CATASTROPHE AND RISK SOLUTIONS

Verisk Tropical Cyclone Model

for the United States

Verisk™

A new standard for U.S. tropical cyclone risk, built for defensible decisions

Tropical cyclone risk is changing—portfolio decisions can't rely on legacy views

The most significant update to the Verisk Tropical Cyclone Model for the United States since its inception is here. Re-engineered to reflect today's climate and built environment, it combines the latest hazard science, expanded exposure data, and updated demand surge to deliver the industry's most advanced view of U.S. tropical cyclone hazard and vulnerability.

Why this update matters for your portfolio

A near-present view of risk, clearer insight into concentrations and accumulations, and a unified financial framework-enhanced by more realistic hazard and vulnerability modeling- so you can make confident, defensible decisions that stakeholders can trust.

Use it to support:

- Underwriting and pricing
- Capital planning
- Reinsurance and insurance-linked securities placements

Validation depth you can stand behind

Built and tested against over

$686B

of industry loss data and multiline, location-level claims, Verisk models deliver a rigorously validated, real-world view of risk.

What sets Verisk's U.S. Tropical Cyclone Model apart?

A unified, near-present catalog spans a continuum of sea surface temperature and El Niño states, enabling more flexible use-cases for evolving analytics.

Expanded event metadata and outputs support transparent model evaluation and validation workflows.

A novel, peer-reviewed wind-field modeling approach features a 3-second surface gust representation for more realistic wind patterns that are better aligned to damage observations.

End-to-end validation against deep, exclusive industry loss and claims data ensures results reflect how events affect portfolios.

Proprietary Verisk analytics around building code adoption and enforcement as well as roof-specific data contribute to a robust and versatile vulnerability framework.

Verisk's next-generation financial model provides a common framework for our catastrophe solutions, served on a unified platform.

The model's scope at a glance

Domain

29 contiguous U.S. states + DC most frequently affected by North Atlantic tropical cyclones

Subperils

Wind, storm surge, precipitation-induced flooding

Delivery

Available exclusively in Verisk Synergy Studio

What's in the model to help drive your business forward?

The model's core capabilities are designed to support pricing, portfolio management, and risk-transfer decisions.

Expanded stochastic catalogs and historical scenarios

10k, 50k, and 100k catalogs now include tropical storms in addition to hurricanes. Under the appropriate circumstances, storms have the ability to undergo rapid intensification and extra tropical transitioning.

A new way to capture wind intensity

3-second wind gusts are simulated at 10-meter height, on a variable resolution grid. A novel approach permits more realistic modeling of asymmetric wind fields.

Enhanced storm surge (coastal flood) modeling

Outputs reflect Delft3D hydrodynamic modeling, tides, and a flexible, terrain-aware simulation mesh for more realistic footprints in complex coastal areas, including inland waterways. Defense failure capability is available in selected states.

Improved precipitation-induced flooding

The model captures river overflow, maximum 24-hour precipitation totals, and levee failure potential while considering antecedent conditions.

Upgraded vulnerability for conventional and specialty risks

The updated model captures progressive damage from sustained winds and expands secondary risk characteristics from 26 to 39—delivering more precise differentiation across building types and exposures. It extends coverage to specialty risks, including large industrial facilities and renewable energy assets such as solar and on- and offshore wind turbines.

Expanded demand surge metrics

Accounts for inflation and labor disruption that vary by state and event, aligned to a consistent global framework for more realistic loss estimate.

Updated industry exposure database

With 90-meter resolution, the model delivers improved commercial detail and expanded high-value home identification.

One modeling standard across every peril, every region

Verisk's Next Generation Financial Model—at the heart of every Verisk catastrophe model—enables consistent, decision-grade analysis without complexity or reconciliation.

What could the latest in tropical cyclone modeling mean for your portfolio?

Schedule a Call