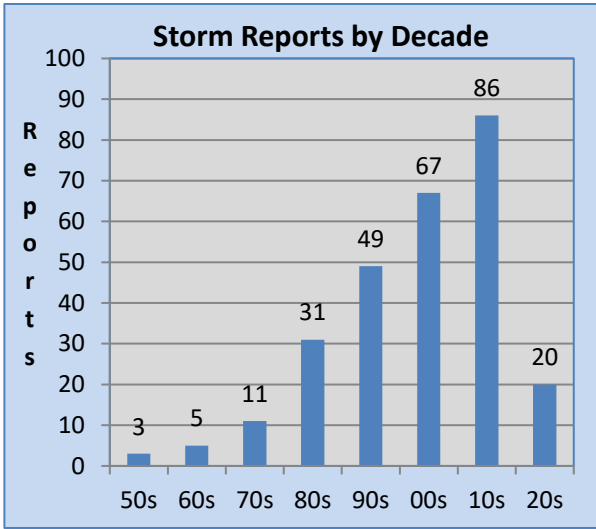


# Portage County Severe Weather Facts (1950-2023)

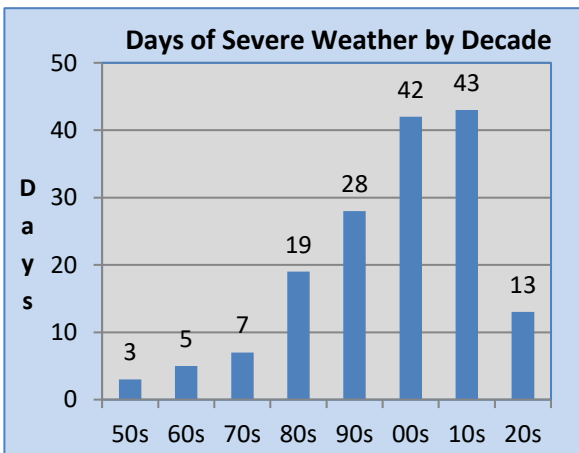
Updated: 01/01/2: Next Update January 2025

## Storm Reports by Decade



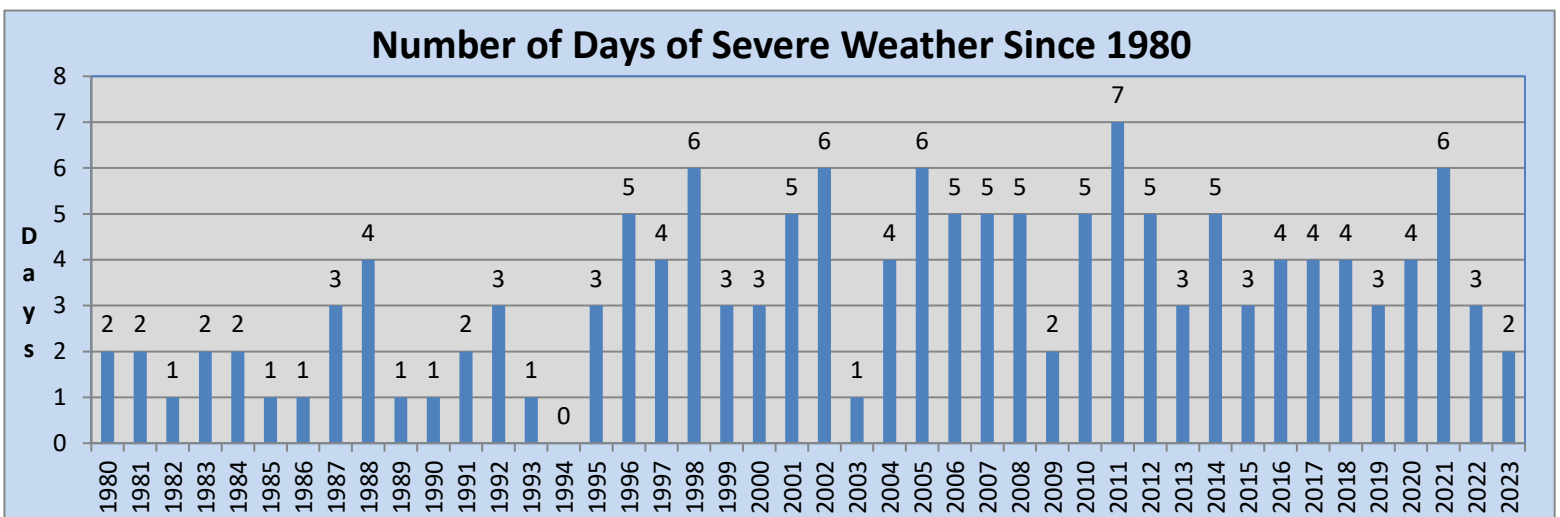
Since 1950 there have been 274 documented reports of large hail, damaging winds and tornadoes across Portage County. The population boom of the 1980s and 1990s combined with the SKYWARN program led to an increase in the number of reports of severe weather during both decades. The number of reports increased 37% 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. 2011 was the most active year with 20 reports followed by 11 reports in 2010, 10 reports in 2004, 2005, 2017 and 2021, and nine reports in 1997 and 1998, and eight reports in 1992, 2002, 2006, 2007 and 2008. Since 1980, there were no reports of severe weather in the following year: 1994. In 2023, there was one report of large hail on July 16 and one report of strong winds/wind damage on August 11.

## 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 32% 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, Portage County averages 4.1 days of severe weather per year. The long-term average from 1980-2023 is 3.3 days. The most active year was 2011 with seven days of severe weather; followed by six days in 1998, 2002, 2005 and 2021, and five days in 1996, 2001, 2006, 2007, 2008, 2010, 2012, 2014 and 2021. In 2023, there was one report of large hail on July 16 and one report of strong winds/wind damage on August 11.

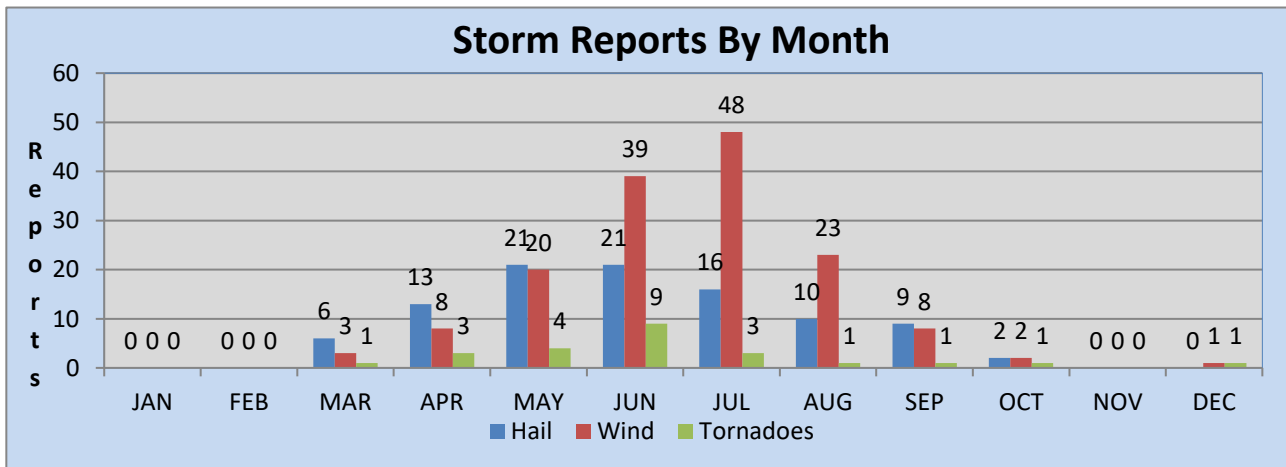
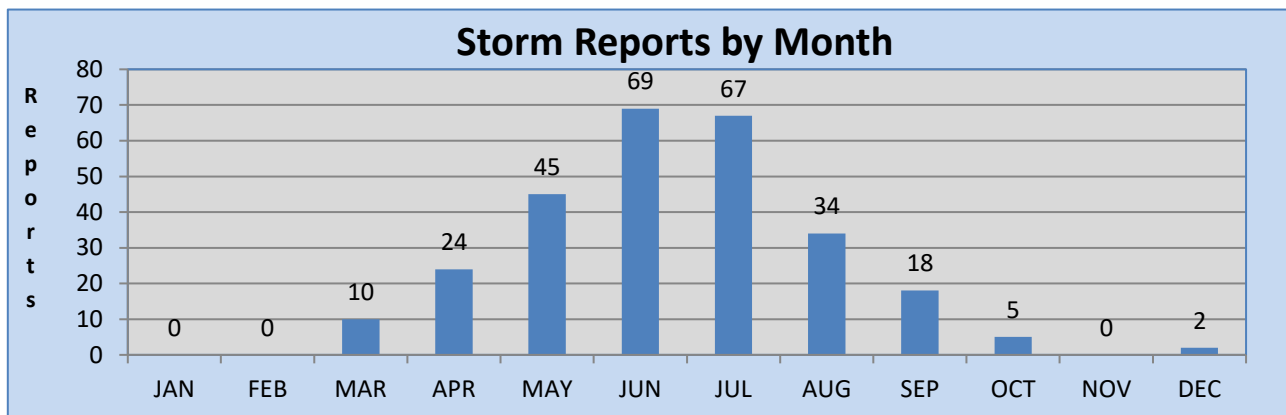
## Number of Days of Severe Weather Since 1980



# Portage County Severe Weather Facts (1950-2023)

## Storm Reports by Month

Severe weather has been recorded in Portage County from March through October with one out of season event in December. A few events have occurred in March. The earliest documented report of severe weather during the year occurred on March 6, 2017 when a gust to 75 mph was reported at Plover. The previous earliest event during a calendar year occurred on March 8, 2000 when one inch hail was reported in the town of Blaine. The severe weather season begins in earnest in April. The heart of the convective season occurs between May and July. The severe weather season then quickly wanes by September. The warm season period of May through September accounts for 85% of all severe weather reports during the year. Severe weather can occur from time to time in September while isolated events can occur in October. Until 2021, the latest report of severe weather during the year occurred on December 1, 1970. On this date, an out of season F1 tornado touched down near Hull at 7 AM CST. This was one of four tornadoes that touched down between Hull and Green Bay on this date. In 2021, unusually mild temperatures 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/wind damage near Park Ridge around 10:25 PM CST.

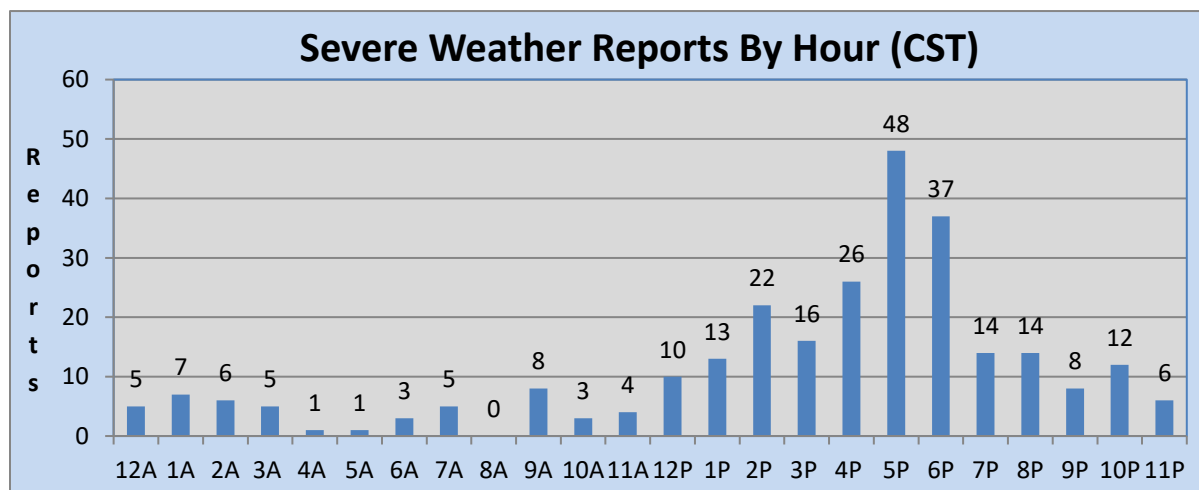
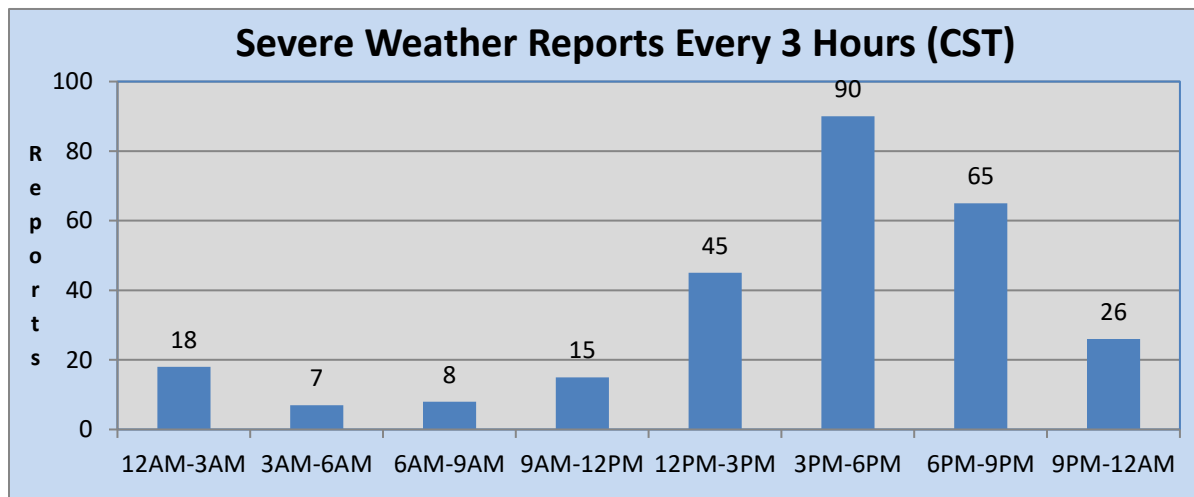


NOTE: The chart depicts storm type by month: (hail, wind/wind damage, tornadoes).

# Portage County Severe Weather Facts (1950-2023)

## Storm Reports by Time of Day

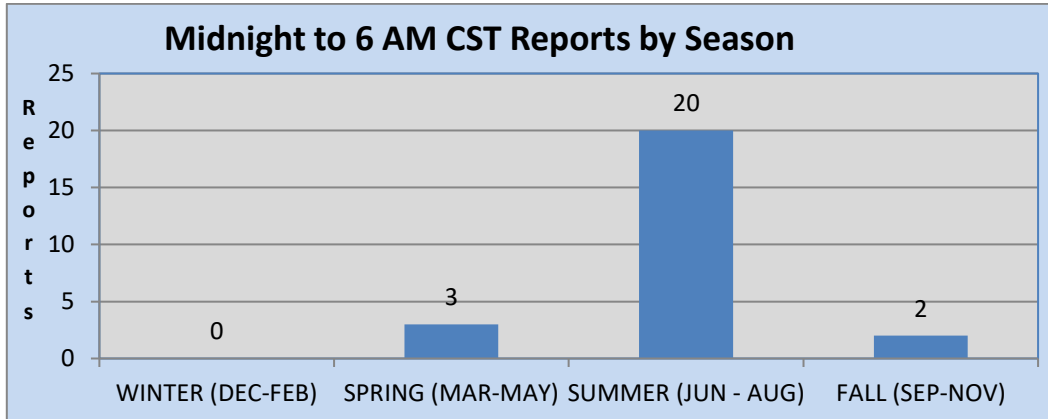
No matter the season, the afternoon and early evening hours are the peak time for severe weather across Portage County. Overall, sixty-nine percent of all severe weather reports occur between 1 PM and 9 PM CST. In Portage County, severe weather reports increased sharply after 1 PM CST with a peak in reports between 4 PM and 7 PM CST. The peak in the storm activity corresponded to peak afternoon heating when the atmosphere becomes most unstable. 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.



# Portage 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 80% of all overnight severe weather reports during the year.



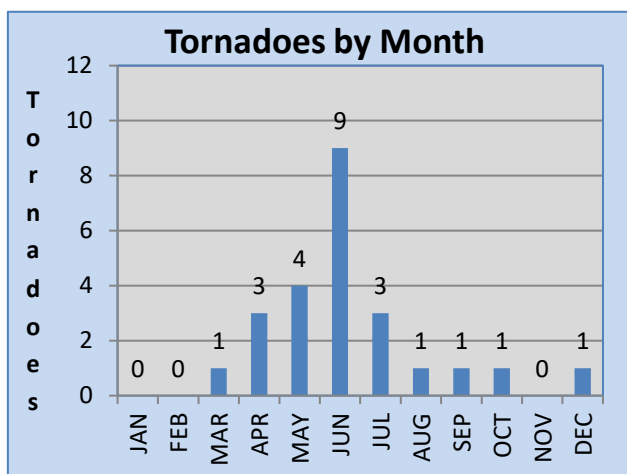
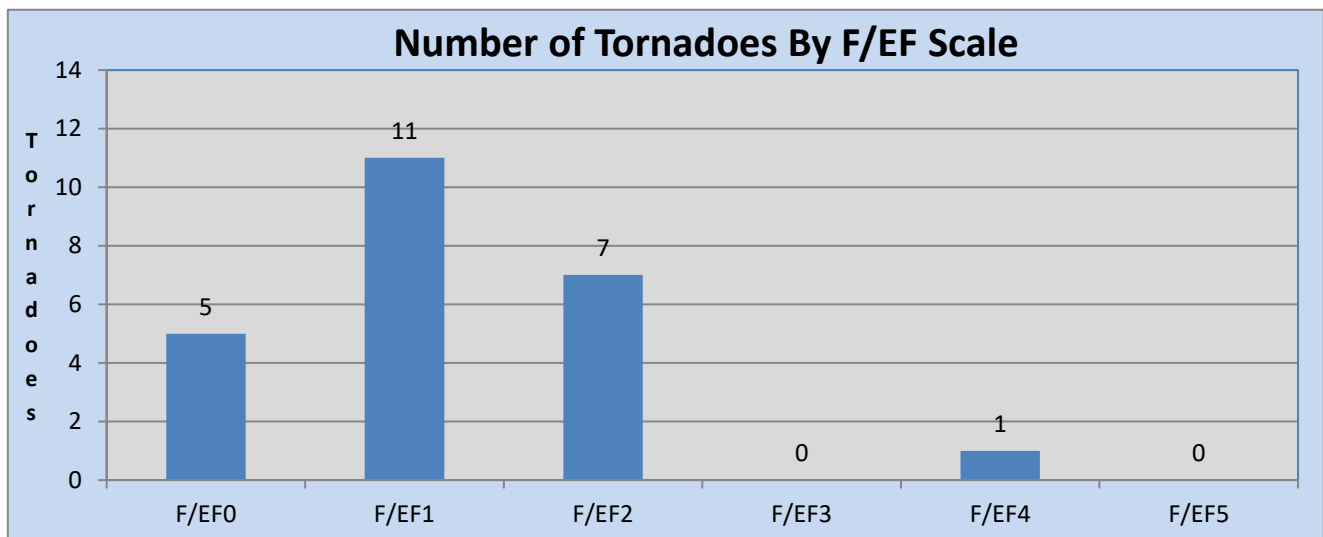


# Portage County Severe Weather Facts (1950-2023)

## F/EF2 or Greater Tornadoes in Portage County

Event #	Date			Time (CST)	Start / End Location	F/EF Rank
	Month	Day	Year			
1	9	26	1951	15:45-16:08	9 SSW Amherst - Bear Creek	4
2	4	3	1956	12:50	Bancroft - Amherst	2
3	8	22	1964	14:00	6 W Bancroft - Grant	2
4	7	7	1970	15:00	Bancroft	2
5	6	12	1976	20:30	1 W Alban	2
6	6	13	1976	19:00	Plover	2
7	4	27	1984	14:15	0.5 S Plover	2
8	5	16	1992	18:10	4 W Keene - 5 SE Amherst	2

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



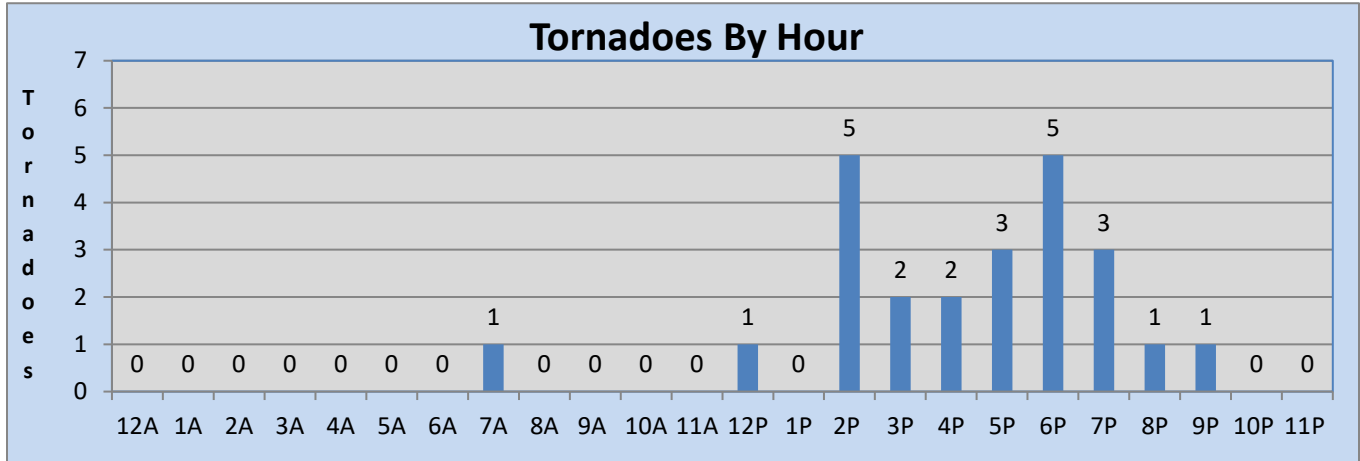
## Tornadoes by Month

Documented tornadoes have occurred in every month except January, February and November. The earliest documented tornado in the spring occurred on March 30, 1982. On this date, a F1 tornado developed near Armenia and moved to three miles southwest of Stevens Point before dissipating. The tornado season peaks in May and June and accounts for half of all tornado reports. The warm season months of May through September account for 75% of all tornadoes during the year. The latest tornado on record during the year occurred on December 1, 1970. A rare F1 December tornado touched down near Hull around 7 AM CST. This was one of four tornadoes between Hull and Green Bay on this morning.

# Portage County Severe Weather Facts (1950-2023)

## Tornadoes by Hour

In Portage County, 22 documented tornadoes (92%) have occurred between 2 PM and 10 PM CST. There have been no documented tornadoes between 10 PM to 6 AM CST and 8 AM to NOON CST. The lone tornado reported between 7 AM and 8 AM CST occurred on December 1, 1970. Most people would not expect that to happen at any time of the day, let alone at seven to eight in the morning in early December!



## Predominant Storm Reports – Wind and Hail Only

During March and April, large hail is the dominant weather report. The atmosphere aloft is still cold which supports large hail to reach the ground. Over the remainder of the convective season, the dominant reports are strong wind gusts and wind damage. This is especially true during July and August when near two out three reports are strong wind gusts/wind damage compared to large hail.

Month	% Hail Reports	% Wind or Wind Damage	Month	% Hail Reports	% Wind or Wind Damage
Jan	0.0	0.0	Jul	25.0	75.0
Feb	0.0	0.0	Aug	30.3	69.7
Mar	66.7	33.3	Sep	52.9	47.1
Apr	61.9	38.1	Oct	50.0	50.0
May	51.2	48.8	Nov	0.0	0.0
Jun	35.0	65.0	Dec	0.0	0.0
			Year	39.2	60.8

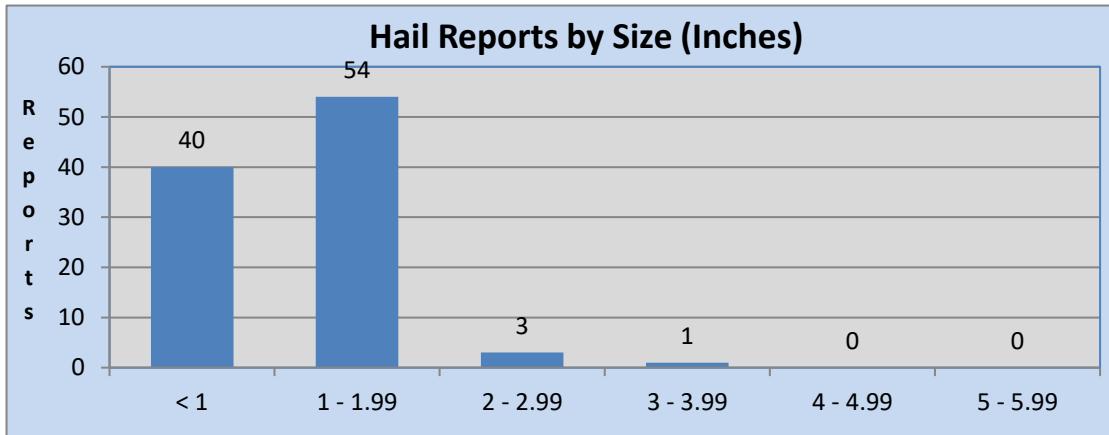
# Portage County Severe Weather Facts (1950-2023)

## Large Hail in Portage County

There have been four documented reports of hail two inches or greater in diameter across Portage County. The largest hail stone documented was three inches in diameter which occurred in Plover on May 22, 2011. The last documented hail stone of two inches or greater occurred on September 20, 2017 when two inch hail was reported just south of Almond. 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 3% of the total large hail reports.

### Hail over 2 inches

Rank	#	Month	Day	Year	Time (CST)	Start / End Location	Hail (Inches)
1		5	22	2011	17:35	Plover	3.00
2		8	8	2000	18:55	Rosholt	2.75
3T		9	20	2017	16:56	0.7 S Almond	2.00
3T		7	16	2008	1134	Plover	2.00





# Portage County Severe Weather Facts (1950-2023)

## Portage County Summary

In Portage County, the severe weather season begins in earnest in April, peaks in 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 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, Portage County ranks 9<sup>th</sup> in the total number of storm reports and tied 11<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	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

# Portage 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