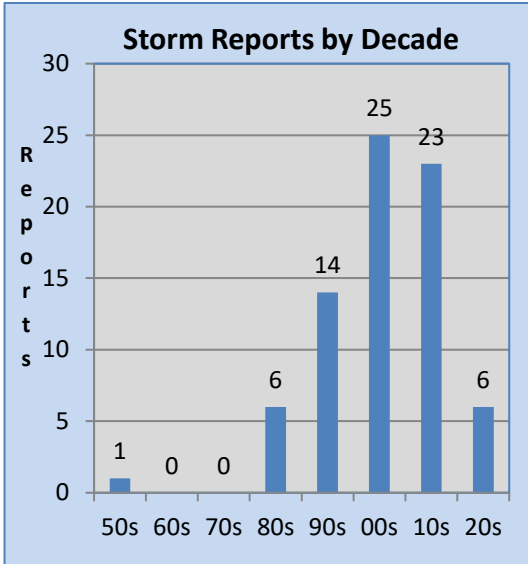


Florence County Severe Weather Facts (1950-2023)

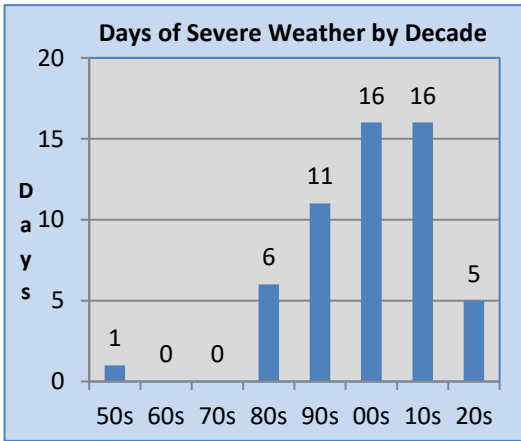
Updated: 01/01/24: Next Update: January 2025

Storm Reports by Decade



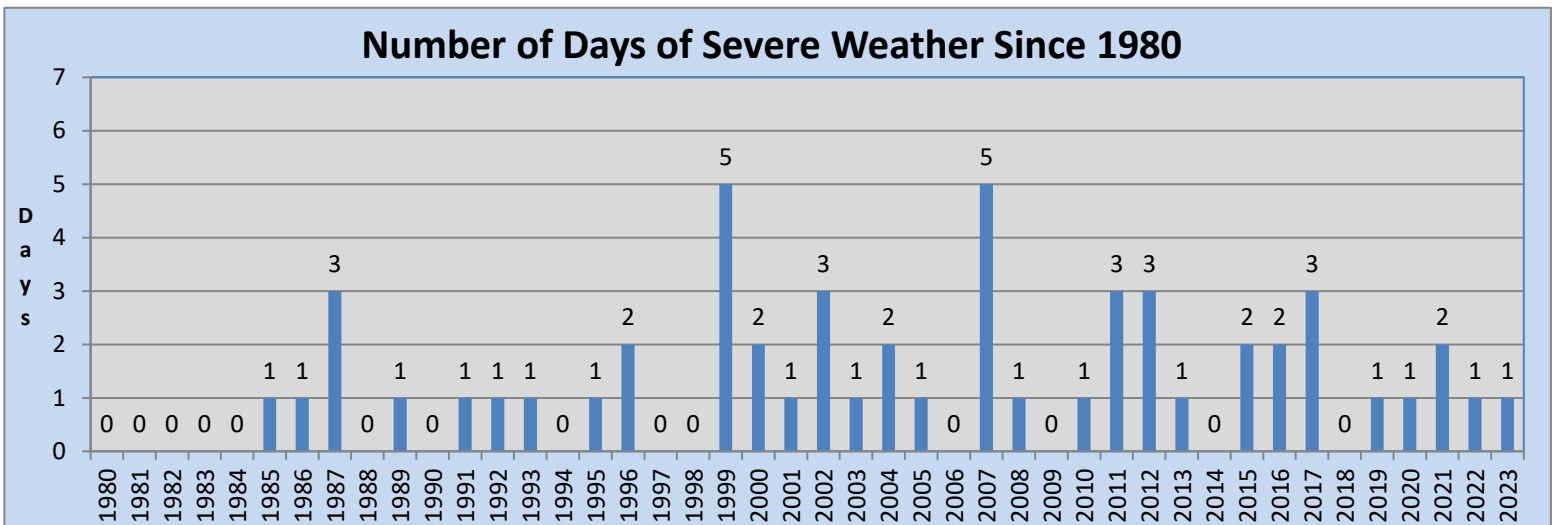
Since 1950 there have been 75 documented reports of large hail, damaging winds and tornadoes across Florence County (see graph to the left). The population boom of the 1980s and 1990s combined with the SKYWARN program led to an increase in the number of reports of severe weather during both decades. The number of reports increased 21% 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. The most active year was 2007 with seven reports, followed by six reports in 1999 and four reports in 2011 and 2012. Since 1980, there were no reports of severe weather in the following years: 1980, 1981, 1982, 1983, 1984, 1988, 1990, 1994, 1997, 1998, 2006, 2009, 2014 and 2018. In 2020, there were two reports of severe weather, including an EF1 tornado on August 9th which touched down 4.6 miles east of Alvin in Forest County and then moved across far northwest Florence County. In 2023, an EF0 tornado touched down 18.1 miles west-southwest to 17 miles west-southwest of Long Lake on July 27th between 6:22 PM and 6:26 PM CST.

Severe Weather Days 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 was only a negligible decrease in the number of days of days of severe weather from the 2014 to 2023 period compared to the 1990s (see graph to the left), although many counties across northeast Wisconsin saw an increase in the number of days of severe weather. This trend can be attributed to the increase in population, technology advances and greater severe weather awareness. Since 2010, Florence County averages 1.5 days of severe weather per year. The long-term average from 1980-2022 is 1.2 days. The most active years were 1999 and 2007 with 5 days of severe weather; followed by three days of severe weather in 1987, 2002, 2011, 2012 and 2017. In 2023, an EF0 tornado touched down 18.1 miles west-southwest to 17 miles west-southwest of Long Lake on July 27th between 6:22 PM and 6:26 PM CST.

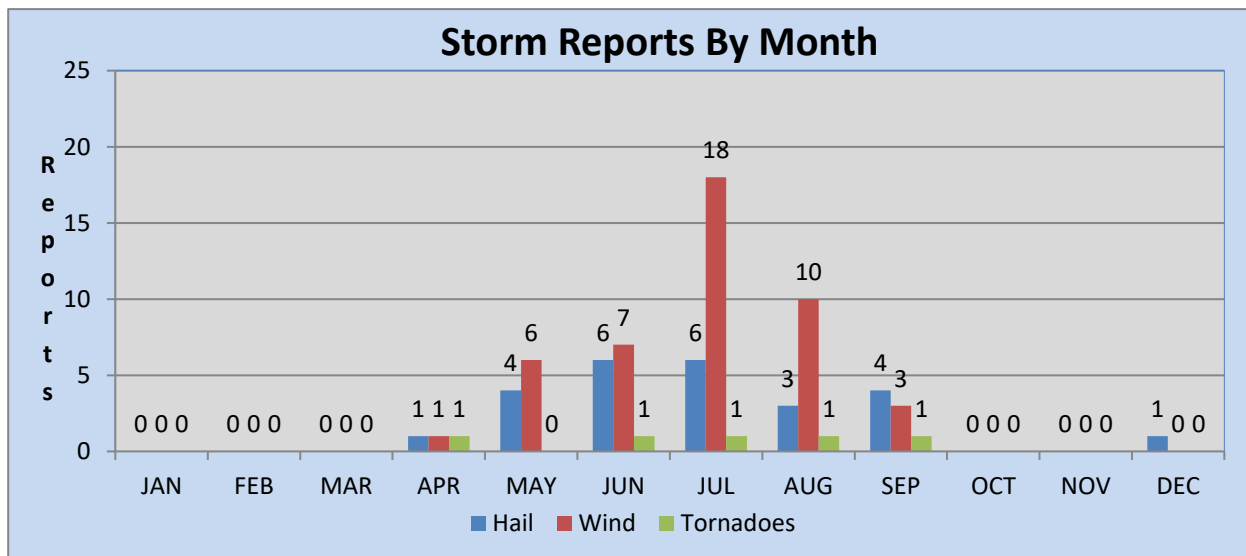
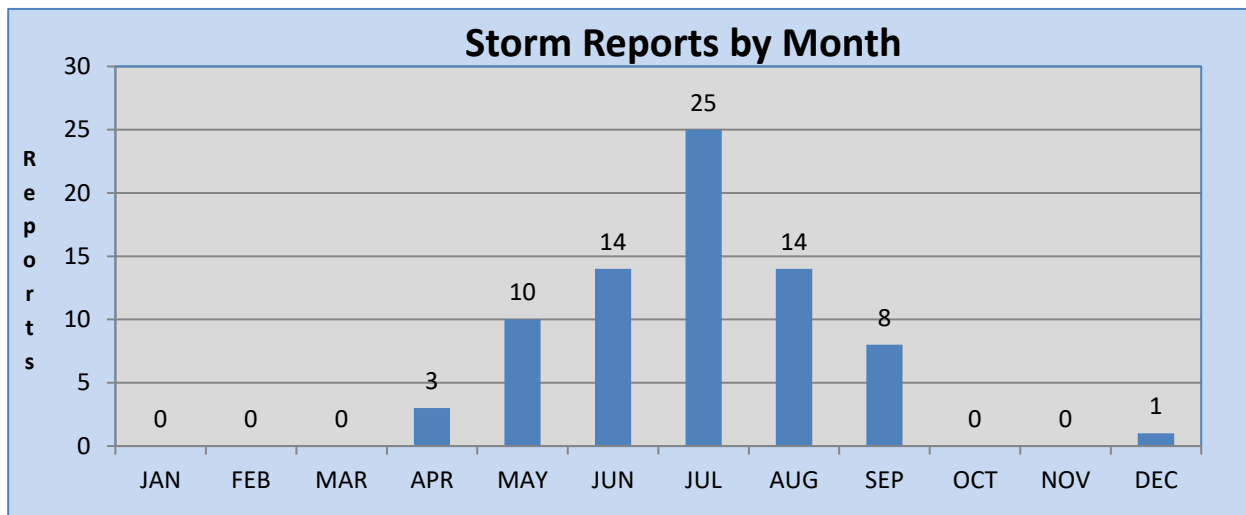
Number of Days of Severe Weather Since 1980



Florence County Severe Weather Facts (1950-2023)

Storm Reports by Month

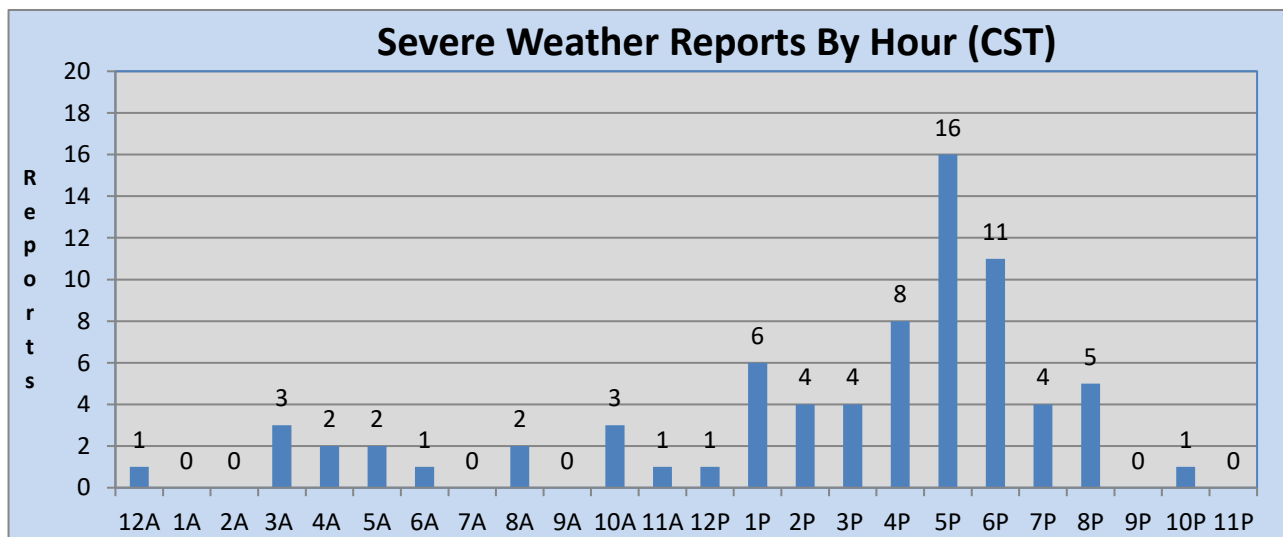
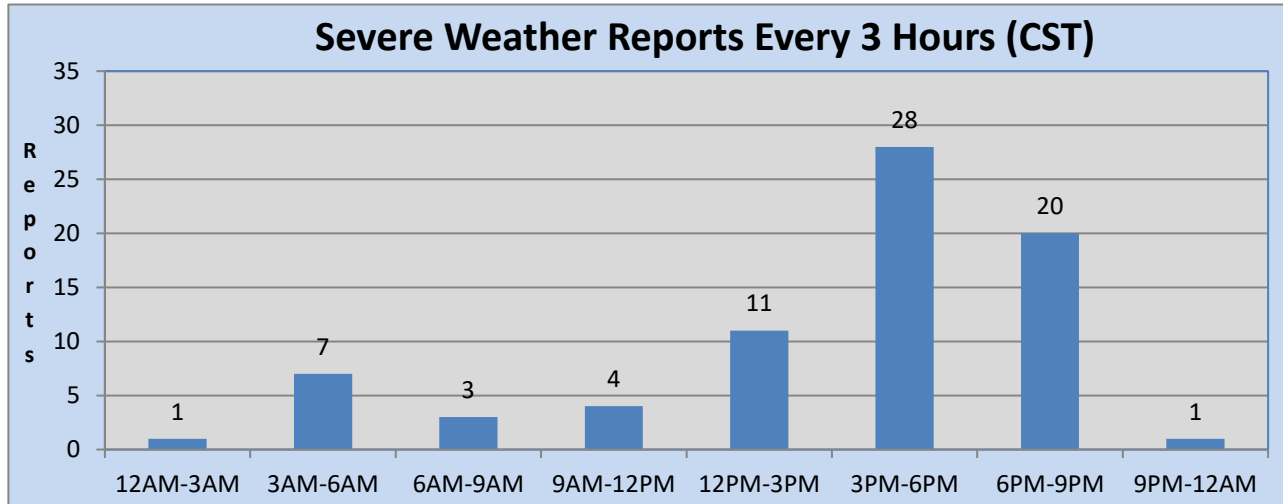
Severe weather reports have occurred in Florence County from April to September with a rare report during December. The earliest report of severe occurred on April 10, 2011 when an EF0 tornado touched down from 3 miles south-southeast of Argonne to six miles south-southeast of Long Lake. This was one of 10 tornadoes on this date across north-central and northeast Wisconsin. This is also tied for the largest single day tornado outbreak across the region. Before this event, the previous earliest report of severe weather during the year occurred on April 18, 2004. On this date, hail the size of three quarters of an inch and winds were estimated at 65 mph two miles southwest of Florence. The convective season begins in earnest in May and peaks during the summer months of June, July, and August. The convective season wanes quickly in September. The warm season months of May through September account for 95% of all severe weather reported during the year. A rare report of severe weather late in the year occurred on December 5, 2001. It is one thing to get severe weather across southern Wisconsin in early December, but it is unheard of to get thunderstorms that produce severe weather in northern Wisconsin during this time of year. Unseasonably mild temperatures combined with a cold front on this date triggered scattered thunderstorm which produced one inch hail at Florence on this date.



Florence County Severe Weather Facts (1950-2023)

Storm Reports by Time of Day

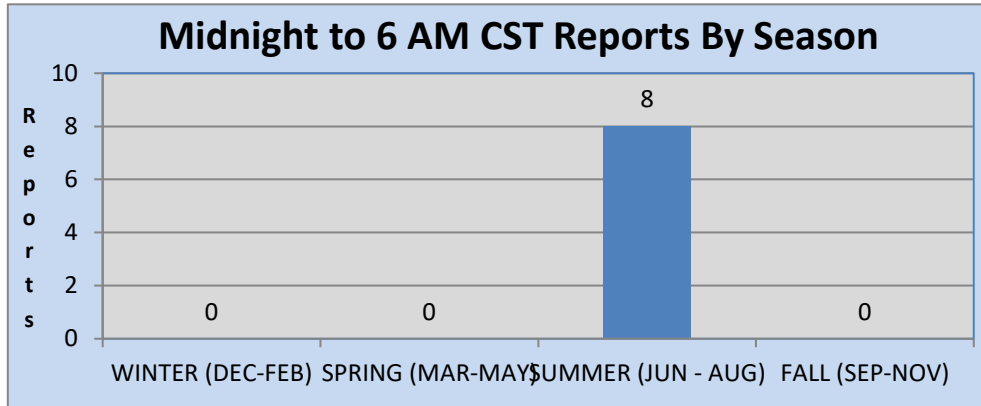
No matter the season, the afternoon and early evening hours are the peak time for severe weather across Florence County. Seventy-seven percent of all severe weather reports occur between 1 PM and 9 PM CST. In Florence County, reports of severe weather picked up after 1 PM CST with peak reporting time between 4 PM and 7 PM CST. The peak in storm activity during the late afternoon and early evening corresponds to peak afternoon heating when the atmosphere becomes most unstable. During the summer months of July and August, there was another minor peak of severe weather that occurs between midnight and 6 AM CST. In these events, convection that fires up across the Dakotas and Minnesota moves eastward into the county overnight.



Florence County Severe Weather Facts (1950-2023)

Severe Weather Reports Midnight to 6 AM CST

Overnight severe weather reports have only been reported during the summer months (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.



Florence County Severe Weather Facts (1950-2023)

Florence County Tornadoes

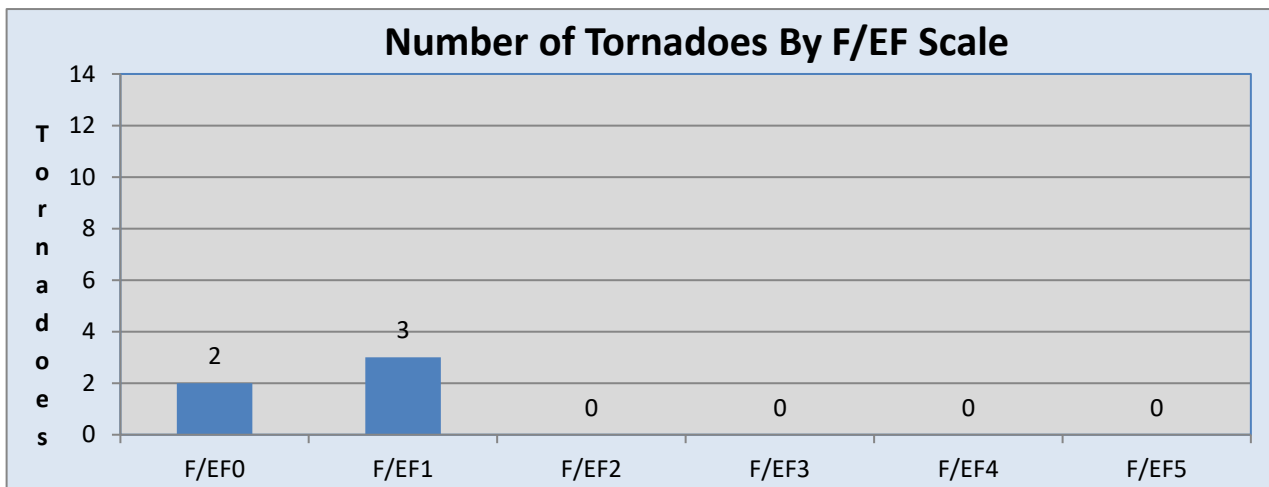
Since record keeping began in 1950, there have been 5 documented tornadoes in the county. The first tornado (F1) occurred on June 14, 1957, which touched down in Florence and traveled eight miles before dissipating. The second tornado (F1) touched down about five and a half miles southeast of Spread Eagle and traveled less than a mile on September 30, 2002. The third tornado touched down three miles southeast of Argonne and then dissipated six miles south-southeast of Long Lake on April 10, 2011. The tornado was one of ten that touched down on April 10th. The ten tornadoes on this date also set a new-record (eventually tied) for the most tornadoes on any single day across north-central and northeast Wisconsin. In 2020, an EF1 tornado touched down 4.6 miles east of Alvin in Forest County and then moved into northwest Florence County. The last tornado to touch down in the county occurred on July 27, 2023. An EF0 tornado touched down 18.1 miles west-southwest of Long Lake and traveled to 17 miles west-southwest of Long Lake between 6:22 PM CST and 6:26 PM CST.

Three tornadoes were rated F/EF1, and two tornadoes were rated as F/EF0. The most tornadoes documented in a single year occurred in 1957, 2002, 2011, 2020 and 2023 with one tornado. A tornado strike in Florence County occurs on average every 15 years.

Florence County Tornadoes

Event #	Date			Time (CST)	Start / End Location	F/EF Rank
	Month	Day	Year			
1	6	14	1957	17:30	Florence	1
2	9	30	2002	18:10-18:11	5.5 SSE - 5.5 SE Spread Eagle	1
3	4	10	2011	18:30-18:46	3 SE Argonne - 6 SSE Long Lake	0
4	8	9	2020	20:12-20:22	4.6 E Alvin - 5 S Caspian	1
57	7	27	2023	18:22-18:26	18.1 WSW – 17 WSW Long Lake	0

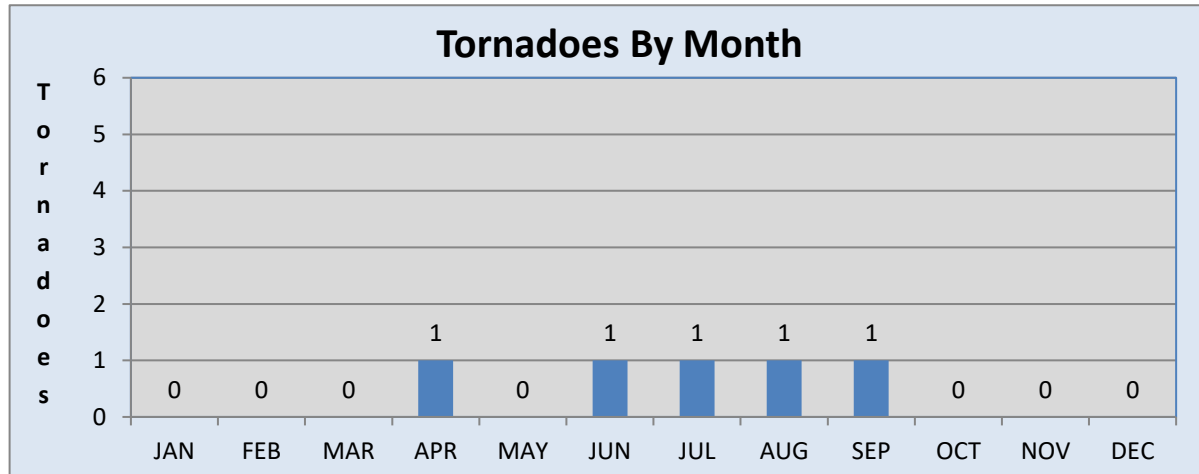
Additional tornado data can be found on the NWS Green Bay webpage at: <http://www.weather.gov/grb/severeclimate>



Florence County Severe Weather Facts (1950-2023)

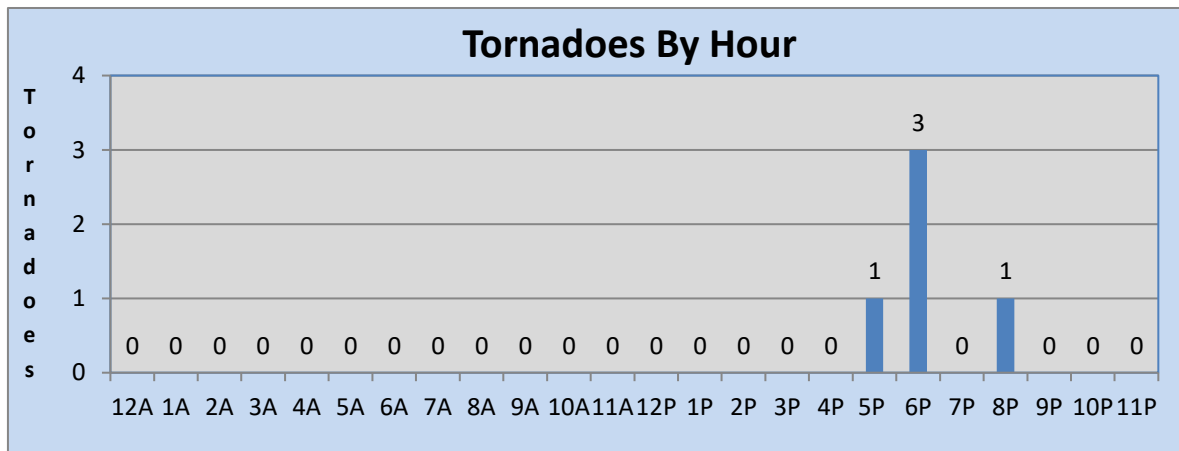
Tornadoes by Month

One tornado has been reported during the month of April, June, July, August, and September.



Tornadoes by Hour

All four tornadoes have occurred between the hours of 5 PM and 7 PM CST.



Florence County Severe Weather Facts (1950-2023)

Predominant Storm Reports – Wind and Hail Only

In the spring, the reports were evenly split between large hail and strong winds / damaging winds while the summer months of June, July and August was strongly biased towards strong winds or wind damage across the county. Large hail was the predominant type of report during the fall and early winter. Over six out of ten reports were high winds or wind damage compared to large hail during the year.

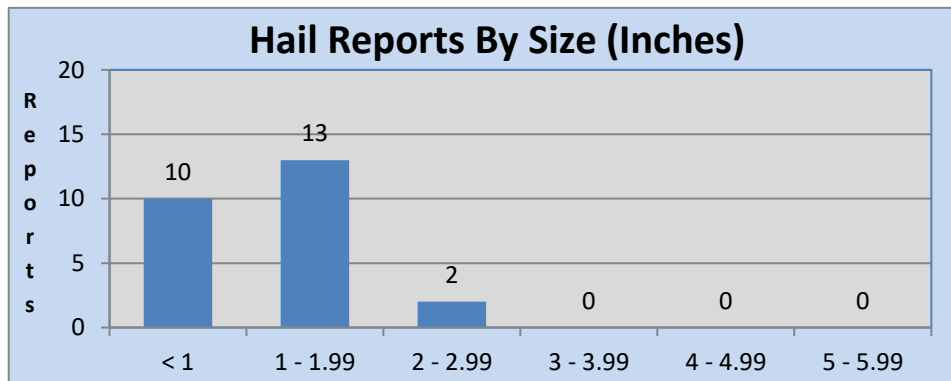
Month	% Hail Reports	% Wind or Wind Damage	Month	% Hail Reports	% Wind or Wind Damage
Jan	0.0	0.0	Jul	25.0	75.0
Feb	0.0	0.0	Aug	23.1	76.9
Mar	0.0	0.0	Sep	57.1	42.9
Apr	50.0	50.0	Oct	0.0	0.0
May	40.0	60.0	Nov	0.0	0.0
Jun	46.2	53.8	Dec	100.0	0.0
			Year	35.7	64.3

Large Hail in Florence County

There have been 25 documented large hail reports of three quarters of an inch or greater since 1950. There have only been 5 documented reports of hail over one and a half inches in diameter across the county. The largest hail stone of 2.0 inches was documented seven tenths of a mile south of Tipler on May 25, 2008 and nearly one mile south of Commonwealth on May 10, 2022. Overall, hail ranging from in size from three quarters to one inch accounted for 76% of the documented large hail reports; while large hail of two inches or greater only accounted for 8% percent of all large hail reports.

Hail over 1.5 Inches

Rank	Month	Date		Time (CST)	Start / End Location	Hail (Inches)
		Day	Year			
1T	5	10	2022	16:37-16:38	0.7 S Commonwealth	2.00
1T	5	25	2008	15:13	0.7 S Tipler	2.00
3T	6	7	2011	04:57	2 WNW Ridgetop	1.75
3T	9	20	2002	17:29	Long Lake to Tipler	1.75
3T	9	6	1985	1950	9 SW Florence	1.75



Florence County Severe Weather Facts (1950-2023)

Florence County Summary

In Forest County, the severe weather season begins in earnest in May and wanes quickly by September, although 2011 brought a rare tornado outbreak to north-central and far northeast Wisconsin. 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. Wind is 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, Florence County ranks 21st in the total number of storm reports and 21st 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 (CST)	Start / End Location	Tor in GRB Service Area 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

Florence 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