

CyclAUS

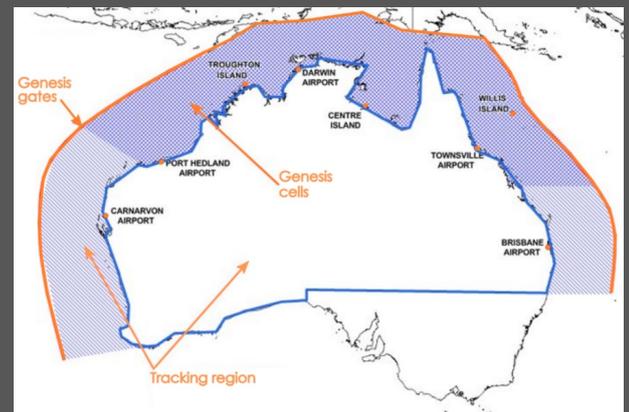
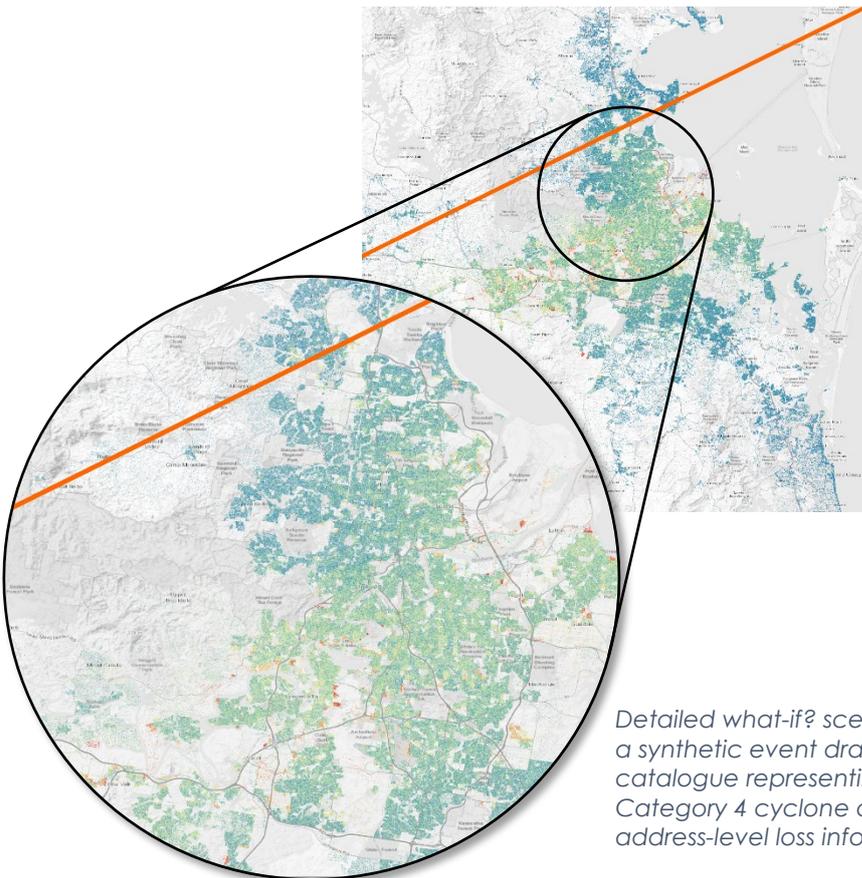
Detailed Loss Model

Intelligently Designed. Location and Portfolio Level Intelligence.

For 25 years, Risk Frontiers has been leading the development of natural catastrophe models for the Asia-Pacific region. CyclAUS is Risk Frontiers' tropical cyclone wind loss model, built with our extensive expertise and local knowledge of tropical cyclone risk in the region. Carefully calibrated and representing 16 years of development, CyclAUS has coverage of all tropical cyclone affected regions in Australia.

Comprehensive Domain, Long Simulation

The CyclAUS modelling domain extends some 600 km seaward from the coast of Australia covering all tropical cyclone affected areas between Coffs Harbour, NSW, on the east coast to Augusta, WA, on the west. The generous extent of the domain and the exceptional length of the simulation (50,000 years) allow for the modelling of extremely infrequent events potentially impacting on populated regions in Southern WA and South-East QLD / Northern NSW. These regions are particularly vulnerable because of the lower building code standards than further north.



The generous extent of the CyclAUS model domain containing more than 350,000 synthetic cyclone events.

Detailed what-if? scenario analysis, showing a synthetic event drawn from the CyclAUS catalogue representing a direct landfall of a Category 4 cyclone at Brisbane and address-level loss information.

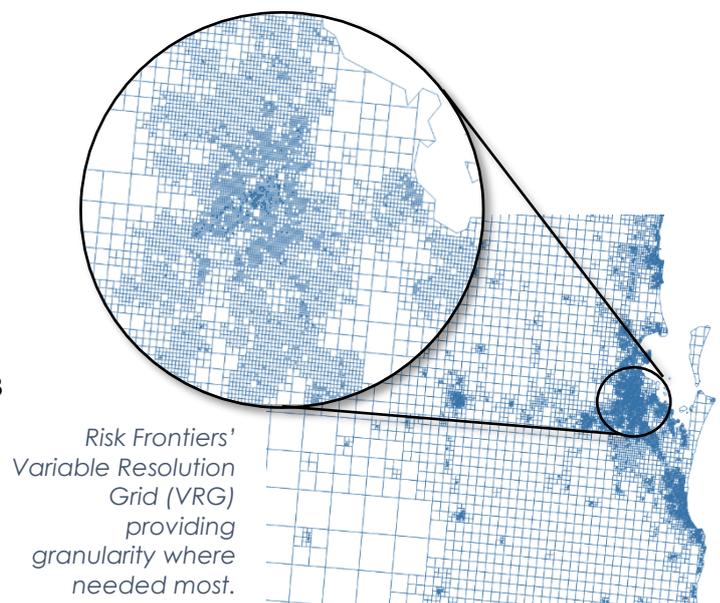


Model Overview

Hazard Resolution	Variable resolution, down to 90 mt
Exposure Resolution	Location Address Level
Event Catalogue	50,000 years of stochastic tropical cyclones
Wind and Exposure Parameters	Local gust wind speed at 10 mt elevation (3 s average), wind regions, building age, building height.
Line of Business	Residential / Commercial / Industrial
Business Interruption	Commercial / Industrial
Coverage	All Properties on mainland Australia and Tasmania. 100% GNAF / Geoscape / Geovision

Resolution Where Needed Most

CyclAUS boasts an extremely high spatial resolution, able to resolve the steep gradients in wind speed as the cyclones move inland as well as the local terrain conditions. The wind speed is calculated every 15 minutes on Risk Frontiers' Variable Resolution Grid (VRG), refined with increasing exposure and proximity to the coastline. Cells have a minimum size of 90 m and maximum of 23 km which reduces to 5.8 km within 150 km of the coastline. This ensures the resolution is highest where most needed. Adjustments for surface roughness change and topographic effects on wind speed are also modelled at a 90 m resolution.



Bespoke Climate Analyses

Risk Frontiers is implementing a catastrophe loss modelling solution to enable business and community leaders to better understand their exposure to future climate scenarios. In CyclAUS, the change in frequency of occurrence for events of different intensities and locations under a range of climate scenarios and time horizons are modelled. This allows us to estimate the change in losses on any portfolio at different points into the future and under different RCPs at a postcode, cresta or location level. We presently offer a future view of cyclone risk in Australia for 2030s, 2050s and 2090s, under a low, middle and high-emissions scenarios.

Location Level Intelligence

Location	McLeod St, Cairns North, QLD
Latitude	-16.9
Longitude	145.75
Property Replacement Value	AUD 350,000
Annual probability of experiencing a loss due to Tropical Cyclone (Gross)	2.1% (AAL: 370 AUD)
Wind Region	C
Selected Vulnerability Parameters	
Year Built	1990
Number of Stories	2

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