

THE ATMOSPHERIC RESERVOIR

Examining the Atmosphere and Atmospheric Resource Management

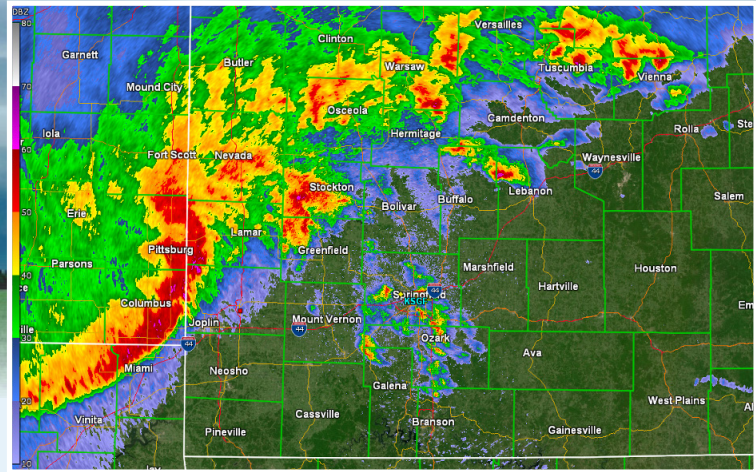
DERECHO

By Mark D. Schneider

Occasionally during North Dakota's thunderstorm season, a line of thunderstorms develops that has unusually strong downbursts where evaporation, melting, and/or sublimation cause cooling of the air. Cooled air becomes more dense than the surrounding air and sinking occurs. As the air sinks, it accelerates and can reach speeds of over 100 miles per hour. When this line of thunderstorms produces wind damage measuring more than 250 miles in length, wind gusts of at least 58 miles per hour, and multiple 75 mile per hour wind gusts which are separated by considerable distance from each other, it's given the name "derecho." A Derecho (pronounced /dā' rā CHō/) is actually the Spanish word for "straight" and that's fitting because a derecho is a widespread straight-line wind event.

When it comes to severe winds, tornadoes often get the most attention; however, damage from strong straight-line winds like the ones associated with a derecho are the most common across the U.S. As you can see on the map from June 6, there were widespread severe wind reports (blue dots representing winds of 58 miles per hour or greater) stretching from eastern Utah through Colorado, Wyoming, Nebraska, and South Dakota before ending in southwestern North Dakota. A derecho was the cause of this widespread wind damage and North Dakota was fortunate enough to only experience the weaker winds during the dissipating stage of the derecho, rather than the 100+ mile per hour wind reports from its mature stage in Colorado.

As you can see from the *Derecho Climatology* Map, North Dakotans are also fortunate that derechos only occur in our state once every 2 to 4 years. For anyone who has experienced a derecho event and experienced the damage they can cause, this is likely often enough.



National Weather Service radar image of a Derecho moving into western Missouri.

