKOTA, Central and West				
ADAMS COUNTY --- 9.0 N REEDER [46.25, -102.96], 16.9 NNE HETTINGER ARPT [46.25, -102.53], 13.1 NNE HETTINGER ARPT [46.19, -102.53], 26.0 NE HAYNES [46.19, -102.03], 21.1 E HAYNES [45.96, -102.03], 11.1 S REEDER [45.96, -102.96]				
	03/06/09 00:00 MST		0.13M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 MST		0	Source: State Official
Rapid snowmelt created overland flooding and flooding along Cedar Creek. This flooding damaged 16 homes along with county and local roads. Flooding continued into April.				
BILLINGS COUNTY --- 19.1 WNW FAIRFIELD [47.31, -103.58], 11.4 NE FAIRFIELD [47.31, -103.07], 13.7 SSE FAIRFIELD [47.01, -103.07], 10.0 NNE FRYBURG [47.01, -103.27], 15.4 S FRYBURG [46.65, -103.27], 17.4 SSW SULLY SPGS [46.65, -103.58]				
	03/06/09 00:00 MST		50K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 MST		0	Source: State Official
Ice jams on the Little Missouri River led to flooding near Medora which inundated two homes.				
BOTTINEAU COUNTY --- 7.7 W ANTLER [48.98, -101.44], 14.1 NE BOTTINEAU ARPT [48.98, -100.21], 3.9 SW OVERLY [48.64, -100.21], 3.3 WNW LANSFORD [48.64, -101.44]				
	03/06/09 00:00 CST		35K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official
Overland flooding damaged county and township roads. No homes were flooded. Flooding continued into April.				
BOWMAN COUNTY --- 18.4 W RHAME [46.27, -104.03], 9.6 NNE SCRANTON [46.27, -103.03], 4.4 E HALEY [45.96, -103.03], 26.1 SW RHAME [45.96, -104.03]				
	03/06/09 00:00 MST		37K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 MST		0	Source: State Official
Overland flooding damaged county and township roads. Three homes were flooded.				
BURLEIGH COUNTY --- 10.4 NNE WILTON [47.31, -100.72], 12.4 N ARENA [47.31, -100.16], 5.8 ESE MOFFIT [46.66, -100.16], 10.9 SE (BIS)BISMARCK MUNI A [46.66, -100.60], 3.0 W BISMARCK [46.80, -100.83], 3.1 SW WILTON [47.14, -100.85]				
	03/06/09 00:00 CST		0.53M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official
Ice jams on the Missouri River caused river water to flood parts of south Bismarck and southeast Burleigh County, around Fox Island, including about 15 homes. Apple Creek also flooded. Overland flooding damaged county and township roads. Flooding continued into April.				
DICKEY COUNTY --- 12.4 WNW MERRICOURT [46.27, -98.99], 5.5 ENE GLOVER [46.27, -98.03], 5.9 SE LUDDEN [45.95, -98.03], 10.1 W FORBES [45.95, -98.99]				
	03/06/09 00:00 CST		99K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official
Overland flooding damaged state, county and township roads. The James River spilled and flooded two homes. Flooding continued into April.				
DUNN COUNTY --- 22.7 NNW KILLDEER [47.66, -103.00], 21.1 NNE KILLDEER [47.66, -102.63], 27.1 NNE KILLDEER [47.75, -102.63], 26.9 NNE WERNER [47.75, -102.34], 7.7 SSE MARSHALL [47.03, -102.26], 6.0 WNW NEW HRADEC [47.03, -103.00]				
	03/06/09 00:00 MST		70K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 MST		0	Source: State Official
Overland flooding damaged state, county and township roads. The Knife River was also in flood. No homes were flooded.				
EMMONS COUNTY --- 14.5 NW HAZELTON [46.61, -100.52], 4.2 N KINTYRE [46.61, -99.96], 4.3 SSE HAGUE [45.97, -99.96], 14.5 WSW WESTFIELD [45.97, -100.49]				
	03/06/09 00:00 CST		0.75M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official
Beaver creek at Linton flooded due to snow melt from heavy rain, and ice jams just west of Linton. Overland flooding damaged state, county and township roads. Seventy three homes were flooded. Flooding continued into April.				

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FOSTER COUNTY --- 4.2 W BARLOW [47.57, -99.24], 2.9 ESE MC HENRY [47.57, -98.54], 7.0 SSE GLENFIELD [47.35, -98.54], 8.1 SSW CARRINGTON ARPT [47.35, -99.24]				
	03/06/09 00:00 CST		50K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official
Overland flooding damaged county and township roads. No structures were flooded in March. Flooding continued into April.				
GRANT COUNTY --- 16.6 NNW ELGIN [46.62, -101.99], 12.2 NNE LARK [46.62, -101.33], 11.1 WSW SHIELDS [46.15, -101.33], 20.1 S NEW LEIPZIG [46.08, -101.99]				
	03/06/09 00:00 MST		0.34M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 MST		0	Source: State Official
The Cannonball River caused extensive flooding due to rain, snow melt, and ice jams. Overland flooding damaged state, county and township roads. Nineteen homes were flooded. Flooding continued into April.				
HETTINGER COUNTY --- 6.0 NNW NEW ENGLAND [46.61, -102.90], 16.8 N BURT [46.61, -102.09], 7.0 S BENTLEY [46.23, -102.09], 11.3 SW MOTT MUNI ARPT [46.23, -102.48], 8.4 WSW MOTT MUNI ARPT [46.30, -102.48], 16.1 S NEW ENGLAND [46.30, -102.90]				
	03/06/09 00:00 MST		25K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 MST		0	Source: State Official
Overland flooding damaged some county and township roads. No homes were flooded in March. Worse flooding continued into April.				
KIDDER COUNTY --- 11.1 N TUTTLE [47.31, -100.01], 13.1 NNE LAKE WILLIAMS [47.31, -99.51], 16.0 S CRYSTAL SPGS [46.65, -99.51], 14.5 SSW STEELE MUNI ARPT [46.65, -100.07]				
	03/06/09 00:00 CST		45K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official
Overland flooding damaged township roads. No homes were flooded in March. Flooding continued and worsened into April.				
LA MOURE COUNTY --- 1.7 NW ALFRED [46.62, -99.02], 12.4 E MARION [46.62, -98.07], 4.8 S VERONA [46.30, -98.07], 16.0 WSW EDGELEY [46.30, -99.02]				
	03/06/09 00:00 CST		1.77M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official
The James River did major flood damage. Overland flooding damaged state, county and township roads. Two hundred and thirty homes were flooded, five were complete losses. Flooding continued into April.				
LOGAN COUNTY --- 10.3 NW NAPOLEON [46.62, -99.90], 3.4 ESE GACKLE [46.62, -99.06], 2.8 SE FREDONIA [46.30, -99.06], 14.4 WSW BURNSTAD [46.30, -99.90]				
	03/06/09 00:00 CST		0.12M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official
Overland flooding damaged state, county and township roads. Four homes were flooded. Flooding continued into April.				
MC HENRY COUNTY --- 13.8 N DEERING [48.60, -101.03], 7.7 ENE BANTRY [48.55, -100.45], 1.4 W ANAMOOSSE [47.88, -100.26], 5.9 WNW KONGSBERG [47.88, -100.92]				
	03/06/09 00:00 CST		60K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official
Overland flooding damaged state, county and township roads. No homes were flooded in March. Flooding continued and worsened into April.				
MCINTOSH COUNTY --- 14.9 W WISHEK [46.27, -99.86], 22.7 ENE DANZIG [46.27, -99.04], 16.6 ESE ASHLEY [45.96, -99.04], 1.6 WSW ZEELAND [45.96, -99.86]				
	03/06/09 00:00 CST		94K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official
Significant overland flooding damaged county and township roads. One home was flooded. Flooding continued into April.				
MCKENZIE COUNTY --- 5.6 N FAIRVIEW [47.93, -104.01], 5.1 E CHARLSON [48.06, -102.76], 1.6 WSW MANDAREE [47.71, -102.71], 8.3 SE WATFORD CITY [47.71, -103.16], 5.8 ESE GRASSY BUTTE [47.36, -103.14], 33.9 S FAIRVIEW [47.36, -104.01]				

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	03/06/09 00:00 MST		94K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 MST		0	Source: State Official

Overland flooding damaged county and township roads. Several homes were flooded around Watford City as Cherry Creek spilled along with the Little Missouri River.

MCLEAN COUNTY --- 10.8 WNW RAUB [47.83, -102.25], 3.3 W BUTTE [47.83, -100.74], 9.0 S MERCER [47.35, -100.74], 9.9 W FALKIRK [47.35, -101.31], 4.3 SE GARRISON MUNI ARPT [47.59, -101.31], 12.4 SSW RAUB [47.59, -102.17]				
	03/06/09 00:00 CST		0.21M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official

Overland flooding damaged many county and township roads. Thirty five homes were flooded. Flooding continued into April.

MERCER COUNTY --- 14.8 N GOLDEN VLY [47.49, -102.13], 2.1 SSE PICK CITY [47.49, -101.46], 5.6 SW STANTON [47.26, -101.46], 0.8 SW BEULAH [47.26, -101.79], 18.7 S BEULAH [47.00, -101.79], 19.6 S GOLDEN VLY [47.00, -102.13]				
	03/06/09 00:00 MST		0.55M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 MST		0	Source: State Official

Spring Creek and the Knife River flooded due to snow melt and ice jams. The Knife, through Beulah, did significant damage to structures. Overland flooding damaged county and township roads. Fifty five homes were flooded. Flooding continued into April.

MORTON COUNTY --- 10.9 NW MANDAN [46.96, -101.03], 2.8 ESE MANDAN [46.82, -100.84], 6.8 SW FT RICE [46.45, -100.68], 2.4 W FLASHER [46.45, -101.28], 6.2 S JUDSON [46.74, -101.28], 11.3 SSW HEBRON [46.74, -102.08], 4.7 NNW HEBRON [46.97, -102.06]				
	03/06/09 00:00 CST		0.60M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official

Heavy overland flooding from the Heart River damaged state, county, and township roads. Eleven homes were flooded. Ice jams on the Heart contributed to flood severity. The Cannonball River also contributed to overland flooding along the Sioux County line. Flooding continued into April.

MOUNTRAIL COUNTY --- 10.4 N WHITE EARTH [48.53, -102.79], 13.1 NNW TAGUS [48.53, -102.02], 2.1 N WABEK DIFFLEY ARPT [47.88, -101.97], 7.5 SE NEW TOWN [47.89, -102.39], 11.3 SW MANITOU [48.20, -102.78]				
	03/06/09 00:00 CST		0.19M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official

Overland flooding damaged state, county and township roads. No homes were flooded. Flooding continued into April.

OLIVER COUNTY --- 16.5 WNW HANNOVER [47.22, -101.75], 3.1 NNW SANGER [47.22, -101.03], 5.5 S PRICE [47.00, -100.96], 16.8 WSW HANNOVER [47.00, -101.74]				
	03/06/09 00:00 CST		88K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official

Overland flooding damaged state, county and township roads. No homes were flooded. Flooding continued into April.

PIERCE COUNTY --- 1.7 NNW BARTON [48.52, -100.19], 8.3 E WOLFORD [48.52, -99.52], 11.2 SE WOLFORD [48.39, -99.52], 4.8 ENE RUGBY [48.39, -99.88], 1.4 N SELZ [47.87, -99.88], 14.4 W SELZ [47.87, -100.19]				
	03/06/09 00:00 CST		25K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official

Overland flooding damaged county and township roads. No homes were flooded in March. Flooding continued into April.

ROLETTE COUNTY --- 11.9 NNW SAN HAVEN [48.99, -100.13], 5.7 ENE ST JOHN [48.99, -99.57], 5.0 SSE MYLO [48.56, -99.57], 15.2 SW THORNE [48.56, -100.13]				
	03/06/09 00:00 CST		0.11M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official

The upper Willow Creek flooded due to thunderstorms with heavy rain causing snow melt. County and township roads were damaged along with twenty two homes. Flooding continued into April.

SIOUX COUNTY --- 50.0 W SELFRIDGE [45.99, -101.97], 21.8 W SELFRIDGE [45.99, -101.38], 18.3 WSW SOLEN [46.34, -100.89], 9.4 SW SOLEN [46.35, -100.69], 0.6 E FT YATES [46.08, -100.62], 8.8 SSW FT YATES [45.96, -100.69], 50.1 W SELFRIDGE [45.96, -101.97]				
	03/06/09 00:00 MST		0.26M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 MST		0	Source: State Official

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
Cedar Creek and the Cannonball River flooded. Overland flooding damaged state, county and township roads. Two homes were flooded. Flooding continued into April.				
STARK COUNTY --- 6.2 N BELFIELD [46.97, -103.19], 8.8 NNE ANTELOPE [46.97, -102.14], 14.1 SSE ANTELOPE [46.65, -102.14], 15.9 S BELFIELD [46.65, -103.19]				
	03/06/09 00:00 MST		30K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 MST		0	Source: State Official

The Green River and the Heart River flooded. Overland flooding also occurred and damaged county and township roads. Four homes were flooded.

STUTSMAN COUNTY --- 12.6 NNW WOODWORTH [47.31, -99.43], 7.0 NNE COURTENAY [47.31, -98.50], 5.6 SE MONTPELIER [46.64, -98.50], 3.9 W STREETER [46.64, -99.43]				
	03/06/09 00:00 CST		0.27M	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official

Flooding of the James River and Pipestem Creek, along with overland flooding, damaged county and township roads. Several homes were flooded in March. Flooding continued and worsened into April.

WARD COUNTY --- 4.6 W CARPIO [48.45, -101.85], 0.5 W WOLSETH [48.45, -101.13], 13.8 S SAWYER [47.88, -101.04], 6.6 SSW MAKOTI [47.88, -101.85]				
	03/06/09 00:00 CST		50K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official

Overland flooding damaged county and township roads. No homes were flooded in March. Flooding continued into April.

WELLS COUNTY --- 4.6 NW HARVEY ARPT [47.84, -100.01], 6.5 NNE BREMEN [47.84, -99.33], 9.3 SSE SYKESTON [47.34, -99.33], 9.2 SW HURDSFIELD [47.34, -100.01]				
	03/06/09 00:00 CST		50K	Flood (due to Heavy Rain / Snow Melt)
	03/31/09 23:59 CST		0	Source: State Official

Overland flooding damaged county and township roads. No homes were flooded in March. Flooding continued and worsened into April.

This devastating flooding continued into April, and in some cases worsened.

Western and central North Dakota experienced a snowy winter of 2008-2009. Bismarck, for example, had the snowiest December on record, which was also the snowiest month ever on record, with 33.3 inches of snow in December 2008. March 2009 was the fifth snowiest month on record with 29.7 inches. For the entire season Bismarck ended up the second snowiest on record with 100.3 inches. A similar scenario played out all across the west and central parts of North Dakota with locations receiving two to three times the normal snowfall. This set the stage for devastating flooding.

A warm up over the southwest early in March resulted in flooding there. Much more significant and widespread warming came toward the middle of March. It occurred ahead of a storm that brought thunderstorms and heavy rain that resulted in rapid snow melt and ice jams, followed by heavy snow and a blizzard.

For most areas the flooding, some of it river and stream related and some overland flooding away from rivers and streams, was the worst in a dozen years, rivaling and in some cases surpassing that following the winter of 1996-1997. For a few places it was the worst flooding ever. Ice jams, which occur most springs in North Dakota, were more numerous and severe than what would be considered normal.

Losses were tremendous with hundreds of homes flooded, some completely destroyed, and many roads and some bridges washed out. County and township roads, already damaged by the winter plowing of snow, suffered more damage by the flooding. Sections of major state highways were closed due to flooding, including interstate 94.

Agriculture was hard hit. It has been estimated by the Farm Services Agency that because of the flooding over west and central North Dakota, around 1.7 million acres would not be planted in 2009. Using an average value of \$300 an acre, that amounts to a potential loss through non planting of around \$490 million.

The ranching industry was also hard hit. It has been estimated by the Farm Services Administration that the harsh winter, including blizzards, and the flooding, resulted in 78,000 calves being killed, along with 19,100 cows, 180 horses, and 3,000 other farm and ranch animals. It was estimated that this number of beef cows, had they lived to slaughter, could have fed 800,000 people for one year. The cost loss would be around \$50 million. Economic impact to society, impact on communities, uses a multiplier of four to seven times the loss, so \$200 million to \$350 million.

See entries for the month of April as well.

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(ND-Z036) KIDDER, (ND-Z042) GRANT, (ND-Z045) SIOUX, (ND-Z046) EMMONS, (ND-Z047) LOGAN, (ND-Z050) MCINTOSH				
	03/09/09 23:00 CST		0	Heavy Snow
	03/10/09 16:00 CST		0	
(ND-Z025) FOSTER, (ND-Z037) STUTSMAN, (ND-Z048) LA MOURE, (ND-Z051) DICKEY				
	03/10/09 02:00 CST		0	Blizzard
	03/10/09 23:30 CST		0	
<p>An upper level low pressure ejecting into the northern plains resulted in strong synoptic scale and frontogenetical forcing coinciding over far southwest and south central North Dakota, from the 9th through the 10th. A band of moderate to heavy snow developed and persisted until slowly abating from west to east.</p> <p>The moderate to heavy snow combined with gusty northerly winds resulted in road closures and the issuance of no travel advisories by local officials. Many school were closed.</p>				
WARD COUNTY --- (MIB)MINOT AFB [48.43, -101.37]				
	03/22/09 08:36 CST		0	Thunderstorm Wind (MG 52 kt)
	03/22/09 08:41 CST		0	Source: ASOS
<p>The Automated Surface Observing System at the Minot Air Force Base measured this thunderstorm wind gust.</p>				
MCHENRY COUNTY --- DEERING [48.40, -101.05]				
	03/22/09 09:05 CST		0	Thunderstorm Wind (EG 52 kt)
	03/22/09 09:07 CST		0	Source: Public
BURLEIGH COUNTY --- 2.0 E MOFFIT [46.68, -100.24]				
	03/22/09 10:35 CST		0	Thunderstorm Wind (MG 58 kt)
	03/22/09 10:40 CST		0	Source: Mesonet
<p>This thunderstorm wind gust was measured at the Long Lake National Wildlife Refuge.</p>				
DICKEY COUNTY --- OAKES [46.13, -98.08], 5.0 N ELLENDALE [46.07, -98.52], 10.0 NE MONANGO [46.27, -98.43], 10.0 NE FULLERTON [46.27, -98.27]				
	03/22/09 14:30 CST		15K	Flash Flood (due to Heavy Rain / Snow Melt)
	03/22/09 18:00 CST		0	Source: Emergency Manager
<p>Minor damage occurred to county roads due to the flash flooding. Action by county crews kept flash flood waters away from a few homes that were threatened.</p>				
LA MOURE COUNTY --- LA MOURE [46.35, -98.30], 6.0 N EDGELEY [46.46, -98.70], 5.0 S EDGELEY [46.30, -98.70], 3.0 S LA MOURE [46.31, -98.30]				
	03/22/09 15:00 CST		5K	Flash Flood (due to Heavy Rain / Snow Melt)
	03/22/09 19:00 CST		0	Source: Emergency Manager
<p>Minor damage occurred to some gravel county roads due to the flash flooding. There were no reports of homes being flooded.</p>				
(ND-Z003) RENVILLE, (ND-Z004) BOTTINEAU, (ND-Z005) ROLETTE, (ND-Z010) MOUNTRAIL, (ND-Z011) WARD, (ND-Z012) MCHENRY, (ND-Z013) PIERCE, (ND-Z018) DUNN, (ND-Z019) MERCER, (ND-Z020) OLIVER, (ND-Z021) MCLEAN, (ND-Z022) SHERIDAN, (ND-Z023) WELLS, (ND-Z031) GOLDEN VALLEY, (ND-Z032) BILLINGS, (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				
	03/23/09 07:00 CST		0	Blizzard
	03/24/09 18:00 CST		0	
(ND-Z025) FOSTER, (ND-Z037) STUTSMAN, (ND-Z047) LOGAN, (ND-Z050) MCINTOSH				
	03/24/09 03:00 CST		0	Winter Storm
	03/24/09 18:00 CST		0	
BURLEIGH COUNTY --- 1.6 SSW BISMARCK [46.78, -100.78], 1.1 W (BIS)BISMARCK MUNI A [46.78, -100.77], 0.7 SSW BISMARCK [46.79, -100.77], 0.9 SW BISMARCK [46.79, -100.78]				
	03/25/09 08:20 CST		20K	Flash Flood (due to Ice Jam)
	03/25/09 10:30 CST		0	Source: Emergency Manager

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An ice jam on the Missouri River at Bismarck, and recent melting snow, caused a drainage canal to back up and overflow into south Bismarck. This occurred in the vicinity of University Drive and Wachter Avenue, and for several blocks around there. Damage was mostly confined to a mobile home park, which was lower in elevation than the surrounding terrain. The homes were elevated within the park and so damage was minimal. Bismarck city crews took action that resulted in the flood waters receding.

A significant low pressure system developed in the lee of the Rocky Mountains over Colorado and Wyoming Sunday, March 22nd, strengthening and ejecting northeast into the upper Midwest by Tuesday, March 24th. Strong southerly flow ahead of this storm system brought ample Gulf of Mexico moisture all the way into southern Canada, setting the stage for significant precipitation accumulations across the region. Winter storm and blizzard watches and warnings were posted well in advance of the storm. Warning lead time averaged nearly 25 hours.

Precipitation started in the form of rain and thunderstorms Sunday into Monday morning, before changing over to all snow west to east Monday afternoon through Tuesday morning. Additionally, strong northwest winds of 20 to 45 mph accompanying the snow, produced widespread blizzard conditions west during the day on Monday, then across central North Dakota Monday evening and into Tuesday morning. Further east, around the James River Basin area, winter storm warnings were in effect due to a wintry mix of rain, snow, and sleet and for lighter snow accumulations.

Blizzard conditions continued across much of southwestern and central North Dakota on Tuesday, with conditions then gradually improving Tuesday night as the snow ended and the winds subsided. Storm total snow amounts ranged from 12 to 22.5 inches across southwest North Dakota, to five to 11 inches central. No travel advisories, road closures, power outages, and school and business closures were common during this significant spring storm.

(ND-Z031) GOLDEN VALLEY, (ND-Z032) BILLINGS, (ND-Z033) STARK, (ND-Z034) MORTON, (ND-Z035) BURLEIGH, (ND-Z036) KIDDER, (ND-Z037) STUTSMAN, (ND-Z040) SLOPE, (ND-Z041) HETTINGER, (ND-Z042) GRANT, (ND-Z043) BOWMAN, (ND-Z044) ADAMS, (ND-Z045) SIOUX, (ND-Z046) EMMONS, (ND-Z047) LOGAN, (ND-Z048) LA MOURE, (ND-Z050) MCINTOSH, (ND-Z051) DICKEY

03/29/09 12:00 CST	0	Blizzard
03/31/09 10:00 CST	0	

(ND-Z020) OLIVER, (ND-Z025) FOSTER, (ND-Z033) STARK, (ND-Z034) MORTON, (ND-Z035) BURLEIGH, (ND-Z036) KIDDER, (ND-Z037) STUTSMAN, (ND-Z047) LOGAN, (ND-Z048) LA MOURE, (ND-Z050) MCINTOSH, (ND-Z051) DICKEY

03/30/09 00:00 CST	0	Heavy Snow
03/31/09 23:45 CST	0	

A significant and complex spring storm impacted southwest and south central North Dakota beginning Sunday, March 29th, and lasting into Tuesday, March 31st. Winter storm warnings and blizzard warnings were posted well in advance of the storm. Warning lead time averaged around 18 hours.

Surface low pressure developed across the central Rockies early on Sunday, then moved into the central plains Monday into Tuesday. As this occurred, a band of moderate to heavy snow developed over southwestern North Dakota early Sunday afternoon, spreading into the south central later Sunday afternoon and evening where strong frontogenetical forcing coincided with large scale ascent ahead of the parent upper level low. This area of forcing remained quasi-stationary along the Interstate 94 corridor from Dickinson to just east of Bismarck, where snowfall rates early Monday morning ranged from one to two inches per hour. Snow gradually ended across the southwest Monday night, but continued well into Tuesday over the south central.

Additionally, strong northwest winds of 20 to 45 mph accompanied the snow and produced widespread blizzard conditions mainly south of Interstate 94 closer to the North Dakota and South Dakota border.

Widespread 14 inch or greater storm total snowfall amounts were common across southwest and south central North Dakota during this event, with a few isolated reports greater than 20 inches. No travel advisories, road closures, including Interstate 94 from Bismarck to the Montana border, and school and business closures were common during this significant spring storm.