

Actuarial Weather Extremes Series

Iowa Tornadoes: March 5, 2022

Authors:

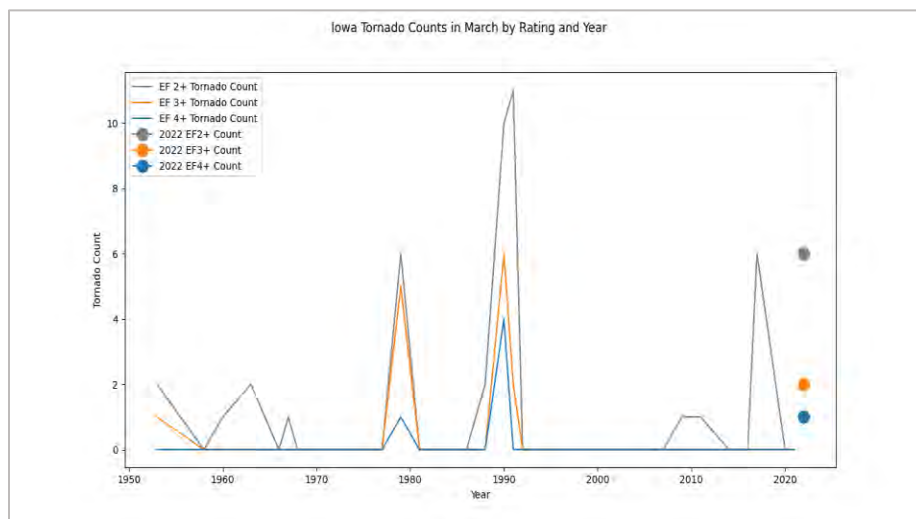
Matthew Self, ASA
Ascension Data Science Institute

Aadit Sheth, ASA, ACIA
Oliver Wyman

Event Description

On March 5, 2022, an EF-4 tornado hit Iowa and caused 6 fatalities, according to preliminary reports.¹ The supercell thunderstorm that produced the destructive tornado also produced damaging wind and hail events. According to the National Weather Service, this tornado was the first EF-4 tornado in Iowa since 2013 and was the second longest tornado path since 1980, with a path length of 69.5 miles.²

In addition to the EF-4 tornado, the storm system also produced one EF-3 tornado, four EF-2 tornadoes, hail up to 2.75 inches in diameter, wind gusts up to 81 MPH, and two-hour precipitation totals greater than one inch in some locations.



Data from National Weather Service: [March 5th 2022 Central and Southern Iowa Tornadoes \(weather.gov\)](https://www.weather.gov) and NOAA National Center for Environmental Information: <https://www.ncdc.noaa.gov/stormevents/> Date Accessed: 3/7/2022

¹ KCCI Des Moines. March 7, 2022. [Iowa severe storm weather coverage \(kcci.com\)](https://www.kcci.com)

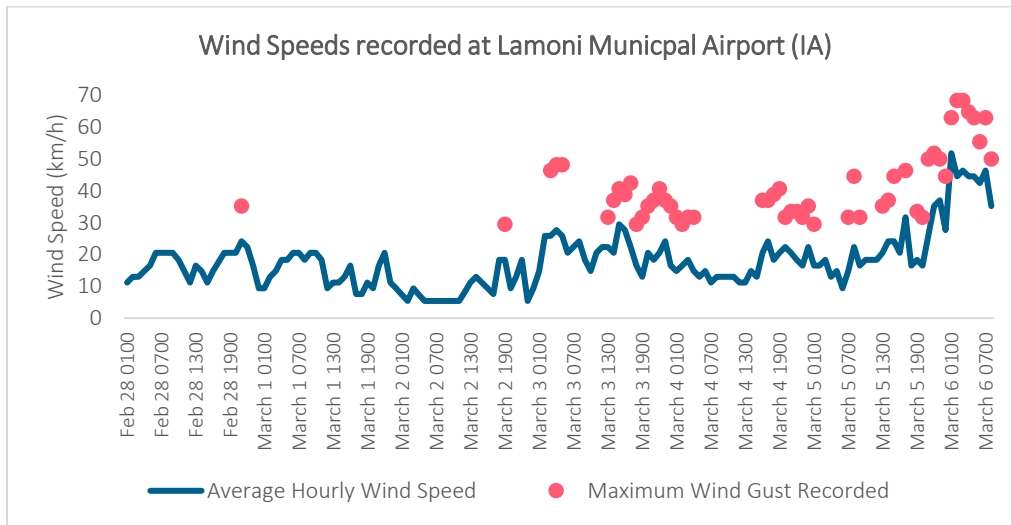
² National Weather Service. March 7, 2022. [March 5th 2022 Central and Southern Iowa Tornadoes \(weather.gov\)](https://www.weather.gov)

Caveat and Disclaimer

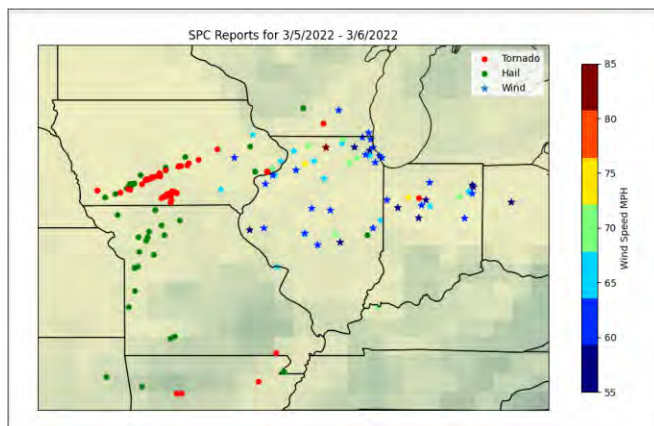
The opinions expressed and conclusions reached by the authors are their own and do not represent any official position or opinion of the Society of Actuaries Research Institute, the Society of Actuaries or its members. The Society of Actuaries Research Institute makes no representation or warranty to the accuracy of the information.

From the historical records at the National Centers for Environmental Information (NCEI), Iowa has only recorded five EF-4 tornadoes in March since 1950, with four occurring in March of 1990. Clearly, this is an unusual event for this state and this time of year and is set to be the deadliest tornado event to hit the state of Iowa since 2008.³

Over the week of February 28th, recorded wind speeds were stable for the first few days of the week, but wind speeds recorded at various stations picked up significantly in the latter part of the week. In particular, the average hourly wind speeds increased overnight on the 5th of March 2022 and continued an upward trajectory. Below is a graph illustrating the wind speeds recorded at Lamoni Municipal Airport in Iowa- one of the many stations that recorded an increase in wind gusts on March 5th and 6th, along with a graph of tornado, hail and wind activity.



Data from NOAA National Center for Environmental Information: [Data Search | National Centers for Environmental Information \(NCEI\) \(noaa.gov\)](https://www.noaa.gov/data) Date Accessed: 3/7/2022



Data from NOAA Storm Prediction Center (SPC): https://www.spc.noaa.gov/climo/reports/220305_rpts.html, https://www.spc.noaa.gov/climo/reports/220306_rpts.html Date Accessed: 3/7/2022

³ Des Moines Register. March 7, 2022. <https://www.desmoinesregister.com/story/weather/2022/03/06/winterset-tornado-among-deadliest-iowa-history-storm-damage/9402060002/>

Caveat and Disclaimer

The opinions expressed and conclusions reached by the authors are their own and do not represent any official position or opinion of the Society of Actuaries Research Institute, the Society of Actuaries or its members. The Society of Actuaries Research Institute makes no representation or warranty to the accuracy of the information.