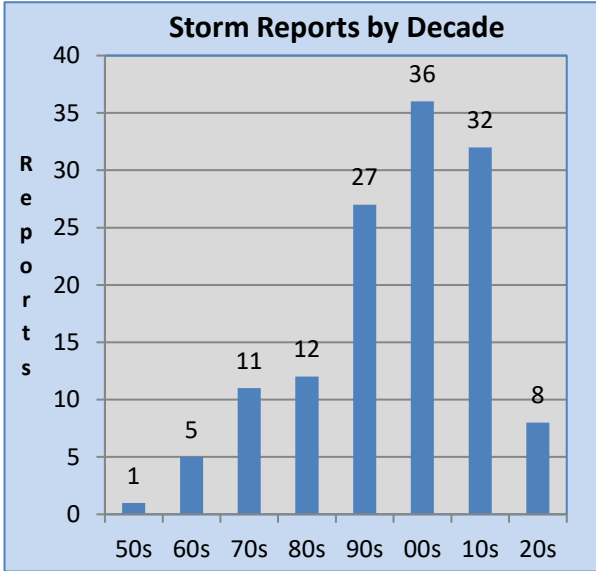


Kewaunee County Severe Weather Facts (1950-2023)

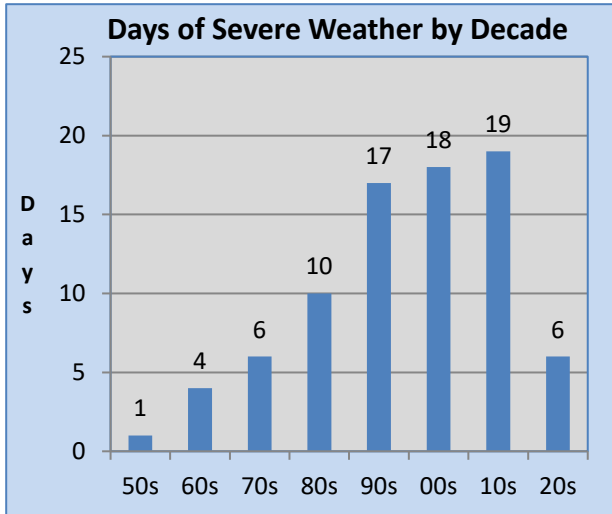
Updated: 01/01/24; Next Update: January 2025

Storm Reports by Decade



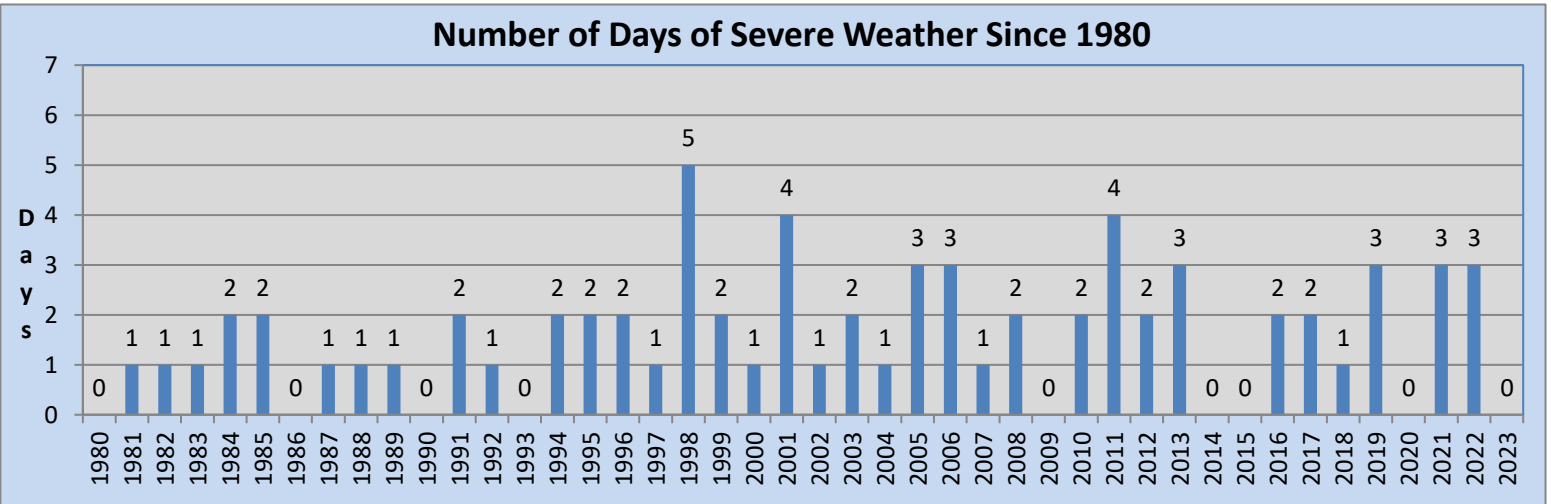
Since 1950 there have been 132 documented reports of large hail, damaging winds and tornadoes across Kewaunee County (see graph to the left). The population boom of the 1980s and 1990s combined with the SKYWARN program led to an increase in the number of reports of severe weather during both decades. The number of reports actually decreased near 25% from the 2014-2023 period compared to the 1990s, although most of northeast Wisconsin saw an increase in storm reports during this time-period. 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 2001 with nine reports followed by eight reports in 2011, seven reports in 2013, six reports in 2019 and five reports in 1994, 1998, 2006 and 2021. Since 1980, there were no reports of severe weather in the following years: 1980, 1986, 1990, 1993, 2009, 2014, 2015 and 2020. There were no reports of severe weather in 2023.

Severe Weather Days by Decade



To address the impact of multiple reports for the same storm, the data was examined by the number of days of severe weather. Since the reports were sporadic during the 1950s through the 1970s, only data from 1980 to present was used. There has been a slight decrease in the number of severe weather days from the 2014 to 2023 period compared to the 1990s (see graph to the left). There is not a clear reason why the severe weather reports have decreased across the county despite other counties indicating an increase in storm reports. Across the rest of northeast Wisconsin, the increasing trend in storm reports can be attributed to the increase in population, technology advances in reporting severe weather, and greater severe weather awareness by the public. Since 2010, Kewaunee County averages 1.8 days of severe weather per year. The long-term average from 1980-2023 is 1.5 days. The most active year was 1998 with five days of severe weather; followed by four days of severe weather in 2001 and 2011; and three days in 2005, 2006, 2013, 2019 and 2021. In 2023, no severe was reported in the county.

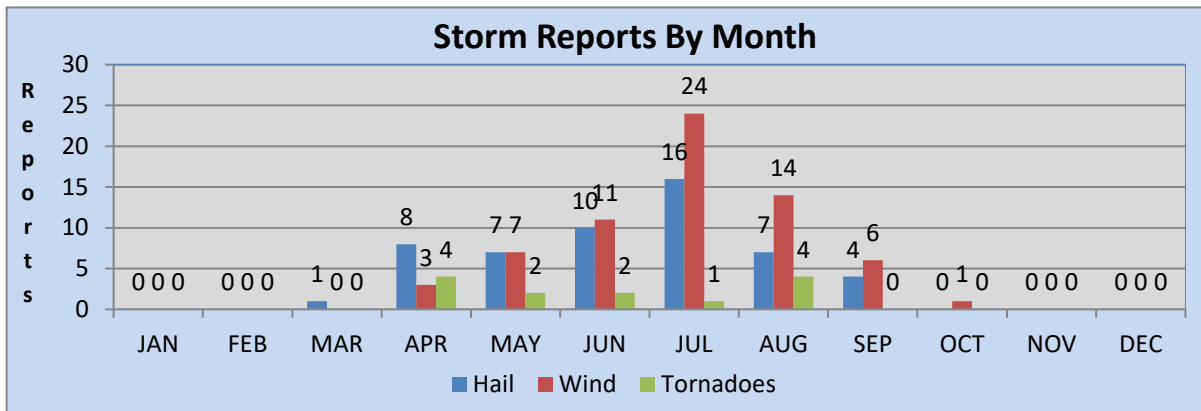
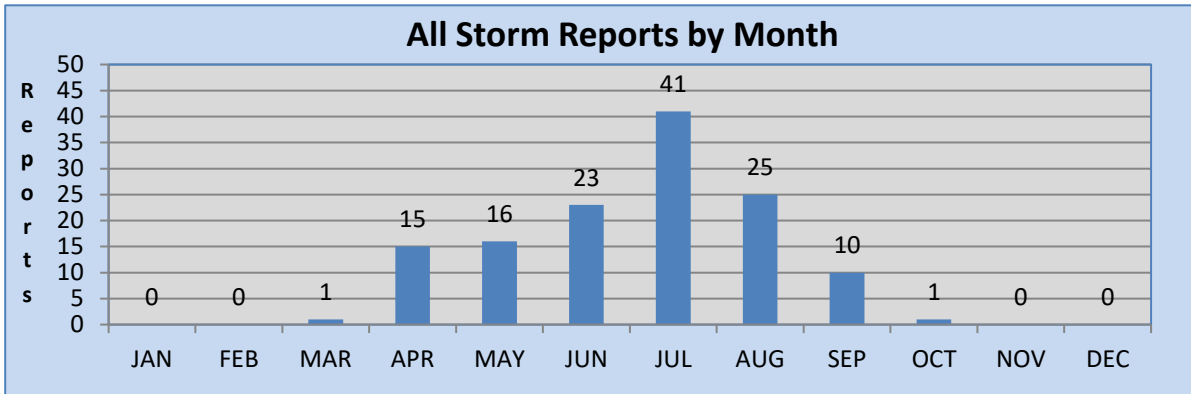
Number of Days of Severe Weather Since 1980



Kewaunee County Severe Weather Facts (1950-2023)

Storm Reports by Month

Severe weather has been documented in Kewaunee County from March through October. The earliest (and rare) event during the year occurred on March 29, 1998 when one inch hail was reported at Norman. The severe weather season begins in earnest in April and peaks in July. The warm season months from May through September account for 87% of all severe weather reports. The convective season wanes quickly by September. The latest report of severe weather during the year occurred on October 17, 1984 when wind damage was reported one mile north of Algoma at 12:40 AM CST. This report is very unusual considering the month and the time of day when it occurred.

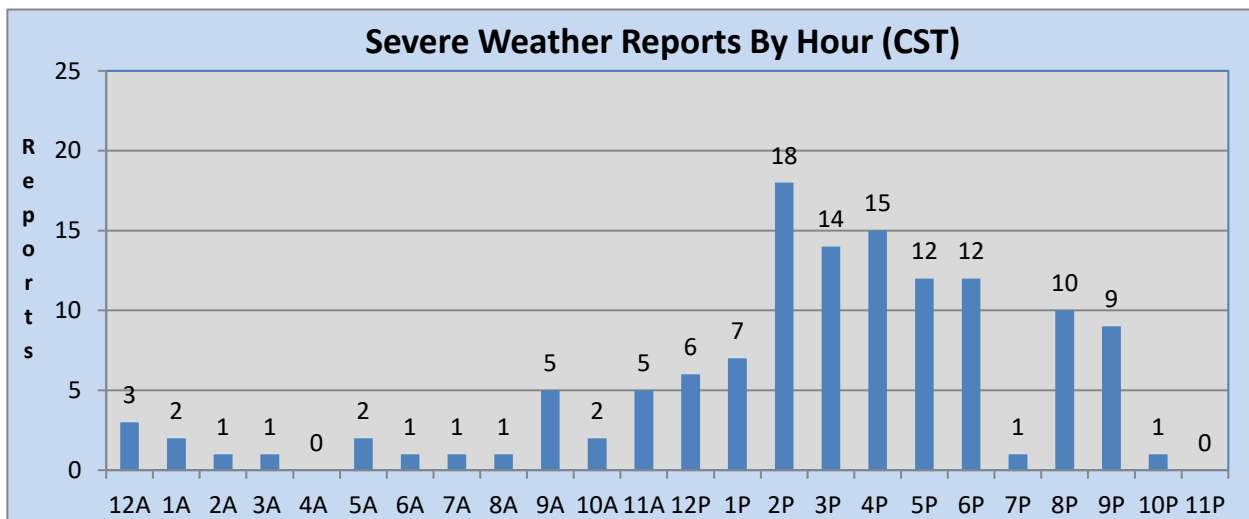
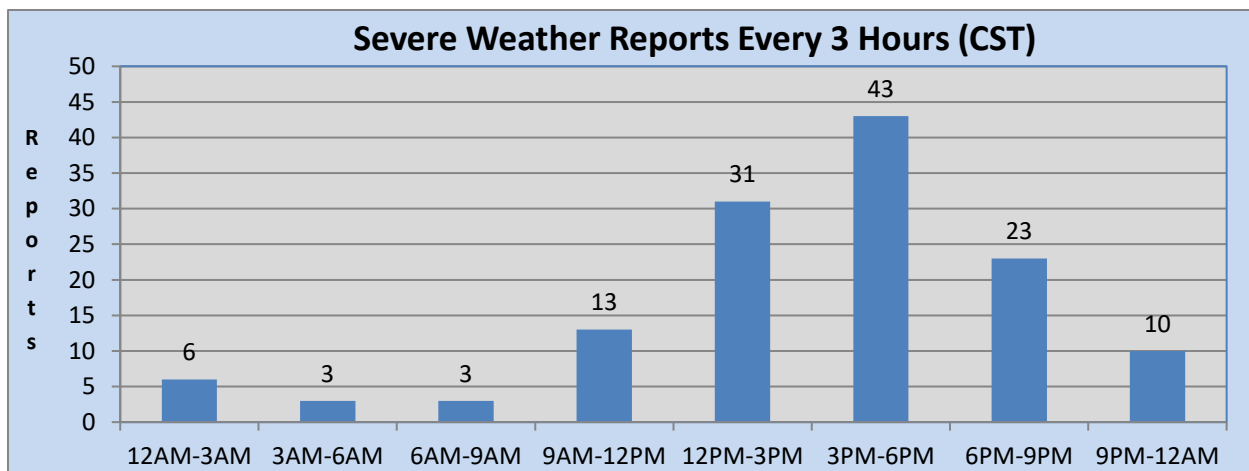


NOTE: The chart depicts storm type by month: (hail, wind/wind damage, tornadoes).

Kewaunee County Severe Weather Facts (1950-2023)

Storm Reports by Time of Day

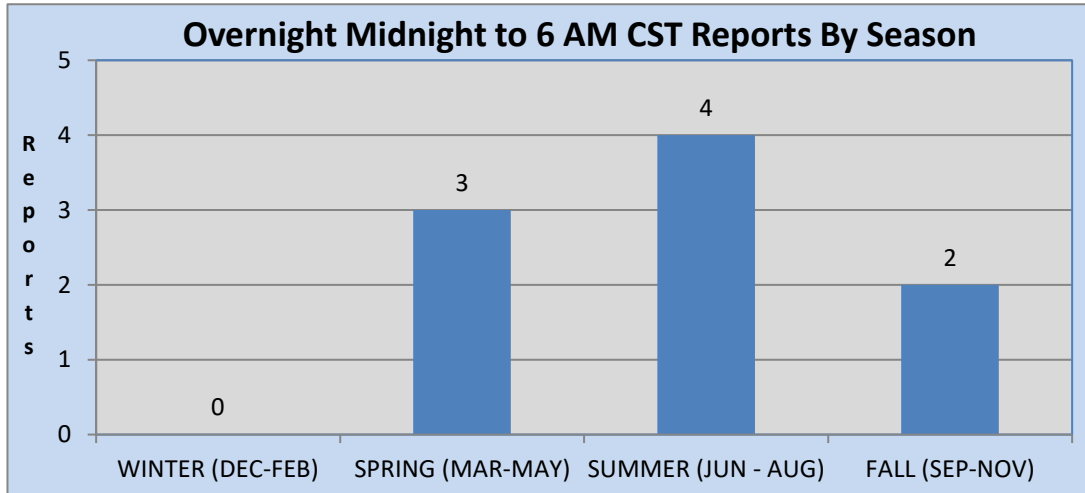
No matter the season, the afternoon and early evening hours are the peak time for severe weather across Kewaunee County. Sixty-nine percent of all severe weather reports occur between 1 PM and 9 PM CST. In Kewaunee County, severe weather reports increased sharply after 1 PM CST and peaks between 2 PM and 7 PM CST. The peak in the storm activity corresponds to peak afternoon heating when the atmosphere is most unstable. During May through early September, there is another peak of severe weather that occurs between midnight and 6 AM CST. In these events, thunderstorms that develop across the Dakotas and Minnesota move eastward into the county overnight. In 2013, there was a rare tornado that struck the county between 12:05 AM and 12:10 AM CST from a half mile south southeast of Henrysville to one mile northeast of Stangelville. In 2016, there was a report of wind/wind damage just east of Luxemburg at 7:45 AM CST on July 21st, and an early morning tornado (9:03 AM to 9:06 AM CST) near Kewaunee. In 2019, there were reports of strong winds/wind damage between 11:09 AM CST and 11:18 AM CST.



Kewaunee County Severe Weather Facts (1950-2023)

Severe Weather Reports Midnight to 6 AM CST

Overnight severe weather reports across north-central and northeast Wisconsin are more 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. However, there was no clear trend in the overnight reports across Kewaunee County as the summer and spring overnight reports are equal and just slightly higher than the fall months (September through November). In 2013, there was a rare tornado struck the county between 12:05 AM and 12:10 AM CST from a half mile south southeast of Henrysville to a mile northeast of Stangelville.



Kewaunee County Severe Weather Facts (1950-2023)

Kewaunee County Tornadoes and Waterspouts

Since record keeping began in 1950, there have been nine documented tornadoes and four waterspouts in Kewaunee County and the adjacent coastal waters. Of the nine tornadoes, there have been zero documented tornadoes of F/EF3 or greater intensity. Two of the seven tornadoes have been rated F/EF2 intensity (see table below). The other six tornadoes were rated F/EF0 or F/EF1. The last EF2 tornado to strike Kewaunee County occurred on April 22, 1970 when the tornado touched down six miles southwest of Algoma. The tornado then traveled to about six miles northeast of Algoma. On this date, two other early season tornadoes were noted across the county. The last documented waterspout was recorded on August 9, 2012. On this date, two separate waterspouts touched down six miles south of Kewaunee between 12:10 PM and 12:35 PM CST. In 2016, a brief tornado touched down in Kewaunee between 9:03 AM and 9:06 AM CST on August 20th. The most active year was 1970 with three tornadoes; followed by two waterspouts in 2012. Since 1950, tornadoes or waterspouts have touched down in ten different years. A tornado or waterspout is reported in Kewaunee County occurs on average every five and a half years.

Event #	Date			Time (CST)	Start / End Location	F/EF Rank
	Month	Day	Year			
1	7	2	1969	16:20	3 SW Luxemburg - Ellisville	1
2	4	22	1970	21:00-21:10	1 N Casco - Rio Creek	2
3	4	22	1970	21:10	6 SW - 4 SE Luxemburg	1
4	4	22	1970	21:20-21:30	Algoma - 6 NE Algoma	2
5	5	8	1978	16:50	1.5 SW - 2.5 SE Luxemburg	1
6	4	24	1994	15:25	3 S Luxemburg	0
7	6	29	1995	11:05	10 SW Kewaunee	0
8	6	4	2005	17:30	5 E Kewaunee (waterspout)	0
9	5	22	2011	18:05	5 NE Algoma (waterspout)	0
10	8	9	2012	12:10-12:20	6 S Kewaunee (waterspout)	0
11	8	9	2012	12:25-12:35	6 S Kewaunee (waterspout)	0
12	8	6	2013	00:05-00:10	0.5 SSE Henrysville - 1 NE Stangelville	1
13	8	20	2016	09:03-09:06	1.1 NW - 0.8 NW Kewaunee	0

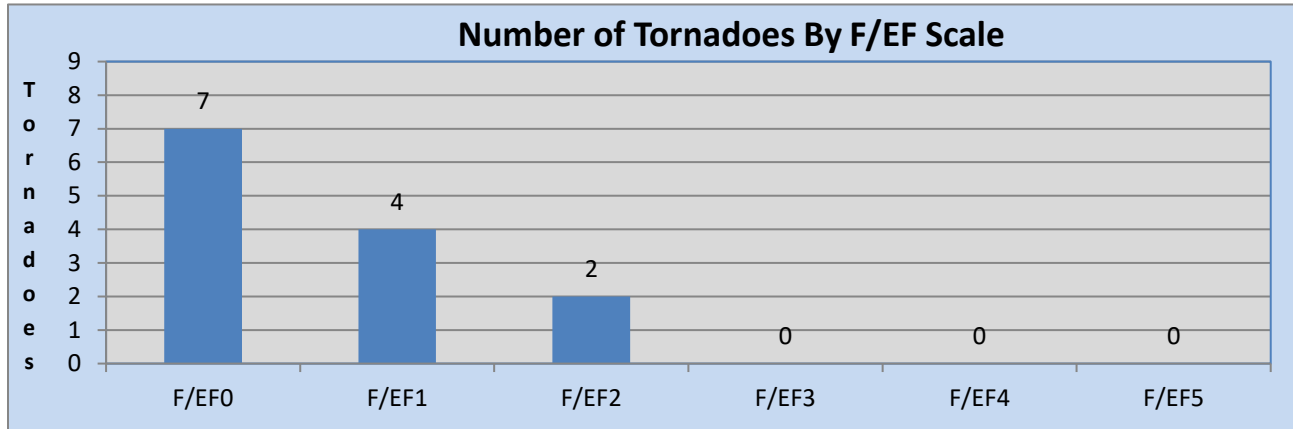
Additional tornado data can be found on the NWS Green Bay webpage at: <http://www.weather.gov/grb/severeclimate>

F/EF2 or Greater Tornadoes in Kewaunee County

Event #	Date			Time (CST)	Start / End Location	F/EF Rank
	Month	Day	Year			
1	4	22	1970	21:00-21:10	1 N Casco - Rio Creek	2
2	4	22	1970	21:20-21:30	Algoma - 6 NE Algoma	2

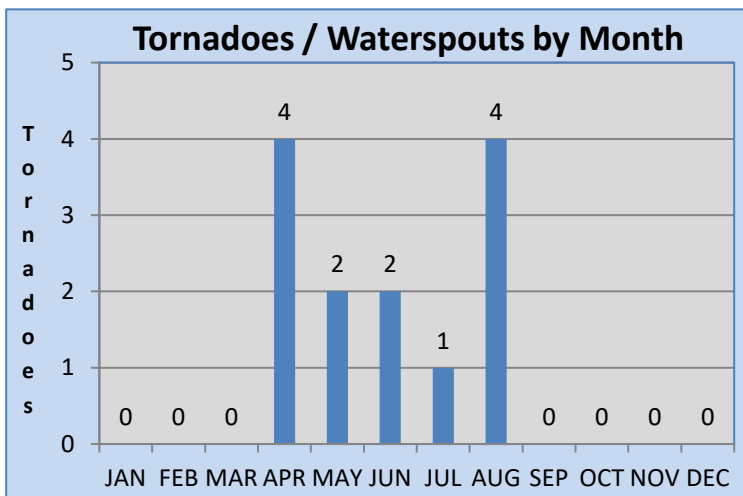
Additional tornado data can be found on the National Weather Service Green Bay webpage at: www.weather.gov/grb/prepare

Kewaunee County Severe Weather Facts (1950-2023)



Only two of the 13 tornadoes (15%) were rated F/EF2 while there were zero F/EF3 or greater tornadoes across the county. Seven of the tornadoes (54%) were rated F/EF0.

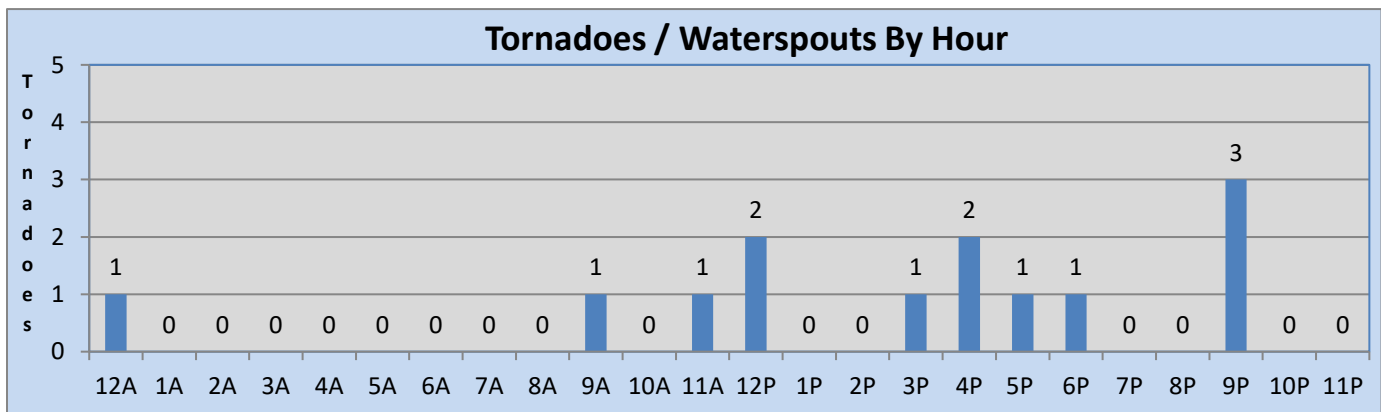
Tornadoes / Waterspouts by Month



Documented tornadoes or waterspouts have occurred in Kewaunee County from April through August. Surprisingly, April has the most documented tornadoes along with August with four. The earliest documented tornado during the year occurred on April 22, 1970. On this date, three separate tornadoes touched down across the county. The first tornado touched down one mile north of Casco and moved to Rio Creek; while the second tornado developed in Algoma and moved northeast. The third tornado touched down six miles southwest of Luxemburg and traveled to four miles southeast of Luxemburg. The latest tornado on record during the year occurred on August 20, 2016 when an EF0 tornado touched down 1.1 NW to 0.8 NW of Kewaunee. The warm season months of May through August account for 69% of all tornado or waterspouts during the year.

Tornadoes / Waterspouts by Hour

In Kewaunee County, eight out of the thirteen (62%) documented tornadoes and waterspouts have occurred between 3 PM and 10 PM CST. In 2016, an EF0 tornado touched down in Kewaunee between 9:03 AM and 9:06 AM CST. There have been no documented tornadoes between 1 AM and 9 AM CST.



Kewaunee County Severe Weather Facts (1950-2023)

Predominant Storm Reports – Wind and Hail Only

During March and April, large hail is the dominant weather event that is reported to the National Weather Service. For the remainder of the convective season, nearly six out of ten reports are high winds / wind damage compared to large hail.

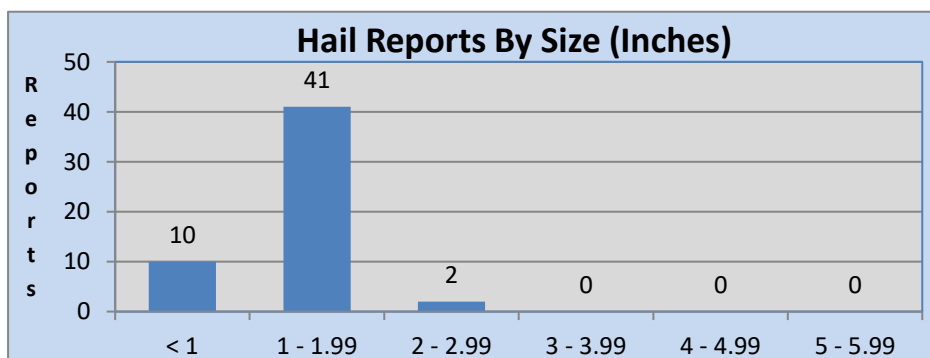
Month	% Hail Reports	% Wind or Wind Damage	Month	% Hail Reports	% Wind or Wind Damage
Jan	0.0	100	Jul	40.0	60.0
Feb	0.0	0.0	Aug	33.3	66.7
Mar	100	0.0	Sep	40.0	60.0
Apr	72.7	27.3	Oct	0.0	100.0
May	50.0	50.0	Nov	0.0	0.0
Jun	47.6	52.4	Dec	0.0	0.0
			Year	44.5	55.5

Large Hail in Kewaunee County

There have only been two documented reports of large hail two inches or larger in diameter across the county. The largest documented hail stone was 2.5 inches in diameter (tennis ball size hail) occurred three miles northwest of Algoma on June 17, 1992. The last occurrence of a hail stone two inches in diameter or greater occurred in Kewaunee on April 10, 2011, when two-inch hail was reported at Kewaunee. Overall, hail ranging in size from three quarters to one inch accounted for 74% of the documented large hail reports. Large hail reports of two inches or greater only accounted for four percent of the total large hail reports.

Hail over 2 inches

Event #	Date	Time (CST)	Start / End Location	Hail (Inches)		
	Month	Day	Year			
1	6	17	1992	10:00	3 NW Algoma	2.50
2	4	10	2011	15:37	Kewaunee	2.00



Kewaunee County Severe Weather Facts (1950-2023)

Kewaunee County Summary

In Kewaunee County, the severe weather season begins in earnest in April and wanes quickly by September. An unusual and early season tornado outbreak (3 tornadoes) occurred on April 22, 1970. 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 wind or wind damage 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, Kewaunee County ranks 20th in the total number of storm reports and 17th 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

Kewaunee 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