



RMS® North Atlantic Hurricane Models

Accurately Quantify, Differentiate, and Manage Tropical Cyclone Risk



KEY BENEFITS

Geographic Coverage: Forty countries in total including the U.S., Canada, Mexico, Bermuda, Central America, the Caribbean, and offshore platforms in the Gulf of Mexico

Perils Modeled: Wind; Storm Surge (U.S., Bahamas, Cayman Islands, and Turks and Caicos only)

Lines of Business: All key lines of business, including; Residential, Commercial, Industrial, Agricultural, and Automobile

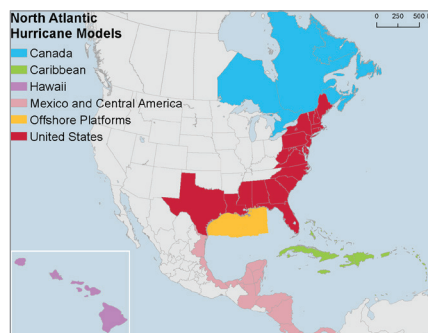
Risk Types: Over 2,000 distinct risk types are represented, including large and complex industrial facilities

Single Basin-Wide Wind and Storm Surge Event Methodology

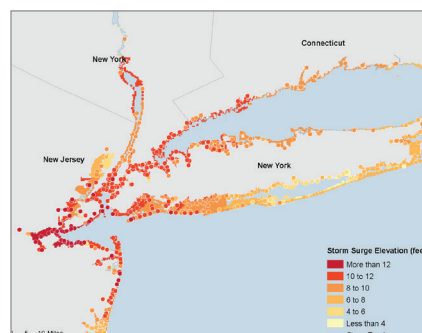
Hurricanes are a significant source of annual catastrophe risk throughout the North Atlantic Basin, including the United States, Bermuda, Canada, the Caribbean, Mexico, and Central America. It is therefore imperative that the (re)insurance industry can quantify, differentiate, and manage tropical cyclone risk accurately at the local level through to portfolio management, reinsurance, and capital management decisions. The RMS® North Atlantic Hurricane Models enable these applications, simulating realistic events throughout the region using a basin-wide event methodology, capturing the impacts of wind and storm surge for a variety of landfalling, bypassing, and transitioning storms.

Over \$300 Billion in Industry Loss Data Spanning More Than 25 Years

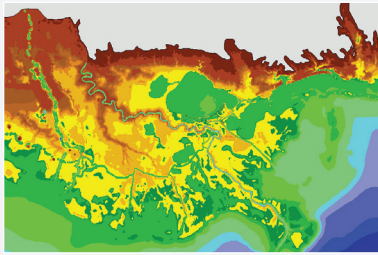
The North Atlantic Hurricane Models have been well-validated by over 20,000 wind and storm surge observations, over \$300 billion in industry loss data, and more than \$20 billion of location-level claims and exposure data (including Hurricanes Katrina, Ike, and Sandy) spanning more than 25 years. In addition, the underlying model assumptions and methodologies have been extensively reviewed by numerous third-party experts. RMS also ensures that its vulnerability module reflects the latest market practices and building codes for each region.



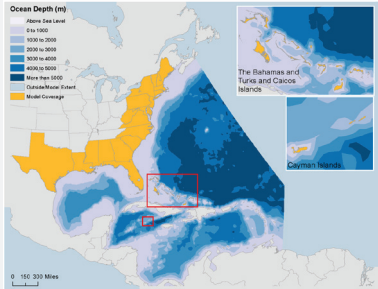
Regions covered by RMS North Atlantic Hurricane Models



Superstorm Sandy (2012): Modeled storm surge elevation vs. observation points in the New York Metropolitan Area



Detailed bathymetry and coastal topography: Southern Louisiana



Regional grid within the RMS storm surge model domain

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RMS is the world's leading catastrophe risk modeling company. From earthquakes, hurricanes, and flood to terrorism and infectious diseases, RMS helps financial institutions and public agencies understand, quantify, and manage risk.

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Granular Risk Differentiation

The North Atlantic Hurricane Models support effective risk differentiation and selection decisions down to the local level within and across regions. The hazard component incorporates high-resolution (up to 15 meters) and high-quality satellite data, reflecting the most up-to-date land use and land cover information. This helps give an accurate representation of local variations in wind hazard due to frictional impacts such as surface roughness, which is particularly important in urban areas with high concentrations of buildings.

The vulnerability module enables deeper and more accurate insights into risk differentiation for underwriting and managing hurricane risk, with unique functions representing regional vulnerability, and over 1,750 combinations of primary characteristics for wind and water-based sub-perils (storm surge for onshore risks and wave for offshore risks).

Seamless Coastal to Inland Transitions

The underlying track and inland filling methodologies used by the models capture tropical cyclone characteristics throughout the full storm lifecycle, reflecting the reality of how storms weaken as they lose energy over water, or weaken post-landfall. This provides confidence for the market to underwrite inland hurricane risk, including the risk associated with transitioning storms.

High-Resolution Coastal Flood Risk Assessment

RMS integrates a hydrodynamic, time-stepping storm surge model solution into its hurricane models to capture the complex interactions between wind and waves throughout the life cycle of a tropical cyclone. This comprehensive model solution simulates surge build-up at sea, accounting for changes in a storm's size and intensity prior to landfall, and the dynamic flow of water around complex coastlines.

With an accurate, high-resolution representation of hurricane-driven coastal flooding, (re)insurers can manage, select, and underwrite risk with more confidence, right down to the street level, and better understand portfolio-wide tail risk driven by storm surge.

Understand The Sensitivity of Hurricane Risk to Climate Trends

RMS is the only modeling company to provide a five-year forward looking view of annual hurricane landfall frequency throughout the North Atlantic basin. Separate from the long-term historical rates, the medium-term rates take into consideration both current and projected near-term climate trends and represent the RMS reference view of event frequency. Having multiple views of event frequency allows (re)insurers to understand model sensitivities to hurricane risk across different time scales and ultimately select the view that best aligns with their view of risk.

Transparency and Detail to Understand Model Assumptions

With documentation specifically to support Solvency II validation, in addition to thousands of pages of detailed model documentation, RMS provides unprecedented transparency and support into various aspects of the models, including methodologies, validation, and change management.

Find out more

Ask your RMS sales or customer services representative for more information on RMS North Atlantic Hurricane Models, or email sales@rms.com.