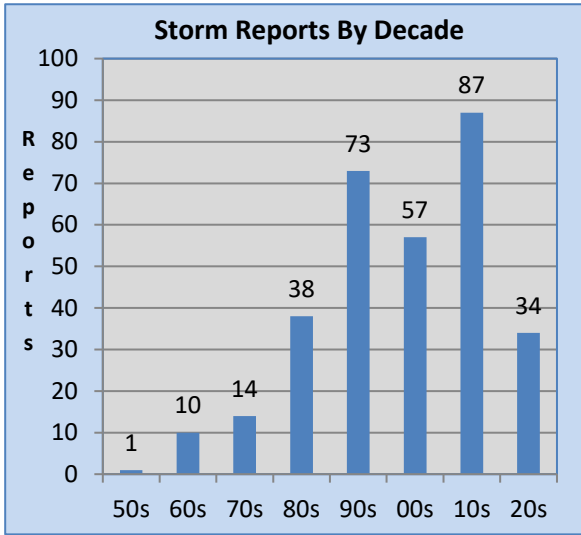


# Wood County Severe Weather Facts (1950-2023)

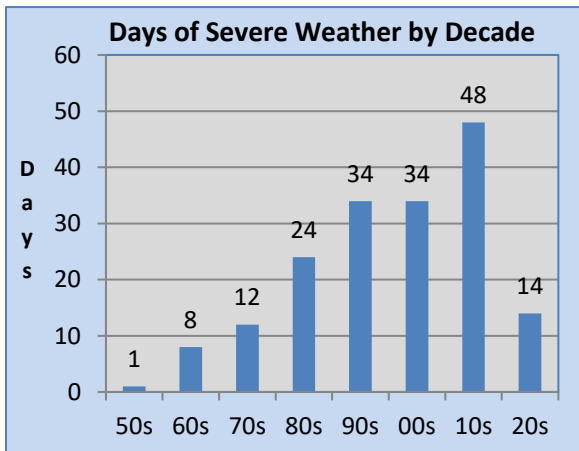
Updated: 01/01/24

## Storm Reports by Decade



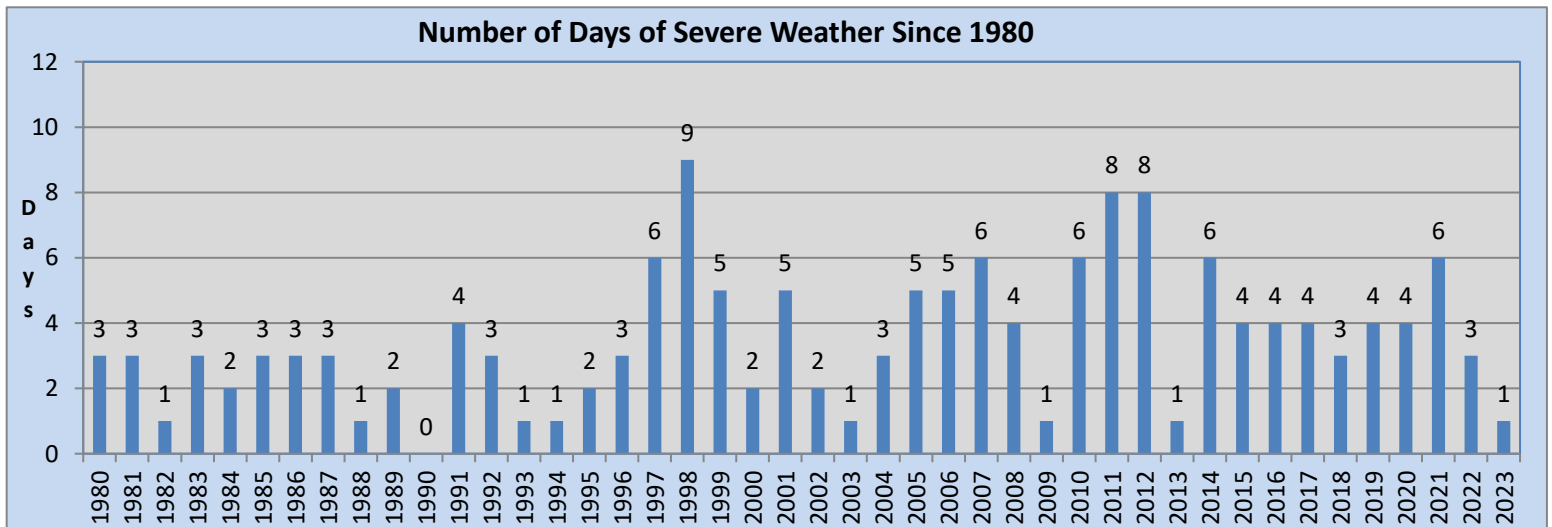
Since 1950 there have been 314 documented reports of large hail, damaging winds and tornadoes across Wood County. The population boom of the 1980s and 1990s, combined with the SKYWARN program, led to an increase in the number of reports of severe weather during both decades. The number of reports increased 15% 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 18 reports followed by 17 reports in 2011, 14 reports in 2016, and 13 reports in 1999 and 11 reports in 1997 and 2020. Since 1980, there were no reports of severe weather in a given year: 1990. In 2023, there were 8 reports of large hail on October 24. Scattered severe thunderstorms developed across central and northeast Wisconsin during the morning into the afternoon. Hail up to 3 inches in diameter fell just west of Masonville.

## 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 12% 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, Wood County averages 4.4 days of severe weather per year. The long-term average from 1980-2023 is 3.5 days. The most active year was 1998 with nine days of severe weather; followed by eight days in 2011 and 2012, and six days in 1997, 2007, 2010, 2014 and 2021. In 2021, the latest report (strong winds/wind damage) during the year occurred on December 15<sup>th</sup>. In 2023, there were 8 reports of large hail on October 24.

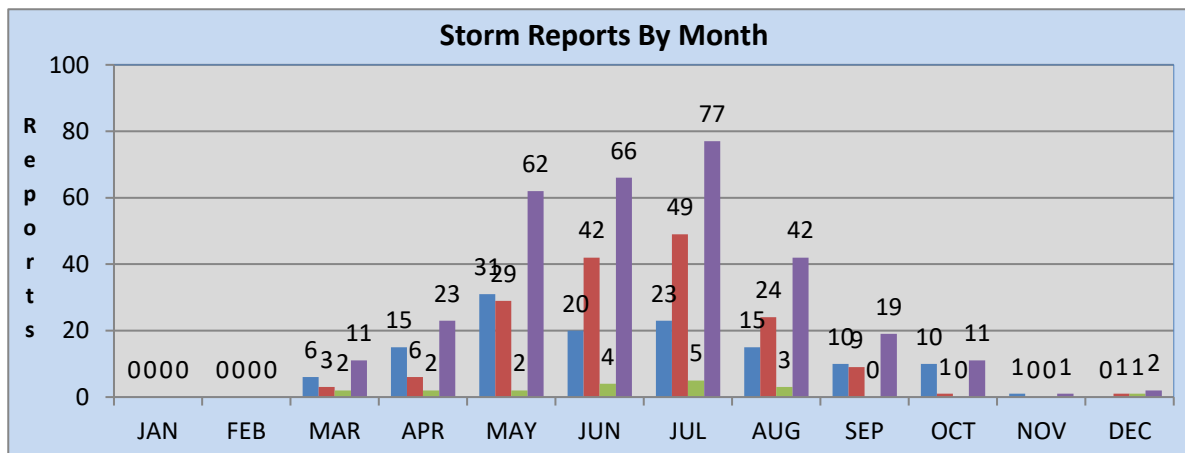
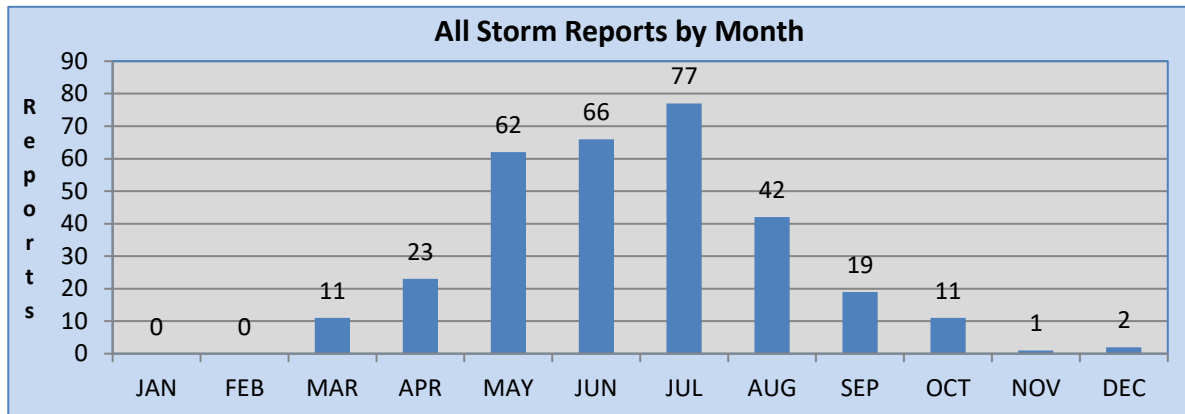
## Number of Days of Severe Weather Since 1980



# Wood County Severe Weather Facts (1950-2023)

## Storm Reports by Month

Severe weather has been documented in Wood County in every month except for January and February. On a rare occasion, severe weather breaks out during the month of March. The earliest report of severe weather in a given year occurred on March 6, 2017 when strong winds and wind damage was reported near the Wisconsin Rapids Airport. The severe weather season begins in earnest in April, with the heart of the convective season between May and July. The warm season period of May through September accounts for 87% of all severe weather reports during the year. Severe weather can occur from time to time in September with isolated reports during October. Until 2021, the latest report of severe weather during the year occurred on December 1, 1970. On this date, an out of season tornado touched down at 9 AM CST in the morning twelve miles southeast of Marshfield. This was one of four tornadoes that touched down between Marshfield and Green Bay on this morning. In 2021, unseasonably mild air on December 15<sup>th</sup> help trigger severe thunderstorms across Iowa and southeast Minnesota into Wisconsin. A weakening line of severe thunderstorms produced strong winds at Wisconsin Rapids. In 2023, there were 8 reports of large hail on October 24, ranging from 1 to 3 inches in diameter. The largest hailstone fell (3 inches in diameter) fell near Masonville around 8:50 AM CST.

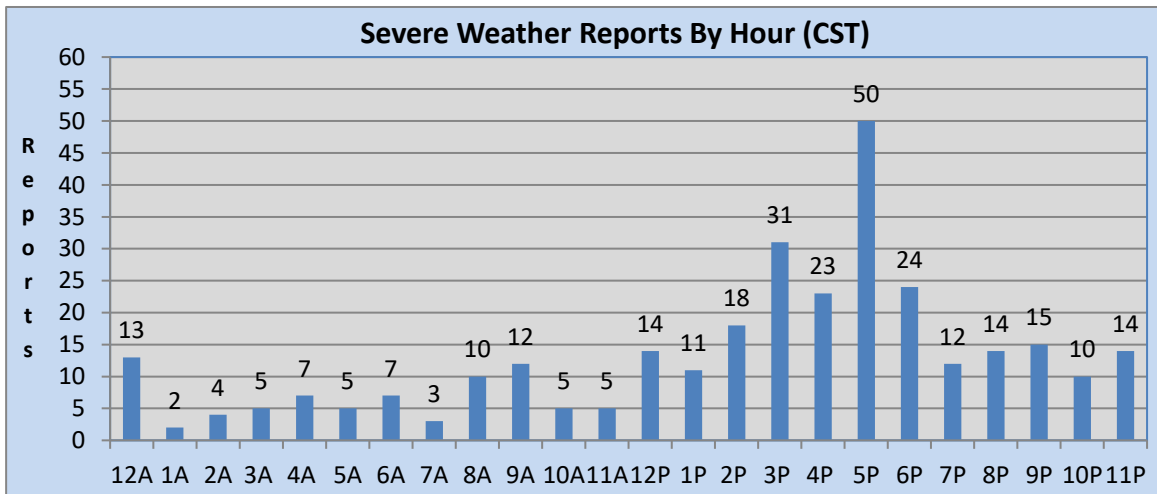
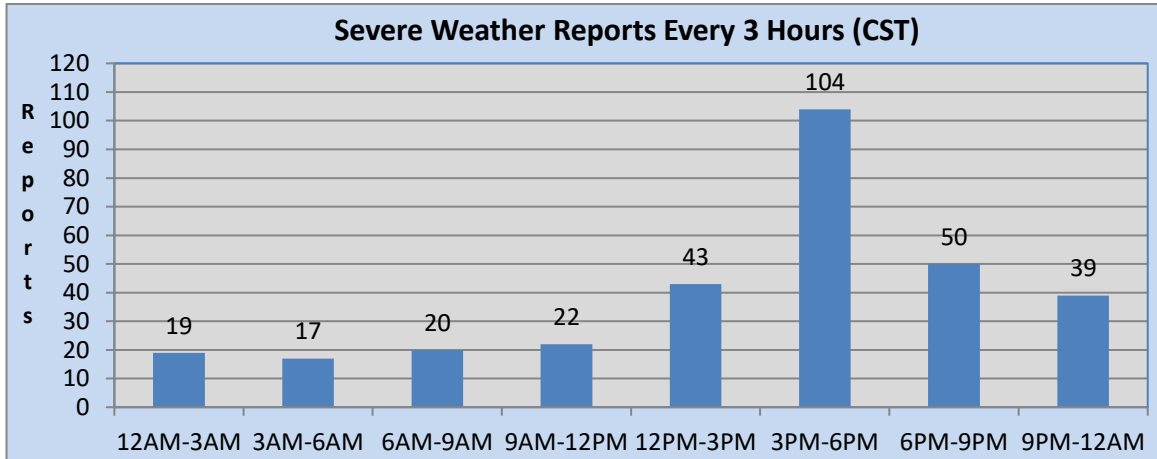


NOTE: The chart depicts storm type by month: (hail, wind/wind damage, tornadoes).

# Wood County Severe Weather Facts (1950-2023)

## Storm Reports by Time of Day

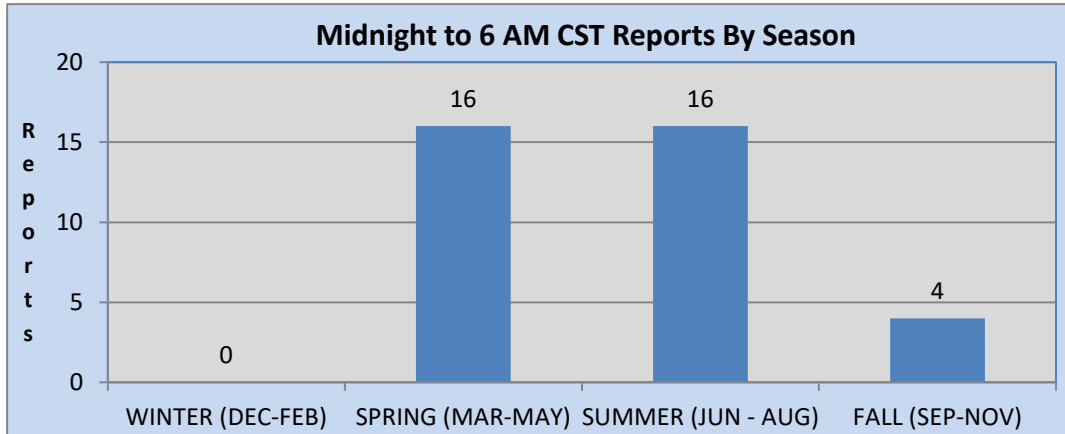
No matter the season, the afternoon and early evening hours are the peak time for severe weather across Wood County. Overall, 58% of all severe weather reports occur between 1 PM and 9 PM CST. Severe weather reports increased sharply after 1 PM CST with the peak in the number of reports between 3 PM and 7 PM CST. The peak in the storm activity corresponds to peak afternoon heating when the atmosphere is most unstable. There was another peak in the number of reports between midnight and 6 AM CST between May and August. The overnight reports correspond to thunderstorms that develop across Minnesota and Dakotas and moves into the county after midnight.



# Wood County Severe Weather Facts (1950-2022)

## Overnight Severe Weather Reports Midnight to 6 AM CST

Overnight severe weather reports are most prominent during the spring and summer months and account for 89% of all overnight severe weather reports during the year. During the late spring and summer months of June through August, nocturnal convection along warm fronts, or from complexes of storms that develop across the Dakotas and Minnesota and roll through the region during the early morning hours account for the storm reports.



# Wood County Severe Weather Facts (1950-2023)

## Wood County Tornadoes

Since record keeping began in 1950, there have been 19 documented tornadoes across Wood County. There had been zero documented as F/EF3 or greater intensity. Five tornadoes were rated F/EF2, five tornadoes F/EF1 and nine tornadoes were rated F/EF0. The most active years were 1967, 1970, 2000 and 2011 with two tornadoes. A tornado was reported across the county in four consecutive years from 1982 to 1985. Since 1950, tornadoes have touched down in 16 different years. A tornado strike in Wood County occurs about every three and a half years.

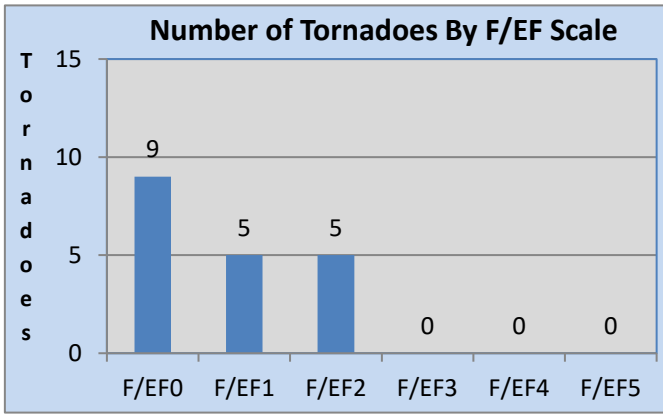
Event #	Date			Time (CST)	Start / End Location	F/EF Rank
	Month	Day	Year			
1	5	7	1964	18:00	Wisconsin Rapids	2
2	3	31	1967	00:05	Marshfield	2
3	7	22	1967	23:00-23:18	2S Loyal - 5 E Marshfield	2
4	6	17	1970	18:35	3 S Wisconsin Rapids	0
5	12	1	1970	09:00	12 SE Marshfield	2
6	7	8	1971	02:00	Wisconsin Rapids	1
7	6	13	1976	18:40-19:20	4 W Wisconsin Rapids - Stevens Point	1
8	3	30	1982	14:05-14:40	Armenia - 3 SW Stevens Point	1
9	7	3	1983	19:11	5 NE Nekoosa	0
10	4	27	1984	04:05	Saratoga	0
11	8	12	1985	18:13-18:30	6 S Marshfield - Auburndale	2
12	4	20	1992	16:00-16:20	2 SW Arpin - Bakerville	1
13	8	3	1999	17:45	3 W Pittsville	0
14	6	8	2003	12:59-13:02	4 S - 4.1 S Marshfield Airport	0
15	6	7	2007	15:26	2.2 W - 2.1 W Wisconsin Rapids Airport	0
16	7	29	2008	17:44-17:49	4.2 SE Nasonville - 4.7 WNW Bethel	0
17	7	14	2010	16:18-16:19	2.5 WSW - 2.2 WSW Veedum	0
18	5	22	2011	17:03-17:46	5.5 SE Cranmoor - 4.8 SE Arpin	1
19	8	23	2011	16:58	0.3 NW Arpin	0

## F/EF2 or Greater Tornadoes in Wood County

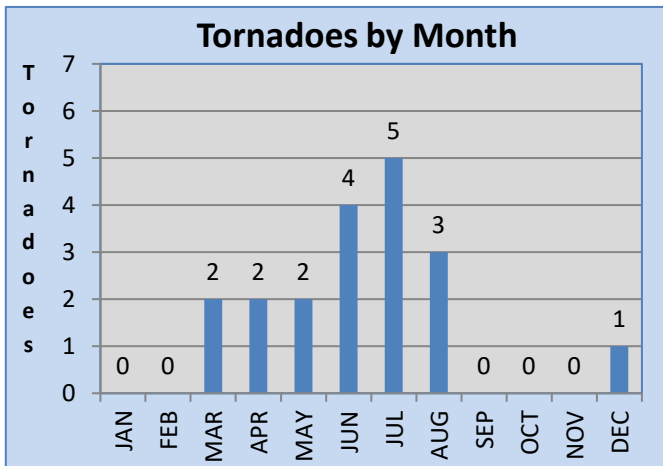
Event #	Date			Time (CST)	Start / End Location	F/EF Rank
	Month	Day	Year			
1	5	7	1964	18:00	Wisconsin Rapids	2
2	3	31	1967	00:05	Marshfield	2
3	7	22	1967	23:00-23:18	2S Loyal - 5 E Marshfield	2
4	12	1	1970	09:00	12 SE Marshfield	2
5	8	12	1985	18:13-18:30	6 S Marshfield - Auburndale	2

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

# Wood County Severe Weather Facts (1950-2023)



There have been zero tornadoes rated F/EF3 or higher. Five tornadoes (47%) were rated F/EF2, five tornadoes F/EF1 and nine tornadoes were rated F/EF0.

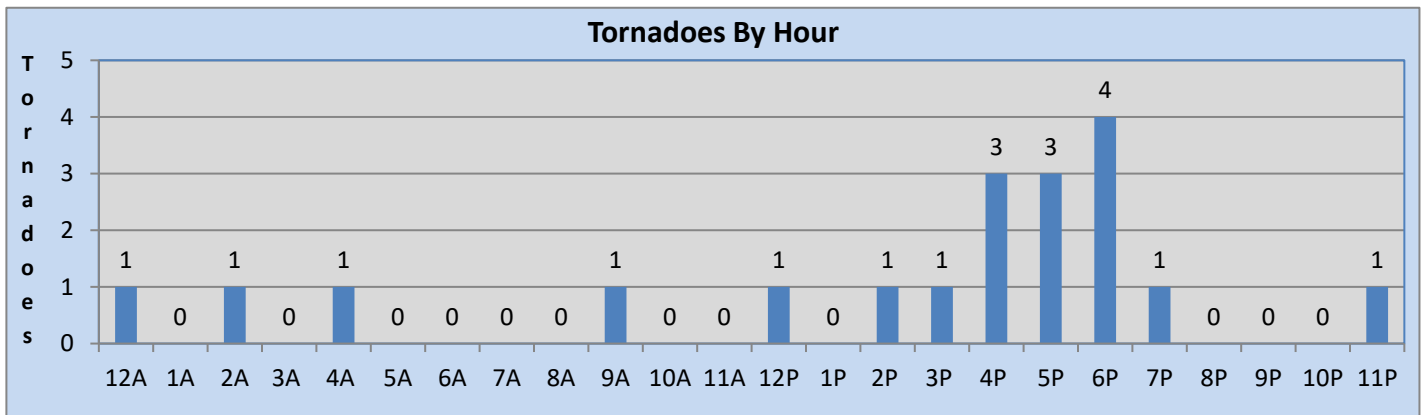


## Tornadoes by Month

Documented tornadoes have occurred from March through August with a very rare tornado report in early December. The earliest documented tornado during the year occurred on March 30, 1982. On this date, a F1 tornado developed near Armenia and moved to three miles southwest of Stevens Point. The warm season months of May through August account for 74% of all tornadoes during the year. The latest documented tornado on record during year occurred on December 1, 1970. A very rare December F2 tornado touched down 12 miles southeast of Marshfield and traveled two miles to the northeast.

## Tornadoes by Hour

In Wood County, thirteen out of the nineteen (68%) documented tornadoes have occurred between 2 PM and 8 PM CST. There have been no documented tornadoes between 5 AM and 8 AM CST and 10 AM to 11 AM CST and from 8 PM to 11 PM CST.



# Wood County Severe Weather Facts (1950-2023)

## Predominant Storm Reports – Wind and Hail Only

During March and April, large hail is the dominant weather event reported to the National Weather Service. During the spring, the upper atmosphere is typically colder to support large hail. Over the remainder of the convective season, the dominant reports are strong wind gusts and wind damage. Over the course of the year, nearly six out of ten reports are strong wind gusts and wind damage compared to large hail reports

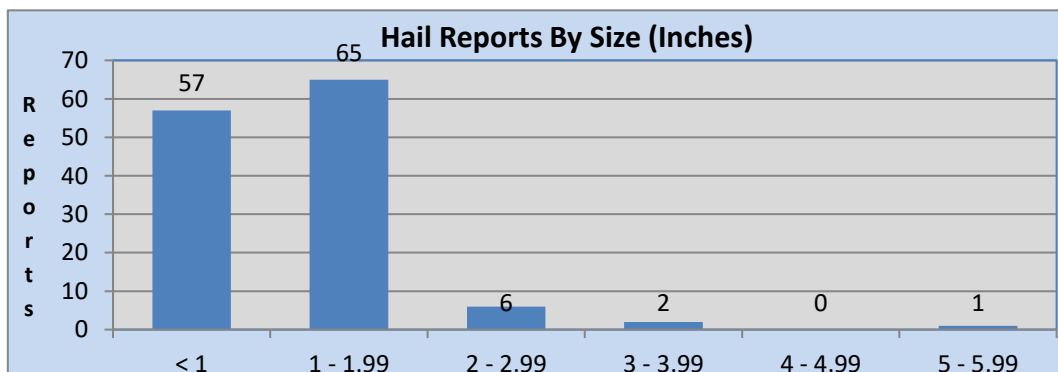
Month	% Hail Reports	% Wind or Wind Damage	Month	% Hail Reports	% Wind or Wind Damage
Jan	0.0	0.0	Jul	31.9	68.1
Feb	0.0	0.0	Aug	38.5	61.5
Mar	66.7	33.3	Sep	52.6	47.4
Apr	71.4	28.6	Oct	90.9	9.1
May	51.7	48.3	Nov	0.0	0.0
Jun	32.3	67.7	Dec	0.0	0.0
			Year	44.4	55.6

## Large Hail in Wood County

There have been 8 documented reports of hail two inches or greater in diameter across the county, which three of these reports occurred in 2023. The largest hail stone reported in the county was five and a half inches in diameter which occurred on June 7, 2007. This hailstone went down in the record books as the 2<sup>nd</sup> largest documented hailstone in Wisconsin. The state record for the largest hailstone is 5.7 inches set in Wausau in on May 22, 1921. In 2023, severe thunderstorms brought large hail to portions of Wood County, which was large as three inches near Masonville around 8:50 AM CST. There were two other reports of hail over 2 inches in diameter. 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 7% of the total hail reports.

## Hail over 2 inches

Rank #	Month	Day	Year	Time (CST)	Start / End Location	Hail (Inches)
1	7	26	2014	23:50-23:52	Wisconsin Rapids	5.50
2T	10	24	2023	08:50-08:51	0.5 W Masonville	3.00
2T	8	2	2015	14:06	Rudolph	3.00
4T	10	24	2023	08:33-08:34	0.9 SE Marshfield	2.25
4T	7	26	2014	23:50-23:52	Wisconsin Rapids	2.25
6T	10	24	2023	08:38-08:39	Hewitt	2.00
6T	8	2	2015	14:00	3.9 E Vesper	2.00
6T	5	27	2006	21:22	Lindsey	2.00



# Wood County Severe Weather Facts (1950-2023)

## Wood County Summary

In Wood County, the severe weather season begins in earnest in April, peaks in June 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 reports of 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, Wood County ranks tied 6<sup>th</sup> in the total number of storm reports and 15<sup>th</sup> 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



# Wood 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