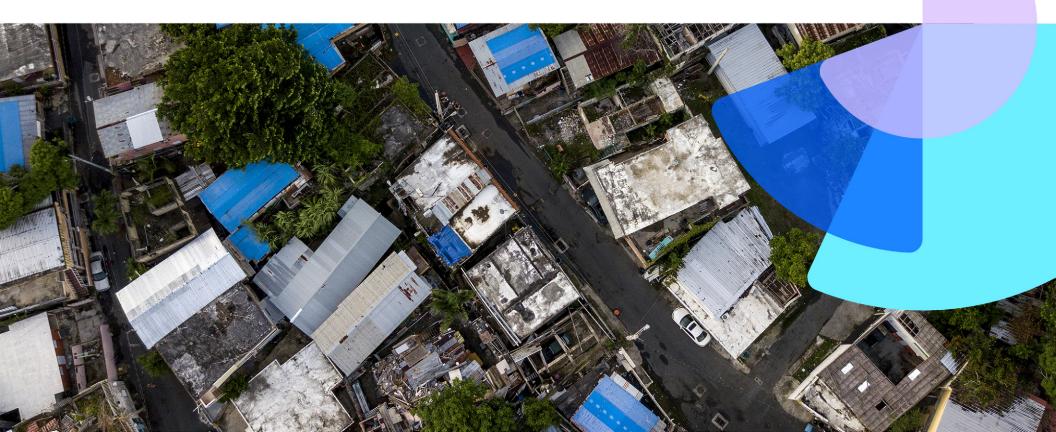


Modeling Insured Catastrophe Losses: A Global Perspective for 2025





# Table of contents

Executive summary	4
Exceedance probability metrics	7
Key drivers of modeled loss	13
Exposure growth	14
Rapid urban expansion	.16
Event frequency	.17
Climate change in forward-looking modeling	19
Managing your global risk	.20





# Figures and tables

Figure 1. Historical and average losses (Source: Verisk, Aon, Swiss Re)	6
Figure 2. Contribution to global insured AAL by peril for all regions (Source: Verisk)	9
Figure 3. Gap between insured and total economic losses (sum of insured and	
uninsured losses), by region, at 1% exceedance probability (100-year return period)	
level (Source: Verisk)	11
Figure 4. Comparison of insured losses exceeding \$1 billion by peril between	
2015–2019 and 2020–2024 (Source: Verisk, Aon, Swiss Re)	18
Table 1. Key insured loss metrics from Verisk's global industry EP curve for all regions	
and perils (Source: Verisk)	8
Table 2. AAL and EP metrics, by region, based on Verisk's global suite of models,	
including those introduced or updated in 2025 (Source: Verisk)	8
Table 3. Insured and economic AAL by region (Source: Verisk)	10
Table 4. Annual exposure growth by region (2020–2024) measured using the Verisk	
Global Capital Stock	15





# \$152 billion

estimated global modeled insured average annual property loss (AAL) from natural catastrophes The global insurance industry stands at an inflection point where unprecedented natural catastrophe losses, averaging \$132 billion over the past five years (compared with \$104 billion in the preceding period), are no longer statistical outliers but the new reality. Verisk's latest models estimate the global modeled insured AAL from natural catastrophes at \$152 billion, which suggests the industry should be prepared, in any given year, for total annual insured property losses from natural catastrophes that far exceed that amount.

Frequency perils, including severe thunderstorms, winter storms, wildfires, and inland floods, now represent nearly two-thirds of the \$152 billion modeled AAL, reshaping the risk landscape that has historically been dominated by singular large events such as tropical cyclones or earthquakes. Globally, these perils have the potential to continue eroding earnings for insurers and, in some cases, for reinsurers, depending on markets and treaty structures.

### Four interconnected forces are driving this transformation in catastrophe risk:

- Exposure growth has accelerated, with global property exposure in Verisk-modeled countries averaging 7% annual growth from 2020–2024, fueled by both rapid inflation and continued construction in high-hazard areas.
- Urban expansion continues to concentrate more valuable assets in catastrophe-prone regions, with more than half the world's population now living in urban areas highly exposed to natural hazards.
- Event frequency has increased substantially, with frequency perils accounting for \$98 billion of the total \$152 billion AAL—a 12% increase in share over 2024.
- Climate change is gradually but measurably shifting atmospheric hazard distributions, with Verisk estimating approximately 1% of year-on-year AAL increases, in aggregate across perils, attributable to these long-term climate effects.

These converging trends present both challenges and opportunities for the global insurance industry. For mature insurance markets, the opportunity lies in leveraging catastrophe models built for the near-present climate and current built environment to establish a holistic view of risk across their business, enabling strategic expansion and more sophisticated risk management through diversification. These markets can transform volatility into competitive advantage by embracing advanced analytics that illuminate previously hidden risk patterns.

Developing insurance markets see further opportunities for innovation, particularly in regions with substantial protection gaps where economic losses dwarf insured losses. In Asia and Latin America, for example, insured losses account for 12% and 32% of modeled economic losses respectively, representing untapped potential for both regional model development and innovative risk management solutions.

Across all markets, relying on historical precedent to inform a forward-looking view of risk is inadequate in the face of inflation, urban expansion, increasing event frequency, and a changing climate. This is especially

critical given recent events such as Hurricane Helene's devastating flooding and the destruction caused by the Eaton and Palisades fires. Organizations that embrace catastrophe models and purpose-built solutions—supported by data and well-validated, transparent methodologies grounded in science—can shift from reacting to "unexpected" loss events to embracing a view of risk that transforms these events into manageable, strategic business decisions. In this way, they can help provide stability and resilience to the organizations and the communities they serve.



Note: 2024 USD adjusted for inflation and exposure growth using the Verisk Global Capital Stock Index

Figure 1. Historical and average losses (Source: Verisk, Aon, Swiss Re)



Verisk's comprehensive approach to catastrophe modeling transforms complex global risk into actionable intelligence for the insurance industry.

We produce this annual report using the same global suite of catastrophe models and software offerings available to our clients. All Verisk catastrophe models leverage the same completely re-architected shared financial framework, enabling seamless risk quantification across diverse portfolios and geographies.

The metrics derived from these models represent more than statistical measures: they are strategic tools that can reveal market opportunities and guide capital allocation decisions.

## Insured losses

The evolution of our global aggregate AAL and exceedance probability (EP) loss metrics for 2025 reflect changes in risk as a result of our commitment to continuous innovation through new models (Verisk Inland Flood model for Malaysia and Indonesia, and Verisk Inland Flood model for the Republic of Ireland) and updated models (Verisk Bushfire model for Australia, Verisk Earthquake model for Mexico, Verisk Inland Flood model for the United Kingdom, Verisk Severe Thunderstorm model for the United States, and Verisk Typhoon model for South Korea) alongside updates to the Global Industry Exposures database.

Table 1 presents global insured AAL and key metrics from the aggregate exceedance probability (EP) curve from 2020–2025.

	Aggregate EP Loss (USD Billions)			
Year	AAL (USD Billions)	5.0% (20-year return period)	1.0% (100-year return period)	0.4% (250-year return period)
2020	82	169	274	342
2021	87	176	285	359
2022	100	193	311	394
2023	109	215	351	430
2024	120	223	363	448
2025	152	274	425	521

Table 1. Key insured loss metrics from Verisk's global industry EP curve for all regions and perils (Source: Verisk)

Average annual insured losses and the metrics from the aggregate insured EP curve—for all regions and perils modeled by Verisk—have increased since we published our first report on this topic in 2012. This expected rise reflects several factors:

- Increases in the numbers and values of insured properties in high-hazard areas
- Inclusion of regions and perils for which new models are now available
- More comprehensive and reliable data to power those models
- Continuous updates to Verisk's view of risk

A breakdown of contributions to global AAL by region and key aggregate EP metrics by region appears in Table 2.

	Aggregate Insured Loss (USD Billions)		
Region	AAL	1.0% (100-year return period)	0.4% (250-year return period)
Asia	10	12	35
Europe	21	8	16
Latin America	7	3	4
North America	111	395	463
Oceania	5	7	2
All exposed areas*	152	425	521

<sup>\*</sup> Note: Aggregate EP losses are not additive

Table 2. AAL and EP metrics, by region, based on Verisk's global suite of models, including those introduced or updated in 2025 (Source: Verisk)

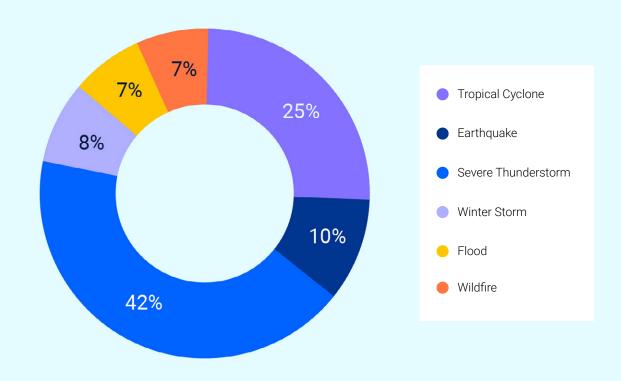


Figure 2. Contribution to global insured AAL by peril for all regions (Source: Verisk)

It is important to note that the AAL represents expected losses over extended periods, not what would be expected in any given year. Our stochastic catalogs reflect that global aggregate losses may comprise a few large loss events in peak regions or lower losses across multiple perils and regions in any given year. What is certain is that these losses are unlikely to look like the long-term AAL breakdowns shown in Figure 1 and Figure 2.





## **Economic losses**

Global economic losses encompass insured losses and uninsured sources, which may include properties with no insurance, infrastructure, and lost economic productivity. Comparing insured losses with reported economic loss estimates for natural disasters since 2015 (as reported by Swiss Re and Aon), Verisk has determined that global insured losses make up more than 38% of global economic losses in total when adjusted for inflation. Based on Verisk's modeled global insured AAL, this would correspond to an economic AAL of more than \$395 billion.

On a regional basis, the insured percentage of economic loss from natural disasters varies considerably (Table 3). In North America, for example, about 48% of the economic loss from natural disasters is insured, while in Asia and Latin America, insured losses account for only about 12% and 32% of economic losses, respectively, reflecting the very low insurance penetration in these regions. The insured portion of economic losses also varies significantly by peril.

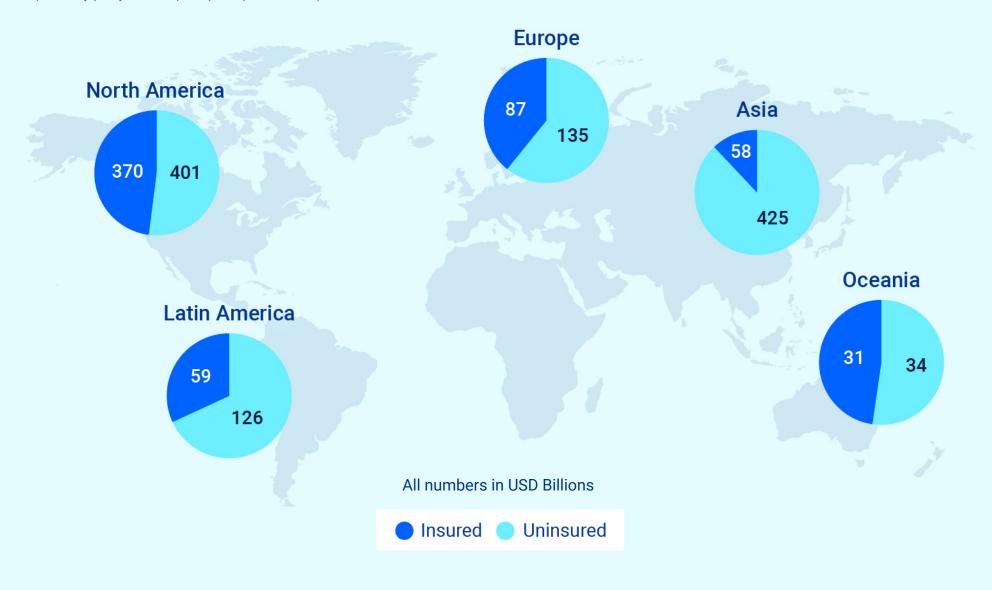
Region	Insured AAL (USD Billions)	Percentage of economic losses estimated to be insured	Economic AAL (USD Billions)
Asia	10	12%	81
Europe	21	39%	54
Latin America	7	32%	21
North America	111	48%	230
Oceania	5	48%	10
All exposed areas	152	39%	395*

Note: There is considerable uncertainty in the estimated percentage of economic losses that is insured, which partly stems from uncertainty in reported economic losses for actual catastrophes

Table 3. Insured and economic AAL by region (Source: Verisk)

\*sum of regional losses

**Figure 3.** Gap between insured and total economic losses (sum of insured and uninsured losses) by region, at 1% exceedance probability (100-year return period) level (Source: Verisk)





# Global protection gap

Using the same techniques employed to quantify the protection gap on an AAL basis, the insured and economic losses for each region at the 1% exceedance probability (the 100-year return period) can be calculated. The difference between economic and insured losses—the uninsured losses—includes potential losses to uninsured properties and losses that extend beyond the models' scope, including estimates of damage to roads, bridges, railways, and sewers, as well as global electrical and telecommunications networks and other infrastructure.

The sizable difference between insured and economic losses—the protection gap—represents the cost of catastrophes to society, much of which governments ultimately bear. The reasons for the protection gap are multifaceted, and these examples highlight a few.

In 2024, several events demonstrated large protection gaps, even in developed countries. Hurricane Helene's U.S. economic loss was \$75 billion, while the insured loss was \$18 billion. However, Hurricane Milton shortly after had a much larger proportion of losses covered by insurance—\$20 billion of the \$35 billion economic loss. There are peril, perception, and geographic reasons for the large differences in the respective protection gaps. Milton was more of a wind-driven event in Florida, which is traditionally associated with hurricanes and thus higher insurance take-up rates. Helene, on the other hand, was a flood-dominated event affecting areas such as western North Carolina, which has a low perception of flood risk and corresponding take-up rates.

In 2025, the Eaton and Palisades wildfires in California were significant loss-causing events, and of the \$53 billion to \$65 billion in economic loss, around 60%–70% was insured. In recent years, several U.S. insurers have scaled back or stopped writing coverage for wildfire in California. Many Californian homeowners were simply not able to find available insurance or became reliant on the California FAIR plan, which acts as an insurer of last resort, providing coverage to those unable to obtain it from traditional carriers. This supply issue is in part due to a historical law creating a high regulatory hurdle for larger changes to insurance premiums.

On July 24, 2025, the Verisk Wildfire model for the United States became the first catastrophe model to successfully complete an evaluation under the California Department of Insurance's new Pre-Application Required Information Determination (PRID) regulatory framework. This is a step toward closing the protection gap by the state, which rolled out regulation to allow the use of catastrophe modeling in ratemaking and thereby support the industry's ability to offer insurance more widely in January 2025.



The global modeled AAL from natural catastrophes previously discussed—\$152 billion—incorporates robust engineering and science that informs Verisk's view of risk. This section looks at how Verisk models account for the current built environment, examining exposure growth driven by new construction and inflationary effects on the building sector, coupled with urban expansion that places more properties at risk of exposure from natural catastrophes. It will also explore the science driving Verisk's hazard modeling forward, including both the observed and modeled drivers of increasing event frequency and how climate change is gradually but measurably shifting the distribution of certain atmospheric hazards.

# **Exposure growth**

Insured losses—and the modeled AAL—increase over time in part because of growth in exposure to natural catastrophes. Over the past five years (2020–2024), global property exposure in Verisk-modeled countries grew about 7% per year on average (Table 4), driven by both new construction and construction price increases. Since 2020, fast-rising global inflation significantly increased exposure values, which in turn helped spur increases in insured natural catastrophe losses. While construction price inflation has slowed recently, exposure growth continues to contribute to rising insured losses.

Changing exposure patterns and repair costs make it essential for insurers to regularly reassess their exposures, particularly in times of increased inflation and in areas that are most at risk from natural hazards. The models used for this task rely on accurate property characteristics to realistically project potential losses, with up-to-date replacement values playing a particularly large role in driving modeled losses.

To help the industry capture these changing risks, we annually update the Industry Exposure Databases for most modeled countries based on the Verisk Global Capital Stock Index (VGCSI). Verisk develops industry exposure indexes using the VGCSI to reflect changes in a country's total industry exposure. The index reflects country-level changes in physical asset values across all business lines.



Region	Annual Exposure Growth	Annual New Construction Activity	Annual Price Inflation
Asia	6.8%	3.7%	2.9%
Europe	8.2%	2.3%	5.8%
Latin America <sup>9</sup>	6.8%	2.9%	3.8%
North America <sup>10</sup>	6.9%	1.6%	5.3%
Oceania	8%	2.6%	5.2%
All exposed areas	7.3%	2.8%	4.4%

Note: Growth rates are based on each country's local currency. Annual exposure growth is nominal exposure growth and includes growth from new construction activity (in real terms) and price inflation. Annual figures are the average of the countries in each region and calculated as the compound annual growth rates from 2020 to 2024. Annual figures exclude Turkey, Lebanon, and Venezuela as each country is experiencing periods of hyperinflation, which skew results. Annual nominal exposure growth is 69% in Turkey, 151% in Lebanon, and 266% in Venezuela.

Table 4. Annual exposure growth by region (2020–2024) measured using the Verisk Global Capital Stock Index

Across modeled countries, exposure growth varies by region. Table 4 shows annual exposure growth by region over the past five years (2020–2024). On average, exposure growth ranged between 6.8% (Asia, Latin America) and 8.2% (Europe) per year. During this period, new construction increased the value of exposure by 2.8% annually, while prices increased 4.4% annually. Growth in construction activity ranged between 1.6% (North America) and 3.7% (Asia) per year, and price increases ranged between 2.9% (Asia) and 5.8% (Europe) per year.

In the United States, exposure growth was driven by residential construction costs outpacing overall inflation. According to Verisk's 360Value® Quarterly Reconstruction Cost Analysis, residential reconstruction costs grew 6.0% per year from 2020–2024, compared with 4.9% per year for overall consumer prices. In the past year, reconstruction costs increased 4.3%. While construction cost inflation has slowed from its 2021–2022 peak, even a 4.3% increase in exposure value from construction cost inflation alone would result in nearly a 46% increase in losses over 10 years.

# Rapid urban expansion

While exposure values typically grew 2% to 10% per year for most countries (Table 4), exposure growth within a country can vary due to population shifts and increased urbanization. The impact of urbanization and population growth on exposure levels varies by country. Today, more than half of the world's population lives in urban areas, many of which are highly exposed to one or more natural hazards. In fast-growing, developing countries, new cities continue to form while others expand outward. In high-income, developed countries, urbanization also contributes to rising exposure levels.

Mexico's experience highlights both the risks and opportunities of rapid urbanization. Nationally, exposure value in Mexico grew 7% per year since 2020; however, exposure is concentrated in urban areas such as Mexico City and coastal resort areas. Over the past several decades, many coastal areas, including Playa del Carmen and Monterrey, urbanized rapidly. Mexico's urban areas are vulnerable to earthquakes, tropical cyclones, and other natural catastrophes, and higher concentrations of exposure can lead to increased catastrophe losses.

In 2023, Hurricane Otis made landfall near Acapulco, Mexico, and actual (economic and insured) damage totaled an estimated \$12 billion to \$16 billion. This made it

Mexico's costliest tropical cyclone on record and among the most expensive natural catastrophes in the country's history (adjusted for inflation). Damage was significant in the densely populated Acapulco metro area, affecting 98% of homes, 80% of hotels, and more than 5,800 commercial establishments. This demonstrates both the concentrated risk and the substantial insurable value in these emerging urban areas.

#### Recognizing peril-specific exposure growth

In the United States, the number of houses destroyed by wildfires doubled from 1990 to 2020. Rising wildfire losses are partially driven by increased development over the past several decades in the wildland-urban interface (WUI)—or areas where houses and other development meet or intermingle with undeveloped natural areas. Between 1990 and 2020, the number of houses in the WUI increased 47%, with the fastest growth occurring in the fire-prone western U.S. (61%).

The 2025 Palisades and Eaton fires in California—as well as the 2017 and 2018 wildfire seasons—highlight wildfire risk in California, where the number of homes in the WUI increased by nearly 240,000 from 2010 to 2020. When wildfires expand into developed areas, they can extensively damage exposed property. Catastrophe models can provide insights into the disaster risks of wildfires in vulnerable areas. For example, the total insured losses from the Palisades and Eaton fires have a 35-year return period for California, and the affected areas include some of the highest property values in the United States.



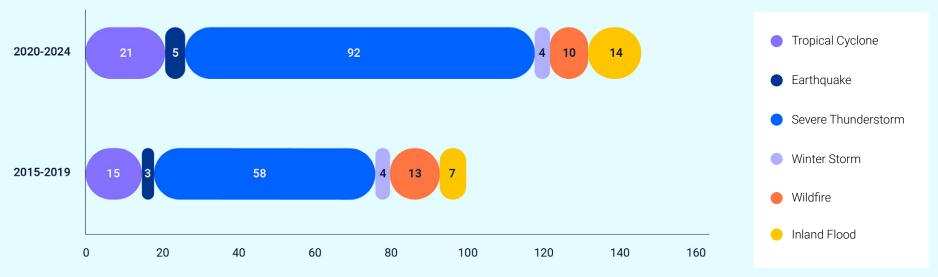


# increase in the contributions of frequency perils to the total modeled risk from 2025 over 2024

It's not yet clear whether regional environmental trends have specific causes. The amplitude and pattern of some regional trends align with expected end-of-the-century impacts from global warming. However, this amplitude is larger than expected by the emerging understanding of how greenhouse gases would eventually affect severe thunderstorms in the long term. Some of these trends may reflect inherent variability in the ocean and atmosphere that spans decades. For instance, regional trends in severe thunderstorm environments show no global consistency that would point to a common cause.

The share of risk from frequency perils is increasing primarily because recent activity offers new data and clarity about elevated risk in certain geographic corridors.

Verisk peril models reflect the state of the science from two perspectives: leveraging a variety of limited data sources and incorporating a process-level understanding of peril activity. This informs our view of near-present climate around the globe—that surprisingly persistent regional environmental factors drive elevated losses from frequency perils, thus complicating the discussion of how climate change affects trends in modeled catastrophe hazards.



Note: 2024 USD adjusted for inflation and exposure growth. Some severe thunderstorm and winter storm events may also include losses from inland flood.

Figure 4. Comparison of insured losses exceeding \$1 billion by peril between 2015–2019 and 2020–2024 (Source: Verisk, Aon, Swiss Re)

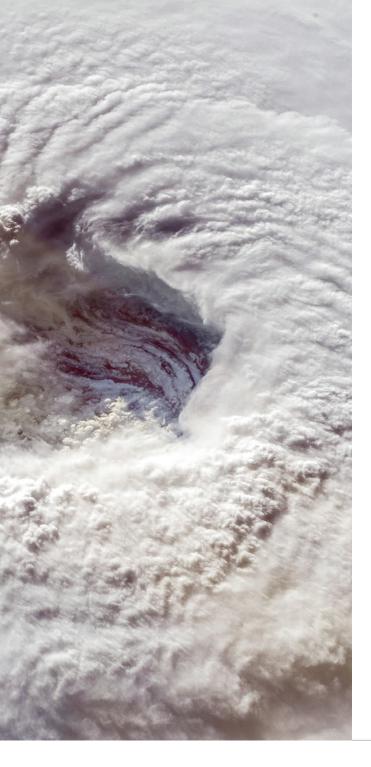
# Climate change in forward-looking modeling

It's important to distinguish between year-to-year variability in climate-related risks versus changes in risk due to long-term climate change driven by human activity. The insurance and reinsurance industry has long known that it must carefully consider the typical multiyear variation in hazard activity when managing risks arising from atmospheric perils (from hurricanes, wildfires, severe thunderstorms, winter storms, inland floods). Even without global warming, the stochastic nature of weather means some years will see below- or near-average hazard activity, and occasionally, the weather system will generate an especially intense tail event. Distributions of losses arising from this atmospheric variability depend on how built exposure intersects with the locations of peril events. Catastrophe risk models are designed specifically to estimate this inherent internal climate variability and the probabilistic, multiyear distribution of losses. These models have become essential for risk managers planning effective resilience strategies against the range of possible weather outcomes in any given year.

At the same time, climate change is slowly shifting the distribution of these atmospheric hazards over the long term. An understanding of the Earth system's underlying physics, joined with statistical tools capable of handling dynamic, evolving probability distributions in space and time, helps Verisk scientists to identify and quantify location-dependent climate change impacts across modeled perils. Verisk's carefully constructed atmospheric peril models represent the near-present climate, especially when it diverges from historical observations. The Verisk Wildfire model for the United States, for example, shows a markedly increased hazard relative to historical records in most, but not all, locations. This signal reflects how well-understood, large-scale warming and drying connect to the mechanisms underlying wildfire. Our near-present climate Wildfire model for the United States, based on this scientific understanding, estimates a return period of around 35 years for the combined Palisades and Eaton fires that devastated Los Angeles in January 2025. Risk managers using this climate-adjusted model were able to better prepare to absorb the financial shocks of those events.

Not all perils in all regions have increased the probability of loss-causing activity due to climate change. In some cases, climate change even decreases risk; for example, heavy snowfall is becoming less frequent in many locations as the world warms. Globally, however, the big-picture climate change signature is a net increase in property and casualty risk. We estimate about 1% of year-on-year increases in AAL are attributable to climate change. Such small shifts can easily get lost behind other sources of systematic loss increase discussed in this report, such as inflation and exposure growth. The random volatility from internal climate variability also dwarfs the small positive climate change signal. Still, insurers and reinsurers need climate-aware catastrophe modeling to account for the compounding long-term effects of climate change and plan more effectively for future resilience.





# Managing your global risk

Amid increasing losses driven by factors including exposure growth, rapid urban expansion, increasing event frequency, and climate change, organizations can take constructive steps to ensure they are well-prepared for future catastrophes. Their primary focus should comprise four key areas:



Deploy complete peril model suites for competitive advantage: Comprehensive modeling across tropical cyclone, earthquake, severe thunderstorm, winter storm, wildfire, and inland flood enables effective risk selection and pricing strategies that create sustainable competitive advantages.



Leverage accurate building characteristics for superior loss protection: Precise capture of construction, occupancy, and year-built attributes enables more accurate loss estimates and pricing strategies than relying on generalized assumptions.



Optimize geocoding precision for enhanced model performance: Ensure that as many properties as possible are accurately geocoded to represent their actual location within the models. Inland floods, severe thunderstorms, winter storms and wildfires are increasingly important drivers of loss and are particularly sensitive to a property's exact location.



Maintain current replacement values for accurate risk assessment: Dynamic replacement value management in high-inflation, high-risk markets enables accurate pricing and prevents unexpected loss emergence.

Outputs warrant much greater trust when complete data is run against the full suite of models, helping to avoid unpleasant surprises in the wake of any catastrophic event. These outputs serve as the currency for risk transfer and are increasingly important for organizations and communities across the globe to manage risk as conversations on resiliency become more detailed. Going beyond the standard model output, Verisk has also provided tools to help companies stress-test their portfolios to account for the impacts of long-term climate change or social inflation. Leveraging catastrophe models and purpose-built solutions—supported by data and methodologies that are well-validated, founded in science, and transparent—empowers the industry to face challenges head-on, providing stability and resilience to organizations and the communities they serve.



Verisk's global suite of catastrophe models, spanning more than 120 countries and territories, helps provide context for the losses the industry has experienced over the past few years. The models capture a range of both natural catastrophes, as reviewed in this report, and man-made perils, including terrorism, strikes, riots, civil commotion, and extreme casualty events. While actual annual insured losses over the past five years have been high, averaging \$132 billion, they should not be seen as outliers. The Verisk global AAL at \$152 billion represents the scale of potential loss for a given year. With this information, companies can prepare for large loss years and truly own their risk with confidence, so they can weather these challenging years without threatening their solvency.

As organizations continue to understand and manage these events, Verisk's models, used with Touchstone® and Touchstone Re™, and the EP curves they generate can provide the information companies need to benchmark their potential losses and confidently manage their catastrophe risk.

#### Copyright

Information in this document is subject to change without notice. No part of this document may be reproduced or transmitted in any form, for any purpose, without the express written permission of Verisk.

#### **Trademarks**

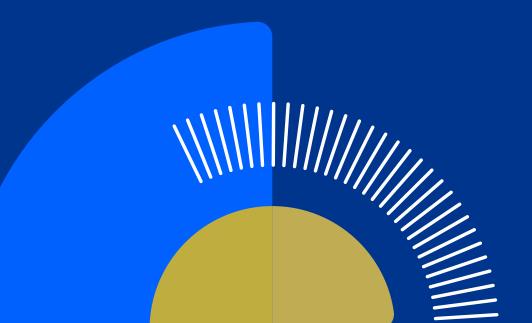
© 2025 Verisk Analytics, Inc. Verisk Analytics is a registered trademark and Verisk and the Verisk logo are trademarks of Insurance Services Office, Inc. AIR Worldwide and Touchstone are registered trademarks of AIR Worldwide Corporation. AIR Worldwide is a Verisk Analytics (Nasdaq:VRSK) business. All other product or corporate names are trademarks or registered trademarks of their respective companies.

#### **Contact Information**

If you have any questions regarding this document, contact:

Verisk Lafayette City Center 2 Avenue de Lafayette Boston, MA 02111 USA

Tel: (617) 267-6645 Fax: (617) 267-8284





#### **Endnotes**

Modeled losses from Multi-Peril Crop Insurance models for Canada, China, India, and the U.S. are not included.

Loss figures from prior years have not been trended to the current year and, instead, represent the loss figures generated by Verisk models at the time of the analysis using the set of models available at that time.

Aon. "Climate and Catastrophe Insight" Aon, 2025, https://assets.aon.com/-/media/files/aon/reports/2025/2025-climate-catastrophe-insight.pdf Accessed 4 Aug 2025.

Aon. "Q1 Global Catastrophe Recap." Aon, April 2025, https://assets.aon.com/-/media/files/aon/reports/2025/q1-2025-global-catastrophe-recap.pdf Accessed 4 Aug 2025.

Gallagher Re. "Q1 2025 Natural Catastrophe and Climate Report Preliminary Overview" Gallagher Re, April 2025, https://www.ajg.com/gallagherre/-/media/files/gallagher/gallagher/pnews-and-insights/2025/april/gallagherre-natural-catastrophe-and-climate-report-q1-2025.pdf Accessed 4 Aug 2025.

California FAIR Plan Association. "About the Califorina FAIR Plan." California FAIR Plan, https://www.cfpnet.com/about-fair-plan/. Accessed 4 Aug 2025.

Verisk provides global industry exposure indexes for most modeled countries and areas, with some exceptions. Exposure indexes for the United States and China are available on the Client Portal (client login required). Verisk does not provide indexes for Albania, Macedonia, and Serbia because they are outside the scope of the VGCSI.

Latin America includes Caribbean, Central American and South America.

North America includes Canada, the United States, Bermuda, and Mexico.

Annual figures exclude Venezuela and Lebanon as both countries are experiencing periods of hyperinflation, which skew results.

U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: All Items in U.S. City Average (CPIAUCSL) (seasonally adjusted year-end 2020-2024), retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/CPIAUCSL. Accessed 6 May 2025.

Reinhart, Brad J. and Reinhart, Amanda, "Hurricane Otis (EP182023) 22–25 October 2023." National Hurricane Center Tropical Cyclone Report, National Hurricane Center, 2 April 2024, https://www.nhc.noaa.gov/data/tcr/EP182023\_Otis.pdf. Accessed 16 May 2025.

Radeloff, Volker C. et al. "Rising wildfire risk to houses in the United States, especially in grasslands and shrublands." Science, 9 Nov 2023, https://www.science.org/doi/10.1126/science. ade9223. Accessed 4 Aug 2025.

Verisk analysis of The University of Wisconsin-Madison Silvis Lab Wildland-Urban Interface (WUI) Change 1990–2020 dataset, https://silvis.forest.wisc.edu/data/wui-change/. Accessed 4 Aug 2025.

U.S. MPCI removed from the 2024 global modeled AAL number for accurate comparison.