August 10, 2020 Midwest Derecho

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NOAA / NATIONAL WEATHER SERVICE

What is a Derecho?

- A widespread, straight-line windstorm produced by a complex of thunderstorms.
- Wind from particularly damaging downbursts creates the damage.
- Damage occurs continuously or intermittently over a swath at least ~400 mi long and ~60 mi wide.

What is a Derecho?

- Derecho - Spanish word interpreted as "straight ahead" or "direct" and was chosen to discriminate between wind damage caused by tornadoes.

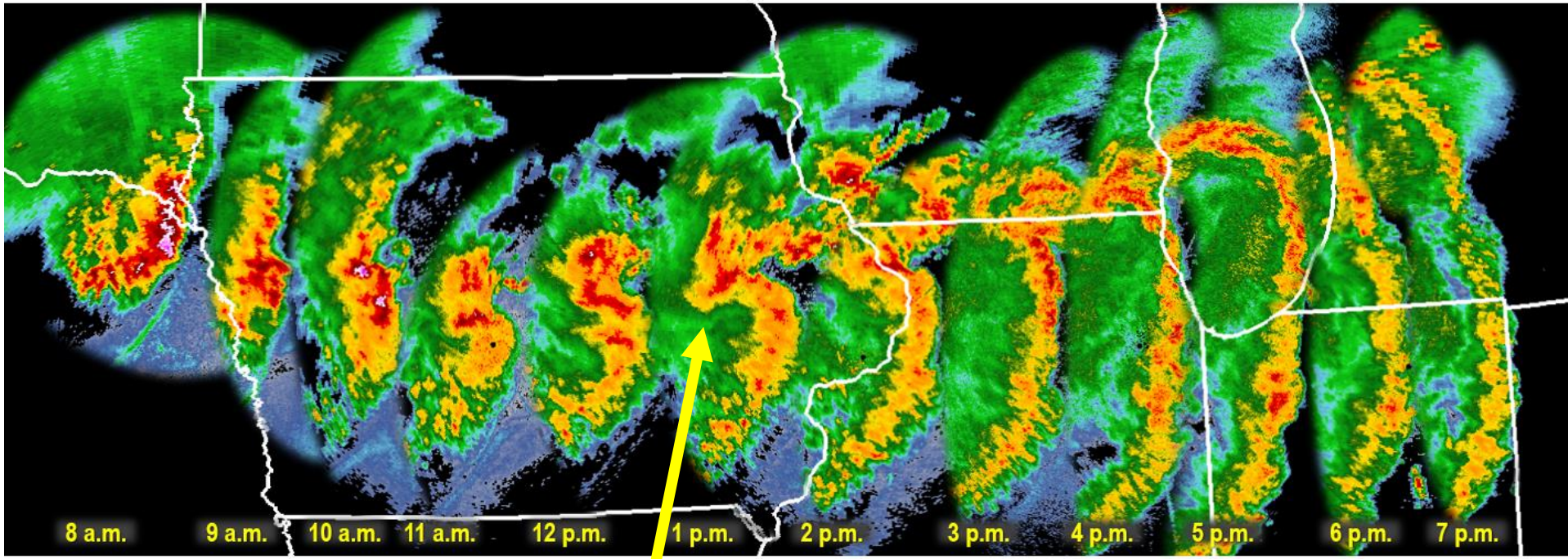
- Derecho discovered and named by Gustavus Hinrichs, U. Iowa physics professor, in 1877. First state climatologist in the country.

- https://www.spc.noaa.gov/misc/AbtDerechos/derechofacts.htm

Radar Evolution

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

All times in CDT



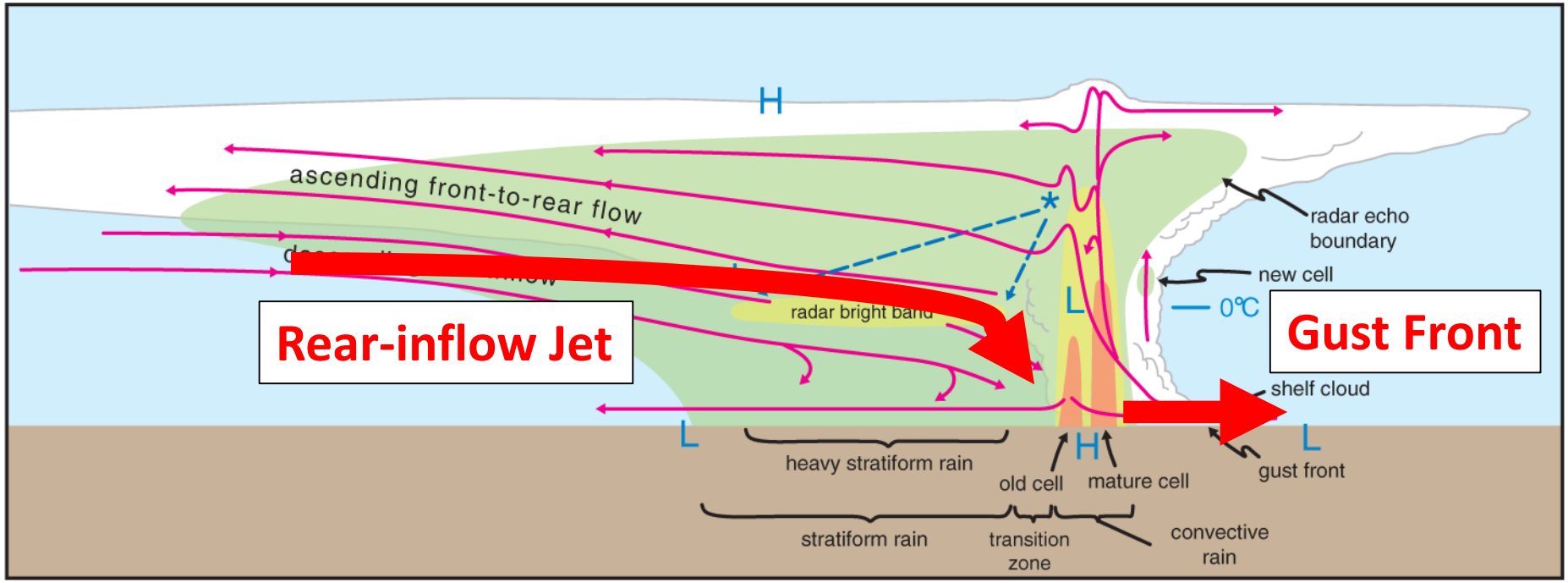
This long-lasting, severe wind thunderstorm complex (known as a derecho) produced hundreds of reports of damage along with likely a few tornadoes.

NWS Chicago | weather.gov

Aug 11, 2020

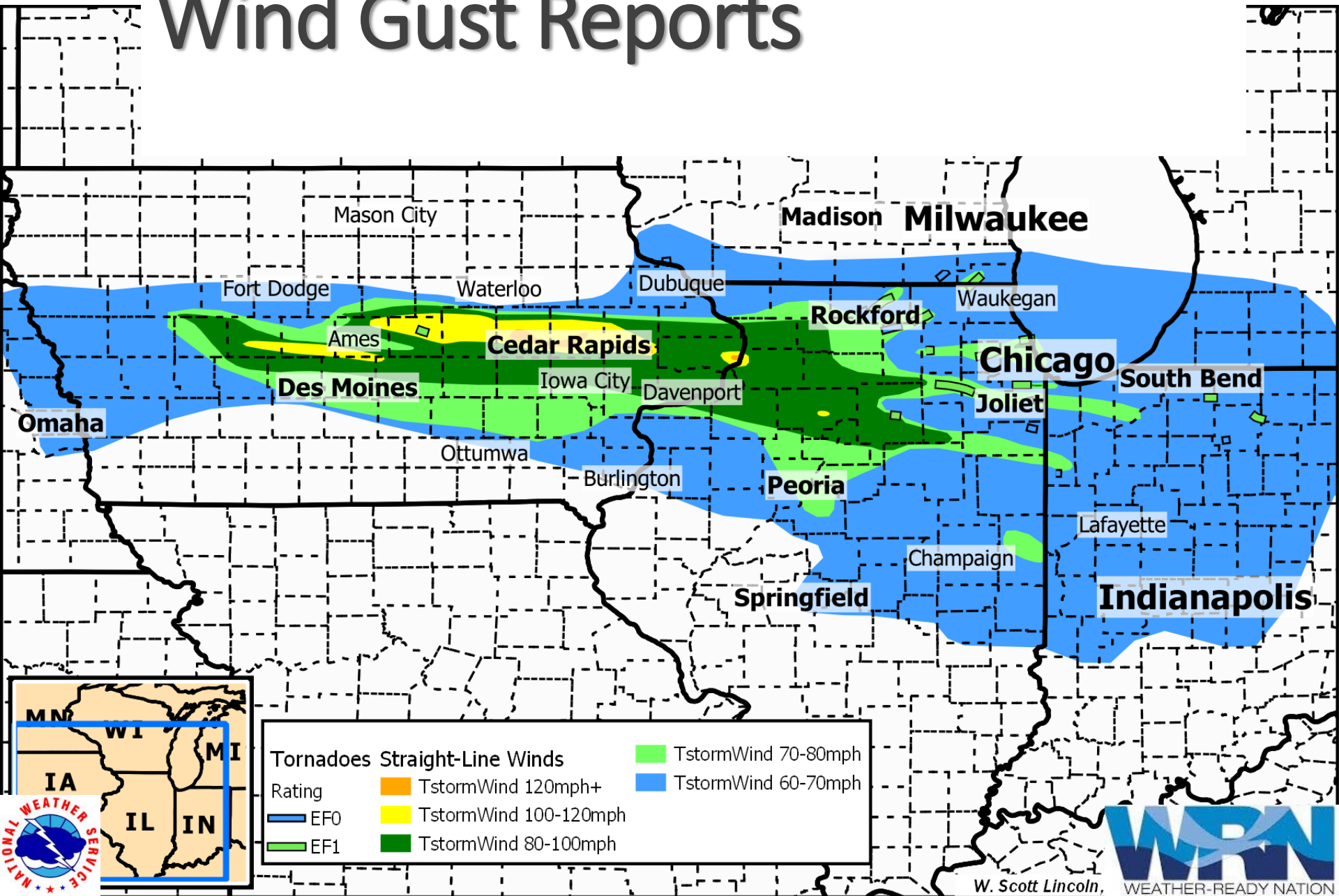
Worst damage

Cross Section

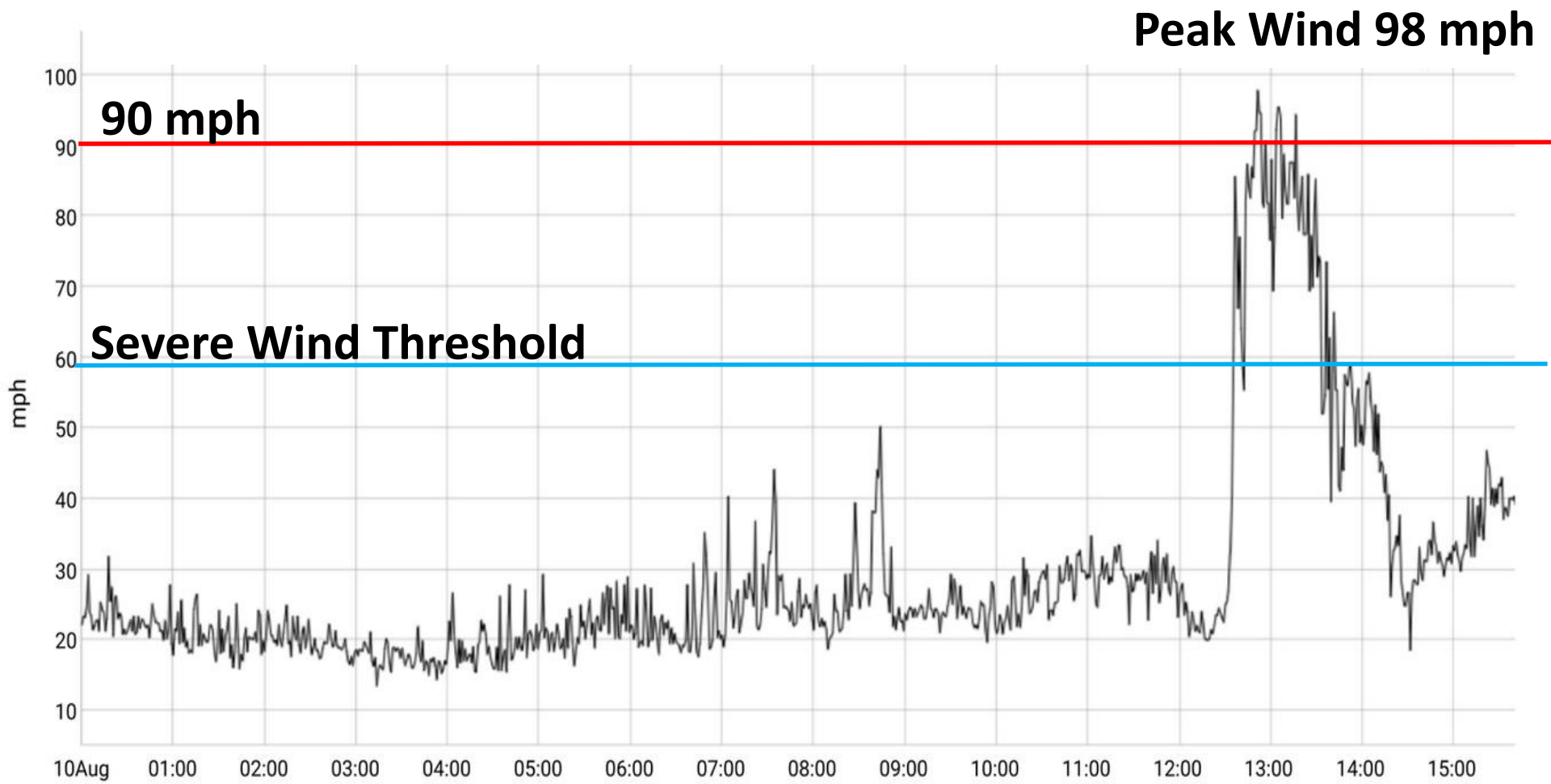


From Markowski and Richardson 2010

Wind Gust Reports

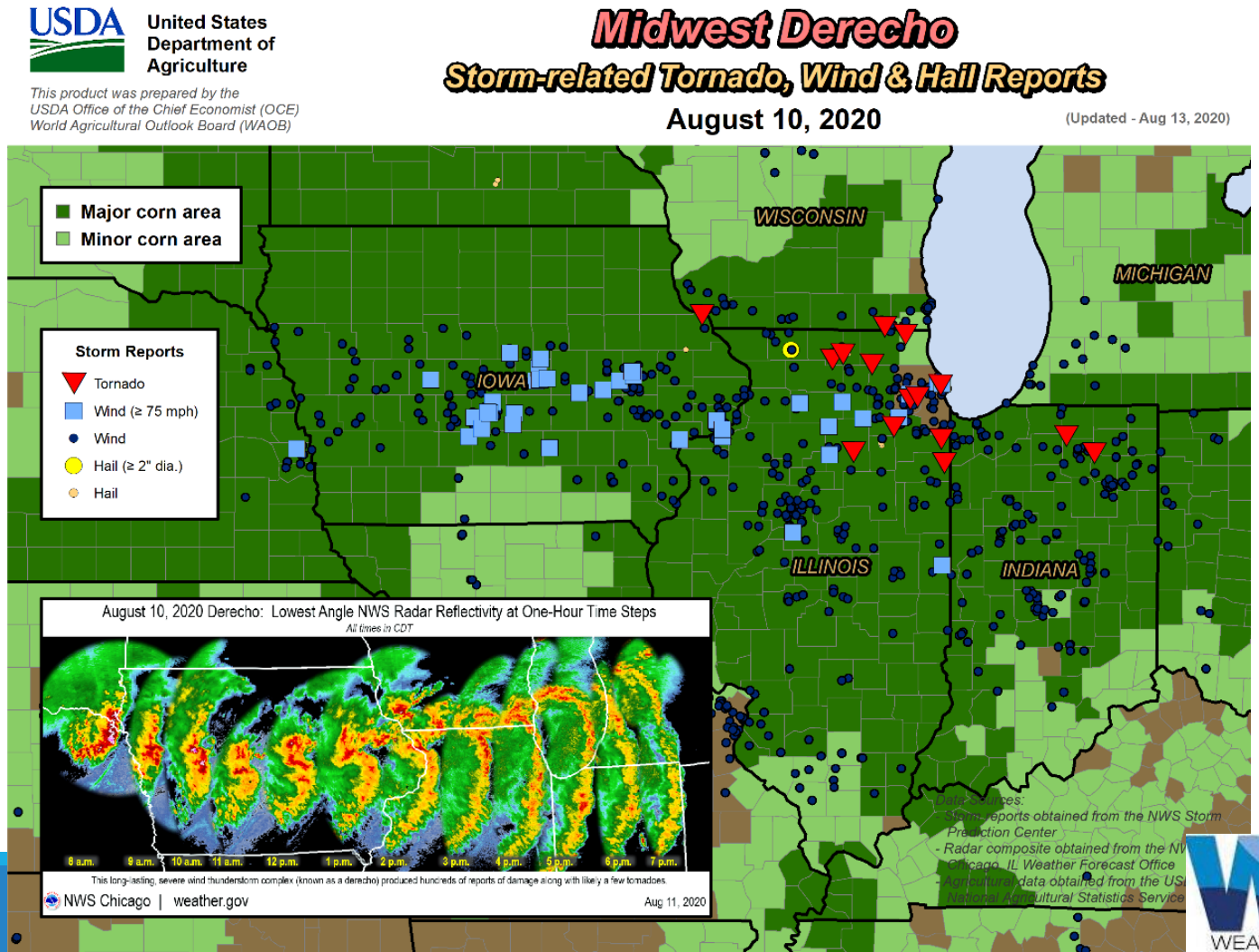


Wind Gusts – North Liberty, Ia



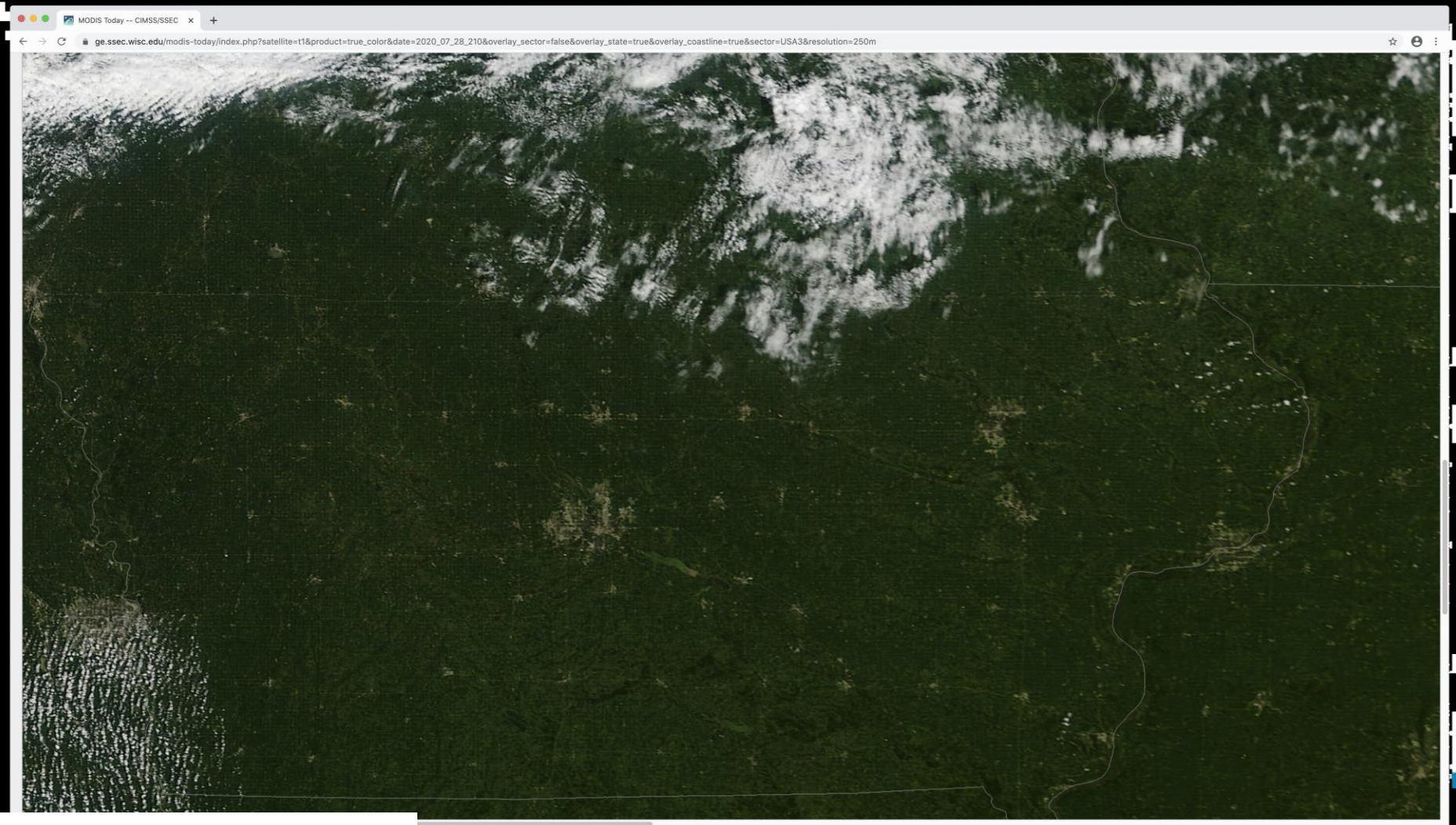
Courtesy of Johnson County, Iowa EMA

Ag Perspective

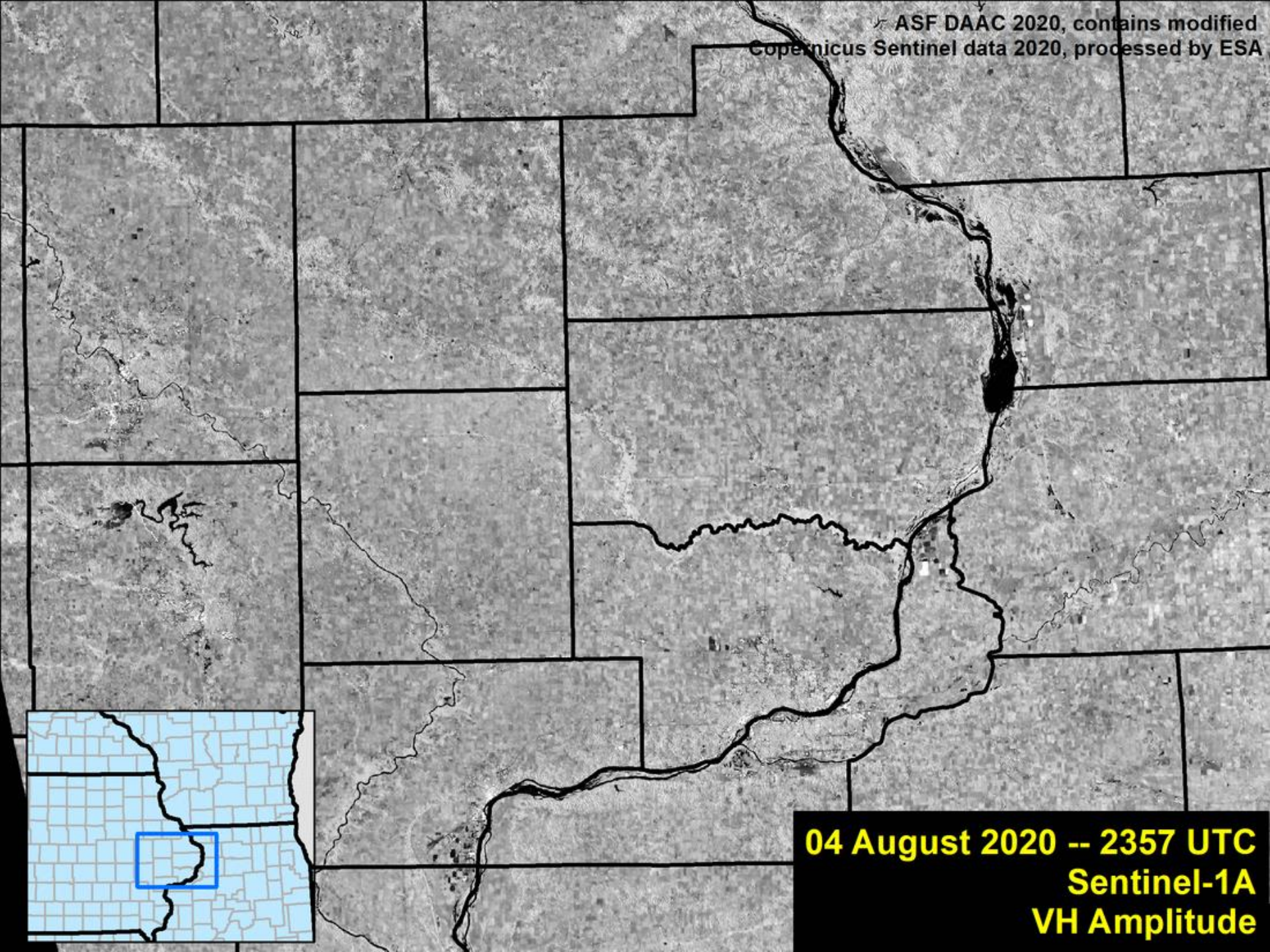


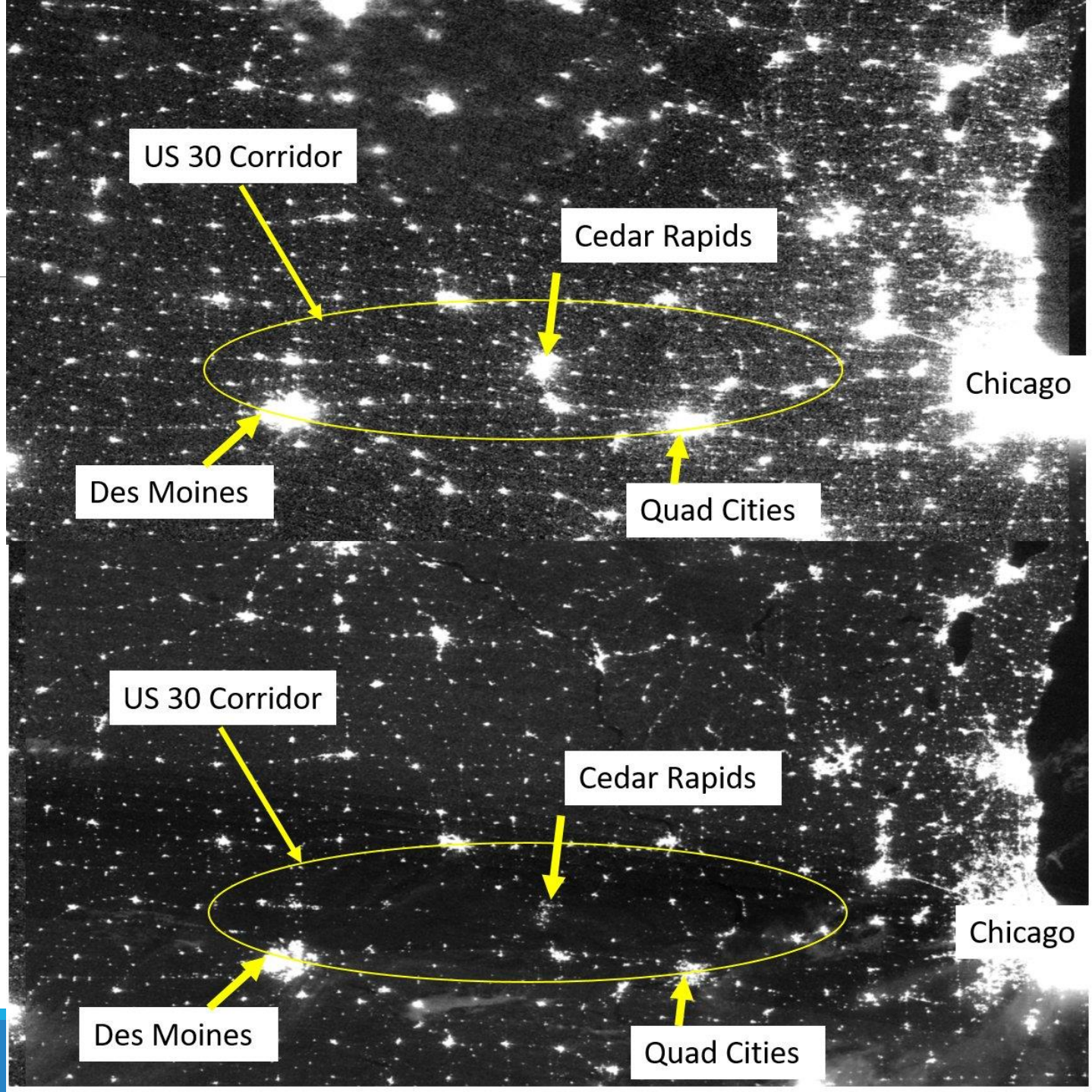
WEATHER-READY NATION

Satellite Perspective



From CIMMS U. Wisconsin


ASF DAAC 2020, contains modified
Copernicus Sentinel data 2020, processed by ESA
04 August 2020 -- 2357 UTC
Sentinel-1A
VH Amplitude


US 30 Corridor
Cedar Rapids
Chicago
Des Moines
Quad Cities
US 30 Corridor
Cedar Rapids
Chicago
Des Moines
Quad Cities

Impacts

- 3 fatalities, 2 in Iowa, 1 in Indiana; numerous injuries
- 1 million+ homes and businesses without power
- Destroyed or heavily damaged 8000+ homes
- Another billion dollar disaster?
- Justin will cover ag impacts

Local Derecho Information

Des Moines - https://www.weather.gov/dmx/2020derecho

Quad Cities - https://www.weather.gov/dvn/summary_081020

Chicago - https://www.weather.gov/lot/2020aug10

SPC - https://www.spc.noaa.gov/misc/AbtDerechos/derechofacts.htm

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