

Storm Data and Unusual Weather Phenomena - April 2010

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

NORTH DAKOTA, Central and West

(ND-Z012) MCHENRY, (ND-Z019) MERCER, (ND-Z023) WELLS, (ND-Z036) KIDDER, (ND-Z046) EMMONS

| | | | | |
|--|--------------------|--|-------|----------------|
| | 04/02/10 04:00 CST | | 0.12M | Winter Weather |
| | 04/02/10 17:00 CST | | 0 | |

(ND-Z020) OLIVER, (ND-Z021) MCLEAN, (ND-Z022) SHERIDAN, (ND-Z034) MORTON, (ND-Z035) BURLEIGH, (ND-Z042) GRANT, (ND-Z045) SIOUX

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|--|--------------------|--|-----|--------------|
| | 04/02/10 04:00 CST | | 36M | Winter Storm |
| | 04/02/10 17:00 CST | | 0 | |

A significant and damaging early spring storm severely impacted much of south central North Dakota on Good Friday, April 2nd. Widespread damages to electrical utilities and nearly impossible travel conditions were common.

A strong mid level disturbance and area of surface low pressure, embedded within an eastward advecting long wave trough, lifted northeast through the central Rockies April 1st and into the Upper Mississippi Valley April 2nd. Well above freezing temperatures ahead of the main storm resulted in precipitation beginning as all rain Thursday, April 1st. Due to the strength of the mid level low and steep mid level lapse rates, convective precipitation bands and scattered thunderstorms developed late Thursday night into early Friday across south central North Dakota, dramatically increasing the dynamic cooling of the atmosphere. This dynamic cooling, combined with strong cold air advection on the back side of the surface low, resulted in the moderate to heavy rain bands across the south central to eventually change over to a mix of sleet and heavy wet snow by daybreak Friday morning. Moderate to heavy snow and sleet then continued into early Friday afternoon before gradually changing back over to rain and dissipating by Friday evening. In addition, wind gusts to near 40 mph developed Friday morning and continued through much of the day as the surface low tightened the pressure gradient across the region.

A band of six to twelve inches of heavy wet snow fell from Grant and Morton counties through parts of Burleigh, McLean, and Sheridan counties. Snowfall amounts quickly dropped off west, north, and east of this area. Numerous road closures and no travel advisories were issued by county and state officials due to several inches of snow and slush coating roads.

Most significant was the widespread utility damage that occurred, resulting in massive power outages to thousands of customers. The combination of heavy wet snow sticking to power lines and poles and the strong winds, resulted in thousands of power poles and hundreds of high voltage transmission towers collapsing. Preliminary damage assessments from this storm exceeded thirty-five million dollars.

(ND-Z018) DUNN, (ND-Z031) GOLDEN VALLEY, (ND-Z032) BILLINGS, (ND-Z033) STARK, (ND-Z040) SLOPE, (ND-Z041) HETTINGER, (ND-Z043) BOWMAN, (ND-Z044) ADAMS

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|--|--------------------|--|---|-----------------------|
| | 04/08/10 23:00 CST | | 0 | High Wind (MAX 51 kt) |
| | 04/09/10 00:00 CST | | 0 | |

Strong pressure rises moving into western North Dakota resulted in short-lived and isolated wind gusts to near 60 mph during the late evening hours of Thursday, April 8th, through the early morning hours of Friday, April 9th.

MCINTOSH COUNTY --- 5.7 WSW VENTURA [45.97, -99.66]

| | | | | |
|--|--------------------|--|---|----------------|
| | 04/12/10 08:55 CST | | 0 | Hail (1.50 in) |
| | 04/12/10 09:10 CST | | 0 | Source: Public |

MCINTOSH COUNTY --- 10.1 E ASHLEY [46.03, -99.16]

| | | | | |
|--|--------------------|--|---|-------------------------|
| | 04/12/10 09:55 CST | | 0 | Hail (1.00 in) |
| | 04/12/10 10:01 CST | | 0 | Source: Trained Spotter |

DICKEY COUNTY --- 3.9 E FORBES [45.94, -98.70]

| | | | | |
|--|--------------------|--|---|---------------------------|
| | 04/12/10 11:10 CST | | 0 | Hail (1.00 in) |
| | 04/12/10 11:14 CST | | 0 | Source: Emergency Manager |

Thunderstorms developed during the mid morning hours of April 12th across portions of south central North Dakota in response to an approaching short wave trough and isentropic ascent ahead of a warm front draped across northern South Dakota. Three reports of large hail were received from the mid morning through the early afternoon.

WARD COUNTY --- 7.3 SW MINOT [48.16, -101.40]

| | | | | |
|--|--------------------|--|---|-------------------------|
| | 04/13/10 00:10 CST | | 0 | Hail (1.50 in) |
| | 04/13/10 00:20 CST | | 0 | Source: Trained Spotter |

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| WARD COUNTY --- 0.5 W BURLINGTON [48.28, -101.43] | | | | |
| | 04/13/10 00:32 CST | | 0 | Hail (0.75 in) |
| | 04/13/10 00:37 CST | | 0 | Source: Public |
| BOTTINEAU COUNTY --- 3.7 E KRAMER [48.69, -100.62] | | | | |
| | 04/13/10 01:56 CST | | 0 | Hail (0.88 in) |
| | 04/13/10 01:59 CST | | 0 | Source: Public |
| Nocturnal thunderstorms associated with steep mid level lapse rates and increasing boundary layer moisture developed across portions of north central North Dakota during the early morning hours of the 13th. Three reports of large hail were received. | | | | |
| MCHEMRY COUNTY --- 4.2 S BERGEN [47.94, -100.72] | | | | |
| | 04/13/10 10:00 CST | | 0 | Hail (1.00 in) |
| | 04/13/10 10:05 CST | | 0 | Source: Public |
| DUNN COUNTY --- 1.4 W HALLIDAY [47.35, -102.36] | | | | |
| | 04/13/10 13:15 MST | | 15K | Thunderstorm Wind (EG 52 kt) |
| | 04/13/10 13:23 MST | | 0 | Source: COOP Observer |
| Tree damage from thunderstorm winds was reported near Halliday. | | | | |
| MORTON COUNTY --- 6.8 ENE SWEET BRIAR [46.86, -101.04] | | | | |
| | 04/13/10 16:00 CST | | 25K | Thunderstorm Wind (EG 52 kt) |
| | 04/13/10 16:15 CST | | 0 | Source: Newspaper |
| High winds from thunderstorms toppled two tandem trailers on a semi along Interstate 94 west of Mandan. The location and time are estimated. | | | | |
| MORTON COUNTY --- MANDAN [46.83, -100.90] | | | | |
| | 04/13/10 16:00 CST | | 25K | Thunderstorm Wind (EG 52 kt) |
| | 04/13/10 16:15 CST | 1 | 0 | Source: Newspaper |
| High winds from thunderstorms caused a large tree to fall on a mobile home in Mandan. One person in the home received minor injuries. Time is estimated. | | | | |
| In the early afternoon hours of April 13th, Severe Thunderstorm Watch 70 was issued for portions of western and central North Dakota in anticipation of severe thunderstorms developing downstream of a strong upper level trough, and in the vicinity of an eastward moving cold front. Due mainly to relatively low instability parameters, only marginal severe thunderstorms developed. One report of large hail and three reports of severe thunderstorm winds were received. | | | | |
| (ND-Z048) LA MOURE | | | | |
| | 04/28/10 15:39 CST | | 30K | High Wind (MAX 55 kt) |
| | 04/28/10 15:47 CST | | 0 | |
| Areas of showers allowed an isolated damaging wind gust to reach the surface over LaMoure County in southeast North Dakota. A strong synoptic low pressure system produced wind advisory criteria winds further west across central portions of the state. | | | | |
| MCINTOSH COUNTY --- ASHLEY [46.03, -99.37] | | | | |
| | 04/30/10 13:25 CST | | 0 | Hail (1.00 in) |
| | 04/30/10 13:33 CST | | 0 | Source: Emergency Manager |
| MCINTOSH COUNTY --- 3.9 E WISHEK [46.26, -99.47] | | | | |
| | 04/30/10 13:30 CST | | 0 | Hail (0.88 in) |
| | 04/30/10 13:38 CST | | 0 | Source: Law Enforcement |
| MCINTOSH COUNTY --- 7.3 NE ASHLEY [46.11, -99.27] | | | | |
| | 04/30/10 13:55 CST | | 0 | Hail (0.75 in) |
| | 04/30/10 14:03 CST | | 0 | Source: COOP Observer |

An isolated severe thunderstorm moving across south central North Dakota resulted in three large hail reports over McIntosh County.