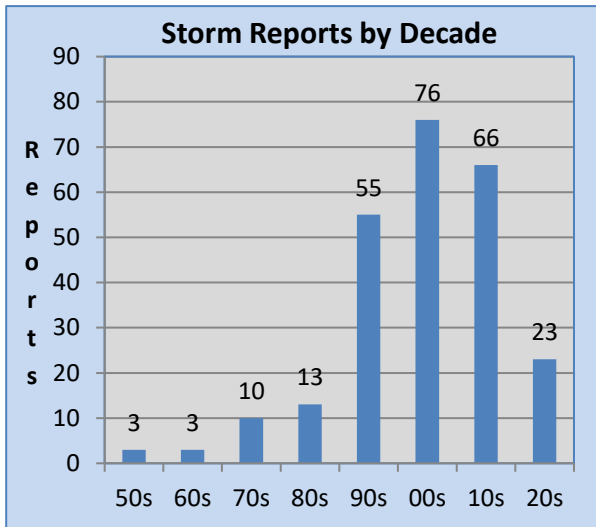


Lincoln County Severe Weather Facts (1950-2023)

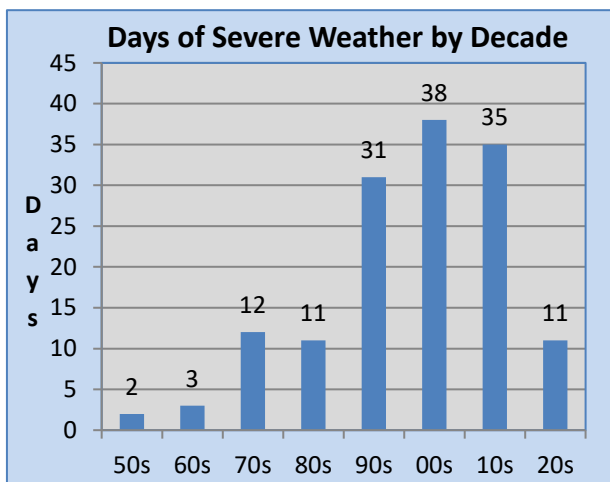
Updated: 01/01/24: Next Update: January 2025

Storm Reports by Decade



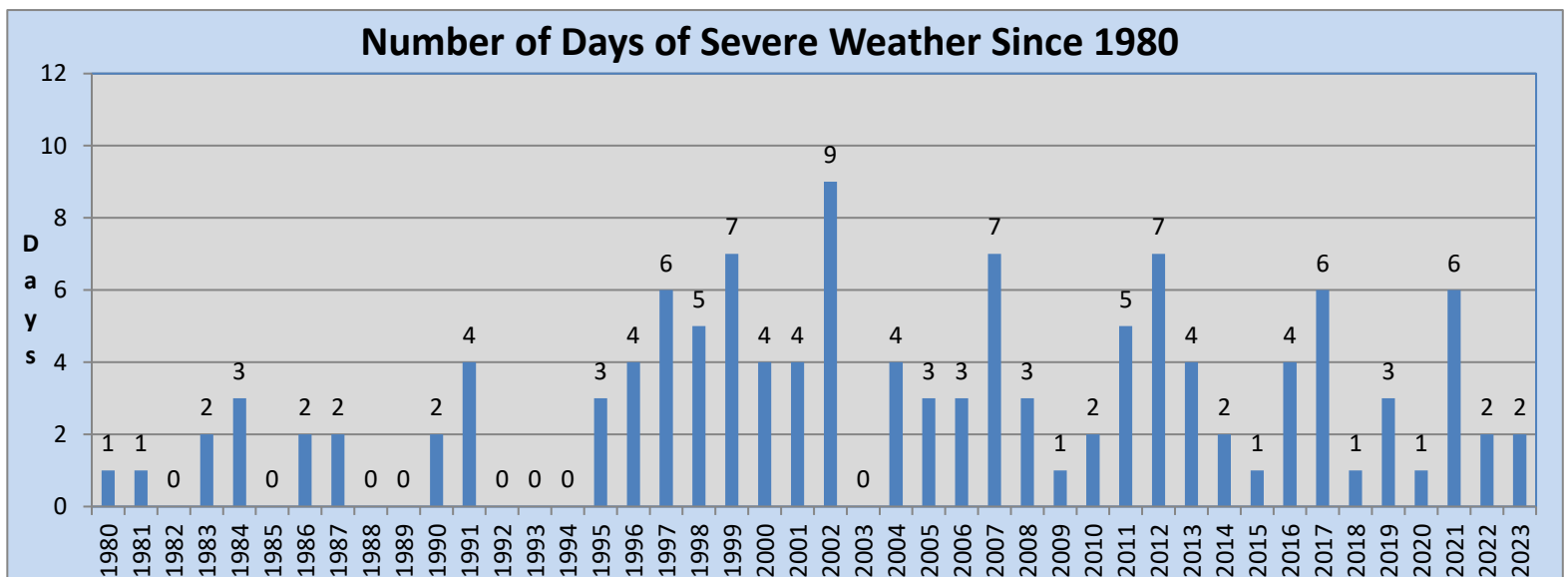
Since 1950 there have been 249 documented reports of large hail, damaging winds and tornadoes across Lincoln County (see graph to the left). The population boom of the 1980s and 1990s combined with the SKYWARN program led to an increase in the number of reports of severe weather during both decades. The number of reports increased 5% from the 2014-2023 period compared to the 1990s, one can't say for sure there has been an increase in severe weather across northeast Wisconsin. One possible reason for the apparent increase in reports is that in some instances, multiple reports were received from a single location for the same storm due to more spotters today. Another reason for the increase in storm reports has been the focus by the National Weather Service (NWS) to improve warning verification. The most active year was 2002 with 22 reports followed by 18 reports in 2007, 15 reports in 2021, 13 reports in 1997 and 10 reports in 2011. Since 1980, the following years did not have a severe weather report: 1982, 1985, 1988, 1989, 1992, 1993 and 1994. In 2023, there was one report of large hail on July 28, and two reports of strong winds/wind damage on July 27.

Severe Weather Days by Decade



In order to address the impact of multiple reports for the same storm, the data was examined by the number of days of severe weather. Since the reports were sporadic during the 1950s through the 1970s, only data from 1980 to present was used. There has been a decrease of 10% in the number of days of severe weather from the 2013 to 2022 period compared to the 1990s (see graph to the left). Many counties in northeast Wisconsin have experienced an increase in the number of days of severe weather. This trend can be attributed to the increase in population, technology advances in reporting severe weather, and greater severe weather awareness by the public. Since 2010, Lincoln County averages 3.2 severe weather days per year. The long-term average from 1980-2023 is 2.9 days. The most active year was 2002 with nine days of severe weather; followed by seven days in 1999, 2007 and 2012, six days in 1997, 2017 and 2021, and five days in 1998 and 2011. In 2023, there was one report of large hail on July 28, and two reports of strong winds/wind damage on July 27.

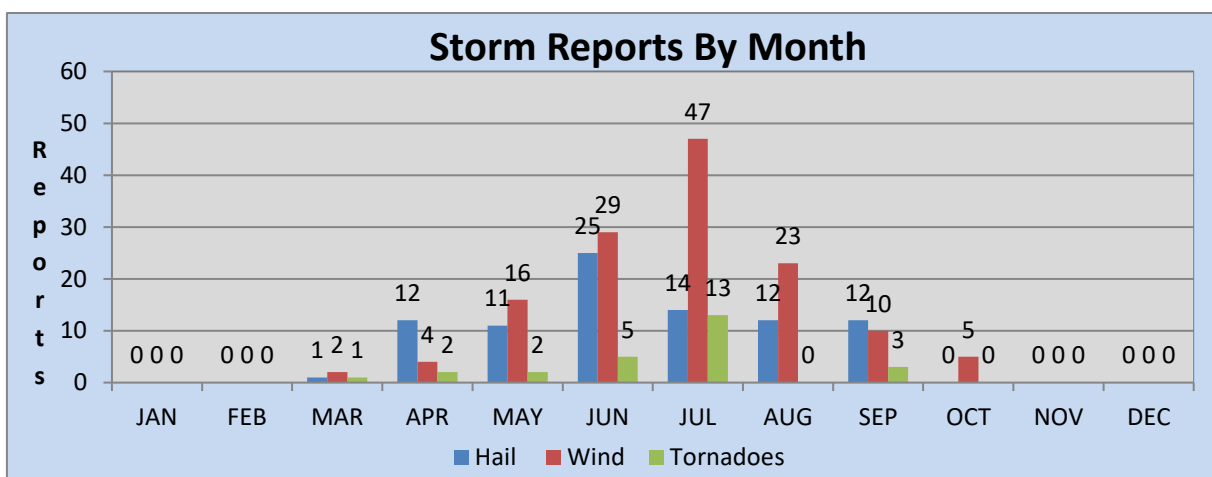
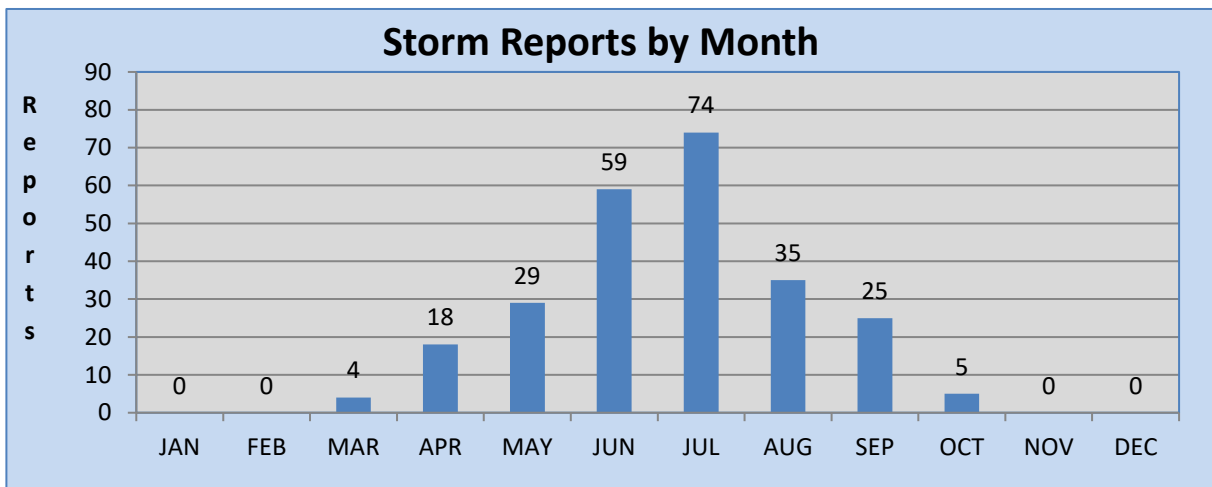
Number of Days of Severe Weather Since 1980



Lincoln County Severe Weather Facts (1950-2023)

Storm Reports by Month

Severe weather has been reported in Lincoln County from March through October. The earliest severe weather report during the year occurred on March 29, 1998. On this date, one and a quarter inch hail fell and winds were estimated over 60 mph at Tomahawk; while a rare March tornado was reported three miles northwest of Tomahawk. The severe weather season begins in earnest in April. The convective season peaks in June and July and wanes quickly in September. The warm season months of May to September account for 89% of all severe weather reports during the year. The latest report of severe weather during the year occurred on October 29, 2004 when wind damage was reported at Heafford Junction. In 2012, there was a late season report of wind damage on October 25th in the city of Merrill.

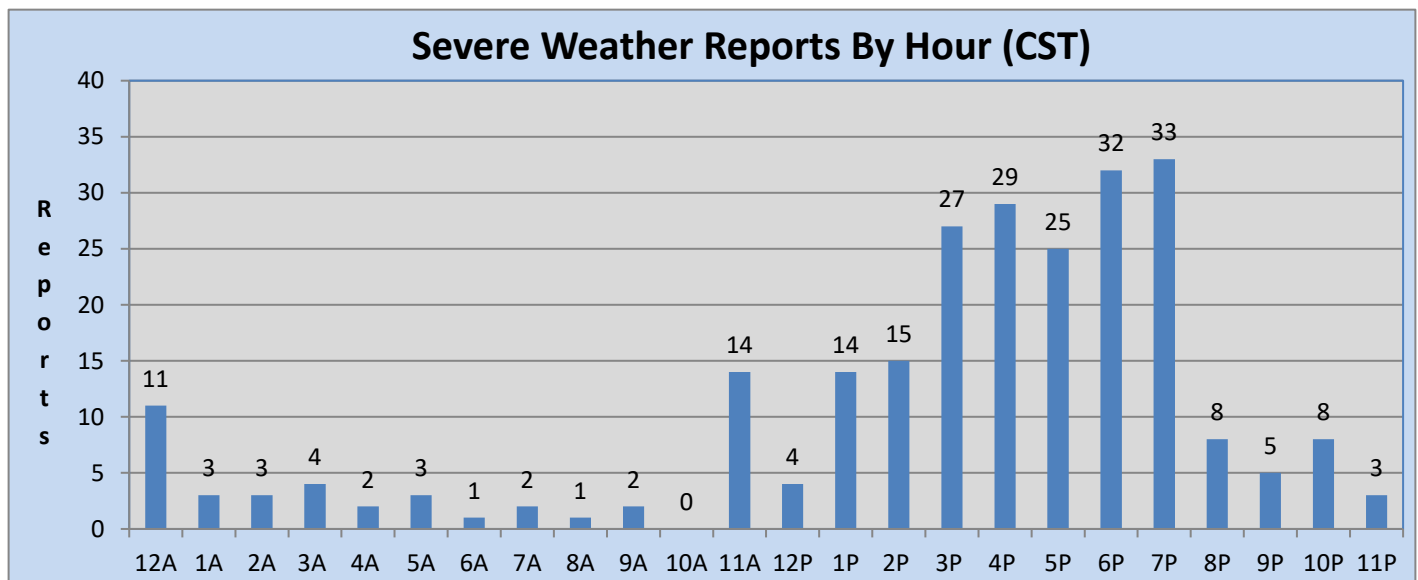
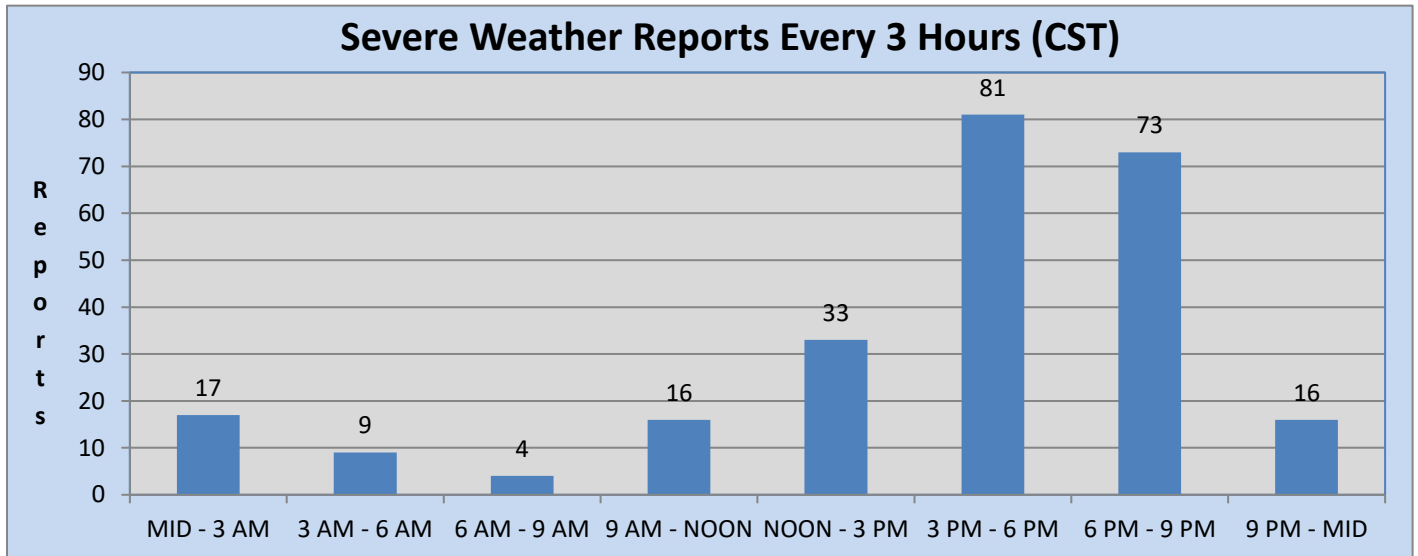


NOTE: The chart depicts storm type by month: (hail, wind/wind damage, tornadoes).

Lincoln County Severe Weather Facts (1950-2023)

Storm Reports by Time of Day

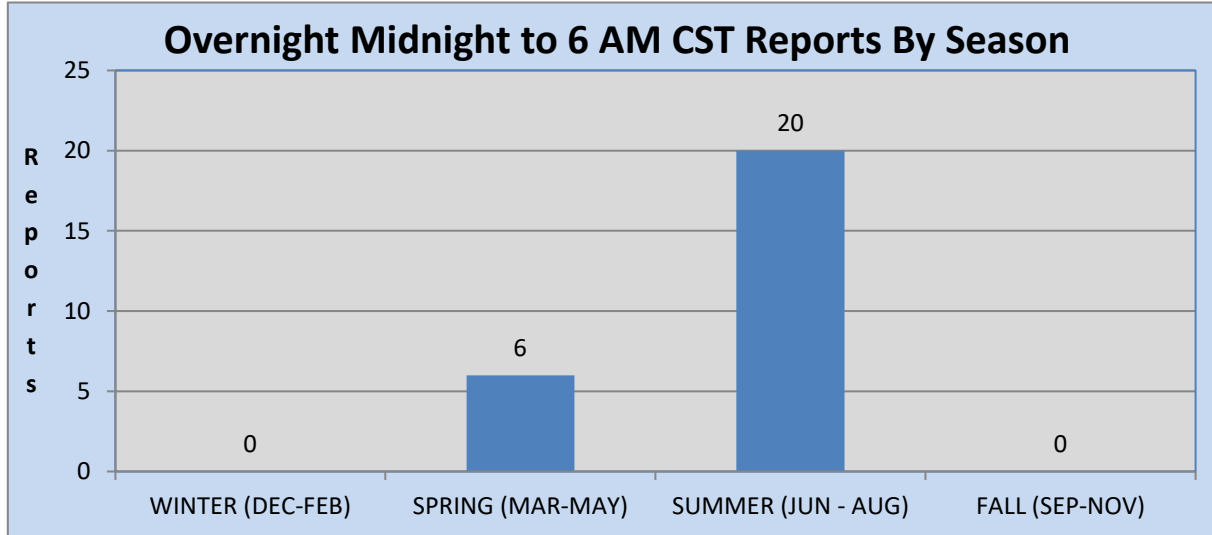
No matter the season, the afternoon and early evening hours are the peak time for severe weather across Lincoln County. Overall, seventy-four percent of all severe weather reports occur between 1 PM and 9 PM CST. In Lincoln County, severe weather reports increased sharply after 1 PM CST with activity peaking between 3 PM and 8 PM CST. The peak in the storm activity corresponds to peak afternoon heating when the atmosphere is most unstable. During May through August, there is another minor peak of severe weather that occurs between midnight and 5 AM. The peak months for overnight convection are July and August when thunderstorms that develop across the Dakotas and Minnesota moves eastward into the county overnight.



Lincoln County Severe Weather Facts (1950-2023)

Overnight Severe Weather Reports (Midnight to 6 AM CST)

Overnight severe weather reports are most prominent during the spring and summer (April through August) due to nocturnal convection along warm fronts, or from complexes of storms that develop across the Dakotas and Minnesota and roll through northeast Wisconsin during the early morning hours. The spring and summer months of May through August account for all the overnight severe weather reports during the year. The summer months of June, July and August accounted for 77% of the total. The last overnight severe weather reported occurred on April 10, 2017 when one inch hail was reported at Merrill.



Lincoln County Severe Weather Facts (1950-2023)

Lincoln County Tornadoes

Since record keeping began in 1950, there have been 26 documented tornadoes in Lincoln County. There has been only one F/EF3 tornado. The EF3 tornado occurred on April 10, 2011, which developed about 2 miles north of Hamburg (see images below) at 5:08 PM CST and moved northeast into Lincoln County at 5:10 PM CST. Pine trees were uprooted and large branches were broken in the path of the storm. One house sustained damage to its siding and several barns were blown down or lost their roofs in Marathon County. The tornado was rated an EF0 in Marathon County. The average width of the tornado in Marathon County was 100 yards. The tornado reached EF3 intensity on the north side of Merrill in Lincoln County at approximately 5:22 PM CST where 22 homes and 7 businesses were destroyed. Several homes lost nearly all exterior and some interior walls. In addition, 22 homes and one business sustained major damage, and 20 homes and four businesses sustained minor damage. A 67 year old male was thrown over 200 feet from his bedroom and suffered broken ribs, a ruptured spleen and a bruised lung. Another person sustained minor injuries. The tornado tore a path over 20 miles long in Lincoln County before dissipating. The maximum width of the tornado was six tenths of a mile (1,050 yards) wide. The average width was about 400 yards. The tornado was one of ten tornadoes across north-central and northeast Wisconsin on this date. The April 10th outbreak was the largest tornado outbreak for a single day during the year across north-central and northeast Wisconsin.

Five tornadoes have been rated F/EF2 intensity, eight tornadoes were rated F/EF1 intensity and 12 were rated F/EF0. The most active year was 2002 with five weak F0 tornadoes and four tornadoes in 2004. Tornadoes were recorded in the county in four consecutive years between 1996 and 1999. There also have been zero tornado related deaths in the county. Since 1950, tornadoes have touched down in 18 different years. A tornado strike in Lincoln County occurs on average about every three years. The last tornado to strike the county occurred on July 28, 2021, when an EF1 tornado touched down 4.8 miles southeast of Merrill and traveled to 2.8 miles northeast of Granite Heights between 7:40 PM and 7:44 PM CST.



Photo by Samuel L Hall



Photo by Julia Berg

Lincoln County Severe Weather Facts (1950-2023)

All Lincoln County Tornadoes

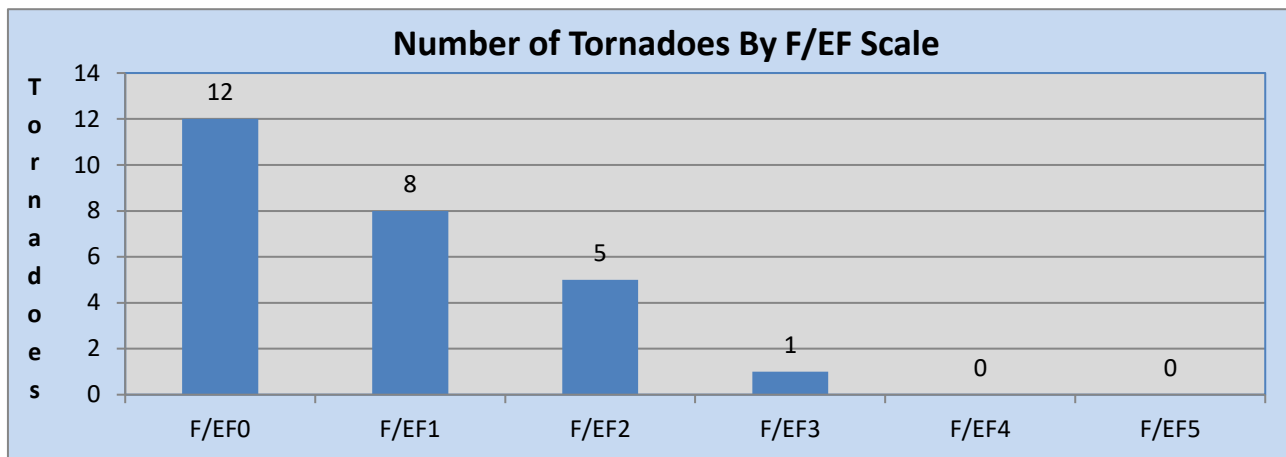
| Event | | Date | | | Time | | F/EF |
|-------|--|-------|-----|------|-------------|---|------|
| # | | Month | Day | Year | (CST) | Start / End Location | Rank |
| 1 | | 5 | 3 | 1955 | 18:00 | Irma | 1 |
| 2 | | 6 | 30 | 1958 | 17:30 | 1 NW Gleason | 2 |
| 3 | | 9 | 3 | 1961 | 17:00 | 12 W Merrill | 1 |
| 4 | | 7 | 24 | 1962 | 17:00 | Corning | 2 |
| 5 | | 6 | 26 | 1969 | 17:00 | 2 SE Tomahawk - Pelican Lake | 1 |
| 6 | | 9 | 28 | 1971 | 14:15-16:05 | 19 W Merrill - Merrill | 2 |
| 7 | | 6 | 13 | 1976 | 20:45-21:00 | 9 E Merrill - 11 NW Antigo | 1 |
| 8 | | 6 | 16 | 1979 | 15:30-15:45 | 0.5 S Irma | 1 |
| 9 | | 6 | 14 | 1991 | 11:55 | 8 WNW Merrill | 1 |
| 10 | | 7 | 18 | 1996 | 16:20-16:30 | 1.5 SW - 3 SSE Tomahawk | 1 |
| 11 | | 7 | 16 | 1997 | 14:38-14:40 | 11.5 ESE - 12 SE Merrill | 2 |
| 12 | | 3 | 29 | 1998 | 19:28-19:35 | 3 W - 3 N Tomahawk | 0 |
| 13 | | 5 | 5 | 1999 | 1630-16:31 | 1 WNW Tomahawk | 0 |
| 14 | | 4 | 18 | 2002 | 15:49 | 2 W Bradley | 0 |
| 15 | | 7 | 30 | 2002 | 17:47-17:50 | 10.5- 9.5 NW Merrill | 0 |
| 16 | | 7 | 30 | 2002 | 18:08-18:28 | 5 N - 9.5 NE Merrill | 0 |
| 17 | | 7 | 30 | 2002 | 18:25 | 8.5 NE Merrill | 0 |
| 18 | | 9 | 30 | 2002 | 18:30-18:35 | 8 W - 4.5 WNW Tomahawk | 2 |
| 19 | | 7 | 11 | 2004 | 15:45 | Irma | 0 |
| 20 | | 7 | 11 | 2004 | 16:13 | 6 W Tomahawk | 0 |
| 21 | | 7 | 11 | 2004 | 16:13 | 6 W Tomahawk | 0 |
| 22 | | 7 | 11 | 2004 | 16:40 | 4 W Tomahawk | 0 |
| 23 | | 4 | 10 | 2011 | 17:06-17:41 | 2 N Hamburg - 1 SW Bloomville | 3 |
| 24 | | 7 | 9 | 2013 | 13:59-14:04 | 0.5 NE Schultz - 3.9 W Bloomville | 0 |
| 25 | | 7 | 19 | 2019 | 17:47-18:00 | 7.5 NNW Spirit Falls - 6.8 NW Tomahawk | 0 |
| 26 | | 7 | 28 | 2021 | 19:40-19:44 | 4.8 SE Merrill – 2.8 NE Granite Heights | 1 |

F/EF2 or Greater Tornadoes in Lincoln County

| Event | | Date | | | Time | | F/EF |
|-------|--|-------|-----|------|-------------|-------------------------------|------|
| # | | Month | Day | Year | (CST) | Start / End Location | Rank |
| 1 | | 6 | 30 | 1958 | 17:30 | 1 NW Gleason | 2 |
| 2 | | 7 | 24 | 1962 | 17:00 | Corning | 2 |
| 3 | | 9 | 28 | 1971 | 14:15-16:05 | 19 W Merrill - Merrill | 2 |
| 4 | | 7 | 16 | 1997 | 14:38-14:40 | 11.5 ESE - 12 SE Merrill | 2 |
| 5 | | 9 | 30 | 2002 | 18:30-18:35 | 8 W - 4.5 WNW Tomahawk | 2 |
| 6 | | 4 | 10 | 2011 | 17:06-17:41 | 2 N Hamburg - 1 SW Bloomville | 3 |

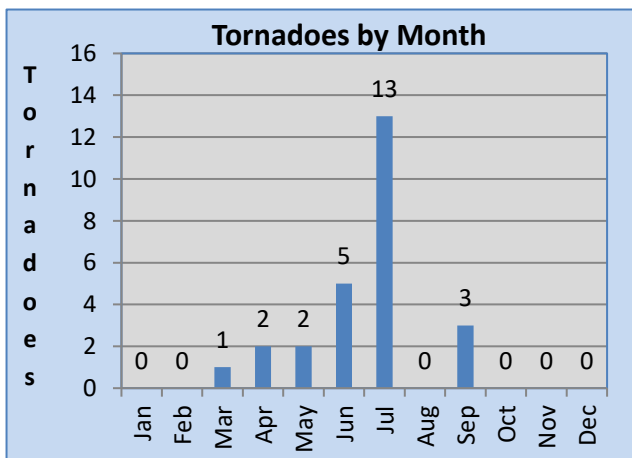
Additional tornado data can be found on the NWS Green Bay webpage at: <http://www.weather.gov/grb/severeclimate>

Lincoln County Severe Weather Facts (1950-2023)



Only one documented tornado was rated EF3 or greater which occurred on April 10, 2011. Five tornadoes (20% of the total) were rated F/EF2. Twenty of the twenty-five tornadoes (77%) were rated F/EF0 or F/EF1. The last tornado to strike the county occurred on July 19, 2019 when an EF1 touched near Spirit Falls and then moved to just northwest of Tomahawk.

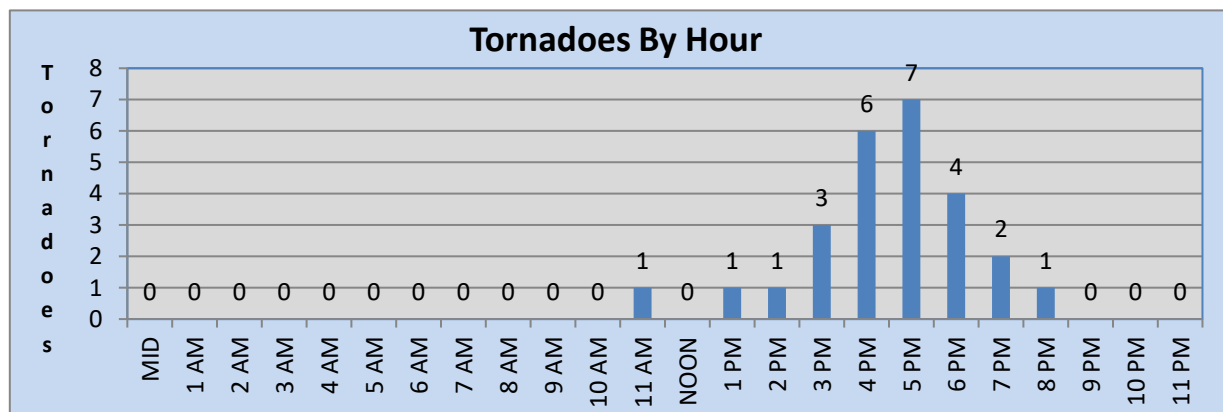
Tornadoes by Month



Documented tornadoes have occurred in Lincoln County in March, April, May, June, July and September. The earliest documented tornado during the year occurred on March 29, 1998, when a weak F0 tornado was noted three miles west and north of Tomahawk. Isolated tornadoes have been reported in April and May, but the peak of the tornado season is June and July. These two months account for 69% of all tornado reports. The tornado season drops off sharply in August and September. The warm season months of May through September account for 88% of the documented tornadoes during the year. Stronger cold fronts moving across the region is the most probable explanation for the increase in the number of tornadoes in September compared to August. The latest documented tornado during the year occurred on September 30, 2002. A F2 tornado touched down eight miles west of Tomahawk and then traveled northeast to four and a half miles west northwest of Tomahawk.

Tornadoes by Month

Twenty-five out of the 26 tornadoes (96%) have occurred between 1 PM and 9 PM CST. No tornadoes have been documented between 9 PM and 11 AM.



Lincoln County Severe Weather Facts (1950-2023)

Predominant Storm Reports – Wind and Hail Only

During April, large hail is the dominant weather event that is reported to the National Weather Service. The atmosphere is very cold aloft to support large hail reaching the ground. For most of the remainder of the convective season, nearly six out of every ten reports are high winds and wind damage compared to large hail. May, June and September did not show any clear trends to which type of report was the dominant event.

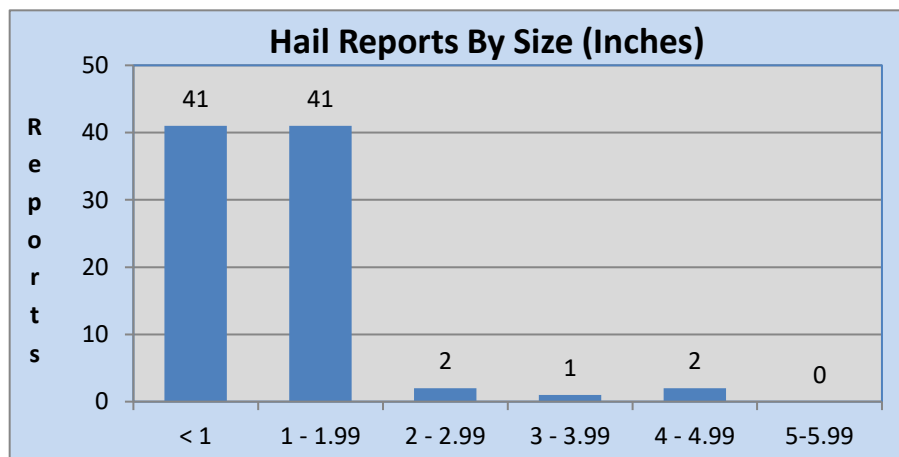
| Month | % Hail Reports | % Wind or Wind Damage | Month | % Hail Reports | % Wind or Wind Damage |
|-------|----------------|-----------------------|-------|----------------|-----------------------|
| Jan | 0.0 | 0.0 | Jul | 22.3 | 77.0 |
| Feb | 0.0 | 0.0 | Aug | 34.3 | 65.7 |
| Mar | 33.3 | 66.7 | Sep | 54.5 | 45.5 |
| Apr | 75.0 | 25.0 | Oct | 0.0 | 100.0 |
| May | 40.7 | 59.3 | Nov | 0.0 | 0.0 |
| Jun | 46.3 | 53.7 | Dec | 0.0 | 0.0 |
| | | | Year | 39.0 | 61.0 |

Large Hail in Lincoln County

There have been five documented reports of large hail over two inches in diameter across the county. The largest hail stone reported was four and a half inches in diameter, which occurred eight miles northeast of Merrill on July 16, 1997. Another hailstone four inches in diameter was reported just southwest of Kings on April 25, 2008. Overall, hail ranging in size from three quarters to one inch accounted for 69% of the documented reports. Large hail reports of two inches or greater only accounted for 6% of the total hail reports.

Hail over 2 inches

| Event # | Date | | | Time (CST) | Start / End Location | Hail (Inches) |
|---------|-------|-----|------|------------|----------------------------------|---------------|
| | Month | Day | Year | | | |
| 1 | 7 | 16 | 1997 | 14:15 | 8 NE Merrill | 4.50 |
| 2 | 4 | 25 | 2008 | 17:50 | 0.8 SW Kings | 4.00 |
| 3 | 4 | 18 | 2002 | 15:30 | 7 WSW Bloomville to 7 NW Bradley | 3.00 |
| 4 | 6 | 29 | 1974 | 1935 | Tomahawk | 2.50 |
| 5 | 8 | 2 | 2015 | 0005 | 8.8 WNW Corning | 2.00 |



Lincoln County Severe Weather Facts (1950-2023)

Lincoln County Summary

In Lincoln County, the severe weather season begins in earnest in April, peaks in July and then wanes quickly by September. Severe weather usually occurs in the afternoon and early evening hours, with a secondary peak between midnight and 5 am during the summer months. If you do experience severe weather, you are likely to see large hail early in the spring. Damaging wind or wind damage will be the dominant severe weather report during the remainder of the convective season. In the NWS Green Bay County Warning Area which includes 22 counties from central to northeast Wisconsin, Lincoln County ranks 12th in the total number of storm reports and 8th in the number of tornado reports since 1950.

Green Bay Forecast Area Severe Weather Climatology Summary

Across the Green Bay forecast area which covers 22 counties in north-central and northeast Wisconsin, severe weather has been documented in every month except February. This includes a rare event on January 24, 1967, in which a line of thunderstorms produced damaging winds across Brown, Winnebago, and Outagamie counties during the early evening hours. Another rare late season thunderstorm produced one inch hail in Florence County on December 5, 2001, while one inch hail was reported four miles west of St. Nazianz in Manitowoc County on December 20, 1967.

Tornadoes have occurred from March through December, with an extremely rare tornado outbreak occurring on December 1, 1970. On this date four tornadoes were reported across central and northeast Wisconsin during the morning. A strong area of low pressure brought unseasonably mild temperatures and severe thunderstorms to portions of central and northeast Wisconsin as a cold front swept across the state. The first tornado was reported twelve miles southeast of Marshfield in Wood County around 7 AM CST while another tornado was reported in the town of Hull in Portage County around 9 AM CST. Later that morning, a F2 tornado was reported in Waupaca and Shawano counties, from four miles southwest of Iola to near Marion and Pella. The last and strongest tornado occurred around 9:45 AM CST. The F3 tornado travelled from Medina in southwest Outagamie County to far southeast Shawano County, destroying about 20 barns and five homes.

Here are the strongest documented tornadoes in the Green Bay forecast area which covers 22 counties in central, north-central, and northeast Wisconsin.

F/EF4 Tornadoes

| Event | Date | | | Time | | Tor in GRB Service Area |
|-------|-------|-----|------|-------------|------------------------------------|-------------------------|
| # | Month | Day | Year | (CST) | Start / End Location | County or Counties |
| 1 | 6 | 25 | 1950 | 21:00 | 1 W Woodboro - 5 NE Rhinelander | Oneida |
| 2 | 9 | 26 | 1951 | 15:45-16:08 | 9 SSW Amherst - 2 SW Bear Creek | Portage-Waupaca |
| 3 | 4 | 3 | 1956 | 13:45-13:53 | Berlin - 2 W Omro | Waushara-Winnebago |
| 4 | 8 | 19 | 1968 | 16:10 | 3 SW Pound - Marinette | Marinette |
| 5 | 4 | 21 | 1974 | 14:40-15:08 | 5 S Ripon - Oshkosh | Winnebago |
| 6 | 4 | 27 | 1984 | 15:20-15:40 | 1 NE Winneconne - Freedom | Winnebago-Outagamie |
| 7 | 7 | 5 | 1994 | 15:43-15:55 | 2.5 NW Maribel - 0.5 W Cooperstown | Manitowoc |

Lincoln County Severe Weather Facts (1950-2023)

Green Bay Forecast Area Severe Weather Climatology Summary

The state record for the largest documented hail stone in Wisconsin occurred in Wausau on May 22, 1921. The hailstone measured 5.7 inches in diameter. More recently, a hailstone of 5.5 inches in diameter was reported in Port Edwards in southeast Wood County on June 7, 2007. In 2021, there were three reports of hail four inches in diameter or greater across northeast Wisconsin.

| Hail | Month | Date | Year | Time (CST) | Start / End Location | County |
|------|-------|------|------|-------------|---------------------------------|-----------|
| 5.70 | 5 | 22 | 1921 | ?? | Wausau | Marathon |
| 5.50 | 6 | 7 | 2007 | 15:23 | Port Edwards - Wisconsin Rapids | Wood |
| 4.50 | 9 | 7 | 2021 | 07:47-07:48 | 2 W Apple Creek | Outagamie |
| 4.50 | 7 | 16 | 1997 | 14:15 | 8 NE Merrill | Lincoln |
| 4.25 | 5 | 22 | 2011 | 15:05 | 0.8 NW Winchester | Winnebago |
| 4.25 | 5 | 22 | 2011 | 14:35 | 0.5 E Redgranite | Waushara |
| 4.10 | 9 | 7 | 2021 | 07:45-07:46 | 3 NE Greenville | Outagamie |
| 4.00 | 9 | 7 | 2021 | 08:13-08:14 | 2 E Apple Creek | Outagamie |
| 4.00 | 8 | 2 | 2015 | 13:32 | 2.8 S Brookside | Oconto |
| 4.00 | 8 | 2 | 2015 | 13:24 | 0.5 E Abrams | Oconto |
| 4.00 | 4 | 25 | 2008 | 17:50 | 0.8 SW Kings | Lincoln |
| 4.00 | 7 | 1 | 2006 | 14:31 | 1 N Hayes - Suring | Oconto |
| 4.00 | 3 | 29 | 1998 | 12:25 | St. John | Calumet |
| 3.75 | 9 | 7 | 2021 | 07:47-07:48 | 1 NW Little Chute | Outagamie |
| 3.50 | 6 | 8 | 2000 | 22:30 | 10 W Middle Inlet | Marinette |
| 3.25 | 7 | 1 | 2006 | 15:05 | Oconto - 6 SE Oconto Falls | Oconto |
| 3.00 | 10 | 24 | 2023 | 08:50-08:51 | Nasonville | Wood |
| 3.00 | 8 | 2 | 2015 | 14:06 | Rudolph | Wood |
| 3.00 | 5 | 22 | 2011 | 17:35 | Plover | Portage |
| 3.00 | 6 | 7 | 2007 | 15:50 | 5 W Langlade | Langlade |
| 3.00 | 7 | 1 | 2006 | 19:29 | Branch - Manitowoc | Manitowoc |
| 3.00 | 4 | 18 | 2002 | 15:30 | 7 WSW Bloomville - 7 NW Bradley | Lincoln |
| 3.00 | 8 | 9 | 2001 | 12:50 | 1S Sturgeon Bay | Door |
| 3.00 | 6 | 5 | 1999 | 18:24 | 3 S - 8 SE Eagle River | Vilas |
| 3.00 | 7 | 27 | 1989 | 10:50 | 1 N Oshkosh | Winnebago |
| 3.00 | 8 | 19 | 1968 | 16:15 | 2 E Harmony | Marinette |
| 3.00 | 7 | 19 | 1963 | 15:00 | 4 S Rhinelander | Oneida |
| 3.00 | 7 | 1 | 1956 | 11:00 | 5 E Green Bay | Brown |