

The Weather Whisper

WHAT'S INSIDE?

➤ Storm Surveying Process: A Peek Behind the Curtain

May 2024 Weather Recap

The Staff of NWS Des Moines

After breaking the record for April tornadoes in April 2024 with 44 reported tornadoes across the state of Iowa (which broke the previous record of 40 April statewide tornadoes from 2001), May has been another active month with numerous storms occurring across the NWS Des Moines coverage area.

MAY 2

Heavy rainfall caused localized flooding across portions of southeast Iowa where numerous reports came in on the morning of May 2 with water over some roads, especially in rural portions of portions of Monroe, southern Lucas, and northern Appanoose Counties prompting a flash flood warning. Meanwhile some rivers returned to flood stage, like the east fork of the Des Moines River at Algona on the evening of May 2, after the late April into early May moderate to heavy rains and diminishing drought conditions.

MAY 6-7

On the the night of May 6 into the early morning of May 7, a line of storms moved across Iowa bringing damaging winds and a few embedded tornadoes. The strongest storms were in southern Iowa where the environment was more supportive of severe weather with five tornadoes identified in the DMX service area (8 statewide), two in Clarke County (Osceola - EF1, & Woodburn - EFO), one in Jasper County (Prairie City - EFO), one in Warren County (Ackworth - EFO), and one in Marion County (Knoxville - EFO). [See more here.](#)

In mid May, a G5 (Range 0 to 5) Geomagnetic Storm allowed for viewing the Aurora Borealis/Northern Lights in the state of Iowa on the nights of May 10th and May 11th. With mostly clear skies in place, many were able to view the spectacle, as seen in the cover photo.

MAY 21

Although many rounds of thunderstorms occurred at times through mid-May (see reports from [May 19](#) & [May 20](#)) attention turned to the large storm system which brought multiple rounds of storms on Tuesday May 21, 2024. Torrential rainfall, damaging winds, hail, and destructive tornadoes all occurred during the events of May 21. These thunderstorms were the result of a low pressure system which lifted north into the area on the night of May 20th, 2024, producing slow moving storms that dropped 2 to 4 inches of rainfall resulting in flash flooding over portions of northern and central Iowa through the morning of May 21. Following the heavy rainfall, skies cleared out ahead of an approaching cold front. By the afternoon hours of May 21st, the cold front produced a line of strong thunderstorms with multiple strong tornadoes throughout the state, including one which led to significant damage in the town of Greenfield, IA, among other locations. This line of storms also produced damaging winds, leading to widespread tree damage and power outages throughout the forecast area. Initial storm surveys have confirmed EF-4 damage in Greenfield, Iowa, EF-3 Damage in NW Adams County, and EF-2 damage in NE Adair County and in Polk into Story County. [More info & photos here.](#)



Click image to view larger.

Above: Flooding near Kellogg. Photo credit: Emma Fox. Below: Greenfield tornado as seen in NE Adams Co. Photo credit: Isaac Polanski.



Click image to view larger.

MAY 24

Quick on the heels of May 21 was an overnight Enhanced Risk (Level 3 of 5) for severe weather on the morning of May 24, a result of a large low pressure system moving through the Dakotas into Minnesota. Initial thunderstorms produced large hail with

Severe Weather Overnight Tonight May 23, 2024 8:53 PM
Enhanced risk (level 3 of 5) for severe weather in western Iowa after midnight tonight.

HIGHEST LOCAL RISK
WHAT THIS MEANS: NUMEROUS severe storms possible

TIMING
FRIDAY 3 AM TO 9 AM

THREATS
DAMAGING WINDS, ISOLATED HEAVY RAINFALL, BRIEF TORNADOES

What To Expect
• A line of storms will move into western Iowa late tonight and track east through early Friday morning.
• Strong winds and a few brief tornadoes may be possible.
• Locally heavy rainfall may delay improvement on flooded rivers.

What To Do?
MULTIPLE WAYS TO RECEIVE WARNINGS
INDOOR SHELTER
OUTDOOR PLANS? STAY WEATHER AWARE

reports up to tennis to baseball size (2.5 to 2.75 inch diameter, respectively) as occurred in Humeston during the early morning hours of May 24. Then, the main squall line moved through west to east transitioning the threat to damaging wind gusts with a few embedded tornadoes. Four EFO tornadoes with estimated wind speeds of 80-85 mph have already been confirmed with this system, two in Polk County...(continued next page)

Messaging from the overnight severe weather threat for the morning of May 24, 2024. (Click on image to view larger)

(continued from previous page)... one in Boone County, and one in Warren County. Additionally, the Storm Prediction Center has confirmed the overall event as a Derecho with damaging wind gusts from central Nebraska through northwest Illinois. [See more here](#) or via [NWS Quad Cities](#) or [NWS Omaha](#).

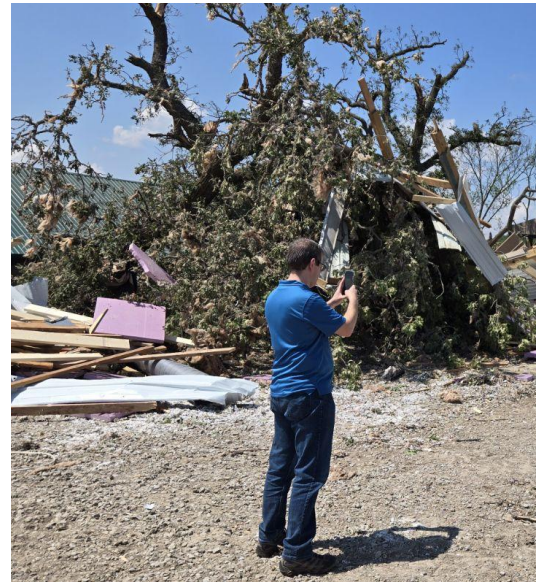
NWS Des Moines expresses heartfelt condolences to those impacted during this active month of weather.

Storm Surveying Process: A Peek Behind the Curtain

Allan Curtis, Meteorologist

Storm surveys assess damage caused by significant storms and can be done for straight line wind events (see 2020 Derecho), as well as tornadoes. Prior to teams being dispatched, they often coordinate with local Emergency Managers and law enforcement to determine areas to prioritize and where to meet-up with local responders. Preparation most often occurs overnight as storms have passed, gathering data and putting together equipment and data the teams will need. On-site, teams visually assess the damage (including the quality of the structure and overall construction), and document notable damage by taking pictures and notes and entering them into the Damage Assessment Toolkit (DAT), a software specifically designed for damage surveying. The DAT aides in estimating wind speeds necessary to achieve the observed damage and its development included industry experts (meteorology and engineering). If the damage path is long or in a dense area, it can take a substantial amount of time to complete a survey of one tornado, let alone multiple tornadoes. This is one reason it can take several days to complete assessments of outbreaks or higher end events.

It also is not lost on us that our teams enter areas and interact with people that have just experienced loses (sometimes extreme and devastating). We will listen to property owner wishes and will not survey a location if we are told not to. When teams are finished in the field, the survey is far from done. Back at the office, additional quality control is done within the DAT to yield tornado paths, ratings, and overall numbers. The process from start to finish can take a number of days.



DMX Lead Meteorologist Andrew Ansorge surveying damage on 5/22/24 in SW IA.
Photo credit: NWS Des Moines

On the Cover:
Photo of the aurora from north of Polk City during the G5 Geomagnetic Storm on May 10th & 11th, 2024. Photo credit: Brad Small.



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