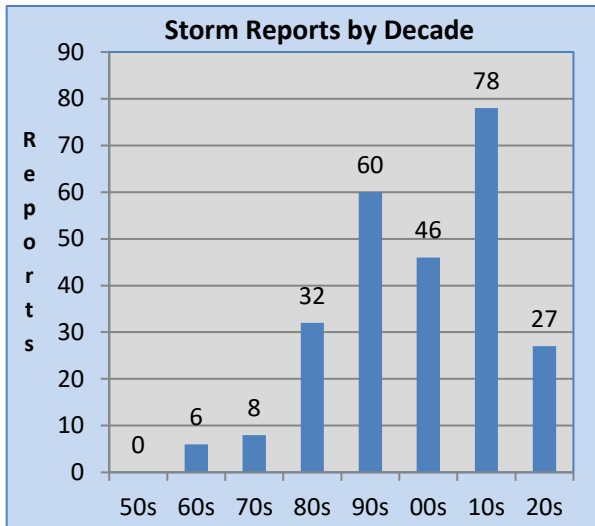


# Shawano County Severe Weather Facts (1950-2023)

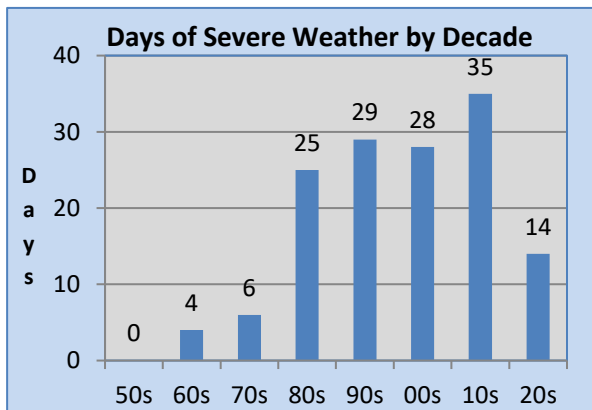
Updated: 01/01/24: Next Update January 2025

## Storm Reports by Decade



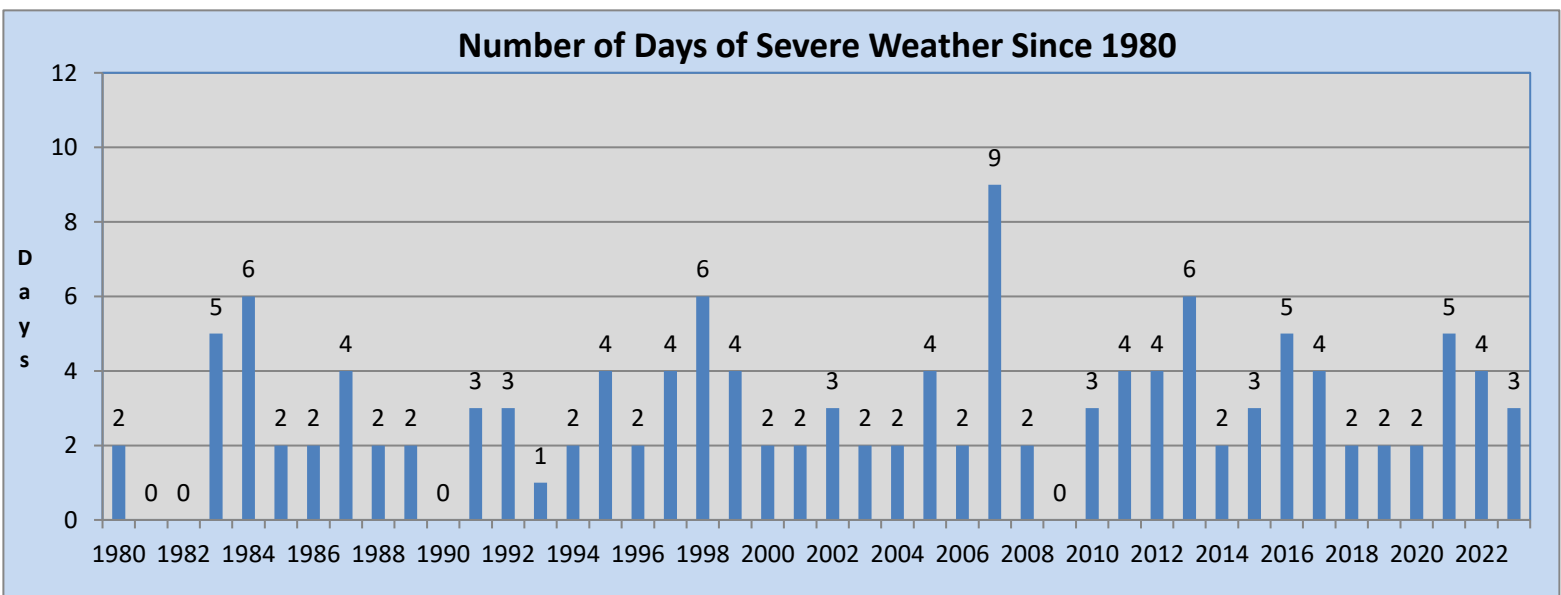
Since 1950 there have been 257 documented reports of large hail, damaging winds and tornadoes across Shawano County. The population boom of the 1980s and 1990s combined with the SKYWARN program led to an increase in the number of reports of severe weather during both decades. The number of reports increased 2% 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. 2013 was the most active year with 16 reports followed by 15 reports in 2007, 14 reports in 2010 and 2022, 13 reports in 1998 and nine reports in 1999 and 2017. Since 1980, there have been no severe weather reports in the following years: 1981, 1982, 1990 and 2009. In 2023, there were 5 reports of large hail (three reports on October 24<sup>th</sup>) and one report of strong winds/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 a 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, Shawano County averages 3.5 days of severe weather per year. The long-term average from 1980-2023 is 3.0 days. The most active year was 2007 with nine days of severe weather; followed by six days in 1984, 1998, and 2013; and five days in 1983, 2016 and 2021. In 2023, severe weather was reported on June 1, August 25 and October 24.

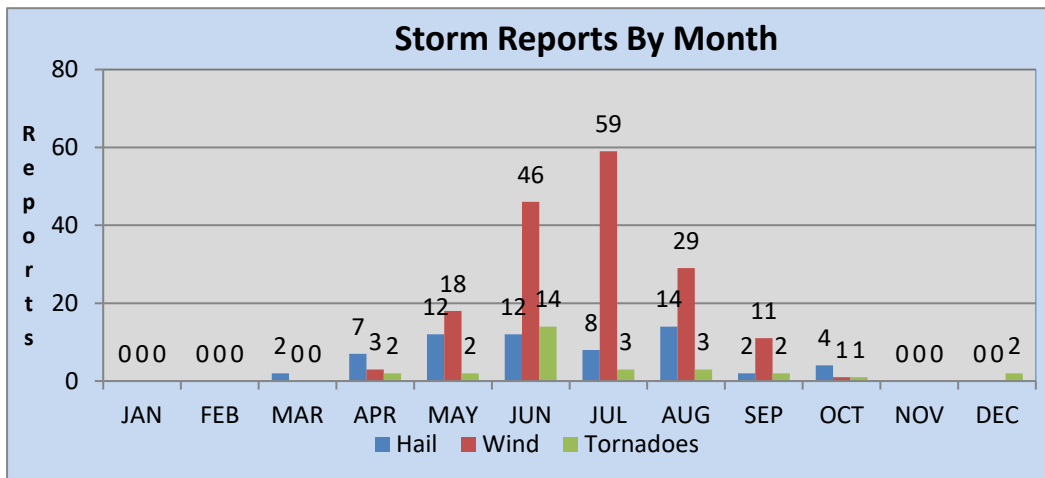
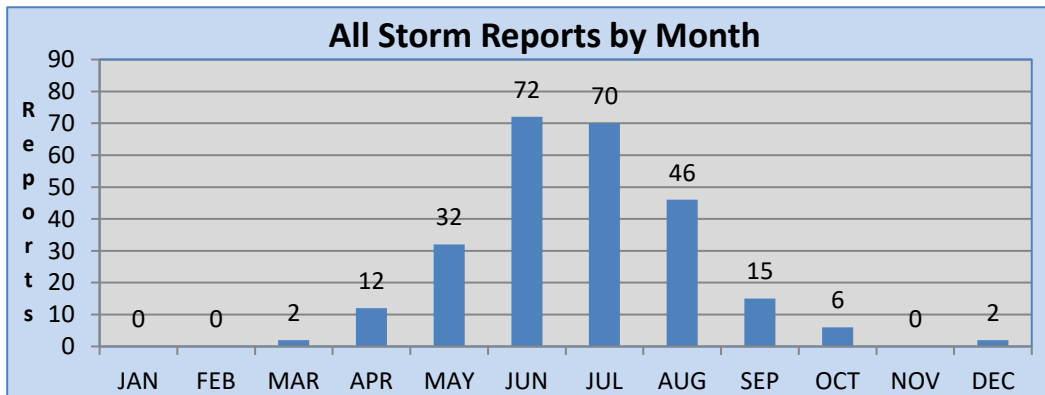
## Number of Days of Severe Weather Since 1980



# Shawano County Severe Weather Facts (1950-2023)

## Storm Reports by Month

Severe weather has been recorded in Shawano County from March through October with an out of season rare tornado event in December. Isolated events have occurred in March. The earliest documented report of large hail during the year occurred on March 8, 2000. Three quarter inch hail was reported five miles west northwest of Shawano. The severe weather season begins in earnest in April. The heart of the convective season occurs in June and July, which accounts for over half (56%) of all severe weather reports. July is the peak month for severe weather and then the severe weather season quickly wanes by September. The warm season period of May through September accounts for 91% of all severe weather reports during the year. Severe weather can occur from time to time in September while isolated events have occurred in October and December. In 2023 large hail was reported on October 24 near Shawano and Cecil. The latest report of severe weather during the year occurred on December 1, 1970. On this date, two tornadoes touched down during the morning between 9:45 AM and 10:30 AM CST. The first tornado (F2) developed four miles northwest of Iola and moved to near Pella. The second tornado rated a F2 developed near Medina in Outagamie County and moved to near Rose Lawn before dissipating.

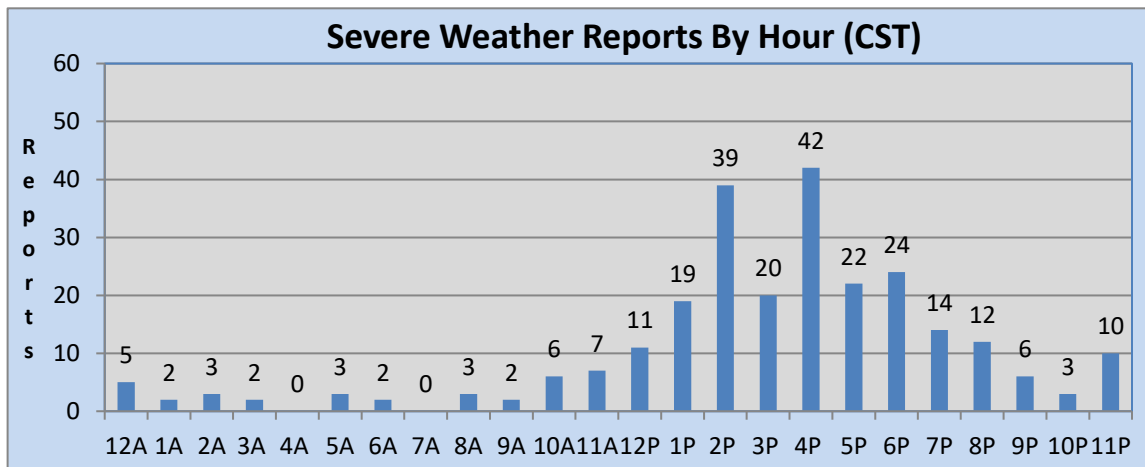
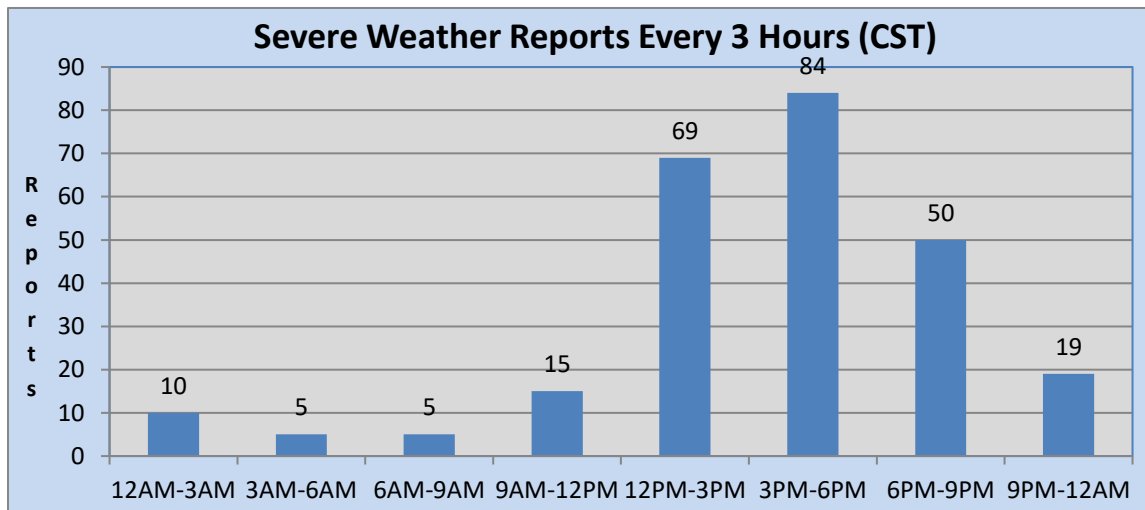


NOTE: The chart depicts storm type by month: (hail, wind/wind damage, tornadoes).

# Shawano County Severe Weather Facts (1950-2023)

## Storm Reports by Time of Day

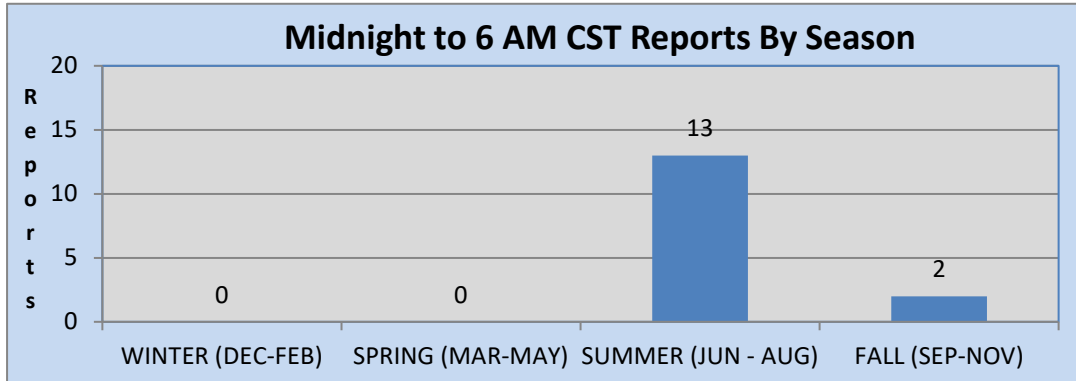
No matter the season, the afternoon and early evening hours are the peak time for severe weather across Shawano County. Three out of every four (75%) severe weather reports occur between 1 PM and 9 PM CST. In Shawano County, severe weather reports increased sharply after 1 PM with a peak in reports between 2 PM and 6 PM CST. The peak in the storm activity corresponded to the afternoon heating combined with timing of cold fronts moving across northeast Wisconsin to produce severe weather. Scattered reports of severe weather were noted through the evening. Between June and August, there is a peak in overnight activity between midnight and 6 AM CST. In these events, convection that develops across Minnesota and the Dakotas moves into the county overnight.



# Shawano County Severe Weather Facts (1950-2023)

## Overnight 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 of June through August account for 87% of all overnight severe weather reports during the year.



# Shawano County Severe Weather Facts (1950-2023)

## Shawano County Tornadoes

Since record keeping began in 1950, there have been 29 documented tornadoes in Shawano County. Two tornadoes have been rated F/EF3. On June 26, 1969, a F3 tornado touched down near Black Creek and moved to near Pulaski. Another F3 tornado occurred on April 27, 1984. The tornado touched down near Union and moved to near Legend Lake before dissipating. Four other tornadoes were rated F/EF2 intensity (see table below) while 13 tornadoes were rated F/EF1 and another 10 tornadoes were rated F/EF0. In 2015, two tornadoes were reported across the county. The first tornado touched down near Morgan on May 17<sup>th</sup>. On July 6, a tornado touched down briefly just east of the Pella airport. What made this event unusual was the fact there was no lightning or thunder associated with the storm. Five tornadoes were reported across the county on June 14, 2017. The previous record for tornadoes in a given year was two set in 1970, 1980, 1984, 2007 and 2015. In 2022, three tornadoes were reported on June 15<sup>th</sup>. A tornado was reported in three consecutive years from 1968 to 1970 and from 2015 to 2017. Tornadoes have been recorded in consecutive in 2021 and 22. Since 1950, tornadoes have touched down in 18 different years. A tornado strike in Shawano County usually occurs on average nearly every two and a half years.

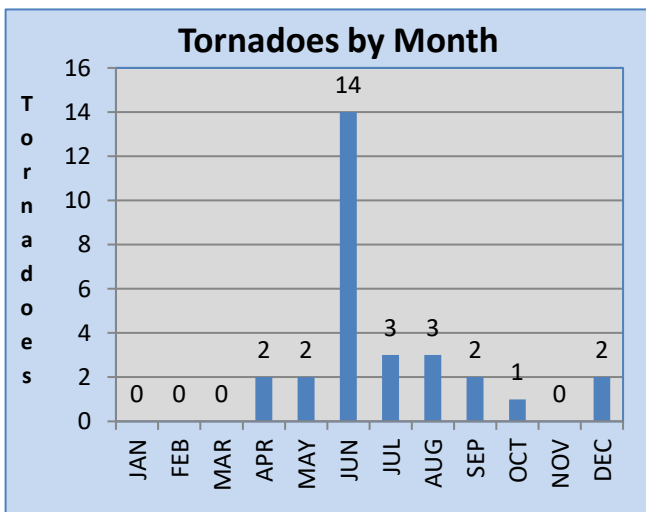
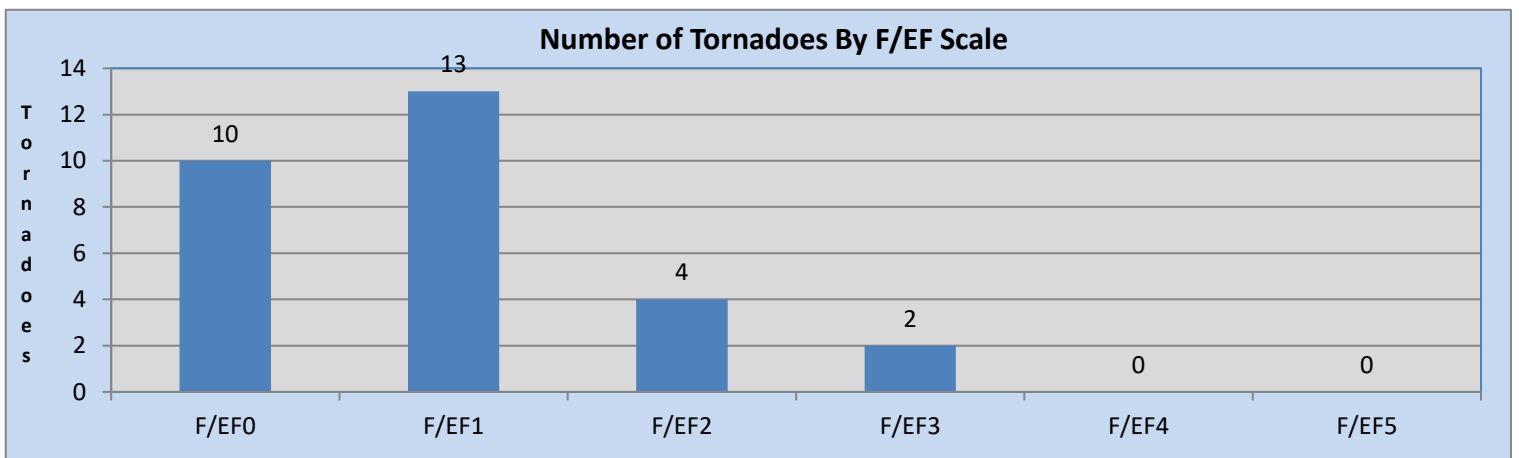
Event #	Date			Time (CST)	Start / End Location	F/EF Rank
	Month	Day	Year			
1	6	9	1964	14:55	Belle Plaine	1
2	8	16	1968	21:20	5 SE Hofa Park	2
3	6	26	1969	11:15-11:30	Black Creek – Pulaski	3
4	12	1	1970	09:45-10:30	4 NW Iola – Pella	2
5	12	1	1970	10:10-10:20	Medina to Rose Lawn	2
6	4	12	1974	14:15	Wittenberg – Bowler	2
7	5	30	1980	14:30	4 S Shawano	1
8	9	20	1980	23:15	Mattoon	1
9	7	3	1983	19:00	Birnamwood	1
10	4	27	1984	14:55-15:40	Union - Legend Lake	3
11	6	26	1984	19:00	Caroline	1
12	9	14	1991	18:00	2 W Green Valley	0
13	7	8	1994	14:16	3 SE Aniwa	1
14	6	3	2007	18:11	1.6 ESE Shawano	0
15	6	7	2007	15:31-15:32	1.7 ENE - 2.7 ENE Mattoon	1
16	8	23	2011	17:56-17:57	0.9 SE - 1.1 SE Briarton	0
17	5	17	2015	14:31-14:40	1.6 WSW - 3.4 NE Morgan	0
18	7	6	2015	16:03-16:04	1.1 E Pella Airport	0
19	6	4	2016	16:00-16:01	0.9 NE Shawano	0
20	6	14	2017	12:47	2 NE Gresham	0
21	6	14	2017	14:40-14:45	1.9 W Nichols - 1.2 WNW Briarton	1
22	6	14	2017	14:45-14:51	1 SE Briarton - 0.9 ESE Landstad	1
23	6	14	2017	14:51-14:59	1.7 SSE Angelica - 1.7 SW Krakow	1
24	6	14	2017	14:53-14:55	2 NW Hofa Park - 0.7 NE Frazier	0
25	10	3	2018	18:08-18:09	1.2 SW - 0.7 SSE Mattoon	0
26	8	11	2021	13:08-13:09	1 SW Angelica - 0.8 SSW Angelica	0
27	6	15	2022	16:34-16:46	1.2 ESE Wittenberg - 2.8 NNW Bowler	1
28	6	15	2022	16:46-16:47	4 NNE Bowler - 4.5 NNE Bowler	1
29	6	15	2022	17:09-17:18	0.9 E Leeman - 1.5 WSW Landstad	1

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

# Shawano County Severe Weather Facts (1950-2023)

## F/EF2 or Greater Tornadoes in Shawano County

Event #	Month	Day	Year	Time (CST)	Start / End Location	Rank
1	8	16	1968	21:20	5 SE Hofa Park	2
2	6	26	1969	11:15-11:30	Black Creek – Pulaski	3
3	12	1	1970	09:45-10:30	4 NW Iola – Pella	2
4	12	1	1970	10:10-10:20	Medina - Rose Lawn	2
5	4	12	1974	14:15	Wittenberg - Bowler	2
6	4	27	1984	14:55-15:40	Union - Legend Lake	3



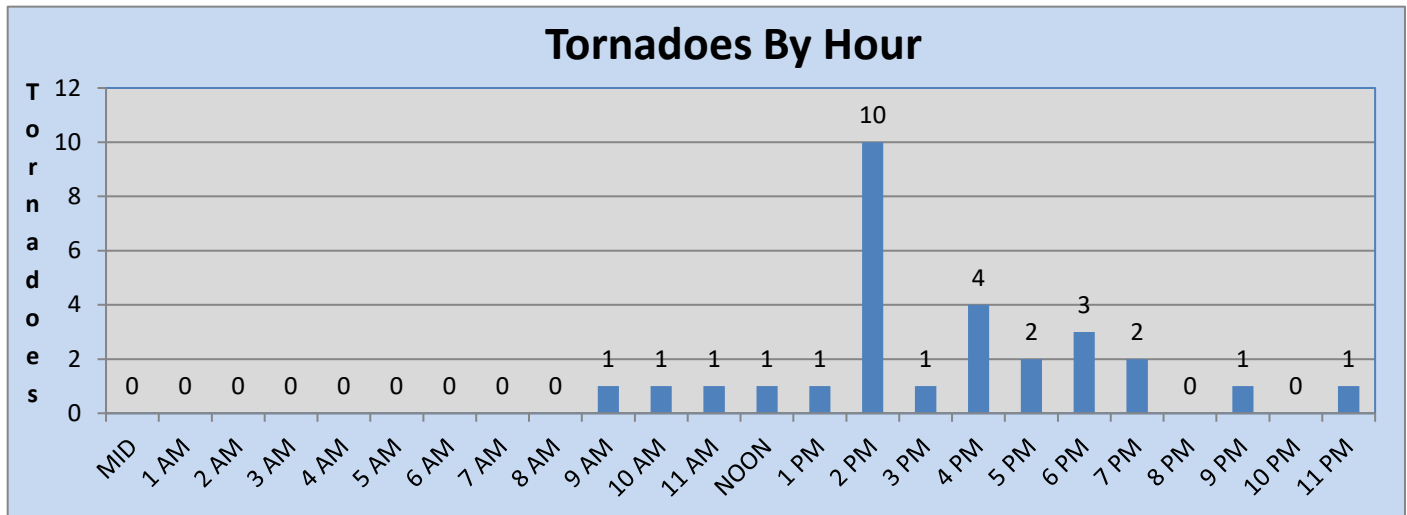
## Tornadoes by Month

Documented tornadoes have occurred from April to September with a rare tornado event in December. The earliest documented tornado during the year occurred on April 12, 1974. On this date, a F2 tornado developed near Wittenberg and moved to near Bowler. The tornado season peaks in June. The warm season months of May through September account for 83% of all tornadoes during the year. The latest tornadoes on record during the year occurred on December 1, 1970. On this date, two tornadoes touched down during the morning between 945 and 1030 am. The first tornado (F2) developed four miles northwest of Iola and moved to near Pella. The second tornado developed near Medina in Outagamie County, which was rated as a F2, moved to near Rose Lawn in Shawano County.

# Shawano County Severe Weather Facts (1950-2023)

## Tornadoes by Hour

In Shawano County, twenty-three documented tornadoes (79%) have occurred between 2 PM and 10 PM CST. There have been no documented tornadoes between midnight and 9 AM CST.



## Predominant Storm Reports – Wind and Hail Only

During March and April, large hail is the dominant weather report. The atmosphere aloft is still cold to support large hail reaching the ground. Over the remainder of the convective season, the dominant reports are strong wind gusts and wind damage. A warm and humid atmosphere is more conducive for severe storms to produce damaging winds compared to large hail. Over the course of the year, strong wind gusts or wind damage were reported nearly three out of four times compared to large hail reports. In the Green Bay forecast area which includes 22 counties in north central and northeast Wisconsin, Shawano County has the highest percentage of strong winds or wind damage reports 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	11.9	88.1
Feb	0.0	0.0	Aug	32.6	67.4
Mar	100.0	0.0	Sep	15.4	84.6
Apr	70.0	30.0	Oct	50.0	50.0
May	40.0	60.0	Nov	0.0	0.0
Jun	20.7	79.3	Dec	0.0	0.0
			Year	26.8	73.2

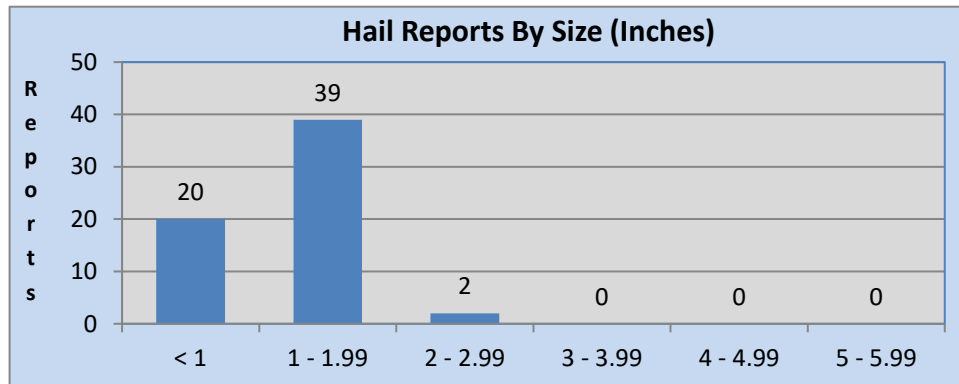
# Shawano County Severe Weather Facts (1950-2023)

## Large Hail in Shawano County

There has been only two documented report of hail two inches or greater in diameter across the county. The largest hail stone of 2.5 inches in diameter was reported five miles west southwest of Navarino on April 15, 2003 and in Krakow on August 2, 2015. Overall, hail ranging in size from three quarters to one inch accounted for 54% of the documented large hail reports. Large hail reports of two inches or greater only accounted for 3% of the total hail reports.

### Hail over 2 inches

Rank		Date			Time		Hail
#		Month	Day	Year	(CST)	Start / End Location	(Inches)
1T		8	2	2015	14:12	Krakow	2.50
1T		4	15	2003	18:00	5 WSW Navarino	2.50





# Shawano County Severe Weather Facts (1950-2023)

## Shawano County Summary

In Shawano County, the severe weather season begins in earnest in April, peaks in July and then wanes quickly by September. An out of season tornado outbreak occurred on December 1, 1970 when two tornadoes hit the county during the morning. 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 in the spring. Damaging winds or large hail 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, Shawano County ranks 10<sup>th</sup> in the total number of storm reports and tied for 5<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

# Shawano 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