

EXPLAINER: What is a derecho?

December 20 2021, by The Associated Press



A tornado approaches Interstate 80 near Atlantic, Iowa, as a semi truck rolls eastward on Wednesday, Dec. 15, 2021. The National Weather Service has declared the series of thunderstorms and tornadoes that swept across the Great Plains and upper Midwest on Dec. 15 as a serial derecho, a rare event featuring a very lengthy and wide line of storms. The service said it was the first-ever serial derecho in December in the U.S. Credit: Bryon Houlgrave/The Des Moines Register via AP

Multiple tornadoes and thunderstorms that struck the Great Plains and upper Midwest on Dec. 15 were the result of a rare event called a derecho, according to the National Weather Service's Storm Prediction Center. It was the first on record in December in the United States.

WHAT IS A DERECHO?

A derecho is often described as an inland hurricane.

According to the National Weather Service, the term comes from the Spanish word "derechos" to mean "direct" or "straight ahead" and was first used in 1888 by a chemist and professor of physical sciences.

The [storm](#) has no eye and its powerful winds come across in a line. That can cause widespread overall damage and smaller pockets of severe damage.

Ryan Maue, a private meteorologist in the Atlanta area and a former chief scientist for the National Oceanic and Atmospheric Administration, said a derecho can develop from a series of separate storms, usually carrying hail and [strong winds](#), that combine and build into a larger bowing complex.

The term "bow" describes how it appears on radar.

When that happens, the system "can subsist on its own, it will continually fuel itself," Maue said. "It can cause tremendous damage with straight-line winds."

HOW OFTEN DO THEY OCCUR?

[Derechos are relatively rare events](#), and in the U.S. are more likely to occur in the Corn Belt, an area that ranges from Minnesota and Iowa

south and eastward toward the Ohio Valley, according to the National Weather Service.



Wind fueled fires burns in a pasture which was part of a fire that burned and stretched across Ellis, Russell, Osborne and Rooks counties, Dec. 16, 2021, near Natoma, Kan. The National Weather Service has declared the series of thunderstorms and tornadoes that swept across the Great Plains and upper Midwest on Dec. 15 as a serial derecho, a rare event featuring a very lengthy and wide line of storms. The service said it was the first-ever serial derecho in December in the U.S. Credit: AP Photo/Charlie Riedel

They're more likely to occur from May through August, particularly during periods of high heat—making the December derecho so

uncommon.

"The climatology of derechos depends on the location and season, but if you consider the entire US (east of the Rockies), then you'll usually see one or two, possibly more per year depending upon the [weather patterns](#)," Maue said.

WHAT DAMAGE CAN IT CAUSE?

A 2020 derecho that traveled from eastern Nebraska across Iowa and parts of Wisconsin and Illinois reached [wind](#) speed of a major hurricane. The National Weather Service's Storm Prediction Center reported winds approaching 100 miles per hour (161 kilometers per hour) in multiple places. In Cedar Rapids, Iowa, residents emerged from their homes to find an estimated 100,000 trees had been snapped or torn out of the ground.

A 2009 storm dubbed a Super Derecho by the National Weather Service traveled from western Kansas to eastern Kentucky. It caused several deaths and injuries and more than \$500 million in damages by the time it had traveled more than 1,000 miles (1,609 kilometers).

A 2003 derecho traveled from Arkansas through several southern states including Alabama, Georgia and South Carolina. Two people died and 11 were hurt.

Last week's storm system spawned at least 45 tornadoes and caused widespread damage. Five deaths have been blamed on the storms.

ARE THERE DIFFERENT TYPES OF DERECHOS?

Yes. The August 2020 storm system was the result of what is known as a progressive derecho. The Dec. 15 event was a serial derecho.

[The weather service](#) said a progressive derecho is fueled by a hot and moist environment with relatively strong winds aloft. Serial derechos are produced by storms with strong winds that bow outward, the service said. They sweep across an area both long and wide, driven by the presence of very strong winds in the atmosphere.

The unprecedented December warm spell included temperatures that rose to 70 degrees Fahrenheit (21 degrees Celsius) as far north as Wisconsin, creating evening temperatures that [weather](#) historian Chris Burt compared to that of a "warm July evening."

© 2021 The Associated Press. All rights reserved. This material may not be published, broadcast, rewritten or redistributed without permission.

Citation: EXPLAINER: What is a derecho? (2021, December 20) retrieved 26 April 2024 from <https://phys.org/news/2021-12-derecho.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.