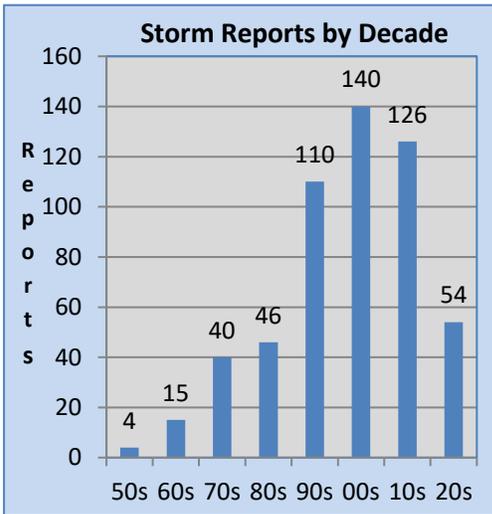


Marathon County Severe Weather Facts (1950-2023)

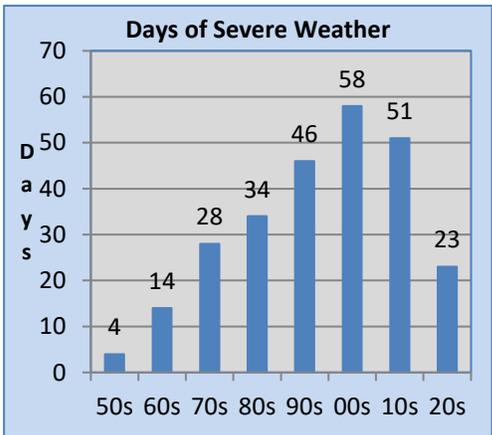
Updated: 01/01/24: Next Update: January 2025

Storm Reports by Decade



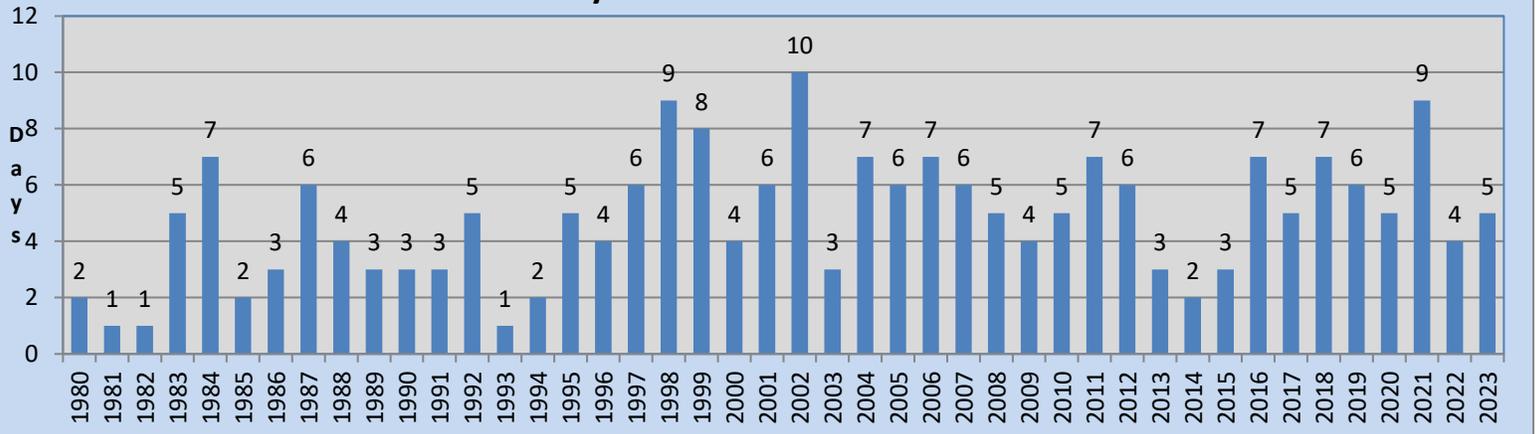
Since 1950 there have been 535 documented reports of large hail, damaging winds and tornadoes across Marathon County. I did include a report from 1921 in this document which is the state record hail stone of 5.7 inches was set on May 22, 1921. The population boom of the 1980s and 1990s combined with the SKYWARN program led to an increase in the number of reports of severe weather during both decades. The number of reports increased 7% 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. 2002 was the most active year with thirty-three reports followed by twenty-six reports in 1998, twenty-four reports in 2012 and 2021, nineteen reports in 2006, eighteen reports in 1997 and 2005, and seventeen reports in 2010. The last time no severe weather was reported during the year was in 1967. In 2023, there were 14 reports of large hail and one strong wind/wind damage report.

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 a 11% increase in the number of days of severe weather from the 2014-2023 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, Marathon County averages 5.1 days of severe weather per year. The long-term average from 1980-2023 is 4.8 days. The most active year was 2002 with ten days of severe weather; followed by nine days of severe weather in 1998 and 2021, eight days in 1999, and seven days in 1984, 2004, 2006, 2011, 2016 and 2018. In 2023, there were five days of severe weather: May 6, July 27, July 28, August 11 and October 24. An unusually large hail was reported across portions of central and northeast Wisconsin on October 24th.

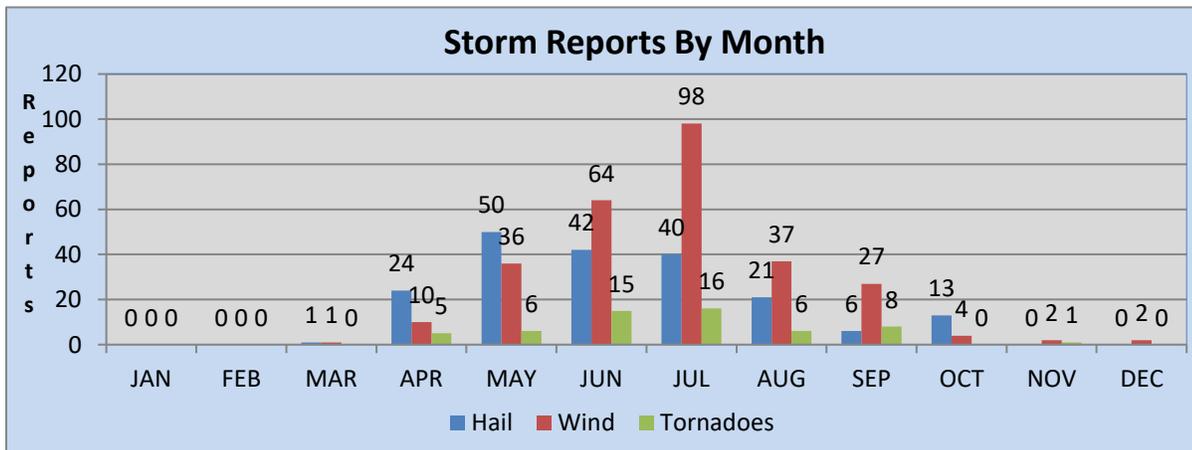
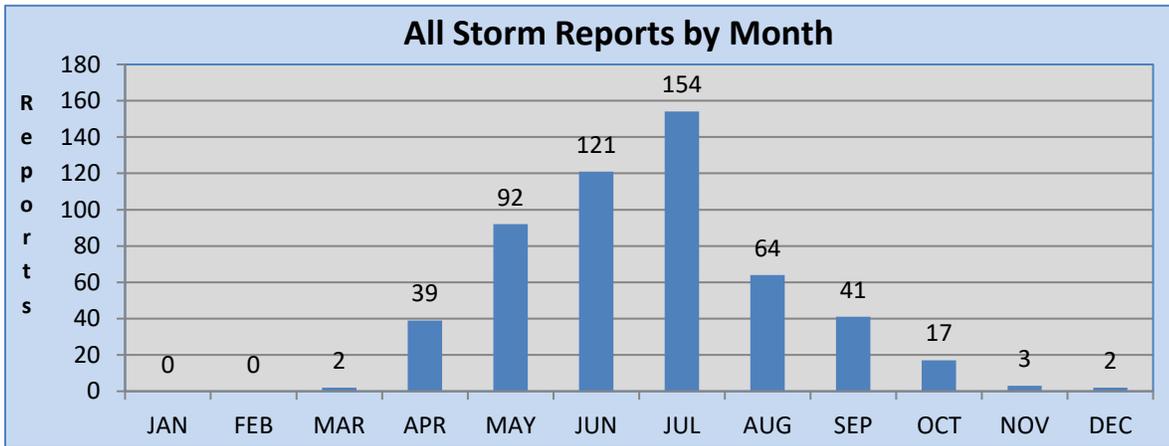
Number of Days of Severe Weather Since 1980



Marathon County Severe Weather Facts (1950-2023)

Storm Reports by Month

Severe weather has been recorded in Marathon County from March through November. A rare event can occasionally occur in March. The earliest documented report of severe weather during the year occurred on March 8, 2000 when one inch hail was reported at Stratford. The severe weather season begins in earnest in April. The heart of the convective season is May through July and accounts for 67% of all severe weather reports. July is the peak month for severe weather. Severe weather reports quickly wanes by September. The warm season months from May through September accounted for 88% of all severe weather reports during the year. Severe weather can occur from time to time in September with isolated reports during October and November. In 2023, two-inch diameter hail was report a mile and a half north-northwest of Mosinee while 1.75 inch hail was reported nearly a mile south of Knowlton on October 24th between 9 am and 10 am. Marathon County is the only county in the Green Bay forecast area that has recorded a tornado during November. A tornado was reported from Chili in Clark County to Rib Mountain on November 15, 1960. Until 2021, the latest report of severe weather during the year in Marathon County occurred on November 21, 1990, when wind damage was reported three miles north of Nutterville or eight miles northeast of Wausau. In 2021, unusually mild temperatures help trigger severe thunderstorms across Iowa and southeast Minnesota into Wisconsin on December 15th. A weakening line of severe thunderstorms brought strong winds and wind damage to near Colby around 9:37 PM CST and about two miles north-northwest of Marathon around 10:10 PM CST.

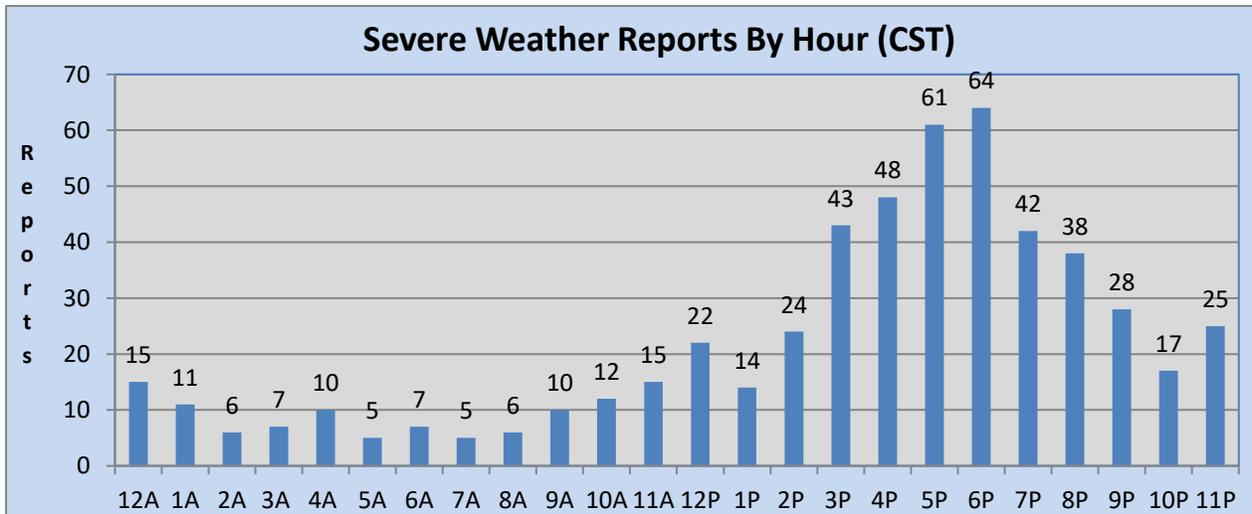
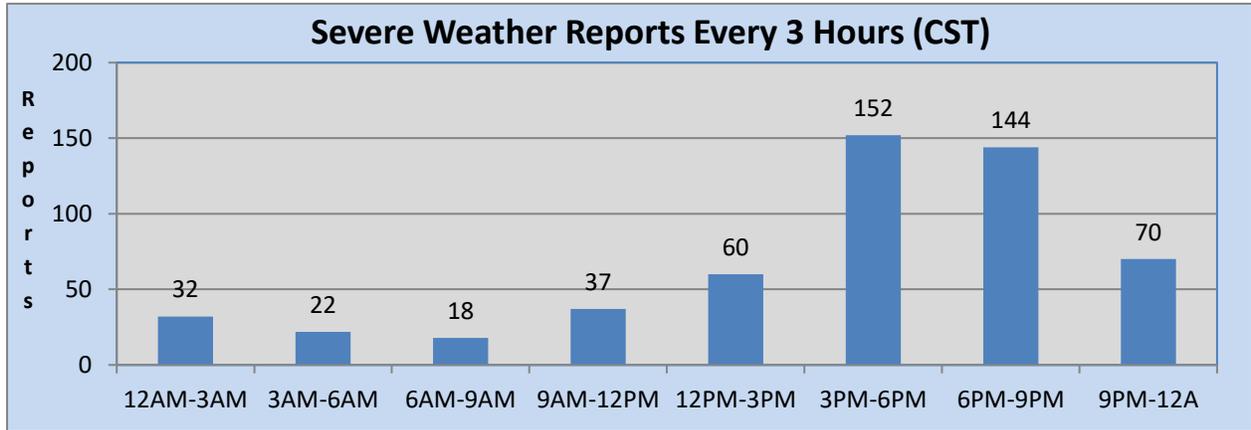


NOTE: The chart depicts storm type by month: (hail, wind/wind damage, tornadoes).

Marathon County Severe Weather Facts (1950-2023)

Storm Reports by Time of Day

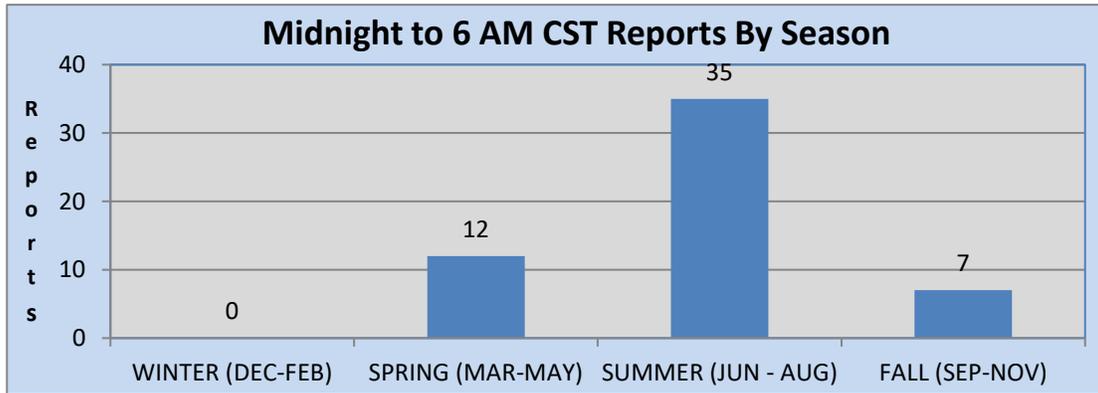
No matter the season, the afternoon and early evening hours are the peak time for severe weather across Marathon County. Overall, 62% of all severe weather reports occur between 1 PM and 9 PM CST. In Marathon County, severe weather reports increased sharply after 1 PM CST with a peak between 3 PM and 7 PM CST. The peak in the storm activity corresponded to the afternoon heating when the atmosphere is most unstable. During May through September, there was another minor peak in activity between midnight and 6 AM CST. In these events, severe thunderstorms develop across Minnesota and the Dakotas which move into the county overnight. Although rare to see severe weather between 6 AM and NOON CST, Marathon County had the highest number of reports during this time frame in the Green Bay forecast area. In 2012, there was a rare outbreak of severe weather between 6:50 AM and 8:05 AM CST on October 25th. This line of thunderstorms produced hail up to 1.25 inches and produced widespread wind damage across the western half of the county.



Marathon 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 65% of all overnight reports of severe weather during the year.



Marathon County Severe Weather Facts (1950-2023)

All Marathon County Tornadoes

Event	Date			Time		F/EF
#	Month	Day	Year	(CST)	Start / End Location	Rank
1	6	25	1950	21:10	2 W Unity - 3 NE Abbotsford	2
2	6	20	1954	02:30	Mosinee	2
3	6	4	1958	19:30	6 SE Chippewa Falls to 2 NW Athens	3
4	5	4	1959	10:30	Wausau	1
5	11	15	1960	14:25	Chili to near Rib Mountain	2
6	9	3	1961	00:10	Fenwood	2
7	9	3	1961	01:00	Athens	1
8	5	8	1964	17:50	7 ESE Knowlton - 5 W Elderon	2
9	8	19	1968	17:30	4 W Fenwood - 11 E Fenwood	2
10	9	28	1971	14:15-16:05	3 NE Brokaw - 6 NE Hogarty	3
11	9	28	1971	16:00	1 NE Abbotsford - Athens	3
12	6	18	1973	11:00	2 W Athens	1
13	4	12	1974	14:05	5 W Athens	2
14	6	13	1976	20:00	2 W Hogarty - Elton	1
15	8	31	1977	18:15	Rib Mountain - Wausau	3
16	7	15	1982	19:15	Mayflower Lake	1
17	7	3	1983	17:35	6 W Unity - Cherokee	2
18	6	26	1984	16:55	13 N Wausau - Texas	1
19	9	24	1984	16:50	13.5 WSW Wausau - Wausau	2
20	7	2	1987	17:10	Pike Lake	1
21	5	8	1988	17:10	4.5 SW Hadler - Rib Falls	2
22	9	19	1988	16:37	1 W Edgar	0
23	6	12	1990	18:35	2 W Stratford	1
24	7	19	1992	15:54	2 WSW Stratford	1
25	7	8	1994	14:00	3 NW Elderon	1
26	8	7	1996	01:45-01:49	6.5 N Stratford - 2.5 NNW Fernwood	2
27	8	7	1996	01:46-01:47	1 N - 1.2 NE Stratford	1
28	8	7	1996	02:19-02:21	4 SW Shantytown - Shantytown	1
29	7	16	1997	14:40-14:45	8.5 NNE - 6.9 NE Nutterville	2
30	7	16	1997	15:00-15:02	4 SW - 4.2 SW Hogarty	0
31	7	16	1997	15:00-15:01	3 N Sunset	0
32	7	16	1997	15:09-15:11	2 NE - 1.8 NE Ringle	1
33	7	16	1997	15:20-15::22	2 N - 1.8 N Elderon	0
34	5	31	1998	00:20-00:21	4 WSW Mosinee	0
35	4	18	2002	18:13-18:27	3 SE Stratford - 6 NW Mosinee	1
36	4	18	2002	18:32	6 SSW Wausau Airport	0
37	7	30	2002	1822-1828	3 W - 0.8 W Central Wisconsin Airport	0
38	9	2	2002	1704-1706	5.2 W - 5 W Athens	0
39	9	2	2002	1735-1743	6 NW Wausau - 4 NE Wausau	1
40	6	4	2005	1527-1529	4 W - 4.5 WNW Edgar	0

Marathon County Severe Weather Facts (1950-2022)

All Marathon County Tornadoes Continued

Event	Date			Time		F/EF
#	Month	Day	Year	(CST)	Start / End Location	Rank
41	6	4	2005	15:39-15:42	1 W - 1.5 NW Athens	0
42	6	4	2005	17:06	4 S Athens	0
43	6	4	2005	17:20	3 W Marathon	0
44	6	4	2005	19:18	7 S Hogarty	0
45	6	10	2005	13:03	4 W Mosinee	0
46	6	7	2007	15:01-15:14	1.4 W Peplin - 0.9 N Pike Lake	2
47	5	25	2008	20:00-20:01	3 ENE Knowlton	0
48	7	29	2008	15:27	3.6 NW Granite Heights	0
49	7	29	2008	15:59-16:00	6.3 NNW Kalinke	0
50	4	10	2011	17:08-17:41	2 N Hamburg - 1 SW Bloomfield	0
51	5	24	2012	18:01-18:07	3.7 SSE - 4.8 ENE Marathon	0
52	6	30	2016	18:16	0.8 WSW Poniatowski	0
53	8	4	2016	10:20-10:26	1.3 NNE Cherokee - 4.4 SSW Stratford	1
54	4	9	2017	23:54-23:55	5.0 SSW Taegsville - 4.9 S Taegsville	1
55	7	19	2019	19:20-19:30	1.5 SSW Moon - 3.9 ENE Knowlton	1
56	7	28	2021	19:40-19:44	4.8 SE Merrill - 2.8 NE Granite Heights	1
57	7	28	2021	20:18-20:19	0.4 SSE - 0.6 SSE Peplin	0

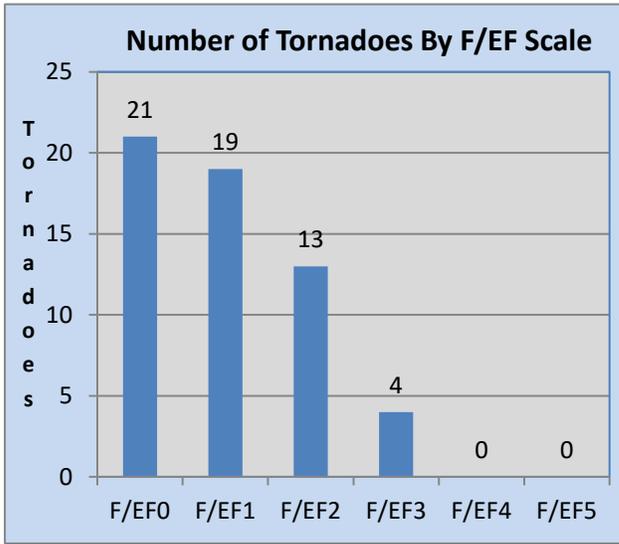
Additional tornado data can be found on the NWS Green Bay webpage at: <http://www.weather.gov/grb/severeclimate>

F/EF2 or Greater Tornadoes in Marathon County

Event	Date			Time		F/EF
#	Month	Day	Year	(CST)	Start / End Location	Rank
1	6	25	1950	21:10	2 W Unity - 3 NE Abbotsford	2
2	6	20	1954	02:30	Mosinee	2
3	6	4	1958	19:30	6 SE Chippewa Falls - 2 NW Athens	3
4	11	15	1960	14:25	Chili to near Rib Mountain	2
5	9	3	1961	00:10	Fenwood	2
6	5	8	1964	17:50	7 ESE Knowlton - 5 W Elderon	2
7	8	19	1968	17:30	4 W Fenwood - 11 E Fenwood	2
8	9	28	1971	14:15-16:05	3 NE Brokaw - 6 NE Hogarty	3
9	9	28	1971	16:00	1 NE Abbotsford - Athens	3
10	4	12	1974	14:05	5 W Athens	2
11	8	31	1977	18:15	Rib Mountain - Wausau	3
12	7	3	1983	17:35	6 W Unity - Cherokee	2
13	9	24	1984	16:50	13.5 WSW Wausau - Wausau	2
14	5	8	1988	17:10	4.5 SW Hadler - Rib Falls	2
15	8	7	1996	01:45-01:49	6.5 N Stratford - 2.5 NNW Fernwood	2
16	7	16	1997	14:40-14:45	8.5 NNE - 6.9 NE Nutterville	2
17	6	7	2007	15:01-15:14	1.4 W Peplin - 0.9 N Pike Lake	2

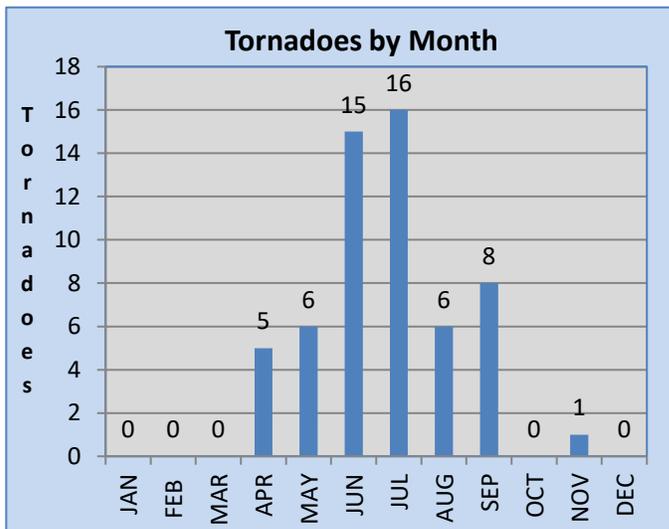
Marathon County Severe Weather Facts (1950-2023)

Tornadoes



Since record keeping began in 1950, there have been 57 documented tornadoes in Marathon County. Of the 57 tornadoes, there have been four documented tornadoes of F/EF3 or greater intensity. There have been four F/EF3 tornadoes to strike the county. The last F3 tornado occurred on August 31, 1977. The tornado touched down one mile northeast of Abbotsford and then moved to near Athens. Thirteen tornadoes were rated F/EF2, nineteen tornadoes were rated F/EF1, and twenty-one tornadoes were rated F/EF0. The most active year was 2005 with six tornadoes, followed by five tornadoes in 1997 and 2002, and three tornadoes in 1996. A tornado was reported in the county for four consecutive years from 1958 to 1961 and three consecutive years from 1982 to 1984 and 1996 to 1998. Since 1950, tornadoes have touched down in thirty-four different years. In 2021, an EF1 tornado touched down in Lincoln County and moved into Marathon County before dissipating nearly three miles northeast of Granite Heights on July 28th. Another tornado (EF0) occurred on this date just southeast of Peplin. A tornado strike in Marathon County occurs on average about every year and a half.

Tornadoes by Month

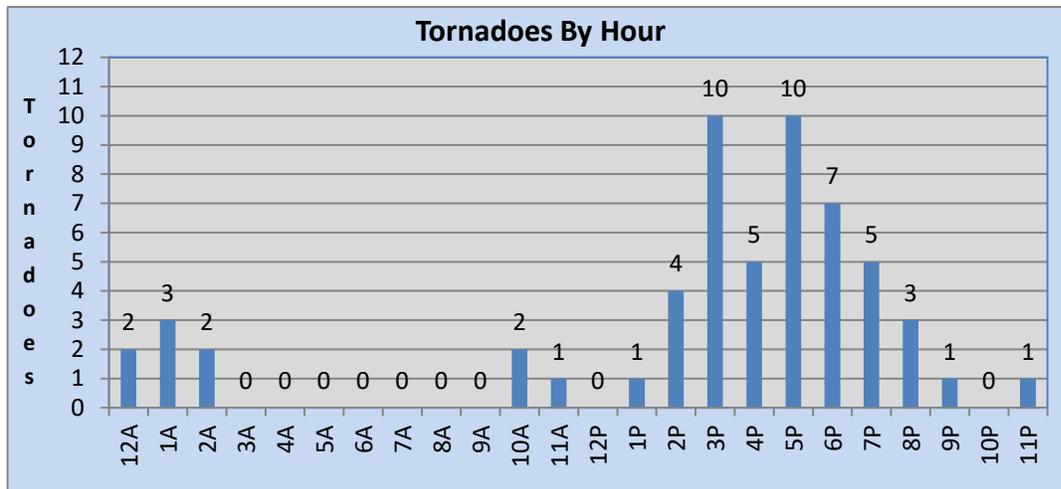


Documented tornadoes have occurred in Marathon County from April through September with a rare tornado in November. In 2017, Marathon County experienced the earliest tornado on record in a calendar year on April 10th when an EF1 tornado touched down about five miles southwest of Taegsville. The previous earliest documented tornado during the year occurred on April 12, 1974, when a F2 tornado touched down five miles west of Athens. The tornado season peaks in June and July, which account for 54% of all tornado reports. There were more documented tornadoes in September than in August. During September, cold fronts are typically stronger while the jet stream is beginning to shift southward during the fall which may explain the increase in tornado activity. The warm season months of May through September account for 89% all tornadoes during the year. The latest tornado on record during the year occurred on November 15, 1960 when a F2 tornado touched down near Chili in Clark County and traveled to near Rib Mountain.

Marathon County Severe Weather Facts (1950-2023)

Tornadoes by Hour

In Marathon County, 45 documented tornadoes (79%) have occurred between 2 PM and 10 PM CST. There have been zero documented tornadoes between 3 AM and 9 AM CST.



Predominant Storm Reports – Wind and Hail Only

During April, May and October, large hail is the dominant weather event that is reported to the National Weather Service. Typically the atmosphere is colder during this time of year to support large hail. For the remainder of the convective season, reports of high winds or wind damage are more likely to be reported than large hail. Wind events are the most predominant report type during June through September.

Month	% Hail Reports	% Wind or Wind Damage	Month	% Hail Reports	% Wind or Wind Damage
Jan	0.0	0.0	Jul	29.0	71.0
Feb	0.0	0.0	Aug	36.2	63.8
Mar	50.0	50.0	Sep	18.2	81.8
Apr	70.6	29.4	Oct	76.5	23.5
May	58.1	41.9	Nov	0.0	100.0
Jun	39.6	60.4	Dec	0.0	0.0
			Year	41.2	58.8

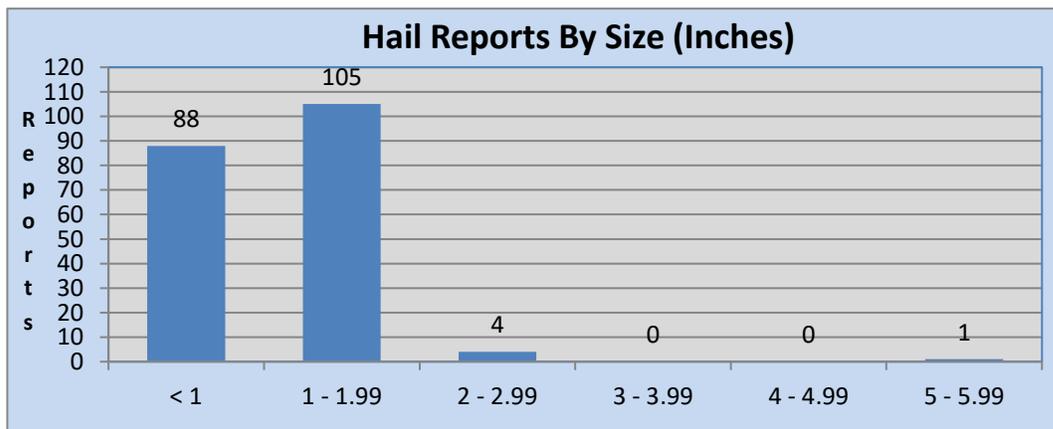
Marathon County Severe Weather Facts (1950-2023)

Large Hail in Marathon County

There have only been four documented reports of hail two inches or greater in diameter across the county. The largest hail stone documented in the county was 5.7 inches in diameter which occurred in Wausau in 1921. This hailstone is also the state record for Wisconsin. The last hailstone two inches or greater in diameter occurred on October 24, 2023 when 2-inch diameter hail was reported a mile and a half north-northwest of Mosinee. Overall, hail ranging in size from three quarters to one inch accounted for 79% of the documented large hail reports. Large hail reports of two inches or greater only accounted for 2% of the total hail reports.

Hail over 2 inches

Rank	Date			Time (CST)	Start / End	Hail (Inches)
	Month	Day	Year			
1	5	22	1921	??	Wausau (state record)	5.70
2	4	25	2008	17:07	Marathon	2.75
3	6	13	2004	06:19	Marathon	2.25
4T	10	24	2023	09:36-09:37	1.5 NNW Mosinee	2.00
4T	7	18	1996	09:15	2 E Brokaw	2.00



Note: The state record hailstone was included in the graph.

Marathon County Severe Weather Facts (1950-2023)

Marathon County Summary

In Marathon County, the severe weather season begins in earnest in April, peaks in June and 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 or late fall. Damaging wind or large hail will be the dominant severe weather report during the remainder of the convective season. In the Green Bay County Warning Area which includes 22 counties from central to northeast Wisconsin, Marathon County ranks 1st in the total number of storm reports and 1st 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	Wausara-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

Marathon 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