

## Storm Data and Unusual Weather Phenomena - July 2023

| Location   | Date/Time          | Deaths &<br>Injuries | Property &<br>Crop Dmg | Event Type and Details               |
|--|--------------------|----------------------|------------------------|--------------------------------------|
| <b>NORTH DAKOTA, Central and West</b>  |                    |                      |                        |                                      |
| <b>RENVILLE COUNTY --- 12.2 SSW GRANO [48.47, -101.72]</b>   |                    |                      |                        |                                      |
|  | 07/01/23 18:30 CST | 0                    |                        | Thunderstorm Wind (EG 52 kt)         |
|  | 07/01/23 18:33 CST | 0                    | 20K                    | Source: Trained Spotter              |
| Wind combined with small hail to damage some crops.  |                    |                      |                        |                                      |
| <b>RENVILLE COUNTY --- 12.8 SSW GRANO [48.46, -101.72]</b>   |                    |                      |                        |                                      |
|  | 07/01/23 18:32 CST | 0                    |                        | Hail (1.00 in)                       |
|  | 07/01/23 18:36 CST | 0                    |                        | Source: Public                       |
| <b>BOTTINEAU COUNTY --- 5.3 NNW BOTTINEAU [48.90, -100.48]</b>   |                    |                      |                        |                                      |
|  | 07/01/23 21:07 CST | 0                    |                        | Hail (1.00 in)                       |
|  | 07/01/23 21:15 CST | 0                    |                        | Source: Trained Spotter              |
| <b>BOTTINEAU COUNTY --- 3.1 ESE BOTTINEAU ARPT [48.81, -100.36]</b>  |                    |                      |                        |                                      |
|  | 07/01/23 21:30 CST | 0                    |                        | Hail (1.00 in)                       |
|  | 07/01/23 21:33 CST | 0                    |                        | Source: Trained Spotter              |
| <b>BOTTINEAU COUNTY --- 3.6 E BOTTINEAU ARPT [48.83, -100.34]</b>  |                    |                      |                        |                                      |
|  | 07/01/23 21:32 CST | 0                    |                        | Hail (1.00 in)                       |
|  | 07/01/23 21:35 CST | 0                    |                        | Source: Public                       |
| Thunderstorms formed along a surface boundary in an unstable environment over northwest North Dakota and became severe as they moved through Renville and Bottineau counties. There were reports of one-inch diameter hail. There was also one report of 60 mph wind gusts in Renville County. |                    |                      |                        |                                      |
| <b>MCINTOSH COUNTY --- 22.3 NE ASHLEY [46.25, -99.03]</b>  |                    |                      |                        |                                      |
|  | 07/07/23 12:27 CST | 0                    |                        | Hail (1.00 in)                       |
|  | 07/07/23 12:29 CST | 0                    |                        | Source: Public                       |
| <b>MCINTOSH COUNTY --- 22.3 NE ASHLEY [46.25, -99.03], 22.2 NE ASHLEY [46.25, -99.03]</b>  |                    |                      |                        |                                      |
|  | 07/07/23 12:30 CST | 0                    |                        | Tornado (EFU, L: 0.17 mi , W: 40 yd) |
|  | 07/07/23 12:31 CST | 0                    |                        | Source: Public                       |
| The tornado touched down in an open field southwest of Kulm and impacted no structures. There was no damage to evaluate. By National Weather Service policy the tornado is rated EF Unknown.   |                    |                      |                        |                                      |
| <b>LA MOURE COUNTY --- 7.4 SE MARION [46.54, -98.20], 7.7 SE MARION [46.54, -98.20]</b>  |                    |                      |                        |                                      |
|  | 07/07/23 12:37 CST | 0                    |                        | Tornado (EFU, L: 0.23 mi , W: 40 yd) |
|  | 07/07/23 12:39 CST | 0                    |                        | Source: Public                       |
| The tornado touched down in an open field southeast of Marion and impacted no structures. There was no damage to evaluate. By National Weather Service policy the tornado is rated EF Unknown.   |                    |                      |                        |                                      |
| <b>LA MOURE COUNTY --- 4.8 N VERONA [46.44, -98.07], 4.6 N VERONA [46.44, -98.07]</b>  |                    |                      |                        |                                      |
|  | 07/07/23 13:00 CST | 0                    |                        | Tornado (EFU, L: 0.27 mi , W: 50 yd) |
|  | 07/07/23 13:02 CST | 0                    |                        | Source: Law Enforcement              |
| The tornado touched down in an open field north of Verona and impacted no structures. There was no damage to evaluate. By National Weather Service policy the tornado is rated EF Unknown.   |                    |                      |                        |                                      |
| <b>MCINTOSH COUNTY --- 7.7 E ASHLEY [46.02, -99.21]</b>  |                    |                      |                        |                                      |
|  | 07/07/23 13:39 CST | 0                    |                        | Hail (0.75 in)                       |
|  | 07/07/23 13:41 CST | 0                    |                        | Source: Trained Spotter              |

A slow moving cold front dropped through south central North Dakota and the James River Valley during the afternoon hours. Strong low level instability combined with converging winds along the frontal boundary resulting in multiple landspout tornadoes developing. All three of the reported tornadoes touched down in open fields and impacted no structures, thus there was no damage to evaluate.

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|----------|-----------|-------------------|---------------------|------------------------|
|----------|-----------|-------------------|---------------------|------------------------|

Therefore, by National Weather Service policy, all the landspout tornadoes were rated EF Unknown. In addition to the tornadoes, there were two reports of hail. The largest hail reported was one-inch in diameter and fell in McIntosh County.

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**SLOPE COUNTY --- 2.3 NNW MARMARTH [46.33, -103.92]**

|                    |  |   |  |                              |
|--------------------|--|---|--|------------------------------|
| 07/11/23 17:26 MST |  | 0 |  | Thunderstorm Wind (MG 57 kt) |
| 07/11/23 17:28 MST |  | 0 |  | Source: Mesonet              |

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**BOWMAN COUNTY --- 6.3 WNW RHAME [46.28, -103.76]**

|                    |  |   |  |                |
|--------------------|--|---|--|----------------|
| 07/11/23 17:37 MST |  | 0 |  | Hail (1.75 in) |
| 07/11/23 17:40 MST |  | 0 |  | Source: Public |

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**BOWMAN COUNTY --- 0.5 W RHAME [46.23, -103.66]**

|                    |  |   |  |                |
|--------------------|--|---|--|----------------|
| 07/11/23 17:47 MST |  | 0 |  | Hail (1.00 in) |
| 07/11/23 17:50 MST |  | 0 |  | Source: Public |

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**ADAMS COUNTY --- 16.6 ENE HAYNES [46.10, -102.18]**

|                    |  |   |  |                         |
|--------------------|--|---|--|-------------------------|
| 07/11/23 18:15 MST |  | 0 |  | Hail (1.50 in)          |
| 07/11/23 18:21 MST |  | 0 |  | Source: Trained Spotter |

Thunderstorms developed over southwest and west-central North Dakota after skies cleared and instability increased in an atmosphere with elevated deep layer shear. Some of the storms became severe over southwest North Dakota. The strongest wind gust report of 66 mph occurred near Marmarth in Slope County, and the largest hail size report of 1.75 inches in diameter was near Rhame in Bowman County.

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**WELLS COUNTY --- 3.1 NW FESSENDEN [47.68, -99.67]**

|                    |  |   |  |                         |
|--------------------|--|---|--|-------------------------|
| 07/18/23 19:10 CST |  | 0 |  | Hail (1.00 in)          |
| 07/18/23 19:12 CST |  | 0 |  | Source: Broadcast Media |

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**WELLS COUNTY --- 0.7 S SYKESTON [47.46, -99.38]**

|                    |  |   |  |                      |
|--------------------|--|---|--|----------------------|
| 07/18/23 19:50 CST |  | 0 |  | Funnel Cloud         |
| 07/18/23 19:51 CST |  | 0 |  | Source: Storm Chaser |

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**FOSTER COUNTY --- 3.9 SSE CARRINGTON [47.40, -99.09]**

|                    |  |   |  |                |
|--------------------|--|---|--|----------------|
| 07/18/23 20:17 CST |  | 0 |  | Hail (0.88 in) |
| 07/18/23 20:21 CST |  | 0 |  | Source: Public |

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**MCINTOSH COUNTY --- 4.3 NE ASHLEY [46.07, -99.30]**

|                    |  |   |  |                         |
|--------------------|--|---|--|-------------------------|
| 07/18/23 21:40 CST |  | 0 |  | Hail (1.00 in)          |
| 07/18/23 21:42 CST |  | 0 |  | Source: Trained Spotter |

Thunderstorms developed during the evening hours ahead of an advancing surface trough where ample moisture was present. Two storms became severe, producing one-inch diameter hail. In addition, one storm produced a funnel cloud in southeastern Wells County.

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**MCKENZIE COUNTY --- 19.2 SSW EAST FAIRVIEW [47.58, -103.92]**

|                    |  |   |  |                         |
|--------------------|--|---|--|-------------------------|
| 07/22/23 23:46 MST |  | 0 |  | Hail (0.88 in)          |
| 07/22/23 23:48 MST |  | 0 |  | Source: Trained Spotter |

Thunderstorms developed over the area, with one storm producing nickel size hail in McKenzie County.

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**MORTON COUNTY --- 3.2 WNW BREIEN [46.40, -100.99]**

|                    |  |   |  |                |
|--------------------|--|---|--|----------------|
| 07/26/23 15:53 CST |  | 0 |  | Hail (1.50 in) |
| 07/26/23 15:55 CST |  | 0 |  | Source: Public |

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**MORTON COUNTY --- 3.2 WNW BREIEN [46.40, -100.99]**

|                    |  |       |  |                              |
|--------------------|--|-------|--|------------------------------|
| 07/26/23 15:53 CST |  | 0.15M |  | Thunderstorm Wind (EG 78 kt) |
| 07/26/23 15:59 CST |  | 0     |  | Source: Public               |

A roof was torn off a barn and a window was blown into the house. A metal horse cultivator was tossed, and fresh hay bales were rolled.

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**MORTON COUNTY --- 2.9 WNW BREIEN [46.39, -100.99]**

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|--|--------------------|-------------------|---------------------|------------------------------|
|  | 07/26/23 15:54 CST |                   | 0                   | Hail (1.00 in)               |
|  | 07/26/23 15:59 CST |                   | 0                   | Source: Public               |
| <hr/>  |                    |                   |                     |                              |
| <b>MORTON COUNTY --- 4.8 W BREIEN [46.38, -101.03]</b>   |                    |                   |                     |                              |
|  | 07/26/23 15:54 CST |                   | 0.10M               | Thunderstorm Wind (EG 52 kt) |
|  | 07/26/23 15:58 CST |                   | 50K                 | Source: Public               |
| <hr/>  |                    |                   |                     |                              |
| The thunderstorm winds combined with hail to flatten two-thirds of a wheat field and to severely damage a sunflower field.   |                    |                   |                     |                              |
| <hr/>  |                    |                   |                     |                              |
| <b>MORTON COUNTY --- 0.7 N FT RICE [46.53, -100.58]</b>  |                    |                   |                     |                              |
|  | 07/26/23 16:30 CST |                   | 0                   | Hail (0.75 in)               |
|  | 07/26/23 16:33 CST |                   | 0                   | Source: Broadcast Media      |
| <hr/>  |                    |                   |                     |                              |
| <b>BURLEIGH COUNTY --- 0.5 W MOFFIT [46.68, -100.29]</b>   |                    |                   |                     |                              |
|  | 07/26/23 16:50 CST |                   | 0                   | Hail (1.00 in)               |
|  | 07/26/23 16:53 CST |                   | 0                   | Source: Public               |
| <hr/>  |                    |                   |                     |                              |
| <b>BURLEIGH COUNTY --- 0.5 W MOFFIT [46.68, -100.29]</b>   |                    |                   |                     |                              |
|  | 07/26/23 16:50 CST |                   | 0                   | Thunderstorm Wind (EG 52 kt) |
|  | 07/26/23 16:53 CST |                   | 0                   | Source: Public               |
| <hr/>  |                    |                   |                     |                              |
| The public estimated thunderstorm winds of 60 mph.   |                    |                   |                     |                              |
| <hr/>  |                    |                   |                     |                              |
| <b>KIDDER COUNTY --- 0.8 NW STEELE [46.86, -99.91]</b>   |                    |                   |                     |                              |
|  | 07/26/23 17:15 CST |                   | 0.10M               | Thunderstorm Wind (EG 78 kt) |
|  | 07/26/23 17:25 CST |                   | 0                   | Source: Trained Spotter      |
| <hr/>  |                    |                   |                     |                              |
| Multiple large trees branches were down throughout the community of Steele, with three trees uprooted. Some of the branches were large enough to block roads. Power was also out throughout the town.  |                    |                   |                     |                              |
| <hr/>  |                    |                   |                     |                              |
| Thunderstorms developed in an environment of strong instability ahead of an advancing cold front. One storm split, and the left moving cell from this split produced very strong winds estimated at 90 mph resulting in damage through south central North Dakota. A farm in far southeastern Morton County near Breien sustained heavy damage, especially to the barn. The storm then continued to the northeast and passed through Steele, where multiple trees were blown over and many large tree limbs were broken. |                    |                   |                     |                              |
| <hr/>  |                    |                   |                     |                              |
| <b>GOLDEN VALLEY COUNTY --- 6.4 NE SENTINEL BUTTE [46.99, -103.74]</b>   |                    |                   |                     |                              |
|  | 07/29/23 17:30 MST |                   | 0                   | Hail (1.00 in)               |
|  | 07/29/23 17:34 MST |                   | 0                   | Source: Trained Spotter      |
| <hr/>  |                    |                   |                     |                              |
| <b>MCKENZIE COUNTY --- 2.4 ESE GRASSY BUTTE [47.39, -103.20]</b>   |                    |                   |                     |                              |
|  | 07/29/23 17:48 MST |                   | 0                   | Thunderstorm Wind (MG 69 kt) |
|  | 07/29/23 17:50 MST |                   | 0                   | Source: Mesonet              |
| <hr/>  |                    |                   |                     |                              |
| <b>MCKENZIE COUNTY --- 2.4 ESE GRASSY BUTTE [47.39, -103.20]</b>   |                    |                   |                     |                              |
|  | 07/29/23 17:48 MST |                   | 0                   | Hail (1.00 in)               |
|  | 07/29/23 17:51 MST |                   | 0                   | Source: Mesonet              |
| <hr/>  |                    |                   |                     |                              |
| <b>DUNN COUNTY --- 5.6 NW KILLDEER [47.43, -102.85]</b>  |                    |                   |                     |                              |
|  | 07/29/23 18:16 MST |                   | 0                   | Hail (1.75 in)               |
|  | 07/29/23 18:19 MST |                   | 0                   | Source: Public               |
| <hr/>  |                    |                   |                     |                              |
| <b>SLOPE COUNTY --- 0.8 NE AMIDON [46.49, -103.31]</b>   |                    |                   |                     |                              |
|  | 07/29/23 19:02 MST |                   | 0                   | Thunderstorm Wind (MG 51 kt) |
|  | 07/29/23 19:04 MST |                   | 0                   | Source: Mesonet              |
| <hr/>  |                    |                   |                     |                              |
| <b>DUNN COUNTY --- 15.0 NNE WERNER [47.58, -102.39]</b>  |                    |                   |                     |                              |
|  | 07/29/23 19:14 MST |                   | 0                   | Hail (1.75 in)               |
|  | 07/29/23 19:17 MST |                   | 0                   | Source: Broadcast Media      |

Thunderstorms developed over western North Dakota in an environment with strong deep layer shear and elevated instability. Some of

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|----------|-----------|-------------------|---------------------|------------------------|
|----------|-----------|-------------------|---------------------|------------------------|

these storms became severe, producing large hail and strong wind gusts. The largest hail reported was the size of a golf ball, which occurred near Oakdale and near Twin Buttes, both in Dunn County. The strongest wind gust reported was 79 mph at the Grassy Butte NDAWN station in McKenzie County.

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**GRANT COUNTY --- 13.2 N ELGIN MUNI ARPT [46.59, -101.81]**

|  |                    |  |   |                         |
|--|--------------------|--|---|-------------------------|
|  | 07/30/23 04:14 MST |  | 0 | Hail (1.00 in)          |
|  | 07/30/23 04:17 MST |  | 0 | Source: Trained Spotter |

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**GRANT COUNTY --- CARSON [46.42, -101.57]**

|  |                    |  |   |                |
|--|--------------------|--|---|----------------|
|  | 07/30/23 05:10 MST |  | 0 | Hail (0.88 in) |
|  | 07/30/23 05:14 MST |  | 0 | Source: Public |

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**GRANT COUNTY --- 0.5 E CARSON [46.42, -101.56]**

|  |                    |  |   |                         |
|--|--------------------|--|---|-------------------------|
|  | 07/30/23 05:12 MST |  | 0 | Hail (1.00 in)          |
|  | 07/30/23 05:15 MST |  | 0 | Source: Trained Spotter |

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**STARK COUNTY --- 0.5 E RICHARDTON [46.88, -102.31]**

|  |                    |  |   |                |
|--|--------------------|--|---|----------------|
|  | 07/30/23 05:33 MST |  | 0 | Hail (1.00 in) |
|  | 07/30/23 05:35 MST |  | 0 | Source: Public |

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**SIOUX COUNTY --- 0.8 NE SELFRIDGE [46.04, -100.92]**

|  |                    |  |   |                |
|--|--------------------|--|---|----------------|
|  | 07/30/23 06:00 MST |  | 0 | Hail (1.00 in) |
|  | 07/30/23 06:03 MST |  | 0 | Source: Public |

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**GRANT COUNTY --- 14.5 N ELGIN MUNI ARPT [46.61, -101.83]**

|  |                    |  |   |                |
|--|--------------------|--|---|----------------|
|  | 07/30/23 06:20 MST |  | 0 | Hail (0.88 in) |
|  | 07/30/23 06:23 MST |  | 0 | Source: Public |

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**SIOUX COUNTY --- 2.1 N SELFRIDGE [46.06, -100.93]**

|  |                    |  |   |                |
|--|--------------------|--|---|----------------|
|  | 07/30/23 07:00 MST |  | 0 | Hail (1.25 in) |
|  | 07/30/23 07:03 MST |  | 0 | Source: Public |

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**GRANT COUNTY --- 16.6 S BRISBANE [46.11, -101.49]**

|  |                    |  |   |                         |
|--|--------------------|--|---|-------------------------|
|  | 07/30/23 07:24 MST |  | 0 | Hail (1.00 in)          |
|  | 07/30/23 07:26 MST |  | 0 | Source: Trained Spotter |

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**GRANT COUNTY --- 18.8 S BRISBANE [46.08, -101.53]**

|  |                    |  |    |                         |
|--|--------------------|--|----|-------------------------|
|  | 07/30/23 07:27 MST |  | 2K | Hail (1.75 in)          |
|  | 07/30/23 07:30 MST |  | 0  | Source: Trained Spotter |

A large garden was destroyed.

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**SIOUX COUNTY --- 26.9 W SELFRIDGE [46.03, -101.49]**

|  |                    |  |   |                |
|--|--------------------|--|---|----------------|
|  | 07/30/23 07:32 MST |  | 0 | Hail (1.50 in) |
|  | 07/30/23 07:36 MST |  | 0 | Source: Public |

Thunderstorms formed during the early morning hours as an upper level short-wave moved into an environment of enhanced instability and strong deep layer shear. Some of these storms became severe over southwest and south central North Dakota, producing large hail. The largest hail reported was the size of a golf ball, and fell in Grant County south of Brisbane.

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**BOTTINEAU COUNTY --- 6.6 NE LANDA [48.97, -100.82]**

|  |                    |  |       |                              |
|--|--------------------|--|-------|------------------------------|
|  | 07/31/23 16:36 CST |  | 0.35M | Thunderstorm Wind (EG 75 kt) |
|  | 07/31/23 16:40 CST |  | 0.25M | Source: Newspaper            |

Seven empty hopper style grain bins were blown over, and one empty standard style grain bin was also destroyed. Various trees were damaged, with some smaller trees broken off. The wind was also accompanied by up to one-inch diameter hail and caused extensive crop damage in the area.

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**BOTTINEAU COUNTY --- 5.5 N KRAMER [48.78, -100.71]**

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|----------|--------------------|-------------------|---------------------|------------------------------|
|          | 07/31/23 17:40 CST |                   | 0                   | Thunderstorm Wind (EG 52 kt) |
|          | 07/31/23 17:47 CST |                   | 75K                 | Source: Trained Spotter      |

The strong thunderstorm winds combined with small hail to strip a nearby corn field down to its stalks.

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### BOWMAN COUNTY --- 9.2 SSE BOWMAN [46.05, -103.36]

|                    |   |                           |
|--------------------|---|---------------------------|
| 07/31/23 19:21 MST | 0 | Hail (1.50 in)            |
| 07/31/23 19:25 MST | 0 | Source: Emergency Manager |

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### BOWMAN COUNTY --- 8.3 NW HALEY [46.05, -103.25]

|                    |   |                |
|--------------------|---|----------------|
| 07/31/23 19:32 MST | 0 | Hail (0.88 in) |
| 07/31/23 19:35 MST | 0 | Source: Public |

Surface low pressure from eastern Montana into western North Dakota ushered moisture northward into western and central North Dakota which served as fuel for thunderstorm development. Although forcing for storm development was weak, enough was present to produce a supercell thunderstorm that moved south-southeast through Bottineau County. This storm produced winds that destroyed grain bins and severely damaged crops. Later in the evening additional thunderstorms developed over southwest North Dakota, with one producing ping-pong ball size hail in Bowman County.