

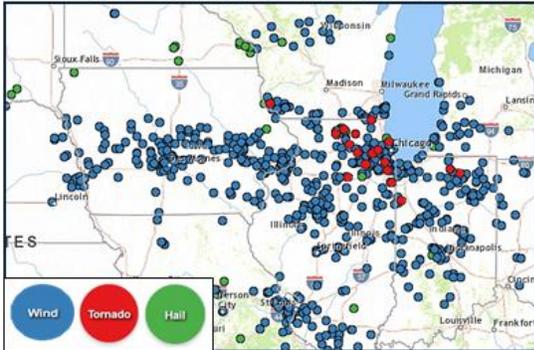
August 10, 2020: Derecho Brings Widespread Severe Wind Damage Along with Several Tornadoes

[Weather.gov](https://www.weather.gov) > [Chicago, IL](https://www.weather.gov/chicago) > August 10, 2020: Derecho Brings Widespread Severe Wind Damage Along with Several Tornadoes

August 10, 2020 Derecho *Derecho: An organized & long-lived system of storms producing a family of particularly damaging downbursts.*

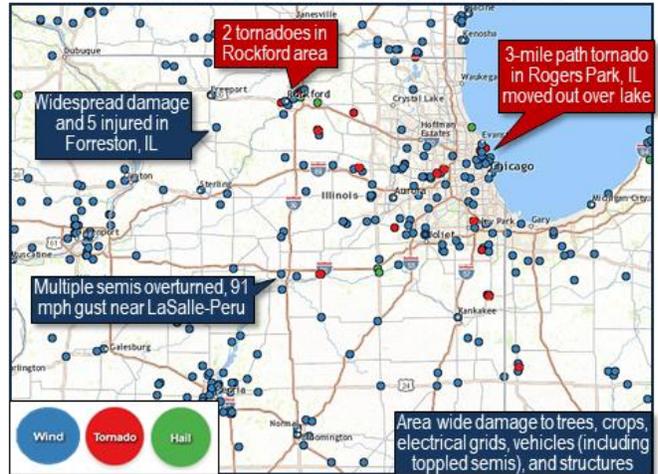


Severe Weather Reports for the Region



- Over 700 severe wind reports from near Omaha, NE through northern/central IN
- Near 200 reports in northern IL & northwest IN, several with significant damage
- Several embedded tornadoes bringing corridors of enhanced damage

Severe Weather Reports for the Local Area

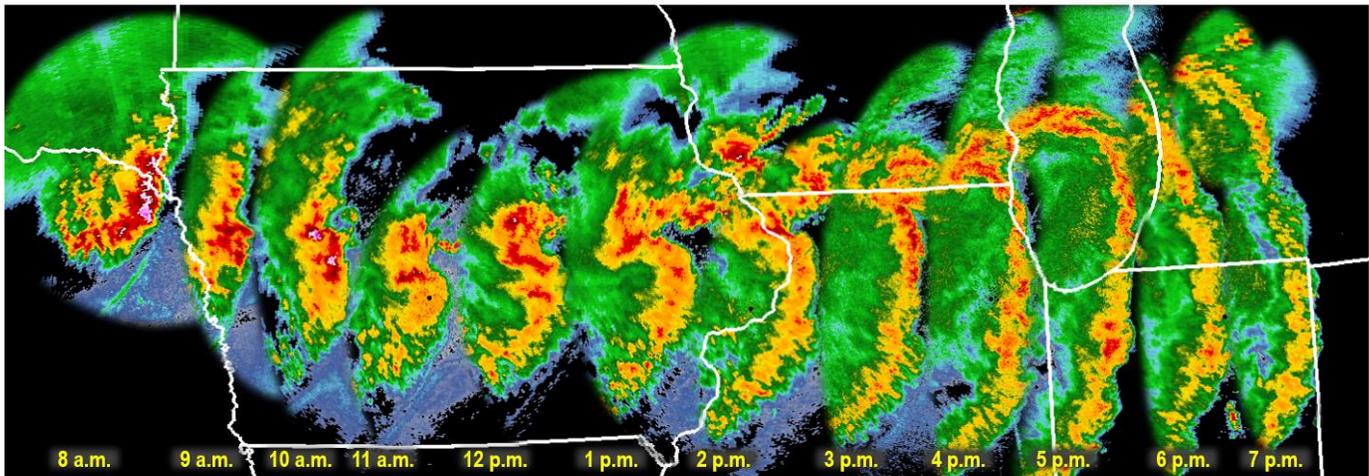


Thank you to storm spotters, broadcast media, and public for your reports!

National Weather Service Chicago Friday, August 14, 2020

August 10, 2020 Derecho: Lowest Angle NWS Radar Reflectivity at One-Hour Time Steps

All times in CDT



This long-lasting, severe wind thunderstorm complex (known as a derecho) produced hundreds of reports of damage along with likely a few tornadoes.

Fast Facts (Updated 1 p.m. Fri, August 14):

- **Summary:** A well-organized and long-lived complex of storms produced widespread severe wind damage across Iowa, northern Illinois, and northern Indiana during the day on Monday, August 10. Much of this severe wind was significant (75+ mph winds) resulting in many downed trees, several toppled-over semi trucks, and many communities receiving at least some minor structural damage. Within the broader area of severe winds, 15 tornadoes were confirmed across northern Illinois and northwest Indiana.
 - Several tornadic circulations developed within the main line of thunderstorms, producing 13 tornadoes across northern Illinois and northwest Indiana. In addition, a lone supercell that was subsequently absorbed into the main line produced 2 tornadoes in and around the Rockford area, bringing the total number of tornadoes for this event to 15. As it stands at this time, since 1950, this is tied for the 2nd highest number of tornadoes to occur on a single calendar day in NWS Chicago's area of responsibility, and the most to occur on a single calendar day in the month of August.
- **Preliminary August 10th numbers:**
 - Over 700 reports of severe wind speeds (58+ mph) or wind damage from the Nebraska/Iowa border, across Iowa, northern Illinois and northern Indiana.
 - Over 150 of the wind reports are from all of northern Illinois and northwest Indiana.
 - Six injuries have been reported in the NWS Chicago CWA, five being in Forreston, IL and one in Peru, IL.
 - In the [NWS Chicago County Warning Area](#), 15 tornadoes have been confirmed, which includes portions of northern Illinois and northwest Indiana.
 - This ties August 10, 2020 with [June 22, 2016](#) as the date with the 2nd most tornadoes to occur on a single calendar day within our county warning area (behind the [6/30/2014 "Double Derecho" event](#)).
 - In total, the derecho produced 18 confirmed tornadoes across Illinois, Wisconsin, and Indiana.
 - The tornadoes include an EF1 tornado in Rogers Park, Illinois (a north-side neighborhood of Chicago), that moved out over Lake Michigan making it a waterspout. This was the first tornado in the city of Chicago since [September 3, 2018](#) (EF0).
 - This was the first F1/EF1+ tornado in the city of Chicago since May 29, 1983 (F1) just east of Cicero Avenue near Hawthorne Race Course. The last time a stronger tornado in the city was an F2 on March 12, 1976 that clipped the far northwest side of the city, roughly near O'Hare Airport and Edison Park.
- **Derecho Facts:** This complex of storms was known as a **derecho**.
 - A derecho produces a swath of particularly damaging thunderstorm winds (specifically, wind gusts of at least 58 mph along most of its length with several well-separated 75 mph or greater gusts) over an area at least 250 miles long.
 - These are primarily classified as straight-line winds rather than tornadic.
 - Even so, wind speeds in a derecho can exceed 100 mph which is equivalent to that of an EF1 tornado but over a vastly larger area than a tornado would impact.
 - Tornadoes can also be embedded within derechos and produce concentrated areas of even more intense damage.
 - Derechos develop in an environment with very warm and moist air at the surface, colder air aloft, and moderate to strong winds at upper levels of the atmosphere.
 - Northern Illinois and northern Indiana have long been known as a corridor of

- enhanced derecho activity, as shown in this graphic from a published paper
- by Guastini & Bosart (2016) titled "Analysis of a Progressive Derecho"
-

More About Derechos...



Is this a new term?

Nope! Been around for a while in meteorology, and when we convey the term think "damaging winds"!

What makes it different than other storm complexes?

These are the most intense of organized thunderstorms and track over a large area, often producing winds to near or even over 100 mph -- equivalent to an EF1 tornado but over a much larger area!

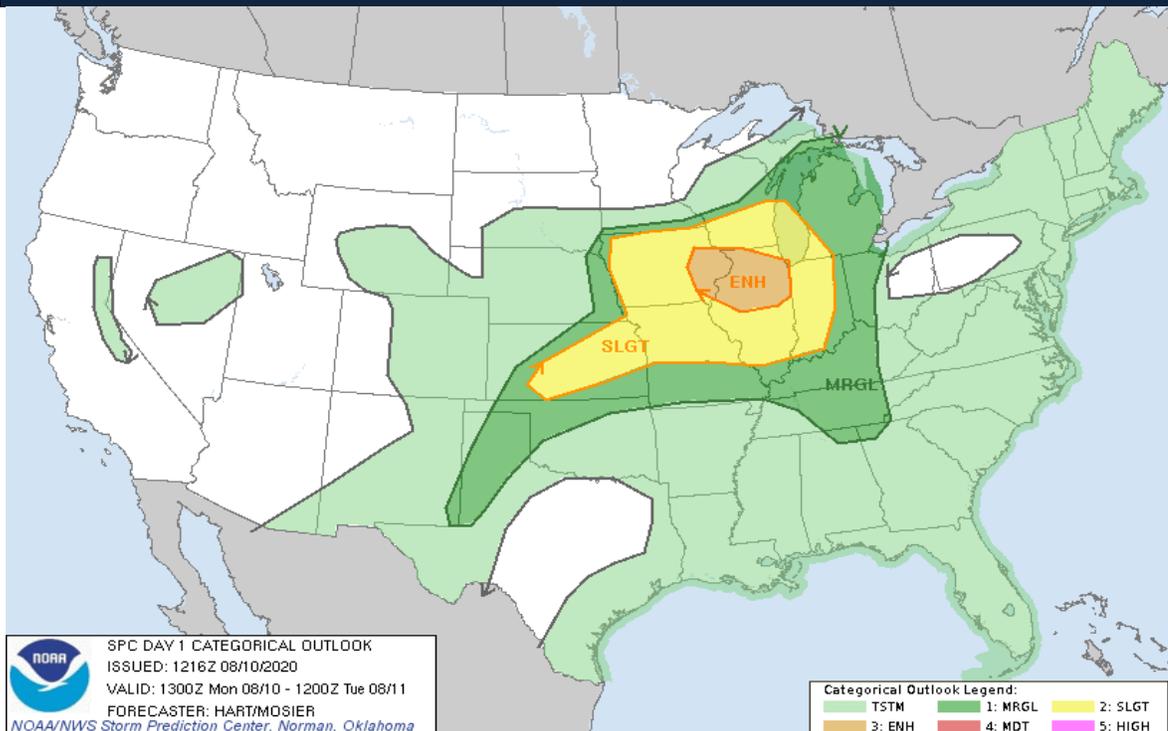
What is the criteria for a derecho?

- Severe gusts (58+ mph) for most of its path
- Several significant gusts (75+ mph) in its path
- Covers an area at least 250 miles long
- Primarily classified as straight-line winds but can have numerous embedded tornadoes

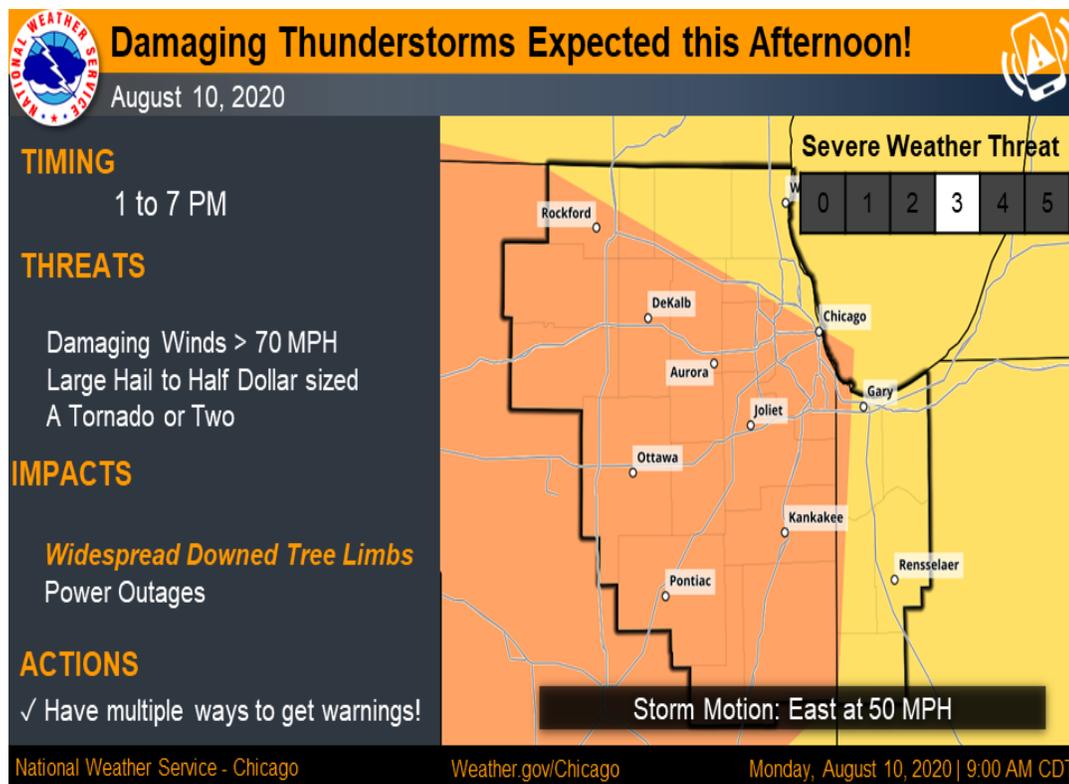
Do these occur often?

- They occur in the Upper Midwest to Great Lakes more often than most other places in the country. Some are more impacting than others, and one of this magnitude and coverage had not occurred in northern Illinois and northwest Indiana since 2014.

National Weather Service Chicago weather.gov



- **Preparedness:** Despite the massive coverage and impressive intensity of the wind damage, there were a very limited number of serious injuries in the local area. This speaks to the effort of our partners including fellow meteorologists in the weather enterprise effectively communicating the threats and action needed to be taken, as well as emergency management and law enforcement for their preparedness efforts beforehand and assistance efforts immediately after. Of course it also means that many public citizens heeded the threat and the warnings, as well as communicated them to their family and friends (being a "Force of Nature!"). For more on severe weather preparedness,
- **The Forecast:** Forecast confidence increased markedly Monday morning that severe weather was likely across northern Illinois and northwest Indiana that afternoon.
- At NWS Chicago, our messaging accordingly increased, and we issued a Situation Report (briefing) for our partners at 9:15 a.m. and held a conference call with them near 12 p.m.
- The office also issued eight Severe Thunderstorm Warnings and six Tornado Warnings.



- Here are some of the forecast information from the **NWS Storm Prediction Center (SPC)** and
- NWS Chicago:



Damaging Thunderstorms Expected this Afternoon!



Widespread Damaging Winds Likely

TIMING

1 to 7 PM

THREATS

Widespread Damaging Winds

Large Hail to Half Dollar sized
A Tornado or Two

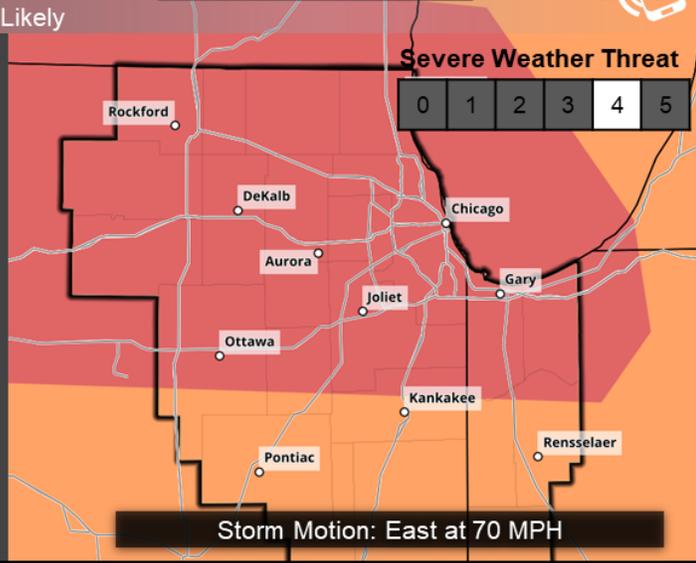
IMPACTS

Widespread Downed Tree Limbs

Power Outages
Damage to Structures

ACTIONS

✓ Have multiple ways to get warnings!



National Weather Service - Chicago

Weather.gov/Chicago

Monday, August 10, 2020 | 11:15 AM CDT

Severe Thunderstorm Watch

Valid Until
7:00 PM CDT Monday
August 10, 2020

Threat Information



TORNADOES

A Couple Tornadoes
Possible



HAIL

Isolated Hail Up To
Ping Pong Size Possible



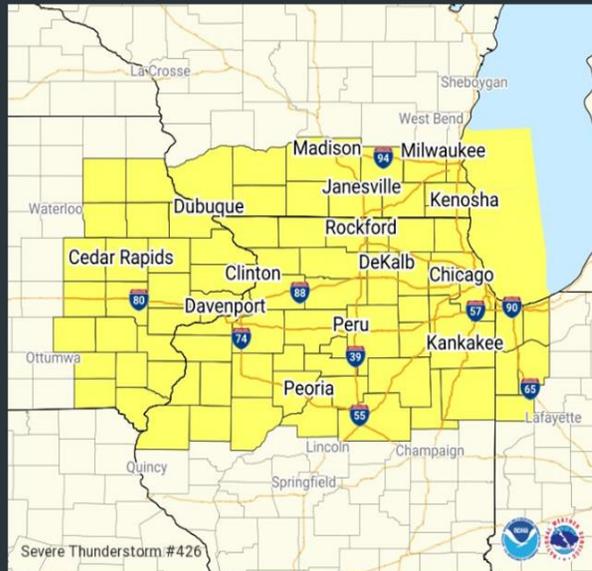
WIND

Widespread Gusts
Up To 100 MPH Likely

Potential Exposure



Population: 15,187,260
Schools: 4872
Hospitals: 280





Latest Severe Thunderstorm Timing

August 10, 2020



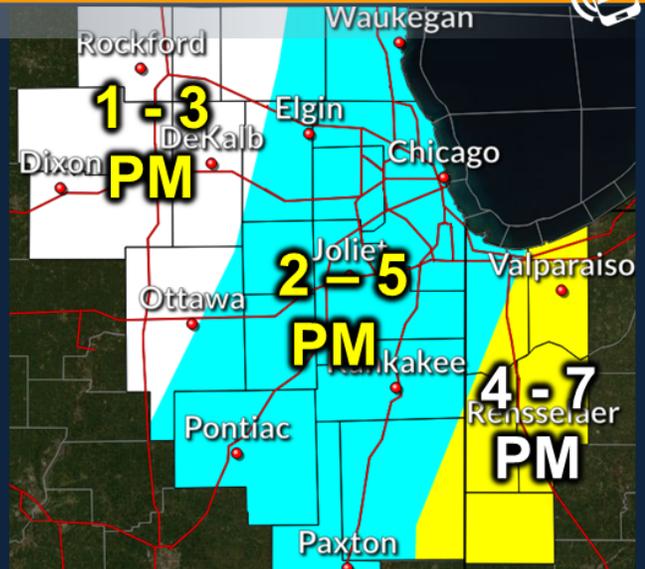
GENERAL INFORMATION

A threat for widespread severe thunderstorm winds will develop this afternoon. This is a rough timing of when to expect the worst conditions.

NOTE: The colors DO NOT represent anticipated storm severity! The entire region is under a severe threat.

ACTIONS

- ✓ Consider altering travel plans this afternoon.
- ✓ Secure loose objects or bring them inside.
- ✓ Have multiple ways to get warnings!



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Weather.gov/Chicago

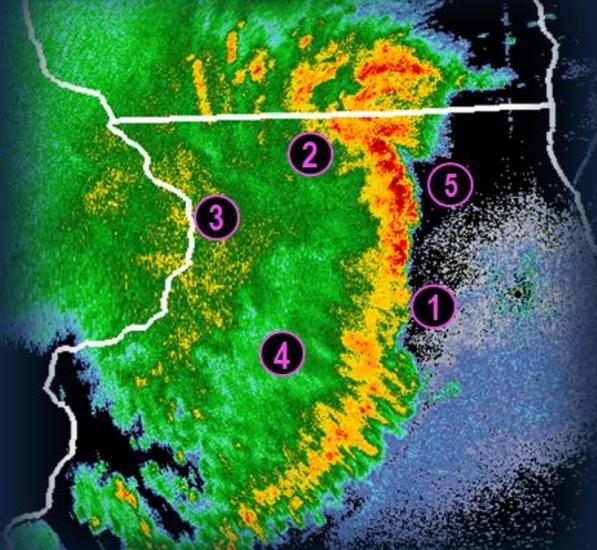
Monday, August 10, 2020 | 12:00 PM CDT

Severe Thunderstorm Watch (issued at 11:25 a.m., Aug 10 through 7 p.m. This was a rarely issued Particularly Dangerous Situation Severe Thunderstorm Watch due to the likelihood of widespread significant wind damage.

Understanding a Damaging Wind Thunderstorm Complex...



Radar from Aug 10, 2020 Derecho



- 1 A large line of storms, frequently with a bowing shape, indicative of strong winds
- 2 Often a comma-head shape on the north end meaning system is well-organized, almost "self sustaining", and favored to persist
- 3 Large rain area on the backside that forms a pool of rain-cooled air, helping to sustain a momentum source for widespread winds
- 4 Lighter radar echoes behind the line may mean descending air from a rear inflow jet supportive of enhanced damaging winds
- 5 In places an almost jagged-like front edge, and at times signifies embedded rotation areas and tornado potential within broader severe winds

National Weather Service Chicago

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NWS Chicago Weather Story graphic illustrating forecast timing of severe winds, issued at 12:00 p.m. Aug. 10.