

The Weather Whisperer

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2024 Weather Year In Review

Team NWS Des Moines

Iowa certainly knows how to dish out impactful weather and 2024 was no different, from heavy snow to tornadoes, 2024 was a record breaking year.

The winter started off mild and warm, but for two weeks in **January** winter roared to life. Heavy snow on [January 8-9](#) was followed by a snow squall across central Iowa the night of **January 10th**. Quickly on its heels, a [blizzard the 11-14](#) brought heavy

snow and white-out conditions, after which an Arctic air mass settled over the area and pushed wind chills into the -30s to -40°F for several days. In the 11 days from **January 8-18**, Des Moines recorded an astounding 27.0" of snowfall. Perhaps most impressively, the snowfall in the 11 days of **January 8-18**, 2024 would in itself qualify as the fifth-snowiest calendar month on record at Des Moines. Meanwhile, Waterloo measured 24.9" over the same 11 days (8th-18th), enough for the fourth snowiest calendar month on record, as seen in the table above with the full January 2024 snow totals.

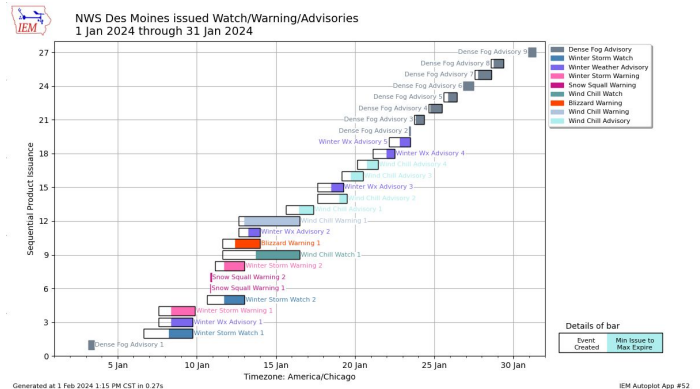
Top-5 snowiest calendar months ever:

Des Moines	Waterloo
1. Jan. 1886 - 37.0"	1. Dec. 2000 - 33.9"
2. Dec. 2000 - 30.3"	2. Feb. 2019 - 31.1"
3. Dec. 2009 - 28.2"	3. Dec. 2009 - 27.3"
4. Mar. 1912 - 28.0"	4. Jan. 2024 - 25.1"
5. Jan. 2024 - 27.2"	5. Dec. 2010 - 24.7"

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After the cold and snowy first half of **January**, late **January** saw a stubborn fog that resulted in Dense Fog Advisories being issued every day between **January 23** and 31. With dense fog enveloping a good portion of the central into southern and eastern U.S. during this time frame, a record was actually set for the [largest number of U.S. counties under a Dense Fog Advisory at the same time!](#)



Graphic of all headlines issued during the busy month of January 2024. [Click image to view larger.](#)

February turned unseasonably mild and the first Red Flag Warning of the spring season was issued **February 26th**, due to dry, breezy, and very warm temperatures in the mid to upper 70s. Despite the quick warm up, winter wasn't quite done. On **March 21-22** a heavy snow band set up, dumping 5-7" of snow in a narrow band from Fort Dodge to Cedar Rapids.

April ushered in the start of what would become a record breaking year for tornadoes across the state. Tornado activity really kicked into a higher gear on **April 16th** when [18 tornadoes occurred](#). **April 26th** brought an [outbreak of tornadoes](#) with 29 impacting the state. The most impactful tornado of the day was a long track EF3 which plowed through the southeast edge of Minden, causing a fatality. The total tornado count for the month was 49 which is the most ever for **April**, breaking the previous record of 40 statewide tornadoes set in April 2001.

May continued the active pace set in April with ten tornadoes spread across the [6th](#), [7th](#), [9th](#), and [20th](#). Another outbreak of tornadoes occurred on **May 21st** with several [strong to even violent tornadoes](#). The most impactful tornado hit the community of Greenfield in the middle of the afternoon causing four fatalities in town with an additional death



[Click image to view larger](#)
Greenfield tornado as seen in northeast Adams County on 5/21/24. Photo credit: Isaac Polanski.

to an individual in a vehicle south of Greenfield. There were also a total of 35 injuries along the path. Only three days later, an overnight thunderstorm complex passed through the state from west to east and produced an [additional 23 tornadoes](#) although most were not as impactful as the tornadoes from previous outbreaks. **May** ended up with 49 tornadoes for the month. In addition to the destruction of the **May** tornadoes, heavy rainfall caused localized flooding in portions of southeast Iowa on **May 2nd** and a G5 geomagnetic storm brought the [aurora](#) all the way to Iowa on the nights of **May 10th** & **11th**.

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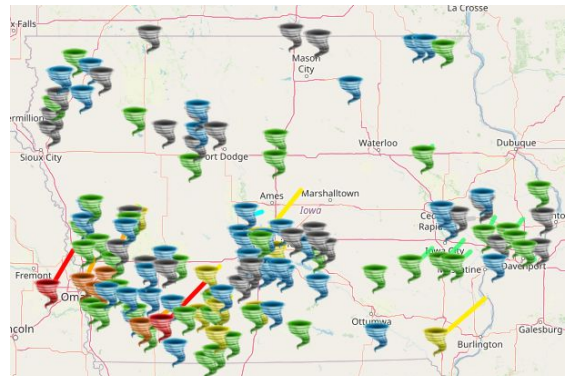
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While **June** was quieter, the month still brought 14 tornadoes, including several on **June 25th** when central Iowa saw [dozens of funnel clouds](#) (at times 2-3 visible in a single picture!). Heavy rain began over northwest Iowa late in the month and continued into **July**, bringing [record breaking flooding to the area](#). While tornado activity slowed down later in the summer, **July** still brought 5 tornadoes to Iowa with one on **July 15th** passing through the [heart of Des Moines](#). **August** quieted down further with 7 tornadoes in Iowa, most occurring in northern Iowa with only minor damage.

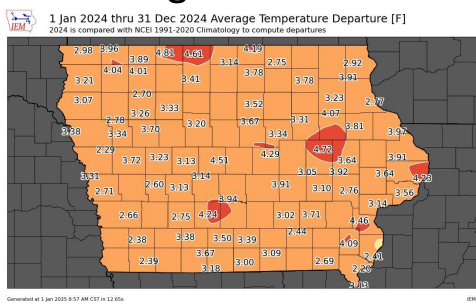
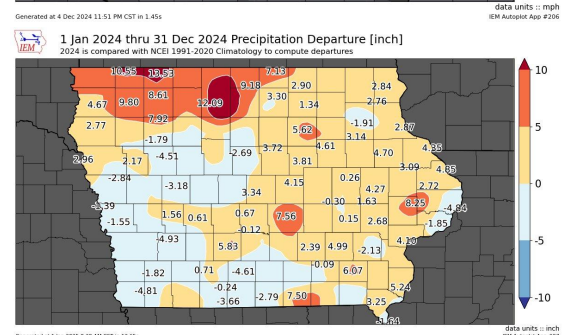
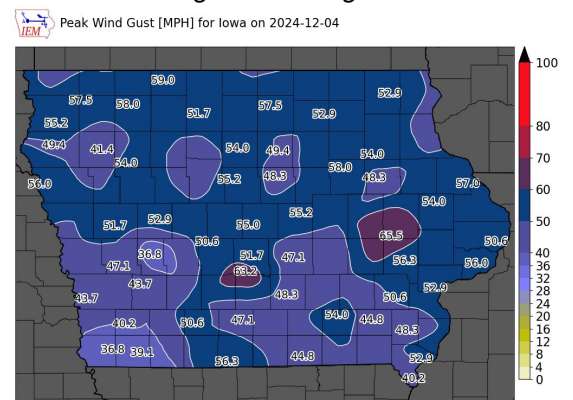
September brought a welcome reprieve from the active spring and summer as drought continued to improve across the state. **October** was also quiet, however the Halloween week was soggy and strong storms on the 30th resulted in most of the Des Moines metro moving trick or treating from Beggar's Night to Halloween night. Not to be outdone, **November** brought one final tornado to Iowa, an EFO near Bloomfield on the 5th that destroyed 2 metal buildings, bringing the [total tornado count for 2024](#) to 125 across the state of Iowa.

As fall transitioned to winter, much of central Iowa saw its first snow of the season when 1-2" of dry, fluffy snow fell overnight into the morning of **December 2**. A strong cold front brought plunging temperatures and strong winds on **December 4** with over 50 mph gusts at many sites, but the peak of the day was a 63 mph gust at the Des Moines Airport. Then came an ice storm which coated most of Iowa in a glaze of ice on **December 13-14**. The last half of **December** saw multiple small winter precipitation events, another day of 40-50+ mph winds on **December 19th**, and day after day of fog to end the 2024 calendar year.

Overall, 2024 saw warmer than normal temperatures across the state (image bottom left) with well above normal precipitation in northwest Iowa where the catastrophic flooding occurred in late June-early July (image bottom right).



Top: Map of [2024 tornado tracks](#) across Iowa. Bottom: Peak wind gusts from 12/4/24, courtesy of Iowa Environmental Mesonet (IEM). [Click images to view larger](#).



Left: 2024 average temperature departure. Right: 2024 average precipitation departure. [Click images to view larger](#).

Planned Burn Near Office

Andrew Ansorge, Lead Meteorologist

On December 6th, a prescribed burn was performed by the US Army Corp of Engineers (USACE) on several small areas of prairie within the Acorn Valley campground, which is next to our office. As part of the planning of a prescribed burn, the USACE will submit a spot fire forecast request to our office, which then our office will provide a fire-specific forecast. This forecast helps the USACE determine if it is safe to burn on a day. On this day, it was a safe day to burn and staff from our office walked over to talk with the fire practitioners and watch the prescribed burn take place. These burns are done to help control invasive species and helps to restore and maintain native plants.



NWS Des Moines staff look on as USACE employees monitor a prescribed burn near the NWS Des Moines office. [Click image to view larger.](#)

Spotter Feature of the Month: Snow Squall

The spotter feature of the month series exists to highlight 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!](#)

SNOW SQUALLS

- Intense bursts of snow and wind
- Short duration
- Whiteout visibility
- Rapidly deteriorating road conditions

National Weather Service **SNOW SQUALL WARNINGS**

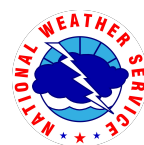
- Issued when a snow squall is occurring or imminent
- Typically in effect for 30-60 minutes in a small, targeted area
- Can trigger a Wireless Emergency Alert to your phone
- When issued, slow down or delay travel

[Click image to view larger or read more about snow squalls here.](#)

Snow Squalls are brief, but intense snow events bringing quick bursts of snow and near-zero visibility resulting in treacherous travel conditions. They can also be accompanied by strong winds or plunging Arctic air creating flash freeze conditions. A snow squall warning, similar to a tornado or severe thunderstorm warning, alerts you to these dangerous travel conditions. If you're caught on the road during a snow squall, slow down & safely pull over or exit the road at the next opportunity. Otherwise, delay travel.

On the Cover:

A photo of a tornado near Afton on April 26, 2024 taken by Dean Baron.



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