

**DTN**<sup>o</sup>

# How to Predict and Prepare:

A Nor'easter Case  
Study

DTN Storm Risk



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## Nor'easter Case Study

After powerful Nor'easters strike, utility crews deploy immediately to assess damage and restore power. This includes clearing debris, fallen trees, and repairing damaged infrastructure.

Arguably more important is planning and preparation.

An emergency response plan ensures field crews are sized appropriately with supplies and equipment on-hand including utility poles, wires, transformers, and extra fuel for generators.

To prepare the right-sized crews, reliable, accurate forecasts and predictive storm insights can save hours – if not days – for those waiting in the dark.





# Winter Storms Coming Ashore



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## Winter Storms Coming Ashore

Historically, Nor'easters are intense, large-scale extratropical coastal storms that develop in the western North Atlantic Ocean.

These storms form from areas of low pressure, typically bringing a mix of severe conditions to the onshore regions from the eastern shores of Florida through the Mid-Atlantic states and into New England.

Nor'easters are not to be underestimated—they combine powerful winds, heavy rain or snowfall, and coastal flooding, leaving a lasting impression on the regions they strike.

### Characteristics of Nor'easters

#### Origin and Track:

- Form along the U.S. east coast, usually during fall and winter.
- Develop when cold air from Canada collides with warm, moist air from the Atlantic Ocean.
- Cyclonic circulation moves counterclockwise, bringing strong winds and heavy precipitation.

#### Intense Precipitation:

- Notorious for heavy precipitation including rain, snow, or a mix of both.
- Coastal areas often experience intense rainfall, flooding and erosion.
- In winter, often blizzard conditions with heavy snowfall and strong winds.

#### Strong Winds and Coastal Impact:

- Nor'easters generate powerful winds, especially along the coast.
- Coastal regions face storm surges, beach erosion, and damage to structures.
- Causes significant disruptions to transportation, power outages, and coastal flooding.



# Nor'easter: December 2023



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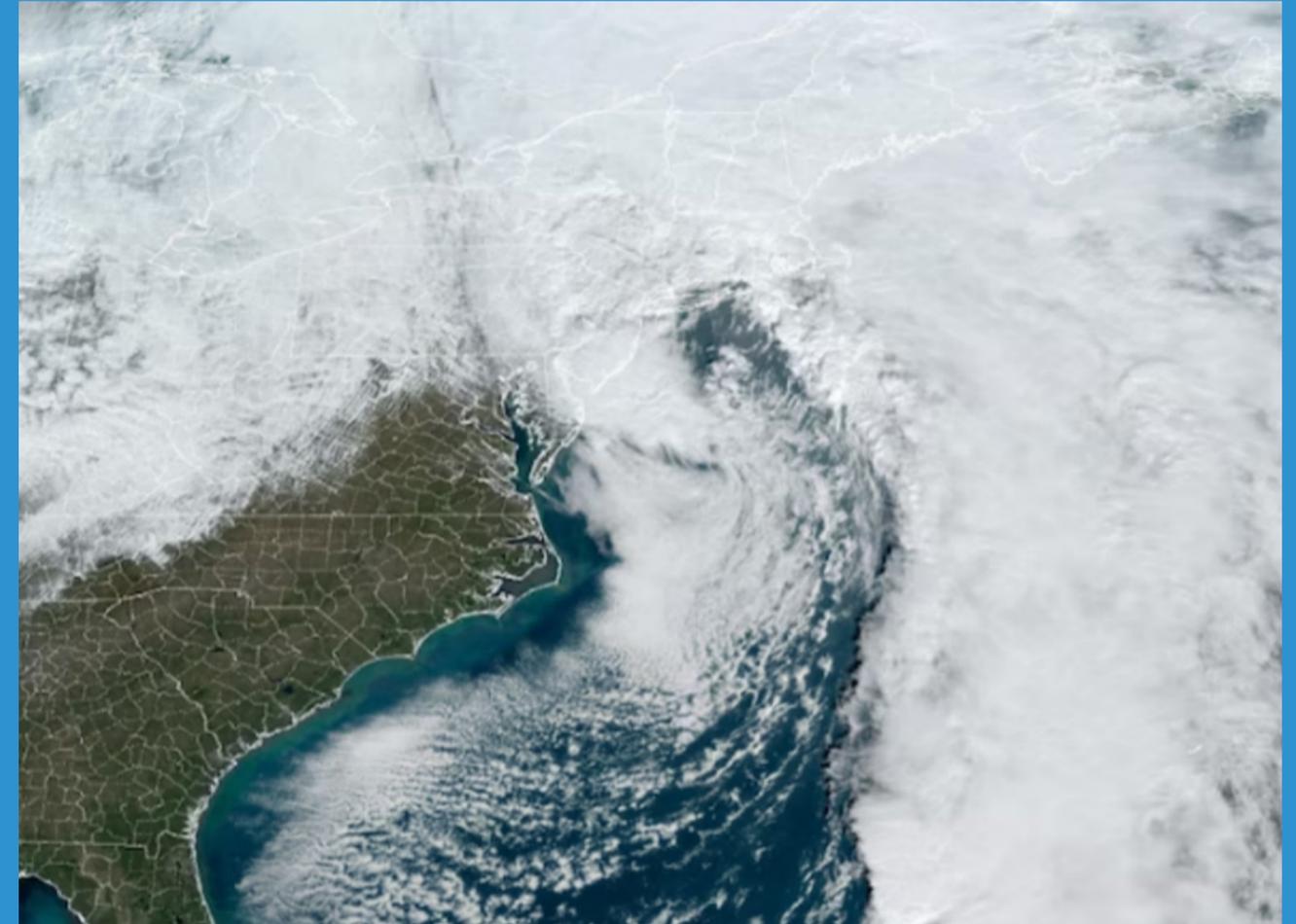
On December 16, 2023, an area of disturbed low pressure began to intensify in the Gulf of Mexico.

The system developed into a strong mid-latitude cyclone crossing the panhandle of Florida before turning northbound along the U.S. eastern shoreline.

Heavy rains fell in eastern Florida through the Carolinas causing record coastal flooding in Charleston, SC and a tornado was spawned near Myrtle Beach.

Heavy rain, damaging wind, and flooding continued into New England with reports of 60+ mph winds persisting for up to 12 hours across parts of New England.

By December 18, this winter Nor'easter had left nearly 1 million customers without power.



A Nor'easter beats down the U.S. Mid-Atlantic and New England coast on December 18, 2023  
Courtesy: NOAA





# Storm Predictions and Planning



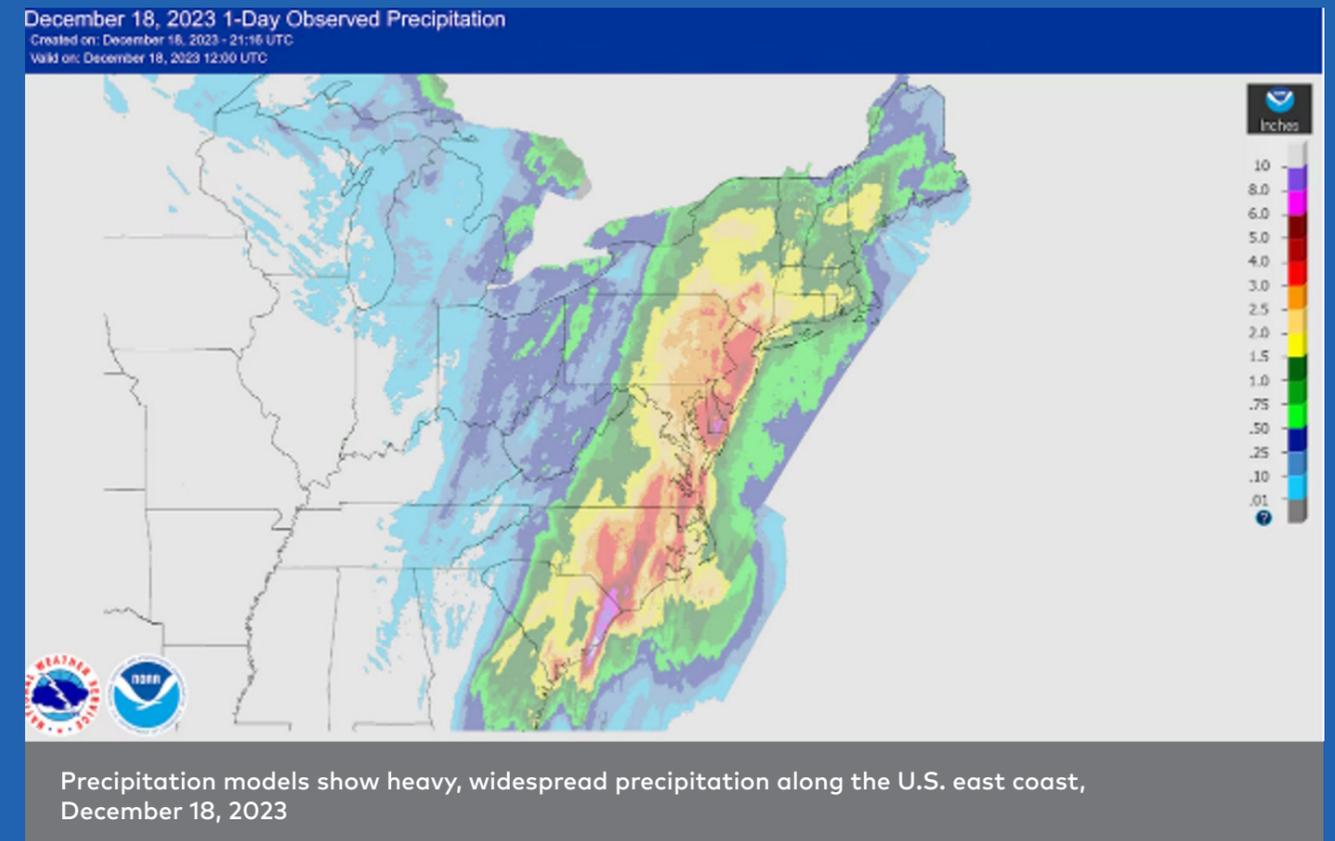
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## Storm Predictions and Planning

Having well defined emergency plans in place is critical. A good rule of thumb is "the earlier, the better." Confidently lining-up resources and equipment in advance of storm outages is critical for utilities.

Timing. While this storm's damage did not happen until December 17-18, the DTN meteorologists first mentioned its likely impacts on Wednesday, December 13.

As confidence in their forecast increased, DTN meteorologists began outlining specific hazards and timing, increasingly refining the most likely potential areas of impact.





# Post-Storm Restoration





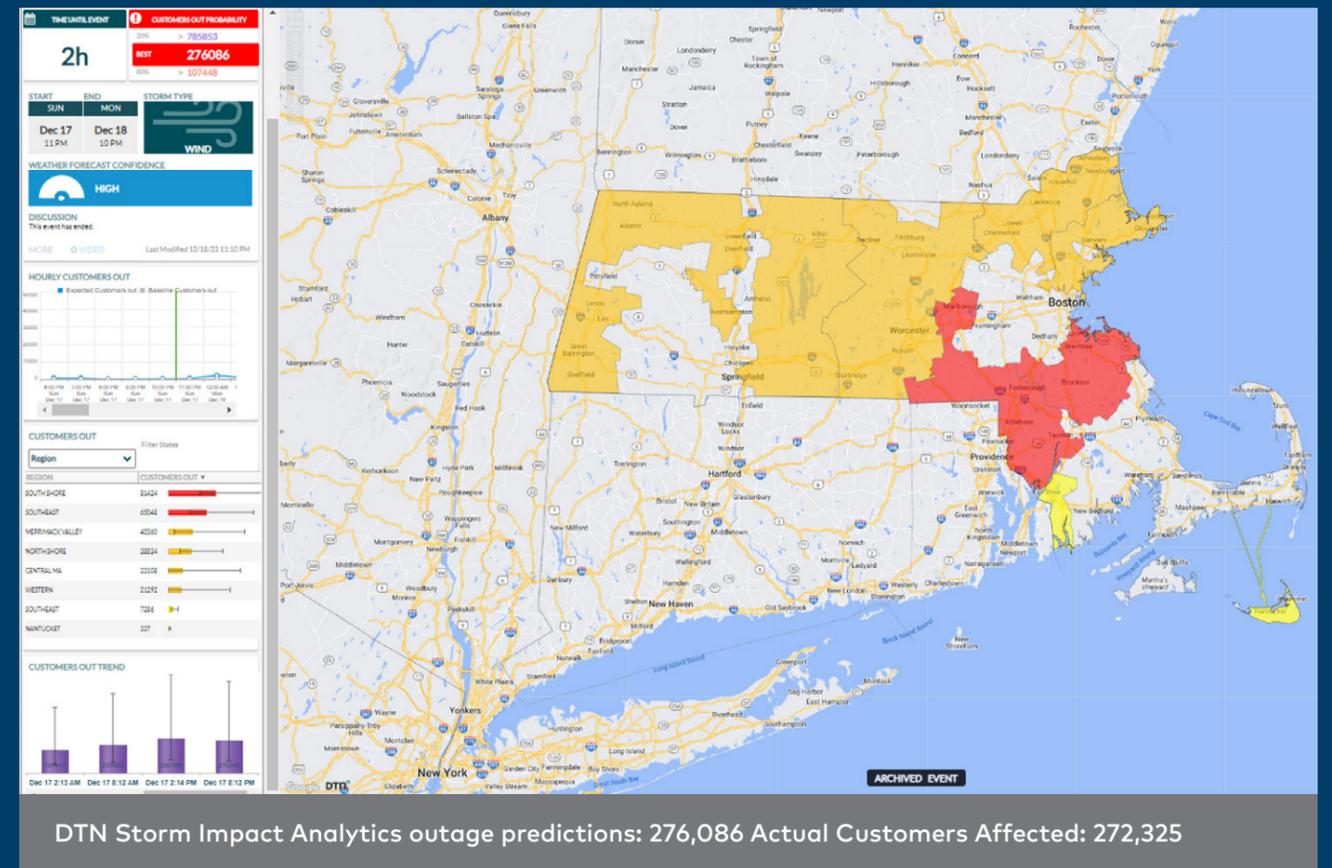
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## Post-Storm Restoration

Relying on DTN Storm Impact Analytics data set, a large utility based in the Northeastern U.S. accurately predicted its impacts days in advance.

Specifically, they were able to estimate the number of customer outages that would result from the storm's impact. The combination of highly accurate weather forecasts, statistical modeling, and predictive analytics resulted in a 98% accuracy rate.

Moreover, the prediction's accuracy allowed their team time to assemble ideal crew sizes, and they were prepared with an accurate time and place for restoration efforts.





To learn more about DTN Storm Risk solutions, visit our website.

DTN Storm Risk

[www.dtn.com](http://www.dtn.com)

