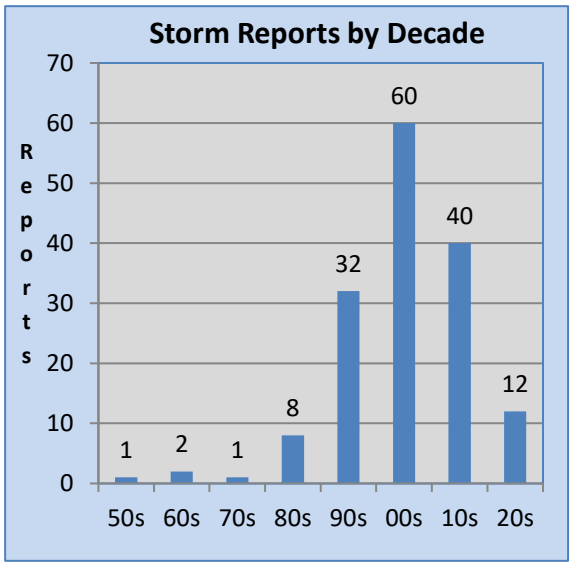
Forest County Severe Weather Facts (1950-2023)

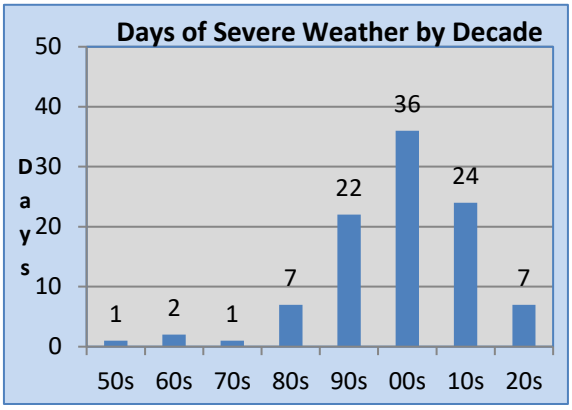
Updated: 01/01/24: Next Update: January 2025

Storm Reports by Decade

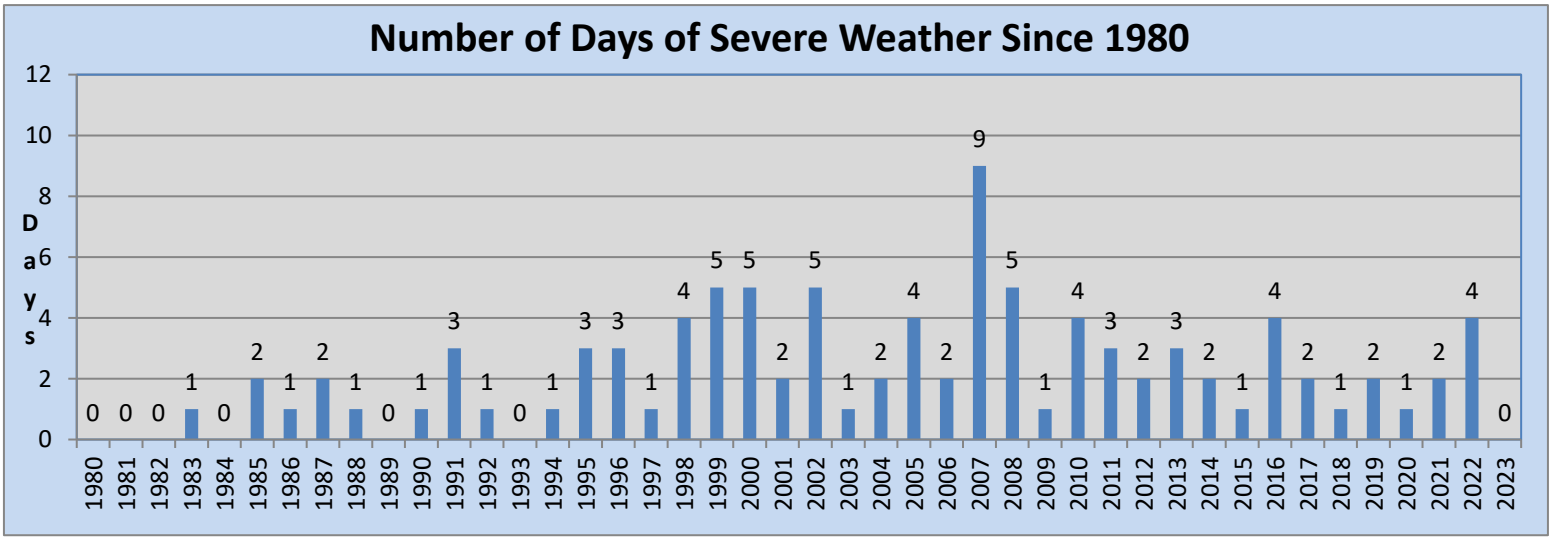


Since 1950 there have been 156 documented reports of large hail, damaging winds and tornadoes across Forest County (see graph to the left). The population boom of the 1980s and 1990s combined with the SKYWARN program led to an increase in the number of reports of severe weather during both decades. The number of reports decreased 16% from the 2014-2023 period compared to the 1990s in Forest County. However, much of north-central and northeast Wisconsin saw a considerable increase in the number of reports, 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 2007 with 13 reports followed by 11 reports in 2000, nine reports in 2005 and 2008, and eight reports in 1999 and 2022. Since 1980 there have been no reports of severe weather in the following years: 1980, 1981, 1982, 1984 and 1989. In 2023, there were no reports of severe weather across the county.

Severe Weather Days by Decade



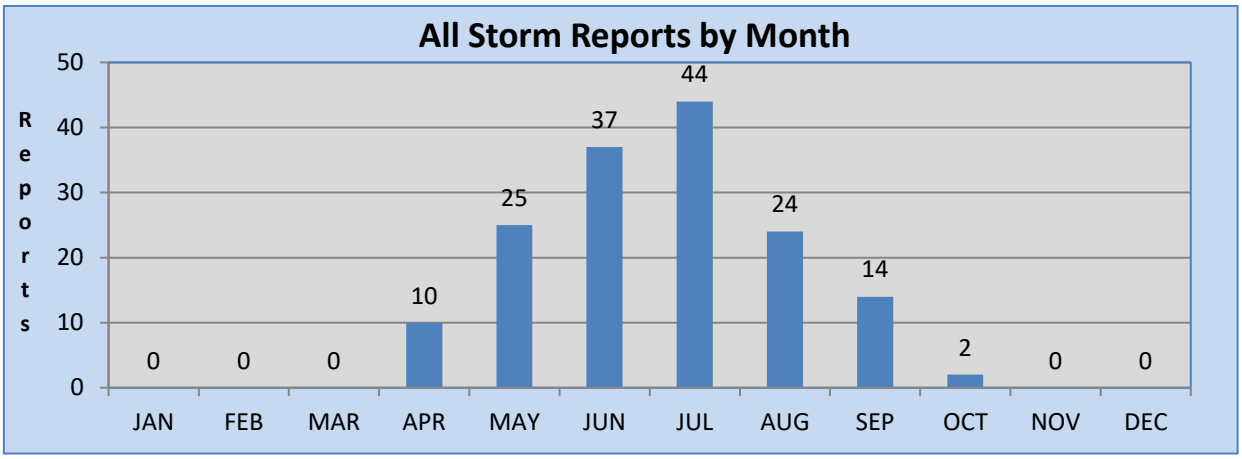
In order to address the impact of multiple reports for the same storm, the data was examined by the number of days of severe weather. Since the reports were sporadic during the 1950s through the 1970s, only data from 1980 to present was used. There was a 14% decrease in the number of days of severe weather days from the 2014 to 2023 period compared to the 1990s. However, other counties in north-central and northeast Wisconsin have seen an increase in the number of days of severe weather. This trend can be attributed to the increase in population, technology advances and greater severe weather awareness. Since 2010, Forest County averages 2.2 days of severe weather per year. The long-term average from 1980-2023 is 2.2 days. The most active year was 2007 with nine days of severe weather; followed by five days in 1999, 2000, 2002 and 2008. In 2022, there was no severe weather reported across the county.

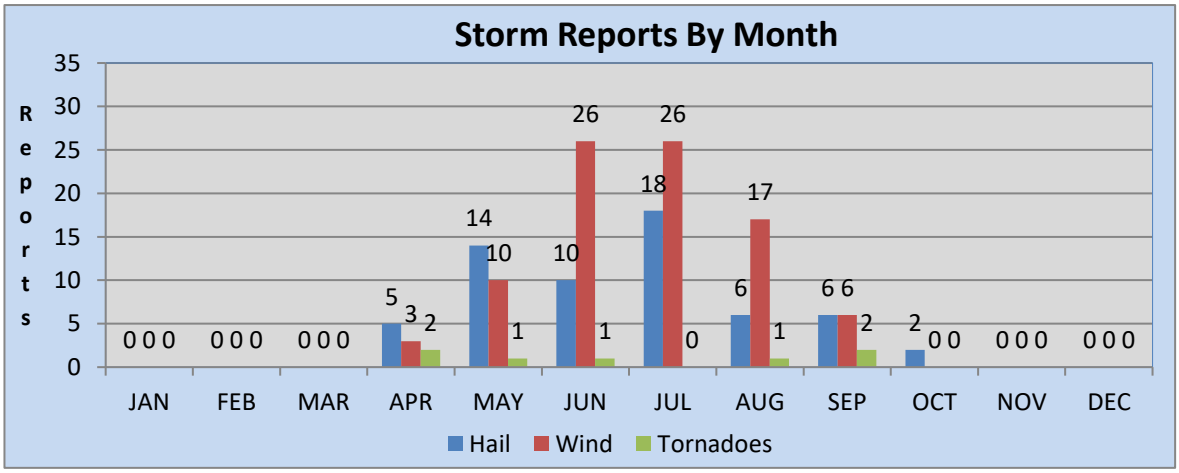


Forest County Severe Weather Facts (1950-2023)

Storm Reports by Month

Severe weather has been reported across Forest County from April through October. On a few occasions, severe weather breaks out during the month of April. In 2011, Forest County experienced the earliest severe weather event for so early in the year on April 10th. On this date, two tornadoes touched down across the county along with large hail up to two inches in diameter. The previous earliest documented severe weather report during the year occurred on April 11, 1996 when 1.75 inch hail was reported six miles west of Crandon. The severe weather season begins in earnest in May and peaks in June and July. June and July accounted for 52% of all severe weather reports. The warm season period of May through September accounts for 93% of all severe weather reports during the year. The severe weather season wanes in August and September. The latest report of large hail during the year occurred on October 20, 2010 when penny size hail (0.75 inches) was reported eight tenths of a mile northeast of Wabeno. In 2016, large hail (0.88 inches) was reported on October 18th just east of Newald.



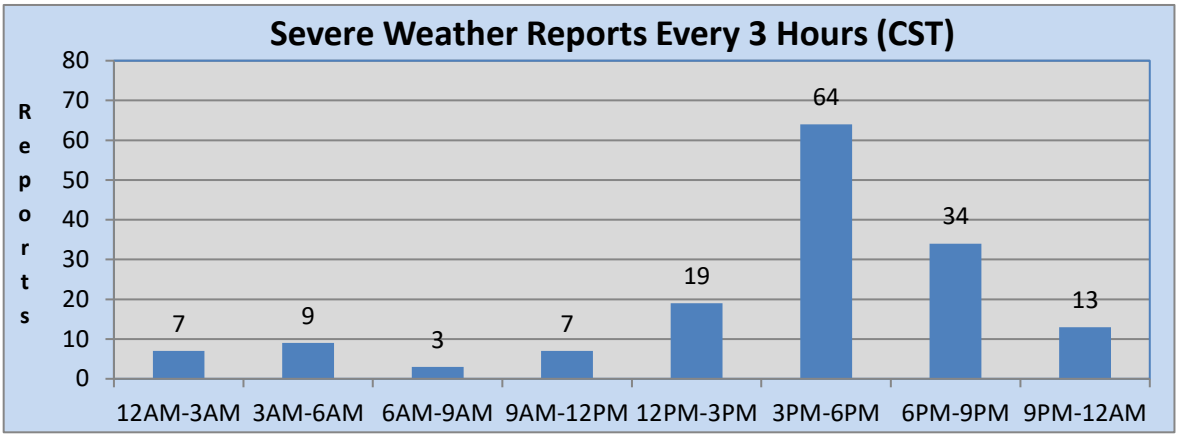


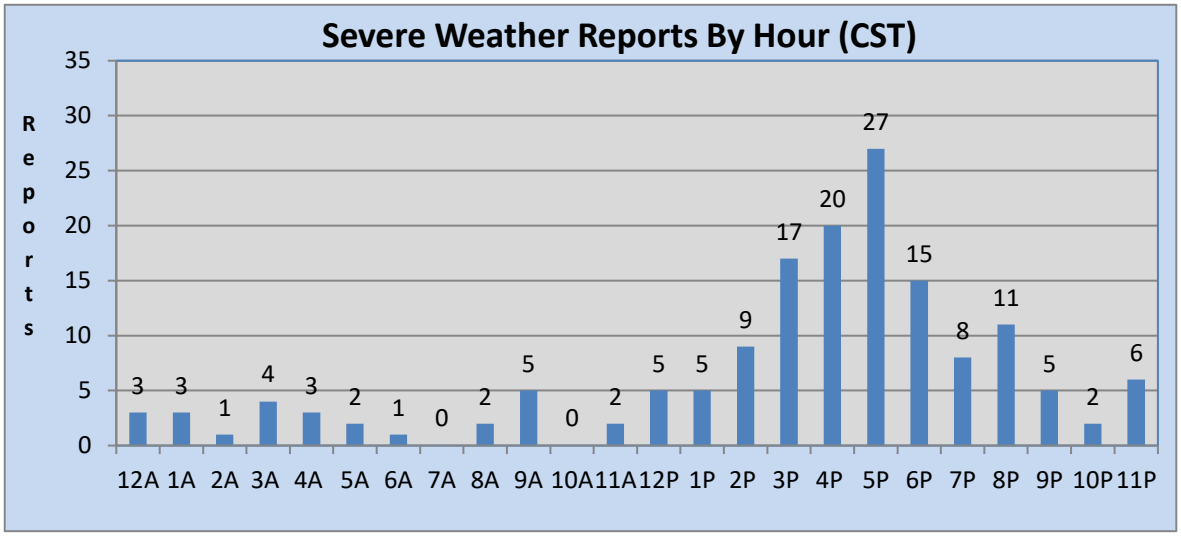
NOTE: The chart depicts storm type by month: (hail, wind/wind damage, tornadoes).

Forest 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 Forest County. Overall, seventy-two percent of all severe weather reports occurred between 1 PM and 9 PM CST. In Forest County, severe weather reports increased rapidly after 2 PM CST. The peak number of reported occurred between 3 PM and 7 PM CST. The peak in the number of reports corresponds to peak afternoon heating when the atmosphere is most unstable. During May through August, there are scattered reports of severe weather between midnight and 6 AM CST. In these cases, convection that fires up across the Dakotas and Minnesota works its way into the county overnight. In 2016, a very rare late season large hail report (0.88 inches) occurred at 1 AM CST near Newald on October 18th.

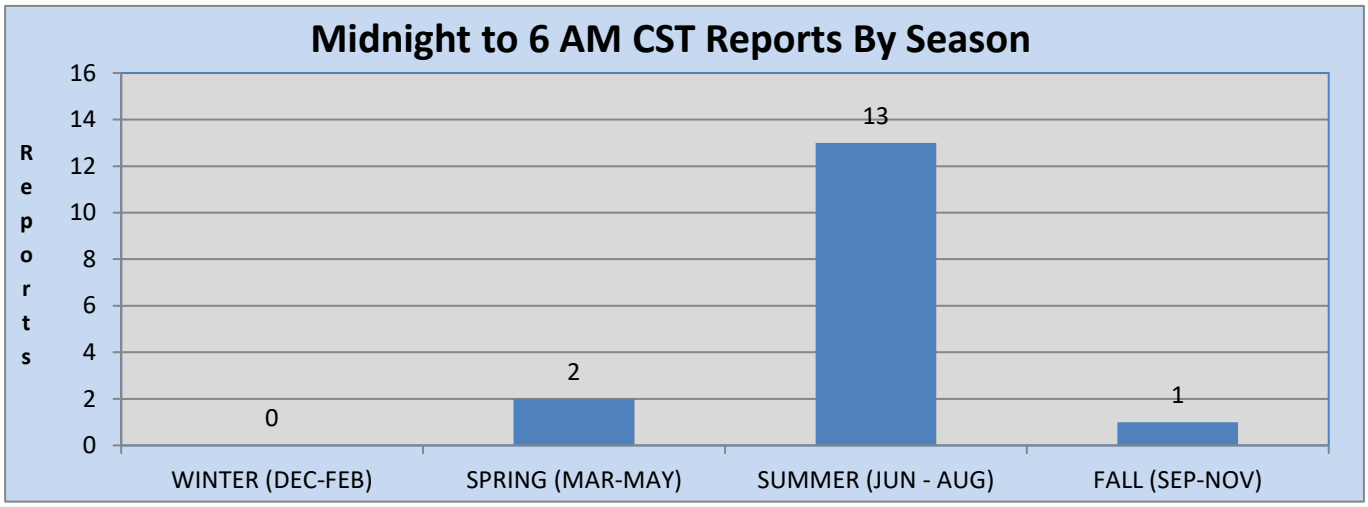




Forest County Severe Weather Facts (1950-2023)

Severe Weather Reports Midnight to 6 AM CST

Overnight severe weather reports are most prominent during the summer (June 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 summer months account for 13 of the 16 (81%) overnight reports during the year.



Forest County Severe Weather Facts (1950-2023)

Forest County Tornadoes

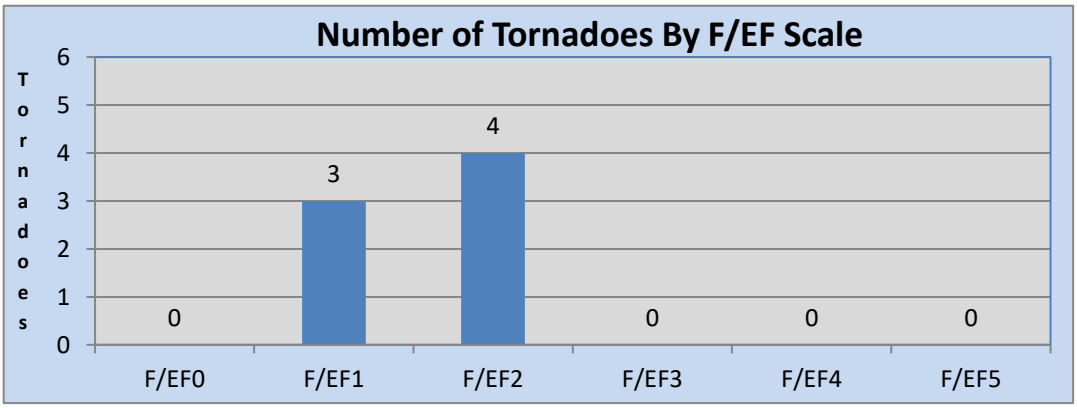
Since record keeping began in 1950, there have been seven documented tornadoes in Forest County. There have been zero documented tornadoes of F/EF3 or greater intensity. Four out of the seven tornadoes (57%) have been rated F/EF2 intensity (see table below) with the other three tornadoes rated at F/EF1. Until 2011 with two tornadoes on April 10th, there had not been more than one documented tornado in a given year. Ten tornadoes touched down across north-central and northeast Wisconsin on April 10th, 2011. The ten tornadoes on this date also set a record for the most tornadoes on any single day across north-central and northeast Wisconsin which was on June 14, 2017. In 2020, an EF1 tornado touched down 4.6 miles east of Alvin and then moved northeast into northwest Florence County before dissipating a half a mile south of Caspian, Michigan. Since 1950, tornadoes have touched down in six different years. A tornado strike in Forest County occurs on average about every ten years.

Event		Date			Time		F/EF
#		Month	Day	Year	(CST)	Start / End Location	Rank
1		9	19	1963	18:00	Laona	1
2		6	30	1968	04:00	3 NW Cavour	2
3		9	16	1972	16:05	4 NW Wabeno - 2 N McAllister	2
4		5	30	1994	20:50-21:16	2 SW Crandon - 1 N Laona	2
5		4	10	2011	18:30-18:46	3 SE Argonne - 6 SSE Long Lake	2
6		4	10	2011	19:03-19:08	4.2 WNW - 3.2 N Armstrong Creek	1
7		8	9	2020	20:12-20:22	4.6 E Alvin - 0.5 S Caspian, MI	1

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

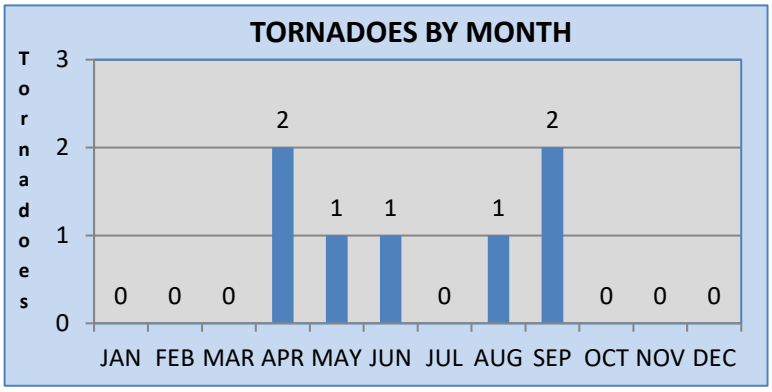
F/EF2 or Greater Tornadoes in Forest County

Event		Date			Time		F/EF
#		Month	Day	Year	(CST)	Start / End Location	Rank
1		6	30	1968	04:00	3 NW Cavour	2
2		9	16	1972	16:05	4 NW Wabeno - 2 N McAllister	2
3		5	30	1994	20:50-21:16	2 SW Crandon - 1 N Laona	2
4		4	10	2011	18:30-18:46	3 SE Argonne - 6 SSE Long Lake	2



Forest County Severe Weather Facts (1950-2023)

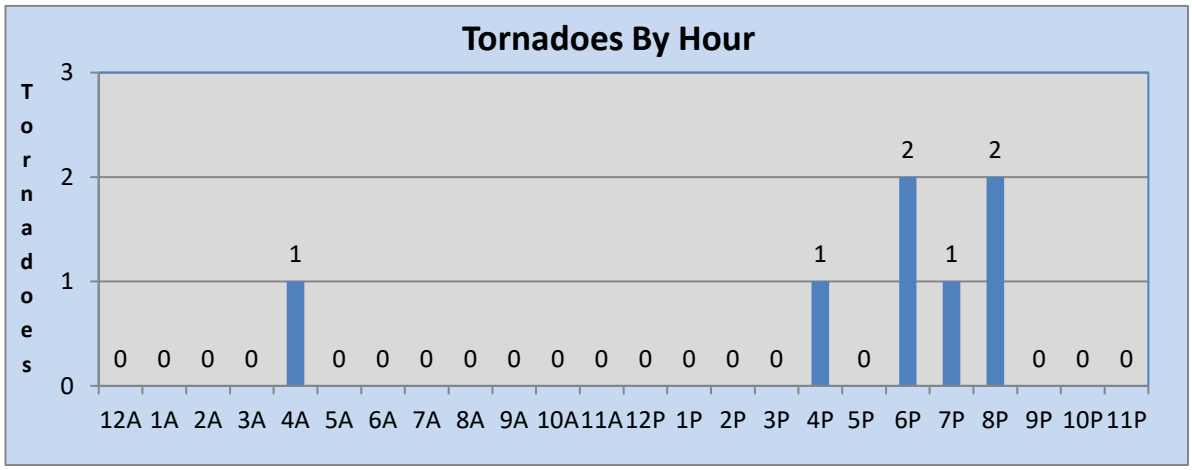
Tornadoes by Month



Documented tornadoes have occurred in Forest County in April, May, June, August, and September. On April 10, 2011, Forest County experienced the greatest tornado outbreak for so early in the year and the greatest single day tornado outbreak on record with two tornadoes. The previous earliest documented tornado during the year occurred on May 30, 1994 when a tornado touched down two miles southwest of Crandon which moved to one mile north of Laona before dissipating. The latest tornado on record during the year occurred on September 19, 1963, when a F1 tornado touched down near Laona.

Tornadoes by Hour

In Forest County, six out of the seven (86%) documented tornadoes have occurred between 4 PM and 9 PM CST. There was a rare F2 overnight tornado that occurred three miles northwest of Cavour around 4 AM CST on June 30, 1968.



Forest County Severe Weather Facts (1950-2023)

Predominant Storm Reports – Wind and Hail Only

During April, September and October, large hail is the dominant type of severe weather across the county. During the remainder of the convective season, nearly six out of every ten reports are strong winds/wind damage compared to large hail. Wind damage is most prominent during the month of August with nearly eight out of ten reports are strong winds or wind damage.

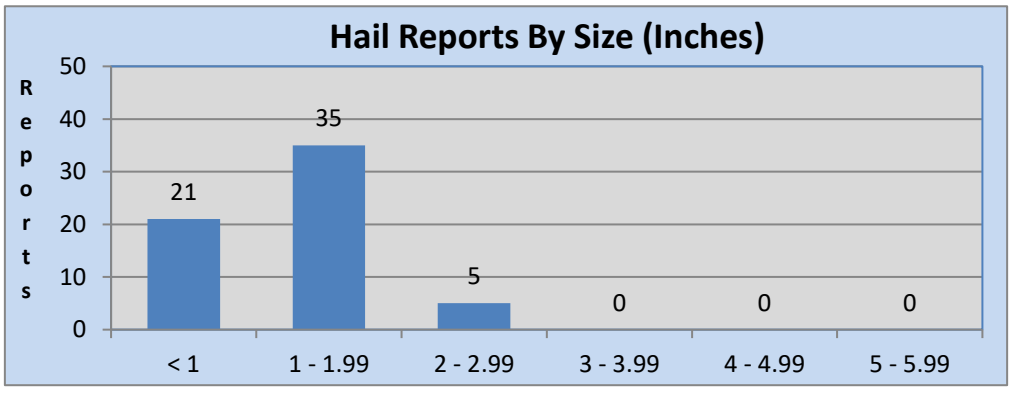
Month	% Hail Reports	% Wind or Wind Damage	Month	% Hail Reports	% Wind or Wind Damage
Jan	0.0	0.0	Jul	40.9	59.1
Feb	0.0	0.0	Aug	26.1	73.9
Mar	0.0	0.0	Sep	50.0	50.0
Apr	62.5	37.5	Oct	100.0	0.0
May	58.3	41.7	Nov	0.0	0.0
Jun	27.8	72.2	Dec	0.0	0.0
			Year	40.9	59.1

Large Hail in Forest County

Since 1950, there have been 61 documented large hail reports of three quarters of an inch or large. There have only been five documented reports of large hail over two inches in diameter across the county. The largest hail stone of 2.75 inches in diameter was documented three miles southwest of Blackwell on June 8, 2000 and again at Laona on June 7, 2007. The last report of large hail two inches or greater in diameter occurred 1.4 miles south of Lake Metonga on April 10, 2011 when two inch hail was reported. Overall, hail ranging in size from three quarters to one inch accounted for 64% of the documented large hail reports. Large hail reports of two inches or greater only accounted for only 8% of all reports.

Hail over 2 inches

Event #		Date Month	Day	Year	Time (CST)	Start / End Location	Hail (Inches)
1T		6	7	2005	17:41	Laona	2.75
1T		6	8	2000	21:45	3 SW Blackwell	2.75
3		9	3	1958	17:30	4 S Laona	2.50
4		4	10	2011	18:35	1.4 S Lake Metonga	2.00
4		6	7	2005	17:54	Crandon	2.00



Forest County Severe Weather Facts (1950-2023)

Forest County Summary

In Forest County, the severe weather season begins in earnest in May and wanes quickly by September, although 2011 brought the earliest documented reports of tornadoes and large hail to the county. Severe weather usually occurs in the afternoon and early evening hours, with a secondary peak between midnight and 5 AM CST during the summer months. If you do experience severe weather, you are likely to see large hail or damaging winds in the spring or fall. Strong winds or wind damage are the dominant severe weather report during the remainder of the convective season. In the NWS Green Bay forecast area which includes 22 counties from central to northeast Wisconsin, Forest County ranks 19th in the total number of storm reports and 20th 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, an 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

Forest 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