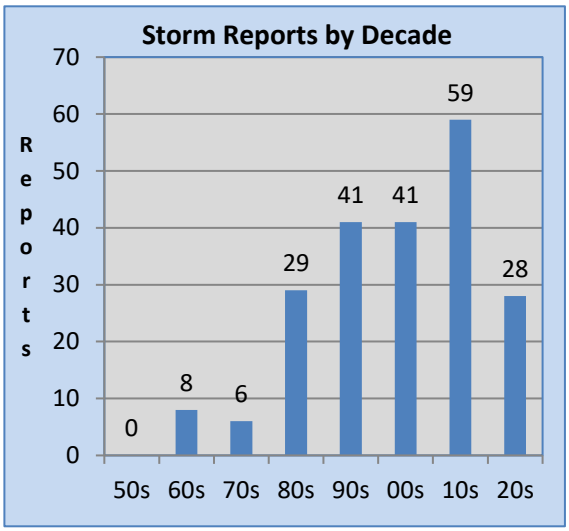
Oconto County Severe Weather Facts (1950-2023)

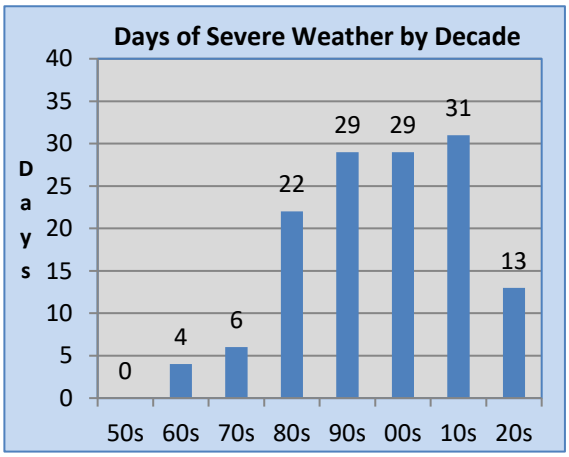
Updated: 01/01/24: Next Update: January 2025

Storm Reports by Decade

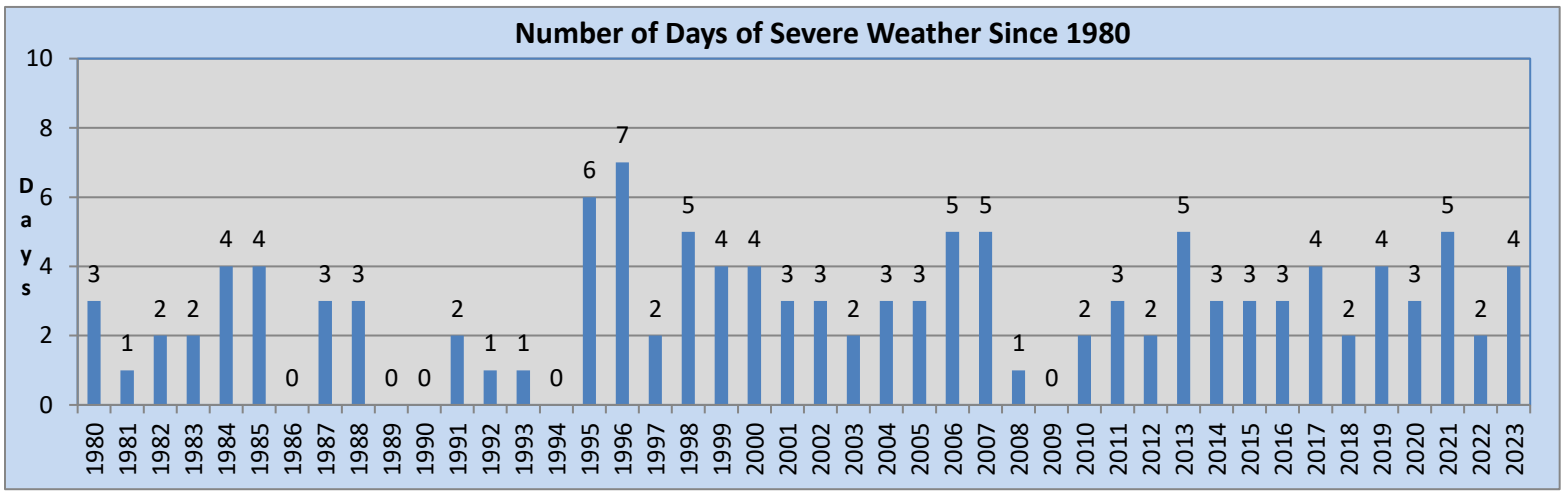


Since 1950 there have been 212 documented reports of large hail, damaging winds and tornadoes across Oconto County The population boom of the 1980s and 1990s combined with the SKYWARN program led to an increase in the number of reports of severe weather during both decades. The number of reports increased 61% 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. 1998 was the most active year with eleven reports followed by ten reports in 2007 and 2017, nine reports in 1995 and 2021, and eight reports in 2015 and seven reports in 1996, 2018, 2019 and 2020. Since 1980, there were no reports of severe weather in the following years: 1986, 1989, 1990 and 2009. In 2023, there were three reports of large hail and three reports of strong winds or wind damage.

Days of Severe Weather by Decade



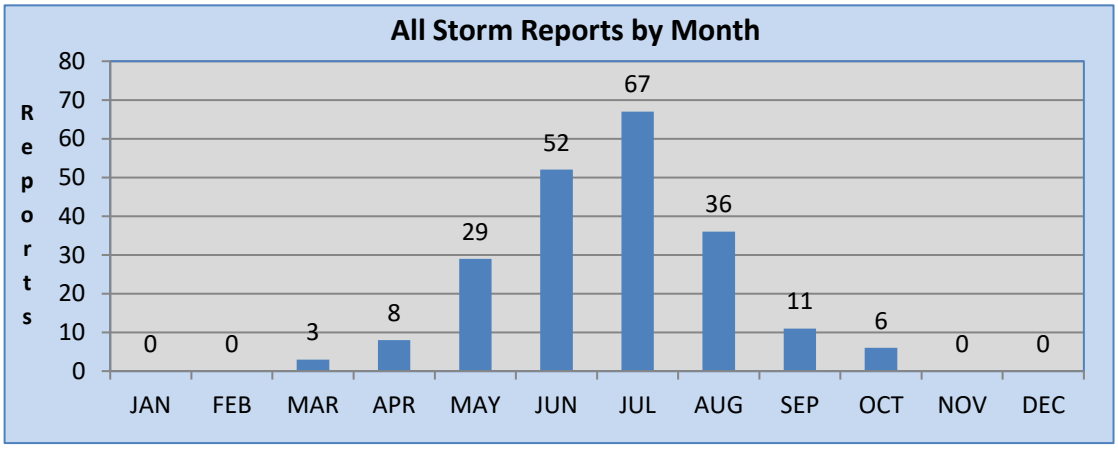
In order to address the impact of multiple reports for the same storm, the data was examined by the number of severe weather days. Since the reports were sporadic during the 1950s through the 1970s, only data from 1980 to present was used. There has been an 10 % increase in the number of days of severe weather from the 2014 to 2023 period compared to the 1990s. 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, Oconto County averages 3.1 days of severe weather per year. The long-term average from 1980-2023 is 2.8 days. The most active year was 1996 with seven days of severe weather; followed by six days of severe weather in 1995, five days in 1998, 2006, 2007, 2013 and 2021, and four days in 1984, 1985, 1999, 2000, 2017 and 203. In 2023, severe weather was reported on July 22, July 25, July 28 and October 24.

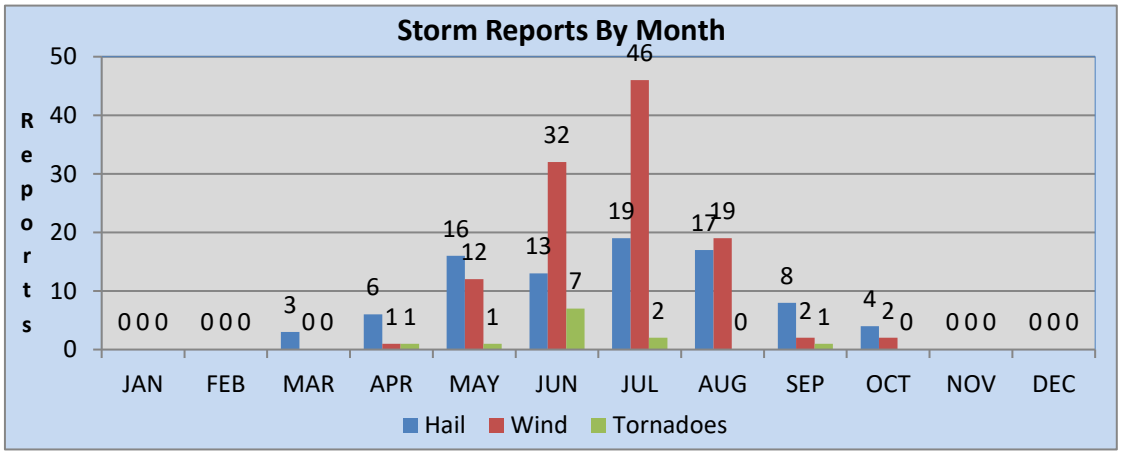


Oconto County Severe Weather Facts (1950-2023)

Storm Reports by Month

Severe weather has been documented in Oconto County from March through October. A rare event can occur in March. The earliest documented report of severe weather during the year occurred on March 29, 1998. Golf ball to baseball size hail was reported in Oconto, Lena, and Gillett. The severe weather season begins in earnest in May. The heart of the convective season is June and July, which accounts for 56% of all severe weather reports. The severe weather season quickly wanes by September. The warm season period of May through September accounts for 92% of all severe weather reports during the year. Severe weather can occur from time to time in September while events in October are rare. The latest report of severe weather during a given year occurred on October 24, 2023 when one-inch hail was reported nearly a mile southeast of Oconto Falls. The previous latest report in a year occurred on October 16, 1984 when wind damage was reported one mile southeast of Gillett. Also, in 2018 there was a report of strong winds/wind damage on October 3rd just south of Breed.



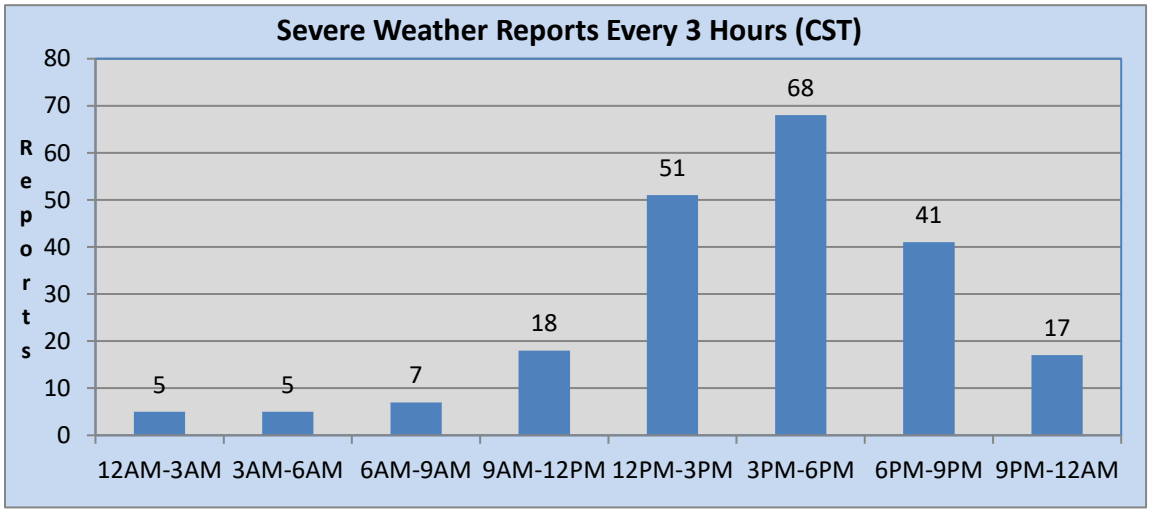


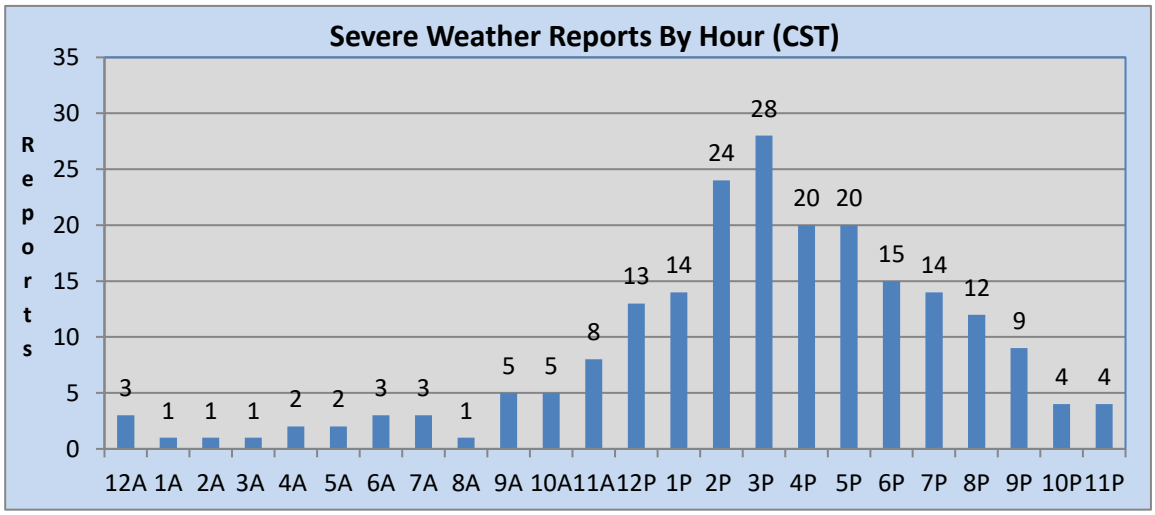
NOTE: The chart depicts storm type by month: (hail, wind/wind damage, tornadoes).

Oconto 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 Oconto County. Overall, nearly 69% of all severe weather reports occurred between 1 PM and 9 PM CST. In Oconto County, severe weather reports increased after 1 PM CST with a peak between 3 PM and 6 PM CST. The peak in the storm activity corresponds to peak afternoon heating when the atmosphere is most unstable. Between May and September, isolated reports were noted between midnight and 5 AM CST. In these events, thunderstorms across the plains or Minnesota move into the county overnight.

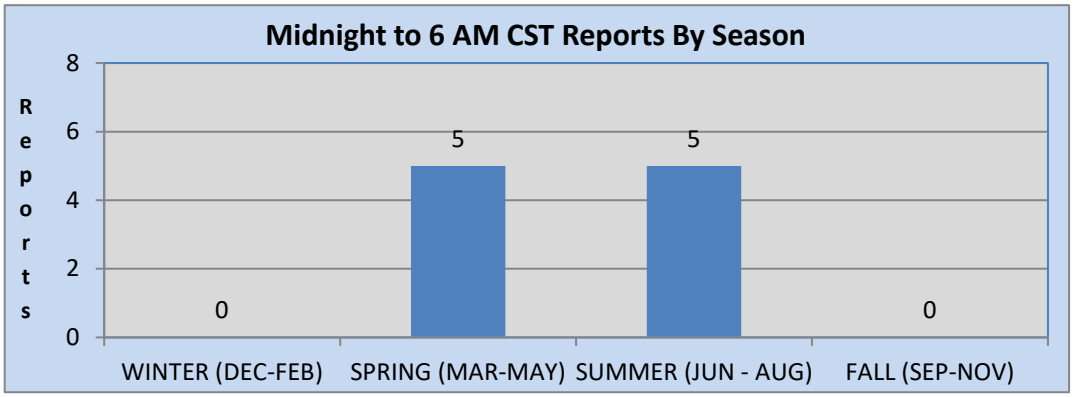




Oconto County Severe Weather Facts (1950-2023)

Overnight Severe Weather Reports Midnight to 6 AM CST

The spring and summer months (March through August accounted for all the overnight severe weather reports. Typical, overnight severe weather reports are most prominent during the late spring (May) and 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.



Oconto County Severe Weather Facts (1950-2023)

Oconto County Tornadoes

Since record keeping began in 1950, there have been 12 documented tornadoes in Oconto County. There have been two documented F/EF3 tornadoes. The last F3 tornado to strike the county occurred on September 28, 1971. The tornado touched down near Hewitt and lifted up near Middle inlet in Marinette County. Four tornadoes were rated F/EF2 intensity (see table below) while four tornadoes were rated F/EF1 and two tornadoes F/EF0. The most active year was 1966 with two tornadoes. A tornado was reported across Oconto County in consecutive years in 1979 and 1980. The last tornado to strike the county occurred on July 6, 2015 when an EF1 tornado touched down 2.2 miles east-northeast of Gillett and traveled to 2.6 miles south-southwest of Kelly Brook before dissipating. Since 1950, tornadoes have touched down in eleven different years. A tornado strike in Oconto County occurs on average every six years.

Event		Date			Time		F/EF
#		Month	Day	Year	(CST)	Start / End Location	Rank
1		6	4	1966	19:00	Gillett - 2 NE Oconto Falls	2
2		6	4	1966	19:00	Suring	2
3		6	26	1969	11:15-11:30	3 W Seymour - 8 W Sobieski	3
4		9	28	1971	16:20-17:20	Hewitt - Middle Inlet	3
5		6	14	1974	16:10	5 NW Gillett	1
6		6	13	1976	20:15	Oconto Falls	1
7		6	16	1979	09:30	Oconto Falls - 2 NE Lena	2
8		5	30	1980	15:20	Oconto	1
9		4	25	1996	17:55-17:57	2 W Pensaukee	0
10		6	7	2007	15:31-16:18	7.8 W Mountain - 9.5 ENE Lakewood	2
11		7	9	2013	18:50-18:54	4.4 NE - 5.2 NNE Oconto	0
12		7	6	2015	16:56-17:03	2.2 ENE Gillett - 2.6 SSW Kelly Brook	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 Oconto County

Event		Date			Time		F/EF
#		Month	Day	Year	(CST)	Start / End Location	Rank
1		6	4	1966	19:00	Gillett - 2 NE Oconto Falls	2
2		6	4	1966	19:00	Suring	2
3		6	26	1969	11:15-11:30	3 W Seymour - 8 W Sobieski	3
4		9	28	1971	16:20-17:20	Hewitt - Middle Inlet	3
5		6	16	1979	09:30	Oconto Falls - 2 NE Lena	2
6		6	7	2007	15:31-16:18	7.8 W Mountain - 9.5 ENE Lakewood	2

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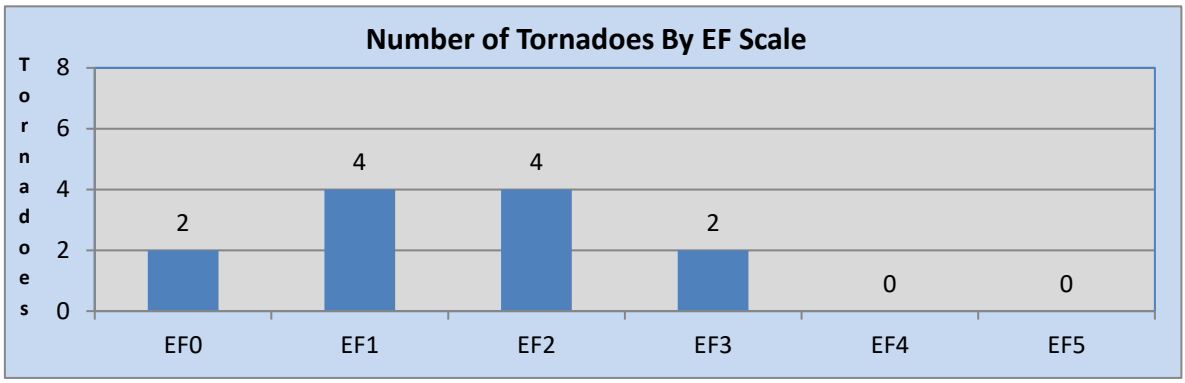
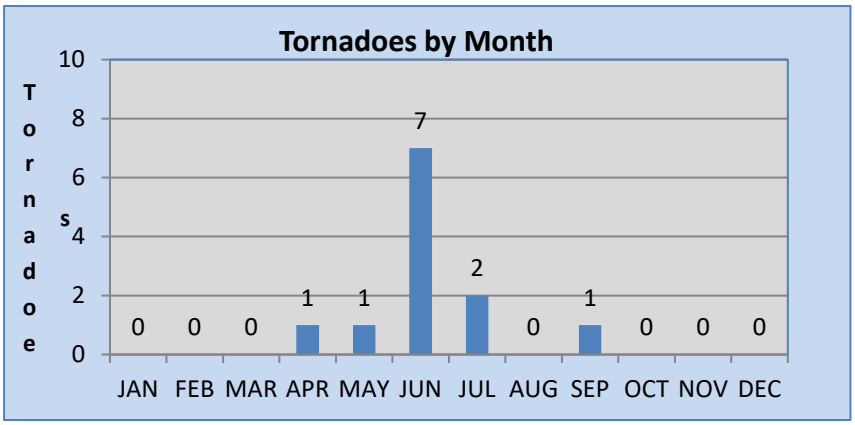


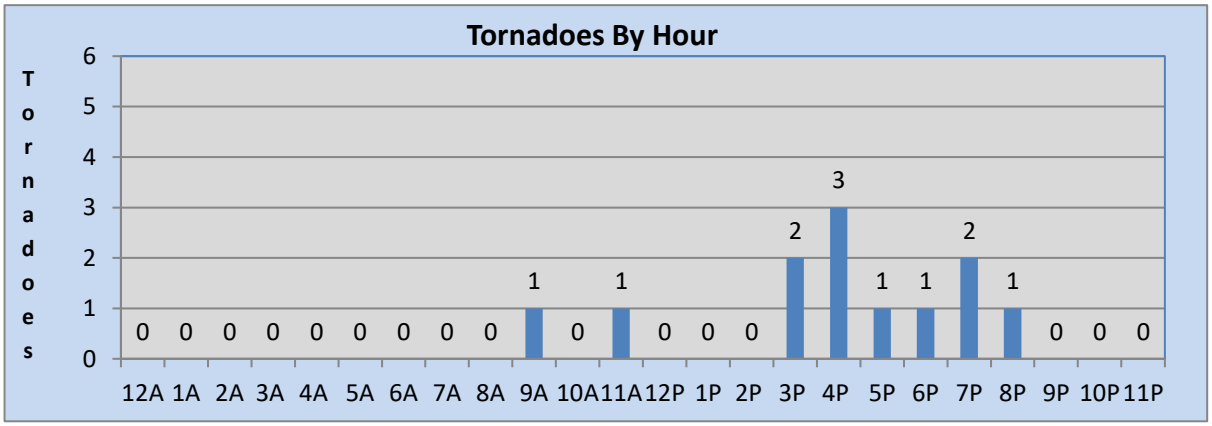
Tornadoes by Month



Documented tornadoes have occurred in Oconto County in April, May, June, July and September. The earliest documented tornado during the year occurred on April 25, 1996, when a F0 tornado touched down two miles west of Pensaukee. The tornado season peaks in June, which accounts for 58% of all tornado reports. The warm season months of May through September account for all but one tornado report during the year. The latest tornado on record during the year occurred on September 28, 1971, when a F3 tornado touched near Hewitt and traveled to near Middle Inlet in Marinette County.

Tornadoes by Hour

In Oconto County, 10 documented tornadoes (83%) have occurred between 3 PM and 9 PM CST. There have been no documented tornadoes between the 9 PM to 9 AM CST.



Oconto County Severe Weather Facts (1950-2023)

Predominant Storm Reports – Wind and Hail Only

During the spring (March into April), large hail is the dominant weather event that is reported to the National Weather Service. The atmosphere is cold aloft to support large hail reaching the ground. For the summer months of June through August, over 6 out of 10 reports were strong wind gusts and wind damage compared to large hail. Overall, just over a half of the reports are strong wind gusts/wind damage compared to large hail.

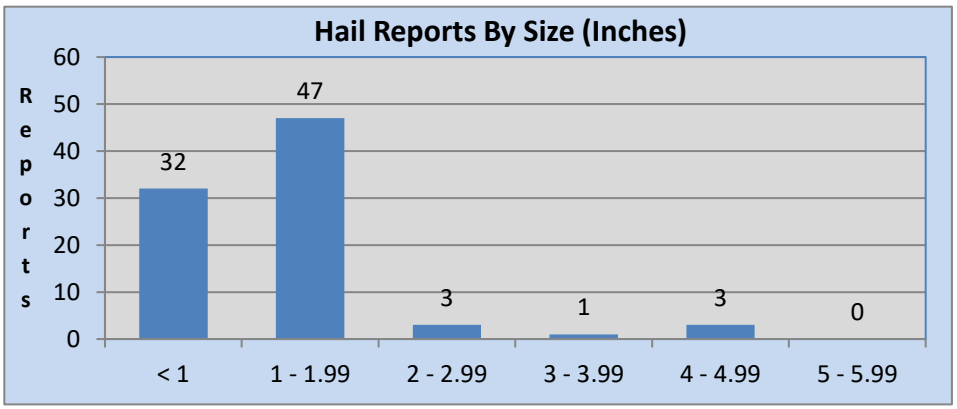
Month	% Hail Reports	% Wind or Wind Damage	Month	% Hail % Hail	% Wind or Wind Damage
Jan	0.0	0.0	Jul	29.2	70.8
Feb	0.0	0.0	Aug	47.2	52.8
Mar	100.0	0.0	Sep	80.0	20.0
Apr	85.7	14.3	Oct	66.7	33.3
May	57.1	42.9	Nov	0.0	0.0
Jun	28.9	71.1	Dec	0.0	0.0
			Year	43.0	57.0

Large Hail in Oconto County

There have only been seven documented reports of hail two inches or greater in diameter across the county. The largest hail stone of four inches in diameter was reported from one mile north of Hayes to Suring on July 1, 2006, and twice in 2015 when four inch hail was reported a half mile east of Abrams and nearly three miles south of Brookside on August 2nd. Overall, hail ranging in size from three quarters to one inch accounted for 69% of the documented large hail reports. Large hail reports of two inches or greater only accounted for 8% of the total large hail reports.

Hail over 2 inches

Event #		Date Month	Day	Year	Time (CST)	Start / End Location	Hail (Inches)
1T		8	2	2015	13:32	2.8 S Brookside	4.00
1T		8	2	2015	13:24	0.5 E Abrams	4.00
1T		7	1	2006	14:31	1 N Hayes - Suring	4.00
4		7	1	2006	15:05	Oconto - 6 SE Oconto Falls	3.25
5		3	29	1998	15:15	1 N Oconto	2.75
6		8	2	2015	13:32	2.8 ESE Brookside	2.50
7		7	30	2012	16:30	1.6 ENE Chase	2.00



Oconto County Severe Weather Facts (1950-2023)

Oconto County Summary

In Oconto County, the severe weather season begins in earnest in May, peaks in June/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 6 AM CST during the summer months. If you do experience severe weather, you are likely to see large hail early in the spring. Damaging winds or strong wind gusts are 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, Oconto County ranks 17th in 7the total number of storm reports and 18th 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

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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