



# The Weather Whisper

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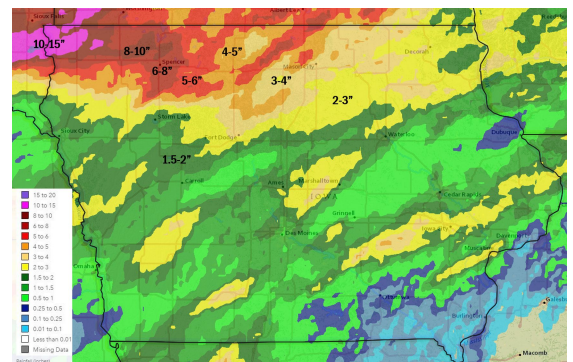
- July 15, 2024 Derecho & DSM Tornado
- Introduction to NWPS

## June-July Record Flooding

The Staff of NWS Des Moines

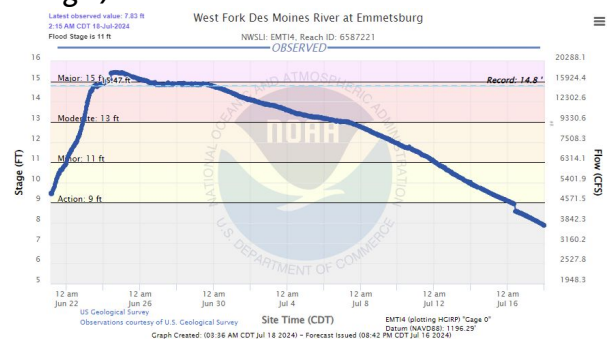
Heavy rain fell over portions of northern into northwestern Iowa, southwest Minnesota and southeast South Dakota later on June 20 through early June 21. This rainfall caused flash flooding in portions of northwest Iowa and also aided in saturating the soil. As another round of heavy rain fell later on June 21 into the night and morning of June 22, renewed flash flooding occurred. This rain made its way into streams and rivers resulting in significant river flooding in northwest Iowa, including the West Fork of the Des Moines River.

Initial analyses of the heavy rainfall event revealed a peak annual recurrence interval (ARI) of greater than 1,000 years (or an annual exceedance probability of less than 0.1%). Multiple record crests were set during this event including Estherville, Emmetsburg, and Humboldt, all on the West Fork of the Des Moines River in our service area. Read more about this event, including areas served by NWS Sioux Falls and Twin Cities [here](#).



**Above:** June 18-22, 2024 5-Day Multi-sensor Estimated Rainfall.

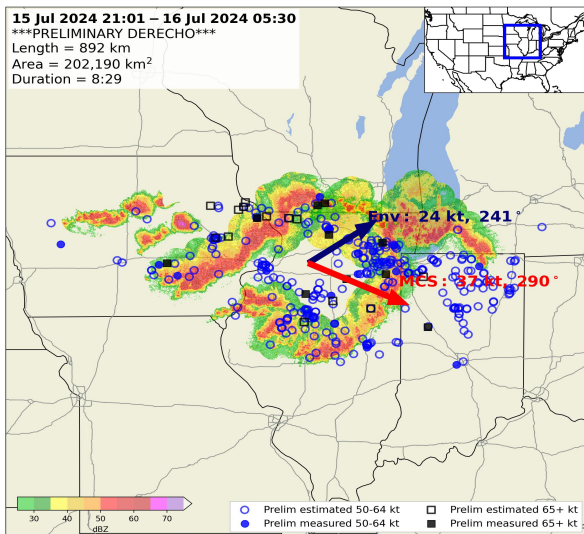
**Below:** West Fork Des Moines River at Emmetsburg. New record crest on 6/24/24 observed to be 15.47 ft (click images to view larger).



# July 15th Preliminary Derecho; Des Moines Metro Tornado

The Staff of NWS Des Moines

Severe storms developed mid-afternoon on July 15, 2024 and continued into the evening as they moved across Iowa. Tree damage and downed power lines were extensive across parts of the Des Moines metro with at least one tornado confirmed. Storms between Carroll and Denison produced hail between 1 and 2.5 inches in diameter along with a 63 mph wind gust. Wind gusts of 60 to near 75 mph were reported north of Pella to Montezuma to north of Oskaloosa as the storms moved into eastern Iowa early in the evening.



The Storm Prediction Center has confirmed that a derecho occurred on July 15, 2024 starting in central Iowa and continuing into northern Indiana with a preliminary length of 892 km/554 miles. All information remains preliminary at this time.

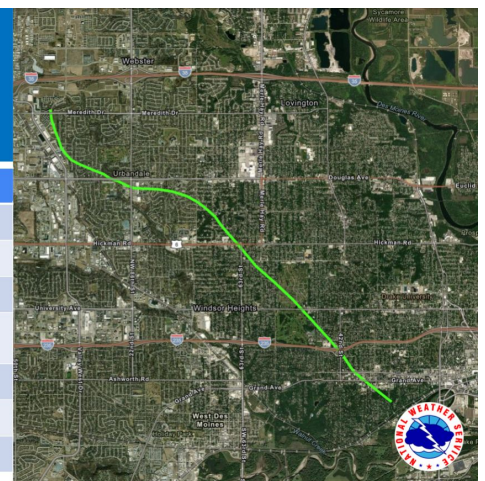
*Left: Preliminary derecho path. Graphic courtesy of the Storm Prediction Center (click image to view larger).*

Just after 5:30pm on July 15th, a tornado quickly developed northwest of Urbandale, which lasted for about 10 minutes, covering around 7.23 miles before lifting to the east of West Des Moines. This tornado was rated EF1 with estimated peak winds up to 100-105 mph. All information remains preliminary at this time.

## NATIONAL WEATHER SERVICE Preliminary Damage Survey Results

### Metro Tornado (Polk County)

Date	July 15, 2024
Time (Local)	5:37-5:47 PM CDT
EF Rating	EF1
Est. Peak Winds	100-105 mph
Path Length	7.23 miles
Max Width	300 yards
Injuries/Deaths	0/0



*Preliminary damage survey results for Des Moines Metro tornado on 7/15/24 (click image to view larger).*

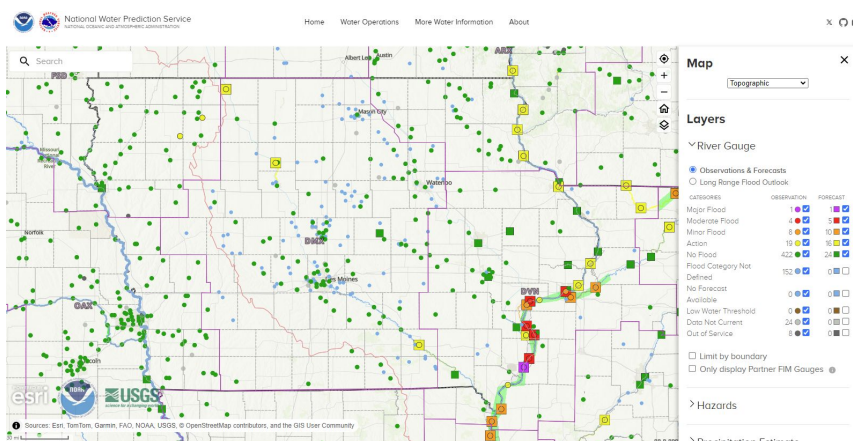


# New Source for Waterway Observations and Forecasts

Jeff Zogg, Senior Service Hydrologist

On March 27, 2024, our National Water Prediction Service (NWPS) replaced our Advanced Hydrologic Prediction Service (AHPS) as the primary source for NWS waterway observation and forecast information. NWPS became operational after a couple years of national development and testing. Three staff members at NWS Des Moines were involved in testing NWPS before it became operational.

NWPS is our new gateway to water resource observations, forecasts, information and related services online which will provide you with critical hydrologic information.



*NWPS map showing the latest observed and forecast waterway information for Iowa on July 22, 2024. (click map to view live data)*

Highlights of NWPS include:

- **Improved base maps and hydro-specific spatial layers.** You can change base maps to highlight and explore desired features and display other essential data layers for examining hydrologic hazards.
- **Dynamic waterway observation and forecast graphs.** These graphs update dynamically to allow you to see information more quickly.
- **Mobile device compatible.** NWPS will work better with mobile devices. Though the visual display may vary, the functionality will remain the same—ensuring a consistent, reliable user experience.

You can access key NWPS features at the following links:

**Waterway observations and forecasts:** <https://weather.gov/desmoines/water>

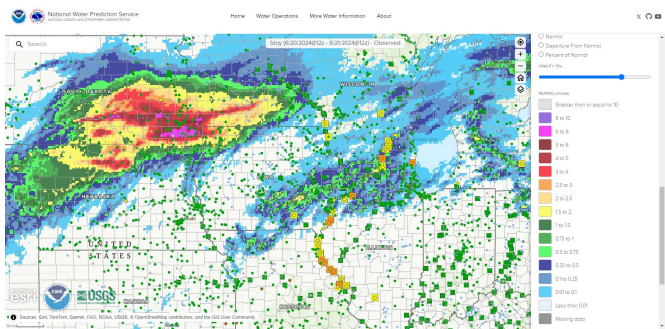
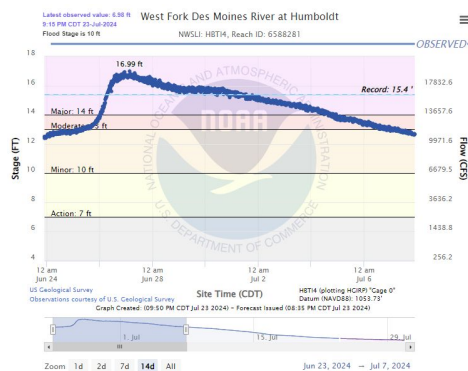
**Past precipitation (QPE):** <https://weather.gov/desmoines/pastprecip>

**Long-range probabilistic info and outlooks:** <https://weather.gov/desmoines/lrpo>

You can find additional information on NWPS including links to reference guides, training material, webinars, fact sheets, and related information at [https://www.weather.gov/dmx/nwps\\_info](https://www.weather.gov/dmx/nwps_info).

*Fun fact about AHPS—NWS Des Moines was the first NWS office in the country to have AHPS. AHPS arose out of the 1993 floods and NWS Des Moines was selected to host the demonstration project before AHPS became a national service. The Des Moines River basin was the first basin in the NWS Des Moines service area covered by AHPS.*

NWPS hydrograph showing the record flooding on the West Fork Des Moines River at Humboldt, Iowa, in June 2024. *(click image to view larger).*



NWPS map showing past precipitation estimates and river stages across Iowa in conjunction with the heavy rainfall event from June 20-21, 2024. *(click image to view larger).*

# Spotter Feature of the Month: Funnel Cloud

Formal spotter training may be complete for 2024, but the continuing education does not have to end there! We continue our new series from last month to feature one or more phenomena each month to educate our spotters and Weather Ready Nation Ambassadors on various weather they may see and can [report to their local NWS!](#)



*Multiple funnel clouds as seen near Colfax on June 25, 2024.  
Photo Credit: Misty Travis*

**Funnel Clouds** are rotating columns of air that are **NOT in contact with the ground**. They are often narrow, vertical tube-like clouds extending down from the base of a storm or wall cloud. Funnel clouds are often smooth in appearance and **WILL have persistent rotation**. If you see a funnel cloud, you should report it to the NWS! If at any point the circulation comes in contact with the ground (look for swirling dust or debris as a tip off), it becomes a tornado.

*Note: Tornadoes can form and be in contact with the ground WITHOUT a fully condensed funnel, so watch carefully!*

On the Cover:  
Large tree snapped at its trunk as a result of the Des Moines metro tornado. Two NWS employees were directly impacted by this tornado, but despite damage in their neighborhood, they and their families were unharmed. Image from NWS Des Moines employee.



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