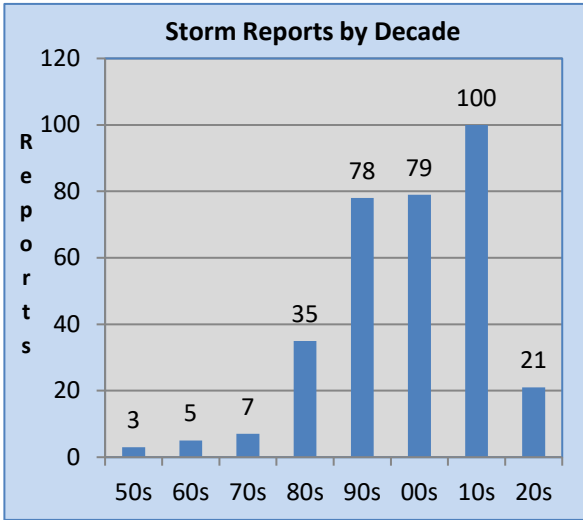


# Oneida County Severe Weather Facts (1950-2023)

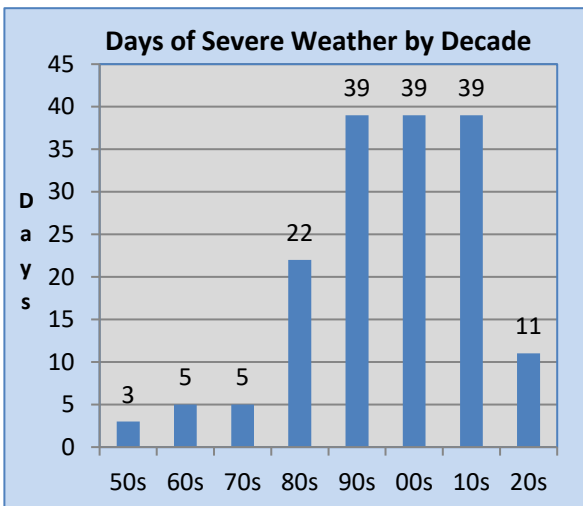
Updated: 01/01/24: Next Update: January 2025

## Storm Reports by Decade



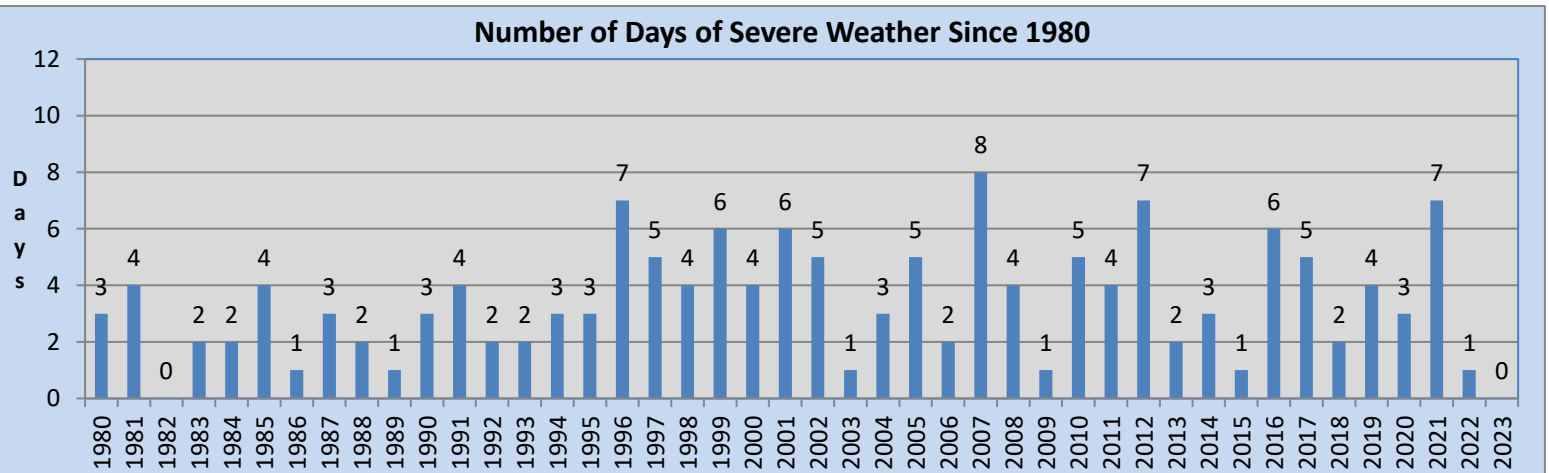
Since 1950 there have been 328 documented reports of large hail, damaging winds and tornadoes across Oneida County. The population boom of the 1980s and 1990s combined with the SKYWARN program led to an increase in the number of reports of severe weather during both decades. The number of reports increased 9% 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. 2017 was the most active year with 22 reports, followed by 19 reports in 1999, 16 reports in 2002 and 2014 and 14 reports in 2007, and 13 reports in 2000. In 2014, 14 out of the 16 severe weather reports occurred on September 4<sup>th</sup>. Since 1980, there were no reports of severe weather in the following year: 1982 and 2023.

## 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 2013 to 2022 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, Oneida County averages 3.6 days of severe weather per year. The long-term average from 1980-2023 is 3.4 days. The most active year was 2007 with eight days of severe weather; followed by seven days of severe weather in 1996, 2012 and 2021, six days in 1999, 2001, 2016, 2017 and 2021, and five days in 1997, 2002, 2005 and 2010. In 2023, there were no reports of severe weather.

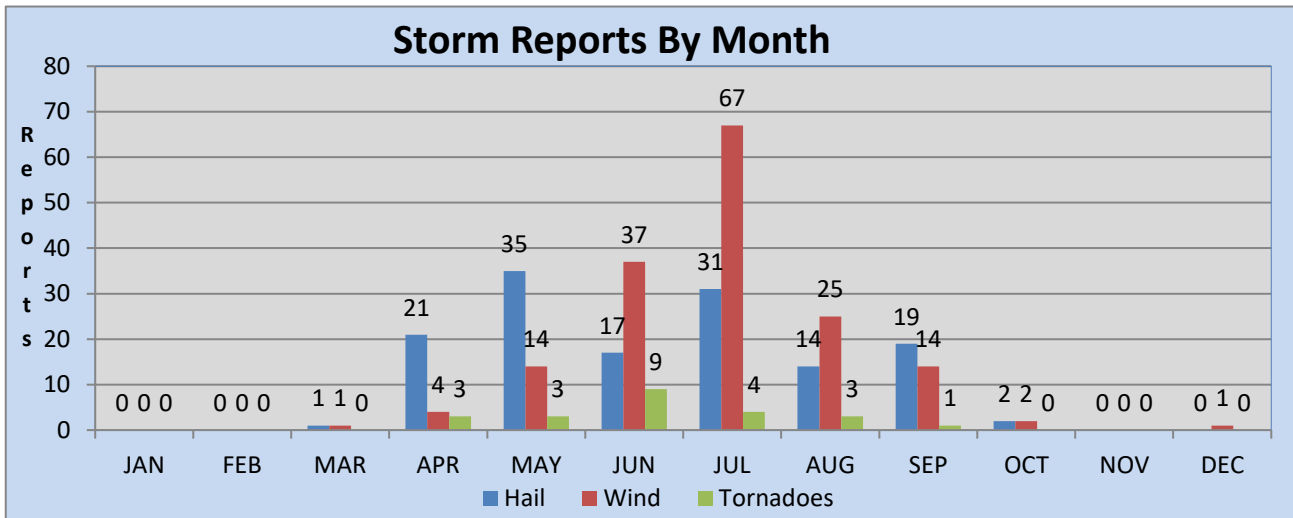
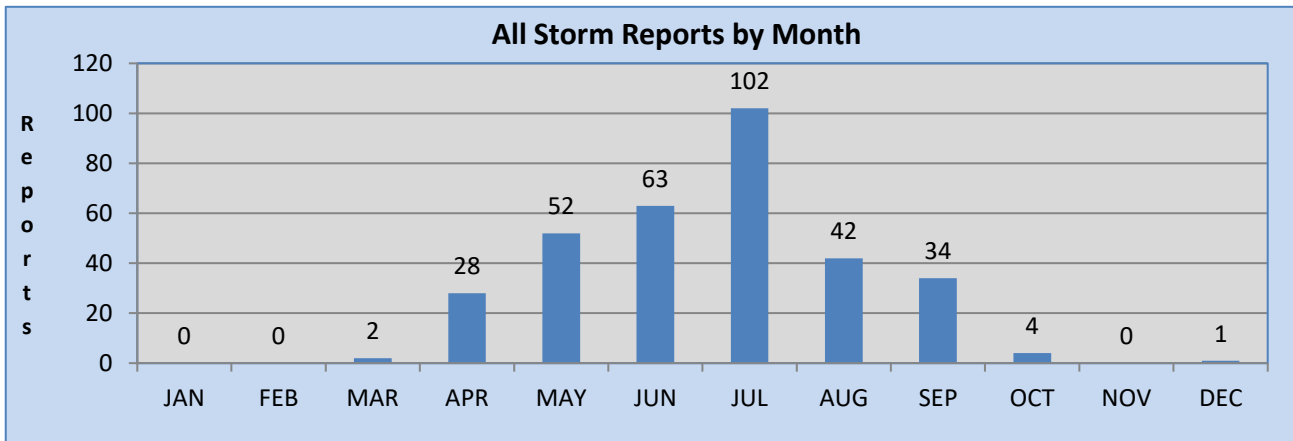
## Number of Days of Severe Weather Since 1980



# Oneida County Severe Weather Facts (1950-2023)

## Storm Reports by Month

Severe weather has been recorded in Oneida County from March through October. A rare event can occur in March. The earliest documented report of severe weather during the year occurred on March 29, 1998. Nickel size hail was reported near Rhinelander while damaging winds were reported near Harshaw. The severe weather season begins in earnest in April. The heart of the convective season occurs from May through July, which accounts for 66% of all severe weather reports. July is the peak month for severe weather and then quickly wanes by September. The warm season period of May through September accounts for 89% of all severe weather reports during the year. In 2014, all 15 reports were documented in September (1 on September 3<sup>rd</sup> and 14 on September 4<sup>th</sup>). Severe weather can occur from time to time in September while events in October are rare. Until 2021, the latest report of severe weather during the year occurred on October 29, 2004, when wind damage was reported two miles southwest of Woodboro. In 2021, unusually mild temperatures on December 15<sup>th</sup> caused a severe thunderstorm outbreak across Iowa and Minnesota into Wisconsin. A weakening line of severe thunderstorms produced wind damage just east of Pelican Lake around 10:50 PM CST.

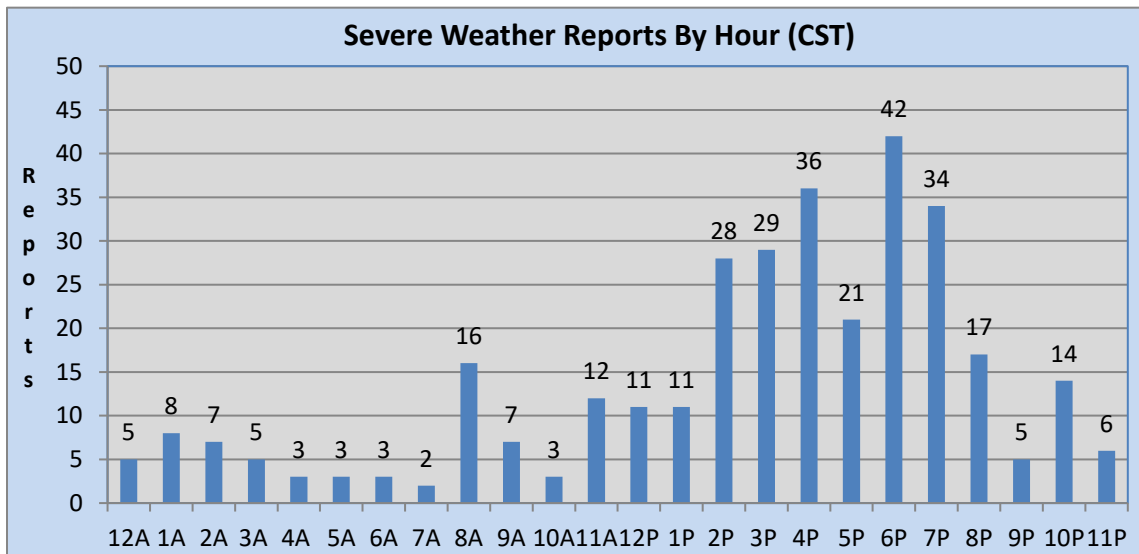
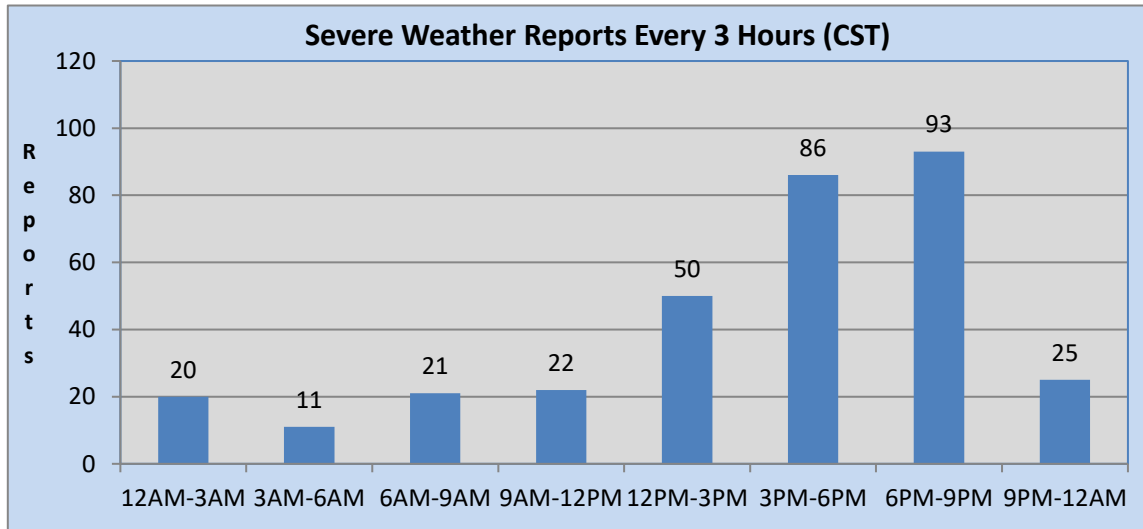


NOTE: The chart depicts storm type by month: (hail, wind/wind damage, tornadoes).

# Oneida County Severe Weather Facts (1950-2023)

## Storm Reports by Time of Day

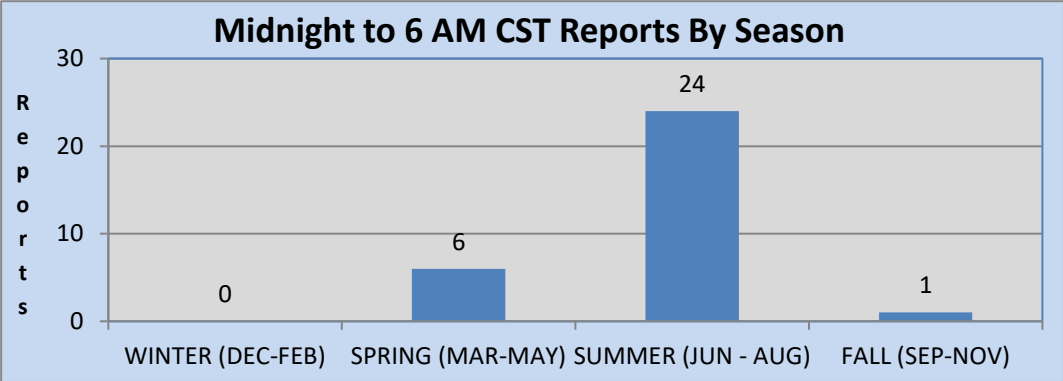
No matter the season, the afternoon and early evening hours are the peak time for severe weather across Oneida County. Overall, 67% of all severe weather reports occurred between 1 PM and 9 PM CST. In Oneida County, severe weather reports increased sharply after 1 PM CST and then peaks between 3 PM and 8 PM CST. The peak in the storm activity corresponds to peak afternoon heating when the atmosphere is most unstable. Between May and August, there is a peak in overnight activity between midnight and 6 am. In these events, thunderstorms develop across Minnesota and the Dakotas and then move into the county overnight. In 2014, all 15 reports occurred between the hours of 8 AM and 10 AM CST (1 report on September 3<sup>rd</sup> and 14 reports on September 4<sup>th</sup>).



# Oneida 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 77% of all overnight severe weather reports during the year.



# Oneida County Severe Weather Facts (1950-2023)

## Oneida County Tornadoes

Event #	Date			Time	Start / End Location	F/EF Rank
	Month	Day	Year	(CST)		
1	6	25	1950	21:00	4 NE Bradley - Rhinelander	4
2	6	20	1953	18:00	Three Lakes	1
3	5	4	1964	18:00-18:10	0.5 S Saint Germain - 7 E St. Germain	1
4	6	26	1969	17:00	Skanawan - Pelican Lake	1
5	6	14	1980	13:25	1 E Rhinelander - Lake Thompson	1
6	6	14	1980	14:22	5 N Rhinelander	0
7	6	13	1981	20:40	1 N Hazelhurst	1
8	6	13	1981	21:00	Three Lakes	2
9	4	27	1984	14:37-15:07	Fawn Lake - Star Lake	3
10	6	8	1985	18:15-18:52	Park Falls - 3 SE Monico	3
11	7	4	1986	19:35-19:40	5 SE Hazelhurst	2
12	8	1	1988	18:20	3 S Hazelhurst	0
13	6	27	1991	18:20-18:30	12 WSW Minocqua - Marian Lake	2
14	8	9	1993	20:15	1 N Tripoli	0
15	8	14	2000	19:10	Lake Tomahawk	0
16	5	1	2001	20:55-21:00	0.4 NNE - NE Minocqua	1
17	9	6	2001	18:09-18:14	0.3 SSW Pelican Lake - 1.3 NNE Pelican Lake	0
18	4	18	2002	15:57	6 SW Woodboro	0
19	4	18	2002	16:33	4 E Rhinelander	0
20	7	11	2004	14:42-14:45	8 SW Harshaw	0
21	7	11	2004	15:43	1 W Goodnow	0
22	5	16	2017	19:12-19:13	5.9 WSW - 5.5 WSW Enterprise	0
23	7	19	2019	18:49-18:58	5.5 SW Lake George - 2.4 NW Enterprise	0

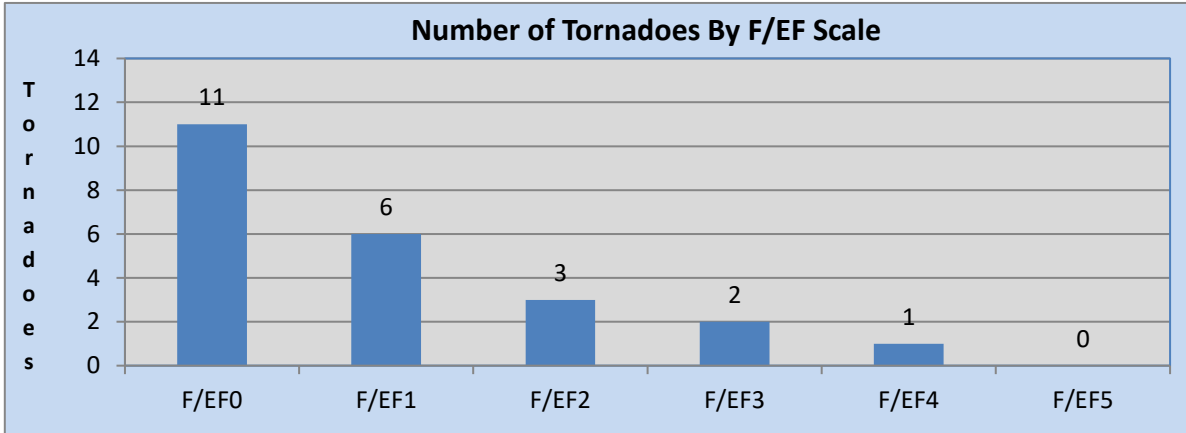
Additional tornado data can be found on the NWS Green Bay webpage at: <http://www.weather.gov/grb/severeclimate>

## F/EF2 or Greater Tornadoes in Oneida County

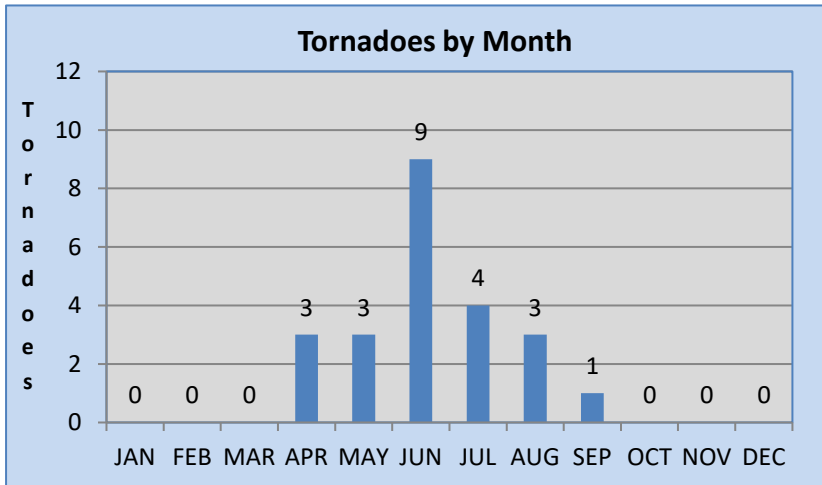
Event #	Date			Time	Start / End Location	F/EF Rank
	Month	Day	Year	(CST)		
1	6	25	1950	21:00	4 NE Bradley - Rhinelander	4
2	6	13	1981	21:00	Three Lakes	2
3	4	27	1984	14:37-15:07	Fawn Lake - Star Lake	3
4	6	8	1985	18:15-18:52	Park Falls - 3 SE Monico	3
5	7	4	1986	19:35-19:40	5 SE Hazelhurst	2
6	6	27	1991	18:20-18:30	12 WSW Minocqua - Marian Lake	2

# Oneida County Severe Weather Facts (1950-2023)

Since record keeping began in 1950, there have been 23 documented tornadoes in Oneida County. There have been three documented tornadoes of F/EF3 or greater intensity. The strongest tornado was a F4 which touched down four miles northeast of Bradley and moved to near Rhinelander before dissipating on June 25, 1950. The last F3 tornado to strike the county occurred on June 8, 1985. The tornado developed near Park Falls and dissipated three miles southeast of Monico. Overall, there has been one F/EF4 tornado, two tornadoes rated F/EF3, three tornadoes were rated F/EF2, six tornadoes rated F/EF1, and eleven tornadoes were rated F/EF0. The most active years were 1980, 1981, 2001, 2002, and 2004 with two tornadoes. A tornado was reported across Oneida County in three consecutive years from 1984 to 1986 and again from 2000 to 2002. The last tornado to strike Oneida County occurred on July 19, 2019 when the EF0 tornado touched down just over 5 miles southwest of Lake George and move to 2.4 miles northwest of Enterprise. Since 1950, tornadoes have touched down in 18 different years. A tornado strike in Oneida County occurs on average about every three years.



## Tornadoes by Month

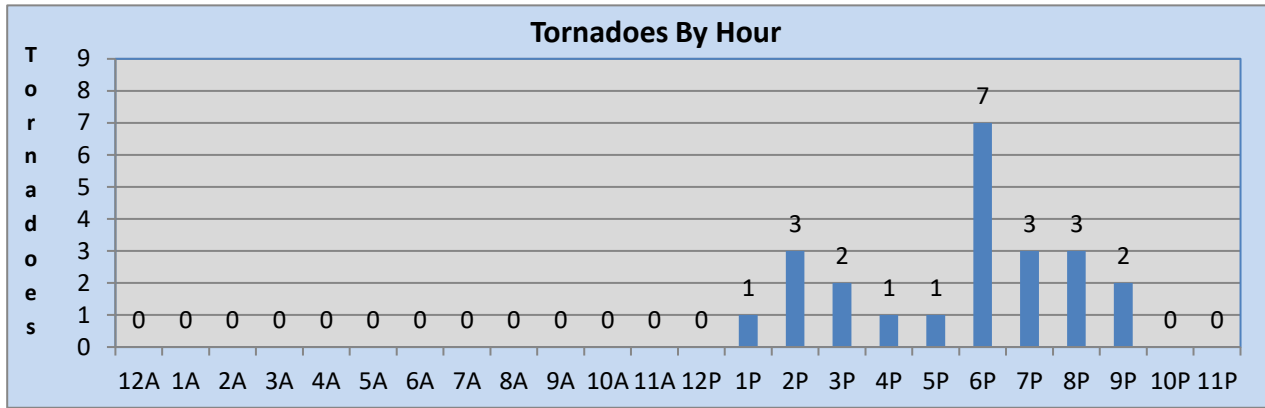


Documented tornadoes have occurred in Oneida County from April to September. The earliest documented tornado during the year occurred on April 18, 2002. On this date, two weak F0 tornadoes were reported four miles east of Rhinelander and six miles southwest of Woodboro. The tornado season peaks in June, which accounts for 39% of all tornado reports. The warm season months of May through September account for 87% of all tornadoes during the year. The latest tornado on record during the year occurred on September 6, 2001 when a F0 tornado traveled from just south southwest of Pelican Lake to just over a mile northeast of Pelican Lake.

# Oneida County Severe Weather Facts (1950-2023)

## Tornadoes by Hour

In Oneida County, all twenty-three documented tornadoes have occurred between 1 PM and 10 PM CST. There have been no documented tornadoes between the 10 PM and 1 PM Central Standard Time.



## Predominant Storm Reports – Wind and Hail Only

During March, the reports were evenly split between large hail and strong winds/wind damage while large hail was the dominant report during April and May. For the remainder of the convective season, strong wind gusts/wind damage was the dominate report type. Over the course of the year, strong winds or wind damage were reported slightly more 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	31.6	68.4
Feb	0.0	0.0	Aug	35.9	64.1
Mar	50.0	50.0	Sep	57.6	42.4
Apr	84.0	16.0	Oct	50.0	50.0
May	71.4	28.6	Nov	0.0	0.0
Jun	31.5	68.5	Dec	0.0	100.0
			Year	45.9	54.1

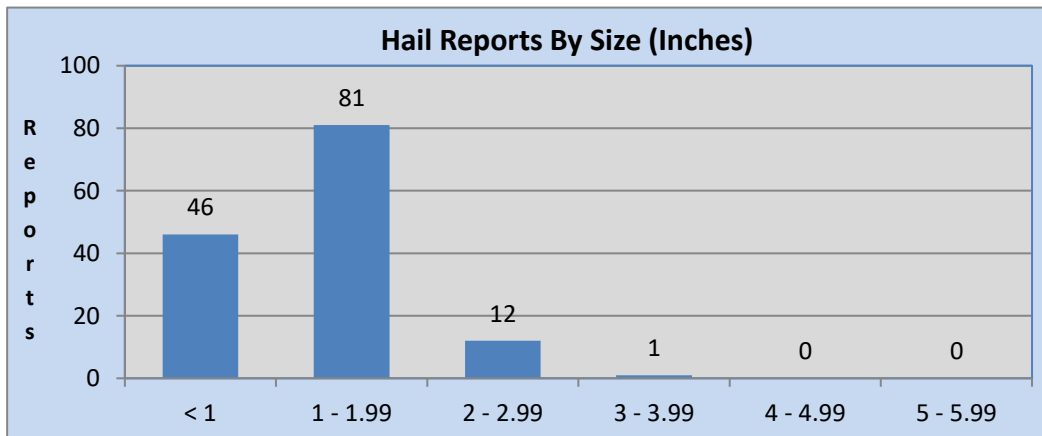
# Oneida County Severe Weather Facts (1950-2023)

## Large Hail in Oneida County

There have been 13 documented reports of hail two inches or greater in diameter across the county. The largest hail stone of three inches in diameter occurred four miles south of Rhinelander on July 19, 1963. The last documented hail stone of two inches or greater occurred on May 16, 2017 when two inch hail was reported just east of Pelican Lake. The previous two-inch hail report was on September 4, 2014 when two and a half inch fell four miles northeast of Lake Tomahawk and 3.6 miles southeast of Mc Naughton between 8:50 AM and 8:55 AM CST. 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 9% of the total hail reports.

### Hail over 2 inches

Rank	Date			Time (CST)	Start / End Location	Hail (Inches)
	#	Month	Day			
1	7	19	1963	15:00	4 S Rhinelander	3.00
2	7	16	1997	12:30	1 N Minocqua	2.75
3T	9	4	2014	08:55	3.6 SE Mc Naughton	2.50
3T	9	4	2014	08:50	4 NE Lake Tomahawk	2.50
3T	5	30	1994	20:55	5 SE Rhinelander	2.50
3T	5	30	1994	20:55	Minocqua	2.50
7T	5	16	2017	19:30	0.5 E Pelican Lake	2.00
7T	7	5	1999	08:50	8 W Three Lakes	2.00
7T	6	5	1999	18:32	Three Lakes	2.00
7T	5	30	1994	20:30	Rhinelander	2.00
7T	4	26	1994	14:20	Woodruff	2.00
7T	7	4	1985	14:25	Minocqua	2.00
7T	7	28	1980	15:30	13 SW Harshaw	2.00





# Oneida County Severe Weather Facts (1950-2023)

## Oneida County Summary

In Oneida 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 or damaging winds early in the spring. Damaging wind or large hail will be the dominant severe weather report during the remainder of the convective season, with the exception of May when large hail was the dominant weather report. In the NWS Green Bay County Warning Area which includes 22 counties from central to northeast Wisconsin, Oneida County ranks 4<sup>th</sup> in the total number of storm reports and 12<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

# Oneida 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