RMS Australia Cyclone Model

Reflects the Latest View of Australian Cyclone Risk in Collaboration With Local Industry and Scientific Partners

KEY FEATURES AND BENEFITS

- Reflects latest representation of the frequency and severity of cyclone hazard in Australia through updated cyclone landfall rates
- Realistic capture of the damageability of risks, with vulnerability functions adjusted based upon local claims data and engineering expertise
- Enhanced modeling of risks with unknown characteristics through a redeveloped building inventory
- Improved risk differentiation with ability to capture mitigation efforts through new and updated vulnerability curve secondary modifiers
- Explicit modeling of the impact of post-event loss amplification (PLA)
- More accurate representation of industrial properties or those under construction using the updated RMS Industrial Facilities Model (IFM) and new Builders Risk Model
- Industry Exposure Database (IED) and Industry Loss Curves (ILCs) will be released alongside the model

Overview

Cyclones are responsible for over a quarter of insured natural catastrophe losses in Australia. Over the last decade, the country has experienced several tropical cyclone events that each caused more than US$500 million in loss to the (re)insurance industry.[1] These include Cyclone Yasi in 2011, Cyclone Marcia in 2015, and Cyclone Debbie in 2017.

In addition, the number of properties in Australia at risk from cyclones has grown rapidly – with the number of dwellings within 200 km of the coast increasing by over 15 percent between 2006 and 2016.[2]

A Model for Use in All Business Applications

The RMS® Australia Cyclone Model incorporates the most recent market and meteorological data and lessons learned from recent historical events. It provides the most up-to-date view of cyclone wind risk in the region.

Insights from the model can be used across the (re)insurance industry, from risk selection and pricing, portfolio management, and reinsurance purchasing decisions to reinsurance underwriting and capital requirement calculations.

The Latest View of Risk From Cyclone Winds in Australia

Over 10 years of new hazard data from the Australian Bureau of Meteorology, along with claims data from recent historical events, was used to update the event rates and vulnerability functions, respectively. A selection of these reconstructed historical events have also been added to the historical event set to allow for analysis of their modeled losses.

A redeveloped building inventory database reflects the latest distribution and composition of properties within Australia, improving the accuracy of modeled losses where building characteristics are unknown. Revisions to vulnerability better capture the impact of updates to the wind building code since the 1980s.

[1] Swiss Re Institute: http://www.sigma-explorer.com/
[2] Australian Bureau of Statistics 2016 Census

SUPPORTED SOLUTIONS

RiskLink®, RiskBrowser®, and Risk Modeler™

- Detailed Loss Model (DLM) accepts high-resolution exposure data for residential, commercial, and industrial lines of business including detailed address information, construction and occupancy descriptions, building height, and year built – for buildings, contents, and time-based risk coverages
- Aggregate Loss Model (ALM) available for aggregate exposure for residential, commercial, and industrial lines of business

Client Support

- Global Client Support services ensure continuous availability of knowledgeable support staff, fulfillment and deployment services, RMS experts, and product and industry training
- Access to comprehensive, transparent documentation, including model methodology, model validation, and model change documents
- When a catastrophe occurs, the RMS Event Response Team provides accurate accumulation, modeling, and loss estimation information and guidance to clients and the market

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

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A Model Specifically Built for the Australian Market

RMS has worked closely with industry and scientific partners in Australia to develop the model update. For example, claims data provided by industry partners has enabled calibration of vulnerability functions using local data.

Additionally, RMS has consulted David Henderson from the Cyclone Testing Station (CTS) at James Cook University (JCU) as part of the vulnerability development process. This ensures the suitability of the RMS vulnerability development work for the region, enabling RMS to incorporate CTS' local engineering expertise in building code development and decades of damage investigations into the model.

In addition, exposure data provided by collaboration partners has informed the development of the RMS Australia Industry Exposure Database (IED), which has not only been used extensively in model development and calibration, but will enable comparison of modeled losses with those of the industry as a whole.

RMS has also added explicit modeling of post-event loss amplification (PLA) to the Australia Cyclone Model, assisting users in understanding the potential for PLA to increase cyclone losses and effectively communicating the impact of this to regulators.

Full Transparency to Meet Regulatory Requirements

With a rigorous development process, RMS individually calibrates and validates every model component with extensive quality assessment and acceptance testing processes. These provide consistency between model components and overall losses and offer full transparency to address all regulatory requirements. The accompanying documentation allows clients to have the information they need to understand the model assumptions as part of their validation process.

One of Three Model Updates for Australia and New Zealand

The Australia Cyclone Model update coincides with an update to the RMS Australia Earthquake model, as well as the recent release of the RMS New Zealand Earthquake HD Model.

The Australia Cyclone Model now includes updated geocoding based on the latest geographic information, additional coding options including the introduction of the Australian and New Zealand Standard Industrial Classification (ANZSIC), and new secondary modifiers to align the modeling options across the Australia Cylone and Earthquake Models, as well as the RMS New Zealand Earthquake HD Model.

These recent releases provide the most up-to-date view of risk across this model suite, as well as consistent coding options for the region, enabling more informed group-level decision-making.

Find Out More

For more information on the RMS Australia Cyclone Model, ask your RMS sales or customer services representative, call +44.20.7444.7600, or email **sales@rms.com**.