

Impact Forecasting

Transparent and Customizable
Catastrophe Models and Platform

ELEMENTS 17





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Catastrophe Analysis and Reporting

Impact Forecasting provides real-time information on catastrophic events through Cat Alerts, Weekly and Monthly Cat Recaps and the Weather, Climate & Catastrophe Insight: Annual Report.

The Catastrophe Insight portal provides aggregated economic and insured loss data for global natural catastrophe events during the current year plus the previous decade. Users can compare losses by peril or region.

catastropheinsight.aon.com

About Impact Forecasting

In an increasingly risky world, insurers and reinsurers need more precise, science-driven modeling to make better decisions pricing risk, managing accumulations and underwriting. Backed by scientific research including climate change, Impact Forecasting's insights and tools help you quantify the financial impact of catastrophes and customize your view of risk.

Breadth of Model Coverage

With over 125 probabilistic and scenario models spanning 12 perils and almost 80 territories, we empower insurers by providing risk insights for the peak risk zones around the globe, as well as for the emerging markets.

Impact Forecasting partners with academic and industry organizations around the world to incorporate the latest research into all of our catastrophe models.

Customizable Models

All Impact Forecasting models can be customized based on the user requirements, such as utilizing an insurer's loss data to generate more accurate damage functions for a specific line of business or developing an entire new model for a previously unchartered peril and territory. Our models use the well-established Oasis model definition format for both hazard and vulnerability components enabling a much wider range of users to bespoke a model to fit their needs.

The choice of platform is yours

Our models run on ELEMENTS and in Oasis based environments, giving insurers the ability to incorporate our models into their own catastrophe modelling landscape.

ELEMENTS delivers transparency, so every step of the calculation process is clearly defined and can be easily explained to stakeholders, regulators and rating agencies while helping to quantify uncertainty in various model components. ELEMENTS has the ability to run Impact Forecasting and third-party models for any peril or territory. Its Application Programming Interface (API) ensures smooth integration with your catastrophe modeling workflow. In addition to the Impact Forecasting financial engine the Oasis engine integrated into the ELEMENTS environment enables users to run Oasis based models through a common user interface.





Risk Rating Information to Enhance Primary Underwriting

Our hazard and risk score products enable more accurate underwriting and risk assessment for natural and man-made hazards. The data helps insurers and corporations understand the impact of catastrophe risk on individual locations and estimate how much premium to charge. Our underwriting solutions are integrated with a number of third party exposure management and policy administration systems.

Automated Event Response for U.S. Hurricane, European Windstorm and Japan Typhoon

Today's weather prediction models offer an opportunity for insurers to estimate the impact of costly hurricanes and windstorms in real time. Utilizing weather forecast and station data, Impact Forecasting's Automated Event Response brings together its expertise in tropical cyclone and windstorm modeling with a portfolio-specific approach to loss estimation to enhance claims response and reporting.

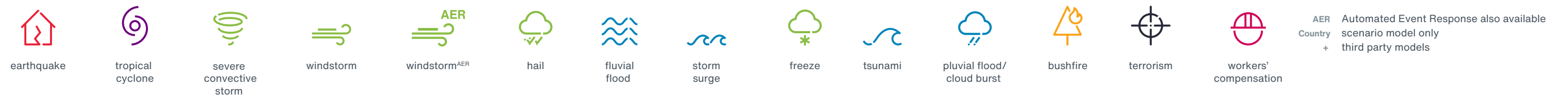
Climate Change Capabilities

Our models enable users to quantify the effects of climate change for different emission scenarios as defined by the Intergovernmental Panel for Climate Change (IPCC). We focus on major territories and perils and on cases with the most significant expected impact of climate change like tropical cyclones, wildfire, floods and SCS. Our model assumptions and methodologies incorporate the latest scientific peer reviewed research from our academic collaborations such as Columbia University, Karlsruhe Institute of Technology, UC-Merced and UCLA amongst others. Future climate versions of the models are directly incorporated into ELEMENTS as separate event sets. Our flood solutions both quantify the effect of the changing hazard as well as incorporate adaptation measures such as strengthening of flood defenses based on governmental planning policies.

Model Coverage Map



Map Icons



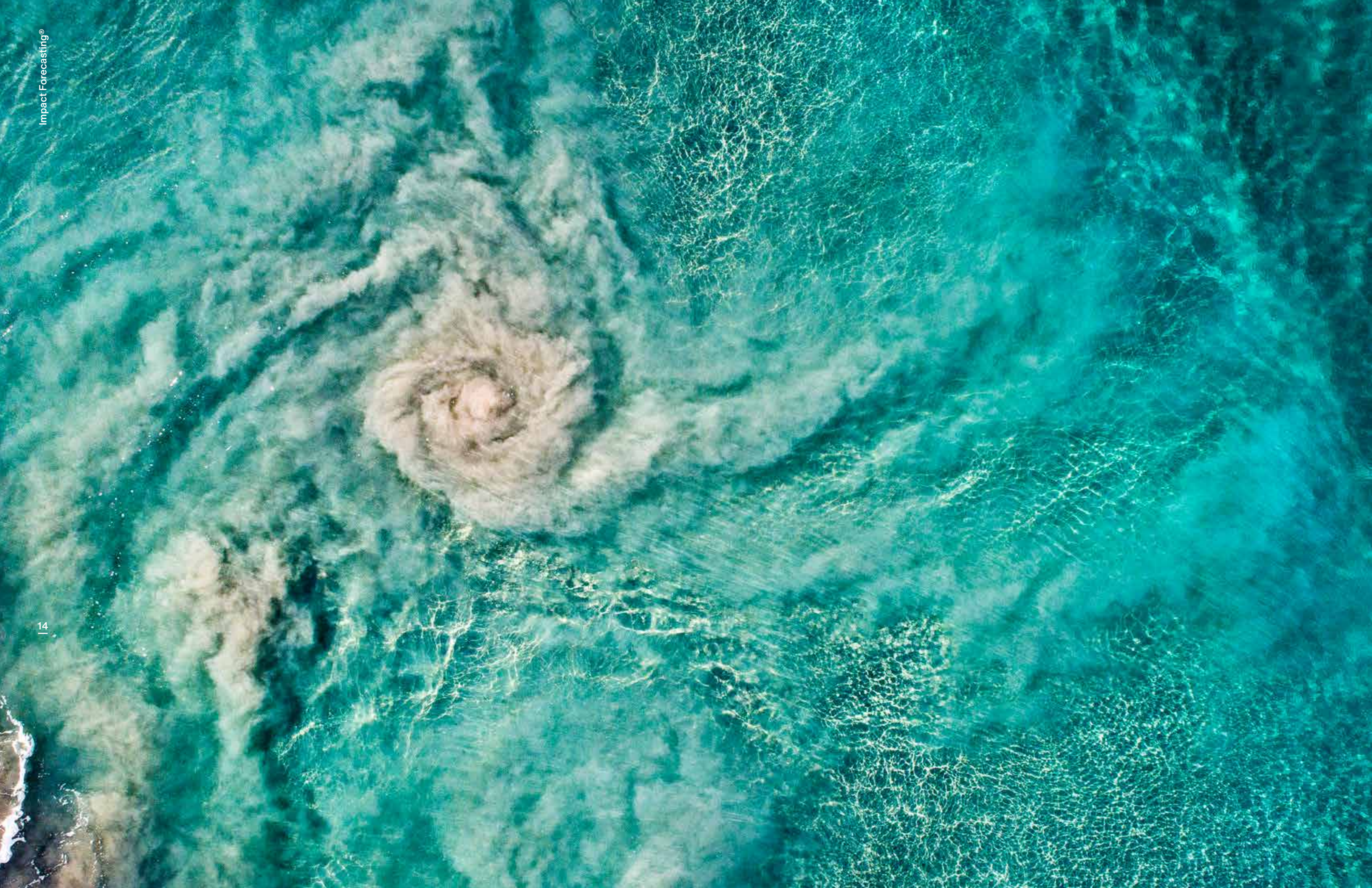
Model Coverage Map

Territory	Probabilistic	Scenario / Historical
Algeria	earthquake	earthquake
Anguilla	earthquake	
Antigua and Barbuda	earthquake	
Aruba	earthquake	
Argentina		flood
Australia	flood (Ambiental)	flood, flood (Ambiental)
Austria	earthquake, flood, hail, pluvial flood, windstorm ^{AER}	flood, hail, pluvial flood, windstorm ^{AER}
Bahamas	earthquake	
Bahrain	earthquake	earthquake
Barbados	earthquake	
Belgium	hail, windstorm ^{AER}	hail, windstorm ^{AER}
Belize		flood
Bolivia		flood
Bonaire	earthquake	
Bosnia and Herzegovina	earthquake	
Brazil	flood	
British Virgin Islands	earthquake	
Bulgaria	earthquake	
Canada	earthquake, flood, pluvial flood	earthquake, flood, pluvial flood, tsunami
Cayman Islands	earthquake	
Chile	earthquake, tsunami	earthquake, tsunami, flood
China	tropical cyclone	flood, pluvial flood
Colombia		flood
Costa Rica		flood
Croatia	earthquake	
Cuba	earthquake	
Curaçao	earthquake	
Cyprus	earthquake	earthquake
Czech Republic	flood, hail, windstorm ^{AER}	flood, hail, windstorm ^{AER}
Denmark	windstorm ^{AER}	windstorm ^{AER}
Dominica	earthquake	
Dominican Republic	earthquake	earthquake
Ecuador		flood
Estonia	windstorm ^{AER}	windstorm ^{AER}
El Salvador		flood
Fiji	earthquake, tropical cyclone	earthquake, tropical cyclone
Finland	windstorm ^{AER}	windstorm ^{AER}

Territory	Probabilistic	Scenario / Historical
France	hail, windstorm ^{AER}	flood, hail, windstorm ^{AER}
French Guiana		flood
French Polynesia	tropical cyclone	earthquake, tropical cyclone
Germany	earthquake, hail, life-terrorism, flood storm surge, terrorism, windstorm ^{AER}	flood, hail, storm surge, windstorm ^{AER}
Greece	earthquake	earthquake
Grenada	earthquake	
Guadeloupe	earthquake	
Guam	tropical cyclone	tropical cyclone
Guatemala		flood
Guyana		flood
Haiti	earthquake	earthquake
Honduras		flood
Hong Kong	tropical cyclone	
Hungary	earthquake, flood, hail, windstorm ^{AER}	hail, windstorm ^{AER}
Iceland	earthquake	earthquake
India	flood, fluvial flood, pluvial flood, tropical cyclone	flood, fluvial flood, pluvial flood
Indonesia	flood, pluvial flood	earthquake, flood, pluvial flood
Iran	earthquake	
Ireland	windstorm ^{AER}	windstorm ^{AER}
Israel	earthquake, life-earthquake	earthquake, life-earthquake
Italy	earthquake, hail	earthquake, hail
Jamaica	earthquake	earthquake
Japan		flood, windstorm ^{AER}
Kazakhstan	earthquake	earthquake
Kenya	earthquake	
Kuwait	earthquake	earthquake
Latin America		flood
Latvia	windstorm ^{AER}	windstorm ^{AER}
Liechtenstein	flood, hail	flood, hail
Lithuania	windstorm ^{AER}	windstorm ^{AER}
Luxembourg	windstorm ^{AER}	windstorm ^{AER}
Malaysia	flood, pluvial flood, tropical cyclone	flood, pluvial flood
Martinique	earthquake	earthquake
Mexico		flood
Montenegro	earthquake	
Montserrat	earthquake	

Territory	Probabilistic	Scenario / Historical
Morocco	earthquake	earthquake
Nepal	earthquake	earthquake
Netherlands	flood, hail, storm surge, windstorm ^{AER}	flood, hail, storm surge, windstorm ^{AER}
New Caledonia	earthquake, tropical cyclone	earthquake, tropical cyclone
Northern Mariana Islands	tropical cyclone	tropical cyclone
Norway	windstorm ^{AER}	windstorm ^{AER}
Navassa Island	earthquake	
Nicaragua		flood
Oman	earthquake	earthquake
Pakistan	earthquake	earthquake
Papua New Guinea	earthquake, tropical cyclone	earthquake, tropical cyclone
Panama		flood
Paraguay		flood
Peru		flood
Philippines	tropical cyclone	earthquake
Poland	flood, hail, windstorm ^{AER}	flood, hail, windstorm ^{AER}
Portugal	windstorm ^{AER}	flood, windstorm ^{AER}
Puerto Rico	earthquake, tropical cyclone	earthquake, tropical cyclone
Qatar	earthquake	earthquake
Romania	earthquake	
Saudi Arabia	earthquake	cloudburst, earthquake, flood
Saba	earthquake	
Saint Barthelemy	earthquake	
Saint Kitts and Nevis	earthquake	
Saint Lucia	earthquake	
Saint Martin	earthquake	
Saint Vincent and Grenadines	earthquake	
Serbia	earthquake	
Singapore	earthquake	earthquake
Sint Eustatius	earthquake	
Sint Maarten	earthquake	
Slovakia	earthquake, flood, hail, windstorm ^{AER}	flood, hail, windstorm ^{AER}

Territory	Probabilistic	Scenario / Historical
Slovenia	earthquake, hail	hail
Solomon Islands	earthquake, tropical cyclone	earthquake, tropical cyclone
South Africa	earthquake, hail	earthquake, flood, hail, pluvial flood
South Korea	tropical cyclone, earthquake	
Spain	windstorm ^{AER}	windstorm ^{AER}
Suriname		flood
Sweden	windstorm ^{AER}	cloudburst, flood, windstorm ^{AER}
Switzerland	earthquake, flood, hail, windstorm ^{AER}	earthquake, flood, hail, windstorm ^{AER}
Taiwan	tropical cyclone	
Tanzania	earthquake	
Thailand	flood, tropical cyclone	earthquake, flood
Trinidad and Tobago	earthquake	earthquake
Turkey	earthquake, life-earthquake	earthquake, life-earthquake
Turks and Caicos Islands	earthquake	
Uganda	earthquake	
United Arab Emirates	earthquake	earthquake
United Kingdom	fluvial/pluvial flood and storm surge (JBA), freeze, life-terrorism, terrorism, windstorm ^{AER}	freeze, fluvial/pluvial flood, storm surge (JBA), windstorm ^{AER}
United States of America	brushfire, cloudburst / pluvial flood, earthquake, fluvial flood, life-terrorism, severe convective storm, storm surge, terrorism, tropical cyclone, workers' compensation	brushfire, cloudburst / pluvial flood, earthquake, fluvial flood, severe convective storm, storm surge, terrorism-blast (computational fluid dynamics), tropical cyclone, tropical cyclone ^{AER}
United States Virgin Islands	earthquake, tropical cyclone	earthquake, tropical cyclone
Uruguay		flood
Vanuatu	earthquake, tropical cyclone	earthquake, tropical cyclone
Venezuela		flood
Vietnam	flood, pluvial flood, storm surge, tropical cyclone	storm surge, tropical cyclone
Yemen	earthquake	earthquake





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The gateway to independent models

Impact Forecasting offers the ability to run your own models or third party models in ELEMENTS to increase your choice of coverage. In addition to hosting your own models, there are third party models available from Ambiental, GEM, JBA and UCL. Impact Forecasting also collaborates with Fathom, ImageCat and GEM to bring you additional insight.

Equally Impact Forecasting models are also available on the Oasis LMF based platforms incl. Nasdaq NRMIC.

Would you like to integrate your own model? Please contact us.

About Impact Forecasting

Impact Forecasting is Aon's catastrophe model development centre of excellence whose seismologists, meteorologists, engineers, mathematicians, finance risk management and insurance professionals analyse the financial implications of natural and man-made catastrophes around the world. Impact Forecasting's experts develop a suite of probabilistic and scenario models, plus its transparent and customizable ELEMENTS catastrophe modelling platform. These empower insurers and reinsurers to understand the impact of global risks ranging from hurricane, earthquake and flood to tsunami, cloudburst and terrorism. To find out more about Impact Forecasting® LLC, visit www.impactforecasting.com

About

Aon plc (NYSE: AON) exists to shape decisions for the better — to protect and enrich the lives of people around the world. Our colleagues provide our clients in over 120 countries and sovereignties with advice and solutions that give them the clarity and confidence to make better decisions to protect and grow their business.

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