CoreLogic

2023 Severe Convective Storm Risk Report

As climate changes and weather becomes more volatile, the frequency and severity of severe convective storm activity will likely continue to impact more U.S. states – more so than any other natural catastrophe.

What Are Severe Convective Storms?

Severe convective storms, including straight-line winds, tornadoes, hail and severe thunderstorms, are among the most frequent and damaging natural hazard events in the United States.

With severe convective storm season peaking from March through June, these storms are the biggest cause of weather-related property damage nationwide.

The atmospheric changes that bring on severe storms cover broad distances. That, combined with our lack of knowledge and studies of the impact of severe convective storms on rural areas, makes it difficult to develop quantitative assessments of the risk of severe convective storms on all properties across the U.S.

Know Your Risk. Accelerate Your Recovery.™

Protecting people, homes, businesses and building storm resilient communities begins with an accurate assessment of the risk.

Accurate risk assessment enables insurers to formulate data-driven predictions to adopt forward-thinking business models that optimize their claims intake and response procedures. Executing these preparations is critical for insurance companies as severe weather events increase in severity and frequency with climate change. Utilizing case studies of past events, combined with probabilistic models and digital solutions, empowers insurance providers in the face of uncertainty.

Severe Convective Storm Risk in the US

Preparing for a severe convective storm season involves looking at areas that are more at risk than others.

Property insurers can put preparations and measures in place to safeguard their policyholders against future perils by evaluating areas with higher severe convective storm risk. Carriers can use CoreLogic's Weather Verification Services, a series of artificial intelligence (A.I.) and machine learning (ML) based digital tools and forensic information, to monitor storm activity and implement the best possible catastrophe response procedures for hazard-prone areas.

20,416,763

Single-family homes with high hailstorm risk in the U.S.

TOP 5 States with the most single-family homes classified as high hailstorm risk

- TX 5,559,834
- MO 2,119,636
- MN 1,633,335
- CO 1,532,289
- OK 1,345,298

$17B The average annual loss from convective storms among the insured in the U.S. » **$11B** of that was due to hail damage

11 Severe convective storm events in 2022 resulting in more than **$1 BILLION** in losses (NOAA Billion Dollar Weather and Climate Disaster data)

Severe convective storms cause significant property damage in the U.S. for both the insured and uninsured, so it is crucial to establish storm resilient communities and for insurers to improve how fast they respond to and repair damage from these events.

Unpack the Damaging Elements of 2022 Severe Convective Storms

Extreme Winds

In 2022, more than half a million homes in the U.S. were affected by extreme winds associated with severe convective storm events occurring across the country, with the top five states highlighted below. Winds exceeding 80 miles per hour (mph) can cause wind-blown debris to damage homes and structures.

A derecho is a widespread, long-lived windstorm associated with a band of rapidly moving showers or thunderstorms. Although a derecho can produce destruction similar in strength to that of tornadoes, the damage typically is directed in one direction along a relatively straight swath. These events are often referred to as straight-line wind damage.

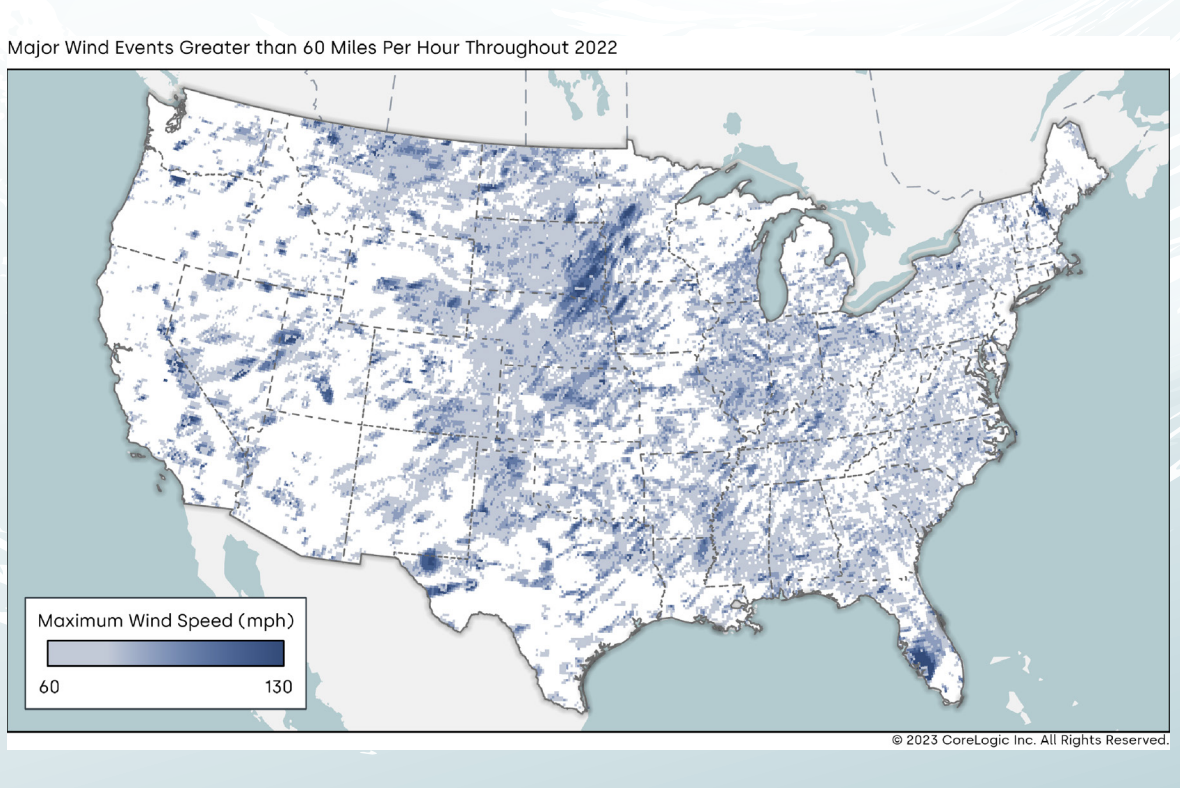
1,247,096

Single-family homes with winds > 80mph in the U.S.

TOP 5 States with single-family residences experiencing winds greater than 80mph (Excluding Florida)

- TX 137,423
- SC 71,340
- CA 33,588
- SD 32,019
- IN 28,527

Major Wind Events Greater than 60 Miles Per Hour Throughout 2022



Note – the total number and map above includes extreme winds associated with hurricane activity. In Florida alone, 728,485 homes were impacted by winds greater than 80 mph, mostly attributed to Hurricane Ian.

Tornadoes

Estimates show that almost 8,000 homes across the U.S. were affected by tornado damage in 2022. Damage could be from direct tornado touchdowns or their associated debris fields. For all of the tornadoes reflected on the map below, approximately 233 homes were immediately impacted by the wind spiral of the tornado, with the remaining homes damaged from peripheral effects, primarily flying debris. While the weakest tornadoes can cause damage to trees, the strongest can uproot the foundations of buildings, so having a precise understanding of tornado touchdown locations is essential for managing risk.

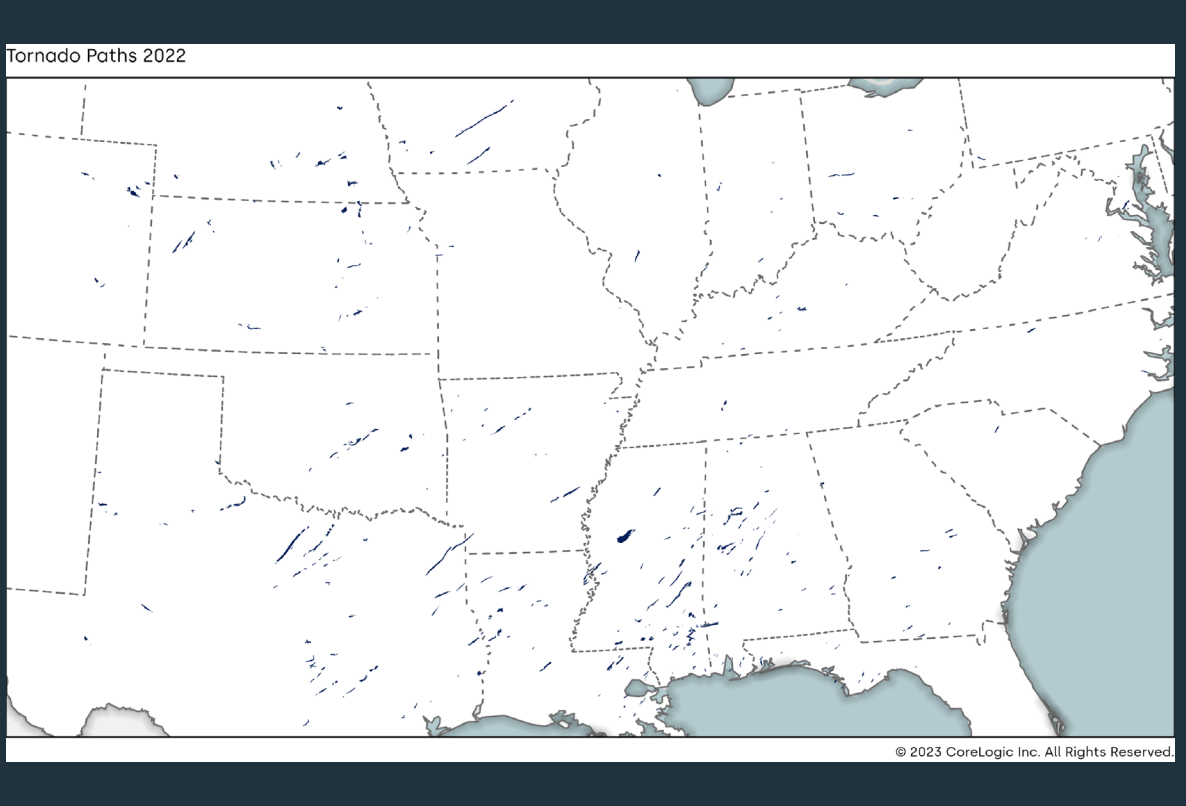
7,908

Homes in the U.S. likely damaged by tornadoes

TOP 5 States with homes that likely sustained tornado damage

- TX 2,250
- OH 1,948
- FL 806
- IA 804
- MS 456

Tornado Paths 2022



Hail

Hail damaged more than one million homes in 2022 across the United States. Hailstones frequently cause damage to homes, automobiles and agriculture.

1,013,649

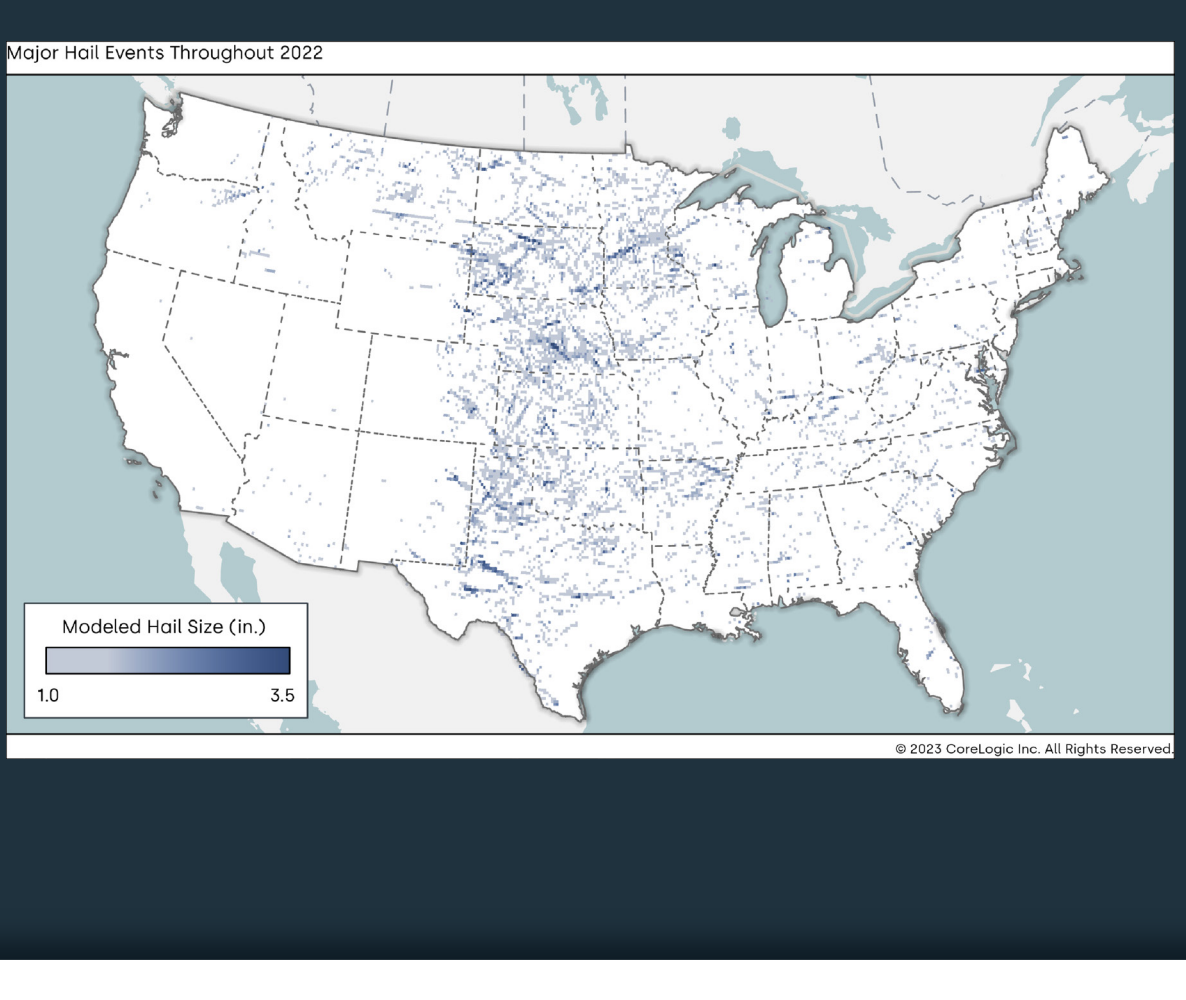
Homes in the U.S. likely damaged by hailstorms

TOP 5 States with homes that experience damaging hail

- TX 214,679
- MN 134,512
- AR 79,405
- NE 66,289
- IA 63,073

*CoreLogic© Reactor™ assessment of 1.5" hail or greater

Major Hail Events Throughout 2022



The Major Severe Convective Storms of 2022

There were five major severe convective storm events in 2022.





March 5th

Several storm supercells traveled across Iowa, including an EF4- intensity tornado accompanied by baseball-sized hail.

March 21st - 22nd

A multi-day outbreak of over 70 tornadoes across Texas, Mississippi, Alabama and Louisiana.

May 12th

Golf ball-sized hail to the Minneapolis-Saint Paul area in Minnesota.

May 19th

A derecho across Nebraska, South Dakota and Minnesota brought 100 mph winds and 34 tornadoes, causing significant property damage exceeding one billion dollars.

December 12th - 15th

A regional tornado outbreak occurred across Louisiana, Mississippi and Texas, hitting many of the same areas as the event that occurred in late March. Considered an urban tornado, more than 3,000 homes (approximately 30 percent) were in the zone of possible damage. More than 14,000 homes were very close to the tornadoes and subject to flying debris.

The Human and Financial Impacts of Severe Convective Storms

Leveraging modern and sophisticated resources and technology to predict and prepare for storms is critical for insurance companies – both in terms of their ability to serve all their policyholders in immediate need, and remain profitable long-term.

Reconstruction after these storm events is becoming more costly. Material and labor costs play a critical role in a community's recovery and these costs typically increase locally after a natural catastrophe event due to demand surge. Demand surge refers to the sudden increase in the cost of materials, labor and services due to increased demand for reconstruction services following a natural disaster. These local increases, combined with already inflated material and labor costs at a national level, are continuing to make recovering from severe convective storm events more challenging.

The Key to Resilience

Data-driven knowledge is key for insurers to better prepare their policyholders and response processes for severe convective storms. Powered by the granular weather measurements from the Weather Verification Services and CoreLogic's detailed property database, the CoreLogic Severe Convective Storm Probabilistic Loss Model helps insurers and property portfolio managers better manage the volatility in weather and climate extremes. In turn, insurers face fewer surprises and can optimize their operations. Reactor from CoreLogic's Weather Verification Services offers unique insights to support homeowners, communities, insurers and contractors with prompt and precise data at scale for the U.S.

The instant availability of this information improves the resilience of our communities by reducing the uncertainties surrounding loss for carriers. Insurers can proactively prepare policyholders for storms coming their way while simultaneously optimizing their response procedures for increased property damage claims. Data and technology-drive procedures benefit insurers on the business side: most importantly, better reconnaissance leads to reduced human suffering from storm-related damage and faster community recovery.

Stay informed.

For ongoing insights into current severe convective storm activity visit HazardHQ.com.

Contact hazardrisk@corelogic.com for additional product information.

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