Case Study: Superstorm Sandy
More accurate
Verisk Insurance Solutions hurricane forecasts and analyses dissect the storm by cause of loss, such as peak wind gust, wind duration, storm surge, wind-driven rain, and rain following roof damage.

Ultrahigh resolution
Our comprehensive, neighborhood-level, real-time, post-storm assessments make it possible to measure the different winds in each neighborhood.

Winds timing and duration at facility level
Our forecasts of the onset and cessation of winds at critical locations and thresholds make it possible to plan catastrophe response and correlate winds with damage.

Earlier warning
We provide the likelihood of a hurricane’s impact on each coastal community or offshore leasing block up to five days in advance.

Meets operational needs
Our service is not defined by a weather forecast—it’s an operational solution. This information can be integrated easily with your company’s existing systems, including native GIS platforms, predictive models, and logistics and supply chain management software.

Expert consultation
Organizations that subscribe to the Respond™ hurricane services have access to our industry-leading hurricane analysis experts for in-depth guidance and counsel.

Independent and proprietary
Verisk’s unique data and analyses are based on proprietary technology not available from the government or any other source.
Who uses the Respond service for hurricane?

- Insurance companies seeking more accurate information to deploy catastrophe response operations, issue moratoriums, and predict financial impact
- Contractors and wholesale distributors that plan restoration staffing, materials demand, and regional supply
- Manufacturers and retail chains responding to consumer demands and managing risk exposure
- Utilities assessing service interruption contingency plans and crew deployment

**Case Study: Superstorm Sandy**

Sandy posed many threats to those in its path. The hybrid nature of the superstorm caused widespread damage up and down the East Coast and portions of the Caribbean. Sandy was the second-costliest storm to hit the Atlantic. Damage totaled nearly $18 billion, affecting 16 states from Florida to Maine and as far inland as Ohio.

In the following example, we demonstrate how Verisk can enable you to prepare better when the next hurricane occurs, fully understand the risk, and accurately adjust your financial and logistical response.

**Step 1: Monitor and Plan**

When a named tropical system forms in the Atlantic and moves westward, our meteorologists use Numerical Weather Prediction (NWP) data to project storm track, intensity, and impacts. As soon as a storm develops, the Respond service for hurricane distributes data to our customers.

Our wide domain, which includes the Atlantic Ocean, Gulf of Mexico, East Coast of the United States, Canadian Maritimes, Mexico, Caribbean Islands, and Bermuda, allows clients to begin tracking the storm well before it’s a threat to the U.S. mainland.

Staying ahead of the storm enables our clients to anticipate potential landfall scenarios and act ahead of their competitors. Verisk’s approach is designed to generate the most accurate forecast available and provide a complete perspective of risk.

**Sandy recap:** As Sandy approached Cuba, it strengthened to a Category 3 hurricane, with winds of 115 mph.
**Sandy recap:** Sandy reached Cuba as a Category 3 hurricane and weakened as the storm moved toward the Bahamas. But it continued to grow in size and eventually reintensified as it approached the southeastern United States.

Although the storm was downgraded to a post-tropical cyclone before U.S. landfall, gales from Sandy’s windfield reached as far inland as Ohio.

Sandy made landfall off the coast of New Jersey, where damaging winds and widespread storm surge were of most concern.

Sandy influenced several high tides as the storm approached New Jersey, causing some of the worst flooding in history for coastal New York and New Jersey.

**Step 2: Tactically Plan**

Five days before landfall, Verisk provides independent and objective forecasts far more detailed and comprehensive than other sources. Our clients receive accurate predictions of strength and likely path, detailed building-level winds, and impact on housing stock. We also supply information on the damaging winds that occur as the storm moves far inland.

Clients can begin planning deployment of catastrophe response teams and understand where the heaviest damage and largest number of claims will be concentrated. An insurance carrier can overlay its properties in force (PIF) onto wind forecasts to view where potential losses will occur.

Verisk provides not only the ability to view the maximum winds over a specific area but also a forecast for the timing of when winds will begin and end, along with wind speed analysis informed by coastal and land properties. Users can understand duration of the strongest winds and correlate with damage rates.

**Assess wind intensity and timing at each location of interest**

Clients receive forecasts of wind speed at an ultrahigh resolution.

This image illustrates a forecast of Sandy winds at landfall and the time when winds of critical thresholds will begin and end for a specific location.

**Assess the wind speeds at the neighborhood level**

This zoom shows 1 km views enabling neighborhood-level assessment for maximum sustained winds ranging from 40 to 60 mph.
Sandy recap:
As Sandy moved up the Eastern Seaboard, it began to tap into energy from a midlatitude cyclone over the Great Lakes. This interaction helped spread the windfield of Sandy farther west.

The most intense winds overland were from New York City through New Jersey and eastern Pennsylvania and down through the Delmarva Peninsula and the D.C. area. Hurricane-force winds were reported off the shore of New Jersey and southward.

Although Sandy quickly weakened after landfall, the remnants remained in the Northeast for several days afterward.

Step 3: Respond to Impacts
Verisk provides our clients with comprehensive, precise analyses of impact on populations, buildings, and infrastructure at the coast and far inland. Throughout the day, clients receive accurate updates on the causes and extent of hazards street by street. Our hazard assessments are multidimensional, including assessments of storm surge, rainfall, maximum sustained wind, peak wind gust, and duration.

Analyze post-storm maximum sustained winds

Throughout the day, Respond provides clients with accurate updates on the causes and extent of hazards.

Use the post-storm analysis to view the maximum sustained winds and the path the storm took before and after making landfall.

Assess storm surge impacts on policyholders and infrastructure

Verisk added storm surge capabilities to Respond in 2015, letting customers evaluate the risk of saltwater flooding of properties and infrastructure. The Respond estimate of storm surge heights incorporates the local shoreline and physical features, including bay and river configurations, water depths, bridges, roads, and levees.
Understand rainfall effects on policyholders

This image revisits Sandy rainfall in New Jersey and Delaware.

Integrated in Your Workflows

Respond natural hazard data, processing, and software enable a faster, more efficient, and accurate workflow. The hurricane forecast and analysis help you estimate potential impact by providing storm surge and windspeed analysis for sustained winds and gusts throughout the duration of the tropical cyclone or extratropical storm. Insurers use our science to estimate and analyze losses from natural hazards, reduce loss and loss adjustment expenses, and improve customer service. Respond analysis overlaid on your PIF visualizes policyholder locations and coverage values with a high probability of exposure to the storm.

Insurers can apply these solutions to help improve customer service, achieve more accurate risk selection, and lower claims expense. Manufacturers, distributors, and retailers rely on Verisk Insurance Solutions to accelerate revenue growth through more accurate forecasts of product demand and to promote stable operations by helping mitigate supply chain risk.
Why Verisk for Hurricane

Clients trust Verisk Insurance Solutions to provide the best science and deploy it in operational platforms that meet their needs for usability and reliability.

Comprehensive Views before, during, and after the Storm

Only Verisk provides a comprehensive scientific viewpoint during the storm event, when your analysts are under pressure to assess financial impacts and adjust operational response. We’re able to achieve this through deep expertise in numerical weather modeling, data integration, and downscaling.

The Best Science

The Respond hurricane service leverages the strongest technical skills in industry, federal laboratories, and operations.

Our experts in hurricane and tropical meteorology have extensive experience in developing and applying numerical modeling and data assimilation to simulations and forecasting of hurricanes. Our scientists at Verisk Insurance Solutions, Atmospheric and Environmental Research (AER), and AIR Worldwide (AIR) work together to share insights on wind impacts, flood risk, and multidecadal changes and climate change signals that affect future hurricane patterns.

The Verisk Insurance Solutions suite of hurricane products includes forecasts and analyses of high-resolution wind, storm surge, tree risk, roof damage, and blackout risk. These are derived from the Hurricane Weather Research and Forecasting model combined with proprietary algorithms calibrated with ground-truth data from operations in several industries.

As a tropical system develops, Verisk assesses all potential hurricane risks and landfall scenarios. Our scientists have deep expertise on downscaling wind algorithms informed by offshore wind modeling. The storm’s cone of uncertainty is based on environmental factors specific to each storm rather than climatological uncertainty. The extent of the cone provides a view of forecast uncertainty that depends on how large-scale phenomena influence the track and intensity of a storm system. Verisk’s experts regularly monitor each storm and provide forecasts specific to our customers to notify them when severe effects are possible.

Each storm has unique characteristics relevant to operational business scenarios. Our tropical meteorologists provide client consultations geared toward the use cases relevant to each business and help interpret the dynamic view of uncertainties that guide actionable business decisions.
Want to know more?
To learn how we can help you manage weather-related risks and claims, contact us at 1-800-424-9228 | sales@Xactware.com | Xactware.com.
Xactware provides sales and support for the Benchmark and Respond products from Verisk Insurance Solutions.