

Storm Data and Unusual Weather Phenomena - January 2014

| Location | Date/Time | Deaths & Injuries | Property & Crop Dmg | Event Type and Details |
|----------|-----------|-------------------|---------------------|------------------------|
|----------|-----------|-------------------|---------------------|------------------------|

NORTH DAKOTA, Central and West

(ND-Z002) BURKE, (ND-Z003) RENVILLE, (ND-Z004) BOTTINEAU, (ND-Z005) ROLETTE, (ND-Z010) MOUNTRAIL, (ND-Z011) WARD, (ND-Z012) MCHENRY, (ND-Z013) PIERCE, (ND-Z022) SHERIDAN, (ND-Z023) WELLS, (ND-Z025) FOSTER, (ND-Z031) GOLDEN VALLEY, (ND-Z032) BILLINGS, (ND-Z037) STUTSMAN, (ND-Z040) SLOPE, (ND-Z041) HETTINGER, (ND-Z043) BOWMAN, (ND-Z044) ADAMS

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|--------------------|--|---|--|----------|
| 01/03/14 15:00 CST | | 0 | | Blizzard |
| 01/04/14 02:00 CST | | 0 | | |

A strong Alberta Clipper brought strong winds, mixed precipitation, and colder air to the Northern Plains January 3rd and 4th.

Warm air spreading east ahead of the storm during the morning of the 3rd brought mainly freezing rain across much of western and central North Dakota. The freezing rain acted to harden the existing loose snow cover, and prevented blizzard conditions from occurring over a much larger area than what actually took place. Once colder air was pulled into the region precipitation changed to all snow.

While snow was limited to no more than two inches, where the snow did fall it combined with winds in excess of 40 miles per hour to result in blizzard conditions. Locations impacted included southwestern North Dakota, north central North Dakota along and north of Highway 2, and the northern James River Valley.

(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-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

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|--------------------|--|---|--|-------------------------|
| 01/04/14 04:00 CST | | 0 | | Extreme Cold/Wind Chill |
| 01/06/14 19:00 CST | | 0 | | |

Subzero temperatures as cold as 25 below zero combined with winds gusting to around 30 miles per hour to produce life threatening wind chill temperatures colder than 40 below zero for a period of three days. Lowest wind chills observed were as cold as 62 below zero.

(ND-Z040) SLOPE, (ND-Z041) HETTINGER, (ND-Z043) BOWMAN, (ND-Z044) ADAMS

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|--------------------|--|---|--|-----------------------|
| 01/13/14 20:00 CST | | 0 | | High Wind (MAX 35 kt) |
| 01/13/14 23:00 CST | | 0 | | |

Strong low pressure moving through the Northern Plains brought high winds to southwestern North Dakota during the evening of the 13th. Strong low level adiabatic lapse rates coupled with unidirectional winds enhanced the high winds, with several reporting sites observing sustained winds of 40 miles per hour.

(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-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, (ND-Z047) LOGAN, (ND-Z050) MCINTOSH

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|--------------------|--|---|--|-----------------------|
| 01/15/14 20:00 CST | | 0 | | High Wind (MAX 65 kt) |
| 01/16/14 15:00 CST | | 0 | | |

Deep low pressure moving from south central Canada into North Dakota brought a prolonged period of high winds across the entire region. Peak wind gusts as high as 75 miles per hour were recorded, with many locations gusting in excess of 60 miles per hour. Blizzard conditions were common over eastern North Dakota, including the James River Valley.

Brief power outages accompanied the high winds.

(ND-Z025) FOSTER, (ND-Z037) STUTSMAN, (ND-Z048) LA MOURE, (ND-Z051) DICKEY

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|--------------------|--|---|--|----------|
| 01/15/14 22:00 CST | | 0 | | Blizzard |
| 01/16/14 14:00 CST | | 0 | | |

A strong Alberta Clipper brought high winds across the Northern Plains, along with accumulating snow to eastern North Dakota.

Northwest winds gusting to over 70 miles per hour combined with the falling snow to create a blizzard across eastern North Dakota, including the James River Valley. Numerous no travel advisories were posted by transportation officials.

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|--|--------------------|----------------------|------------------------|------------------------|
| (ND-Z018) DUNN, (ND-Z031) GOLDEN VALLEY, (ND-Z032) BILLINGS, (ND-Z033) STARK, (ND-Z034) MORTON, (ND-Z040) SLOPE, (ND-Z041) HETTINGER, (ND-Z043) BOWMAN, (ND-Z044) ADAMS | | | | |
| | 01/20/14 05:00 CST | | 0 | High Wind (MAX 56 kt) |
| | 01/20/14 11:00 CST | | 0 | |

Strong three hour pressure rises to around 10 millibars moved southward across western North Dakota during the morning of the 20th behind a strong Arctic cold front. As the pressure rise bubble moved over the higher terrain of southwestern North Dakota, the strong winds aloft were able to reach the surface, with some reports of winds nearing 65 miles per hour.

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| (ND-Z001) DIVIDE, (ND-Z002) BURKE, (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-Z025) FOSTER, (ND-Z033) STARK, (ND-Z034) MORTON, (ND-Z035) BURLEIGH, (ND-Z036) KIDDER, (ND-Z037) STUTSMAN, (ND-Z042) GRANT, (ND-Z045) SIOUX, (ND-Z046) EMMONS, (ND-Z047) LOGAN, (ND-Z048) LA MOURE, (ND-Z050) MCINTOSH, (ND-Z051) DICKEY | | | | |
| | 01/22/14 21:00 CST | | 0 | Extreme Cold/Wind Chill |
| | 01/23/14 09:00 CST | | 0 | |

Wind speeds of 10 to 20 miles per hour combined with subzero temperatures to produce wind chill temperatures as low as 45 below zero during the evening of the 22nd and early morning of the 23rd.

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| (ND-Z031) GOLDEN VALLEY, (ND-Z032) BILLINGS, (ND-Z033) STARK, (ND-Z040) SLOPE, (ND-Z041) HETTINGER, (ND-Z042) GRANT, (ND-Z043) BOWMAN, (ND-Z044) ADAMS, (ND-Z045) SIOUX | | | | |
| | 01/25/14 22:00 CST | | 0 | High Wind (MAX 55 kt) |
| | 01/26/14 17:00 CST | | 0 | |

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|--|--------------------|--|---|----------|
| (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-Z034) MORTON, (ND-Z035) BURLEIGH, (ND-Z036) KIDDER, (ND-Z037) STUTSMAN, (ND-Z046) EMMONS, (ND-Z047) LOGAN, (ND-Z048) LA MOURE, (ND-Z050) MCINTOSH, (ND-Z051) DICKEY | | | | |
| | 01/26/14 04:00 CST | | 0 | Blizzard |
| | 01/26/14 20:00 CST | | 0 | |

A baroclinic zone over western North Dakota moved slowly east across the state during the day on the 25th. Coupled with a mid level shortwave trough up to three inches of snow fell over the area through the early evening. Gusty west to northwest winds developed during the evening hours of the 25th behind the front as it continued south and east. A secondary and much stronger cold front moved in during the morning hours of the 26th. Additional light snow and high winds over 50 miles per hour accompanied the front, with strong winds continuing through the afternoon. A peak wind gust of 68 miles per hour was reported near Crosby, Divide County.

Blizzard conditions on the 26th were common where snow accumulated during the day on the 25th, and where additional snow fell during the morning of the 26th. Interstate 94 was closed from Bismarck to Fargo, and Highway 83 was closed from Bismarck to Minot due to zero visibilities and numerous accidents. All of northwest, central, and eastern North Dakota were under no travel advisories that were posted by transportation officials. While very little snow fall across the southwest, winds were still high, gusting to around 60 miles per hour.

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|--|--------------------|--|---|-------------------------|
| (ND-Z001) DIVIDE, (ND-Z002) BURKE, (ND-Z003) RENVILLE, (ND-Z004) BOTTINEAU, (ND-Z005) ROLETTE, (ND-Z010) MOUNTRAIL, (ND-Z011) WARD, (ND-Z012) MCHENRY, (ND-Z013) PIERCE, (ND-Z021) MCLEAN, (ND-Z022) SHERIDAN, (ND-Z023) WELLS, (ND-Z025) FOSTER, (ND-Z036) KIDDER, (ND-Z037) STUTSMAN, (ND-Z047) LOGAN, (ND-Z048) LA MOURE, (ND-Z050) MCINTOSH, (ND-Z051) DICKEY | | | | |
| | 01/26/14 22:00 CST | | 0 | Extreme Cold/Wind Chill |
| | 01/28/14 09:00 CST | | 0 | |

Subzero temperatures as low as 15 below zero combined with winds up to 20 miles per hour to produce life threatening wind chill temperatures as low as 45 below zero over a three day period.