MOODY'S

EXECUTIVE SUMMARY

MOODY'S RMS™ EVENT RESPONSE REPORT

2025 catastrophe review

What's inside

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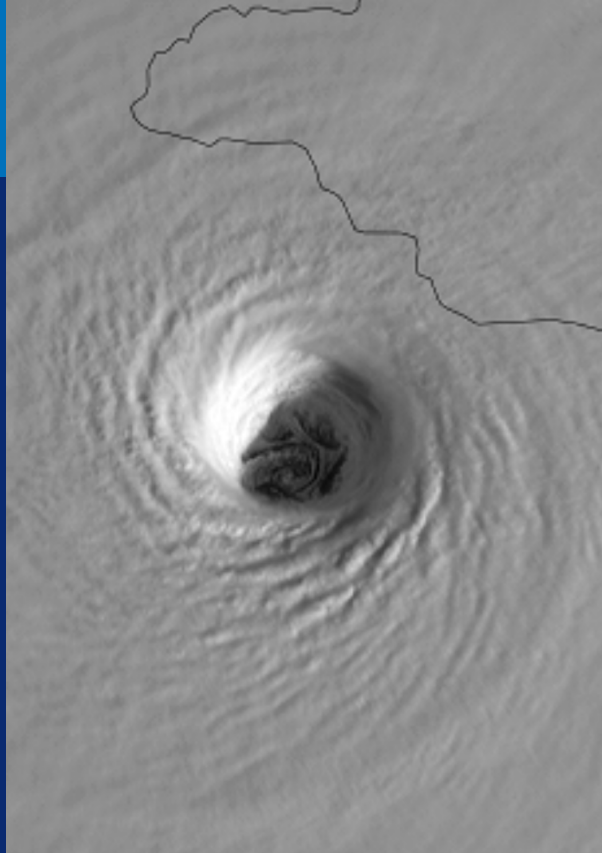

Hurricane Melissa
Source: NOAA

ON THE COVER:
Malibu Wildfire, Pacific Palisades, Woodley Fire, California
Source: Neil/stock.adobe.com

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Customers can download the full Moody's RMS Event Response 2025 catastrophe review report from the Support Center.

This full report also contains details and insights into US severe convective storm losses, Hurricane Melissa and the 2025 North Atlantic hurricane season, and tropical cyclone activity around the rest of the world, in addition to how we have developed an advanced and automated artificial intelligence and machine learning tool to improve floodwater depth and location estimation.

Wildfires and severe convective storms dominate global losses

Malibu Wildfire, Pacific Palisades, Woodley Fire, California
Source: Neil/stock.adobe.com

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The global catastrophes of 2025 caused approximately US$224 billion in economic losses and around US$108 billion or US$107 billion in insured losses, according to market estimates from Munich Re and Swiss Re. This is the sixth consecutive year that catastrophe losses have surpassed US$100 billion although 2025's total is approximately 25% lower than 2024's record insured losses.

An overwhelming majority (more than 80%) of global insured loss in 2025 originated in the US, driven primarily by the Los Angeles wildfires and severe convective storm outbreaks throughout the first half of the year.

Catastrophes of 2025

The Los Angeles wildfires were the year's costliest event. From January 7, 2025–January 31, 2025, multiple destructive wildfires spread across the greater Los Angeles metropolitan area. The two largest wildfires, the Palisades and Eaton Fires, were the second- and third-most damaging wildfires in California's history, respectively, resulting in the destruction of over 18,000 structures and claiming the lives of 30 people. By the time the two fires were fully contained, the fires had burned more than 37,000 acres (15,000 hectares). Moody's RMS Event Response estimated that the insured losses from the Palisades and Eaton Fires in Southern California will range between US$20 billion and US$30 billion.

"The two largest wildfires, the Palisades and Eaton Fires, were the second- and third-most damaging wildfires in California's history, respectively, resulting in the destruction of over 18,000 structures and claiming the lives of 30 people."

Malibu Wildfire, Pacific Palisades, Woodley Fire, California

Source: Neil/stock.adobe.com

The wildfires were driven by a trifecta of conditions: consecutive wet winters that fueled vegetation growth followed by a severe drought and an intense Santa Ana wind event that fanned the flames into urban conflagrations. The wildfires underscored the growing interplay of natural factors, urban development, and human activity in shaping wildfire risk as well as the urgent need for adaptive risk management strategies.

Post-event reconnaissance conducted by Moody's RMS Event Response teams revealed powerful insights into fire dynamics and resilience measures. Observations highlighted how urban features like irrigated cemeteries, defensible ridgelines, and fire-resistant structures served as critical firebreaks, often sparing entire neighborhoods. Conversely, vulnerabilities such as ember accumulators, connected fuels, and high-density building layouts amplified the destruction. The role of smoke damage, which is often overlooked, was another stark lesson, with pervasive smoke rendering many untouched homes uninhabitable. These findings validated advanced Moody's RMS Event Response wildfire modeling assumptions and reinforced the importance of incorporating mitigation measures into both urban planning and insurance frameworks.

The market impacts of these fires have been profound. With more than 1 million policies nonrenewed in recent years, reliance on the state-backed California FAIR Plan has surged, which has seen its exposure grow significantly, including by over 50% in Los Angeles County alone between 2024 and 2025. Regulatory reforms, such as the approval of catastrophe models for ratemaking, represent a turning point and will allow insurers to price risk more accurately and incentivize resilience measures.

The Moody's RMS US Wildfire HD Model has been reviewed by the California Department of Insurance and certified for rate filing for our customers. This model encompasses over 60 million events with 100,000 years of simulations, covering the entire US and Hawaii. It incorporates a state-of-the-art solution for modeling urban configurations that accurately captures the characteristics of the Los Angeles fires.

The January 2025 wildfires serve as a pivotal case study in the critical need for collaboration among insurers, policymakers, and communities to build sustainable, equitable solutions for managing wildfire risk in an increasingly volatile future.

Elsewhere in the US, 2025 marked the third consecutive year in which severe convective storm losses exceeded $45 billion and cemented the peril's growing dominance in the US insurance landscape. While 2025 saw fewer multibillion-dollar outbreaks compared with the record-setting years of 2023 and 2024, it delivered the largest single loss event of the three: a March outbreak that caused US$8 billion–US$10 billion in damages across 26 states. Tornado activity was particularly notable, especially in the first half of the year, with more than 1,500 reports, including the first EF-5 tornado in the US in 12 years. These statistics underscore the increasing frequency, intensity, and costliness of severe convective storm events, which are no longer "secondary perils" but primary drivers of loss for insurers.

Changes to the built environment, rising repair costs, and social inflation have collectively transformed US$45 billion in annual loss from an anomaly into an expectation. Events such as the March outbreak and a deadly May tornado sequence in the Midwest demonstrated the peril's regional clustering and widespread impacts as well as the growing exposure due to urban sprawl.

In response to these challenges and risks, we released our Moody's RMS US Severe Convective Storm HD Models in late 2025, which integrate high-resolution, physics-based hazard simulations with the largest-ever claims-calibrated vulnerability dataset that captures over US$55 billion in industry claims. Enhanced financial modeling helps insurers differentiate between scenarios of minor damage and total loss. By leveraging these tools, insurers can better manage the growing volatility of severe convective storm events, optimize pricing strategies, and foster resilience in a rapidly changing risk landscape. The 2025 season serves as both a stark reminder of the peril's escalating costs and a call to action for the adoption of cutting-edge science and technology in risk management.

While the North Atlantic produced its third consecutive above-normal season and the ninth above-normal season in the past 10 years, the US did not experience a landfalling hurricane for the first time since 2015. That will be of great relief to the insurance industry following multiple years of multibillion-dollar losses.

The season's standout event was Hurricane Melissa, which made landfall in southwestern Jamaica in late October as a Category 5 major hurricane. It broke numerous records, including becoming the strongest and most intense hurricane to make landfall in Jamaica since recordkeeping began in 1851 as well as the joint-second-strongest and third-most-intense hurricane anywhere in the North Atlantic basin on record. Melissa left Jamaica devastated, particularly in western areas such as Westmoreland, St. Elizabeth, and Manchester Parishes. Moody's RMS Event Response estimated insured losses from Hurricane Melissa could range between US$3 billion and US$5 billion, with economic losses in Jamaica from the event potentially exceeding the island's GDP, which was approximately US$20 billion in 2024.

"The US did not experience a landfalling hurricane for the first time since 2015. That will be of great relief to the insurance industry following multiple years of multibillion-dollar losses."

The South China Sea was the focus of typhoon activity in 2025 with 15 of the 27 named storms tracking through the region. Nine named storms made landfall in both China and the Philippines, with both countries experiencing consecutive damaging storms at points.

Countries in South and Southeast Asia also found themselves in the firm grip of a series of catastrophic typhoon, cyclone, and flood events in late 2025. Relentless rainfall events ranging from Sri Lanka to southern Thailand, central Vietnam, and western Malaysia through to parts of the Philippines and western Indonesia triggered widespread flooding and landslides. Southeast Asia is no stranger to widespread flood events, but economic flood losses over the past 10 years have not exceeded US$1 billion–US$2 billion annually. Only the 2011 Thailand floods were of a larger scale, with US$45 billion economic losses reported at the time. But 2025's floods provide a wake-up call to the vulnerability of global technology supply chains and to the insurance industry's exposure to natural catastrophe losses in the region.

In response to the growing number of significant flood events globally and to showcase our ongoing commitment to improve our efficiency and effectiveness in responding to major flood events, Moody's RMS Event Response has developed an advanced and automated artificial intelligence and machine learning tool to improve floodwater depth and location estimation from remote and virtual reconnaissance aerial imagery as well as high-water-mark photography. Our work and findings are spotlighted in this year's report.

The year also saw a major Amazon Web Services outage that triggered a cascade of failures across interdependent cloud services, significantly disrupting a large portion of the global internet. Many organizations were affected, which spanned critical sectors including financial services, government agencies, retail and e-commerce, transportation, and education. Although full restoration of services occurred within a day, the event underscored the systemic risk of cloud dependency and the impact of deeply interconnected service failures within cloud platforms. Accidental cloud outages have historically occurred and are expected to persist in the future; however, the critical priority is to accurately represent this risk by developing a comprehensive understanding of the intricate architecture of cloud systems, the causal relationship between proximate outages and cascading failures, the differentiation between cloud service providers and user downtime and recovery periods, and the implications of cloud service providers' adoption patterns and usage behaviors.

In total, the Moody's RMS Event Response team reported on 106 events in 2025, a similar number to 2024, and released accumulation and modeling products and files for 29 events — including but not limited to the Los Angeles wildfires, seven US severe convective storm outbreaks, and Hurricane Melissa — demonstrating our commitment to real-time event response and supporting our industry during the year's most significant events.

Moody's RMS Event Response continues to provide timely responses and solutions to the insurance industry during its most critical moments. This report contains specialist insights about the key events of 2025 and highlights some of the factors brought to light by the year's events. In the weeks and months ahead, we will continue to investigate and work with customers ahead of incorporating our learnings into future model updates.

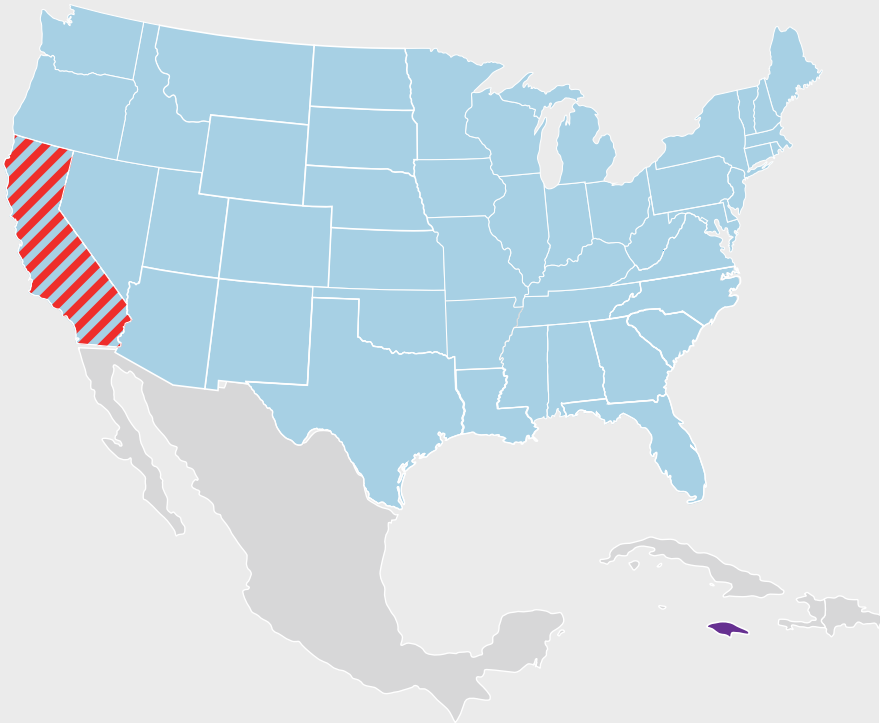
Major event loss estimates of 2025

United States

Southern California wildfires:
US$20 billion–US$30 billion
Moody's RMS Event Response estimate

Severe convective storms:
>US$45 billion
Market estimate

Hurricane Melissa:
US$3 billion–US$5 billion
Moody's RMS Event Response estimate



The catastrophe year: 2025

The Palisades fire burns fiercely during a powerful windstorm, spreading devastation across the west side of Los Angeles, California.
Source: TaufikJahan/stock.adobe.com

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Through 2025, people around the globe felt the influence of a warmer world. This influence includes trends that we first forecast 10 years ago.

One of the perils that we expected to show a strong climate signature was wildfire. In particular, the combination of wetter winters producing foliage followed by extended heat wave and drought summers creates the fuel for fires. In California, add in an outbreak of hot dry Santa Ana or Diablo easterly winds, and, should a fire start, it could soon be out of control, with the fire front moving too fast to be contained.

This was exactly the situation prevailing over the greater Los Angeles area at the start of January 2025. There was an exceptionally wet winter season between December 2022 and April 2023 followed by an extended drought at the end of 2024, with a delayed start to the winter wet season several weeks into the new year.

The Palisades Fire initiated under strong Santa Ana winds on the evening of January 7, 2025; consumed 6,837 structures; and damaged a further 1,017 in Pacific Palisades and Malibu. Also starting on the evening of January 7, the Eaton Fire destroyed 9,418 structures and damaged 1,073 in Altadena and Pasadena. These fires were the second- and third- most destructive in California's history.

Having two large fires burning simultaneously inevitably stretches resources, reducing the potential to limit fire spread.

"Through 2025, people around the globe felt the influence of a warmer world. This influence includes trends that we first forecast 10 years ago."

House burning in the Palisades fire
Source: GrantSmithCamera/stock.adobe.com

Alison Cullen, presenting at the Society for Risk Analysis conference in New Orleans, identified that large simultaneous fires are becoming more common throughout the continental US. Logging all major fires in the lower 48 states and comparing 1984–99 with 2000–15, she found "a significant increase in the level of simultaneity in the second time period."

In the Southwest, there were only two incidents of wildfires that extended over more than 50,000 acres during the first time period, but then 34 separate fires of that size burned in the following 15 years, including an instance in which five large fires blazed simultaneously in April and May 2011.

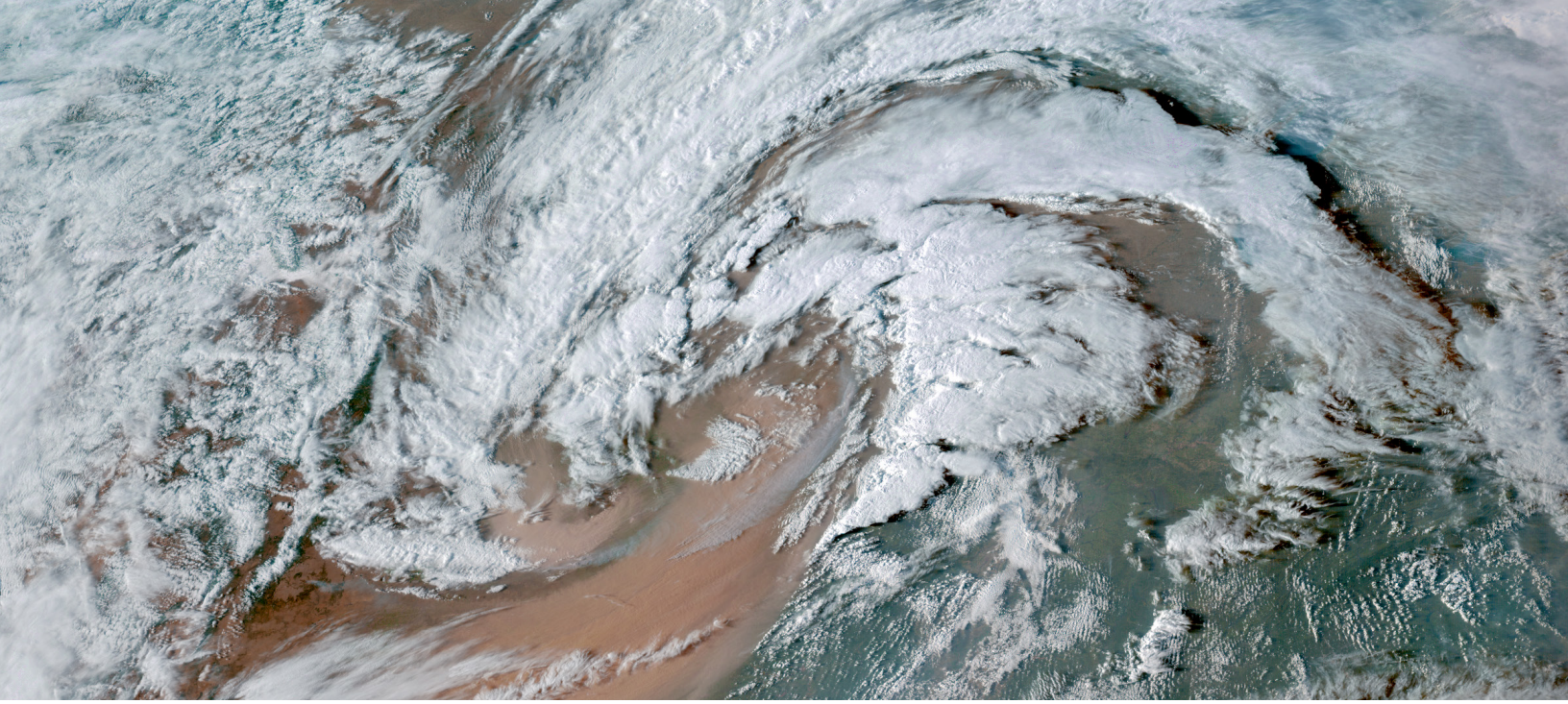
The federal government's latest National Climate Assessment, released in November 2023, found that wildfires are growing in frequency, intensity, extent, and duration. Since 1984, fires in the West have burned more than twice the area expected under the previous climate regime.

For Moody's, a key feature of managing wildfire risk has been to develop models that can be used to price fire (re) insurance as well as to demonstrate and measure the implications of mitigative actions on property risk costs. We designed the models to answer questions such as the following: What is the underlying trend in losses brought by ocean warming? How would risk cost be affected by burying cables to harden the transmission and distribution system? What if power was turned off when high winds were forecast? What would be the local risk reduction from applying fire construction codes; increasing property separation; replacing shingles with fire-resistant roofing materials; and applying more stringent vegetation management including wider separation between the property, trees, and brush?

Because the incidence of fire can readily lead to many instances of 100% loss, if the probability of such incidence can be shown to be greater than 1% per year, we can easily get into situations where the risk cost makes the property uninsurable.

Another confident climate forecast concerns more intense rainfall accompanying higher atmospheric temperatures. In December 2025, it was a persistent atmospheric river bringing 250 mm of rain to the Pacific Northwest. In early July 2025, flash flooding falling on the coastal catchment of the Guadelupe River in Texas raised the water level 8 meters in an hour and caused 135 deaths, including many children. The fatalities could not be blamed on climate but were a consequence of poor risk management. The rainstorm occurred at night, and warnings of flooding failed to be transmitted to those at risk; sleeping facilities for children staying with relatives or attending a Christian girls camp had also been located too close to the river.

For North Atlantic hurricanes, the forecast over the last decade has been to expect more intense storms even while the number of hurricanes may be relatively unchanged. It appears this is what is already happening.



Powerful mid-latitude cyclone kicks up dust across the Plains while triggering destructive tornadoes in the Midwest and South
Source: NOAA

From 1950–1999, there were two to four Category 5 major hurricanes per decade, with an average just under three. In the decades starting with 2000, this Category 5 activity increased. Since 2000, there were eight Category 5 hurricanes in the first decade, six in the second decade, and in the six years since 2020 there have already been eight — more than twice the pre-2000 average. For example, in the summer of 2025, although there were only four major hurricanes, three of them intensified to Category 5, one of which, Melissa, made landfall as a Category 5 major hurricane in southern Jamaica.

For the decade 2011–2019, it seemed as if Category 5 intensity at landfall had increased even more than Category 5 in the basin. In 2017, Irma sustained Category 5 landfall in four locations (Barbuda, St Martin, Virgin Gorda, and Cuba), while Maria made landfall as a Category 5 in Dominica. In 2018, Michael was a Category 5 at landfall in Panama City, Florida, and 2019 saw Dorian landfall as a Category 5 in Abaco, Bahamas. There were six Category 5 hurricanes in the 2010s and either seven or four landfalls depending on how specialists account for Irma.

So far, Category 5 landfall does not appear to be a supplemental trend. For the first decade of the new millennium, although there were seven Category 5 hurricanes, only two sustained that intensity to landfall: Ivan (2004) in western Cuba and Dean (2007) in the Yucatán.

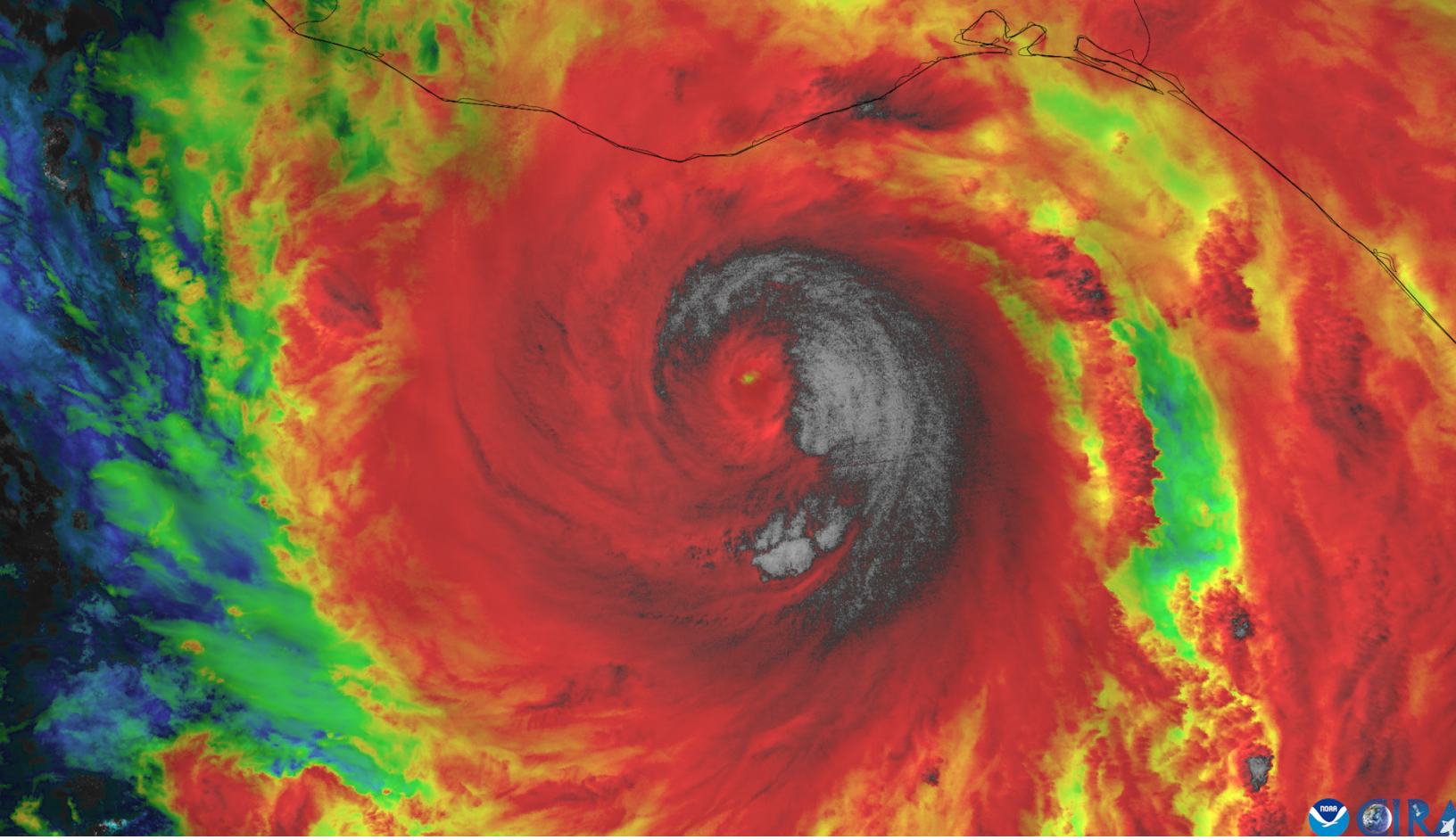
From the eight Category 5 hurricanes since 2020, we have observed two Category 5 hurricane landfalls: Otis (2023) in Acapulco, Mexico, and Melissa (2025) in Jamaica.

Concerning the 2025 season, hurricane activity sputtered, shutting down for periods. The most notable feature of the North Atlantic hurricane season was that while there were only four major hurricanes (Category 3– Category 5), three of those four intensified into a Category 5. There had never previously been such a year when 75% of major storms reached Category 5 status (and only one year, 2005, with more Category 5 hurricanes in the basin). The pronounced increase in Category 5 activities is part of a trend that can be traced back 25 years and is most likely related to the warming of ocean surface temperatures.

The evidence for an increase in the number of Category 5 storms has particular implications for investors in parametric hurricane catastrophe bonds, with central pressure triggers. As with wildfire, unless the ongoing trends in catastrophe occurrence are included in the risk analysis, it is likely that investors will underestimate the risk.

On the other side of the globe, we also saw some exceptional behavior from tropical cyclones, including the simultaneous generation of highly damaging tropical cyclones at very low latitudes.

Theoretically, tropical cyclones cannot occur at the equator where the Coriolis force reduces to zero and, in spanning the equator, reverses. However, while there is a band of low latitudes around the Earth in which tropical cyclones generally stay away, there is no wall determining the low latitude limit at which tropical cyclones can form. Ultimately it comes down to probabilities of occurrence reducing the closer one gets to the equator, and, given the



Hurricane Erick from polar-orbiting satellites
Source: NOAA

spatial scale of a cyclonic circulation, reaching a limit of perhaps 3 degrees to 4 degrees north or south.

For such low-latitude storms, we would expect that with limited intensification, wind will not be much of a problem, whereas slow forward speeds will tend to amplify rainfall totals.

In late November 2025, we saw an unprecedented instance of twin low-latitude storms forming in the North Indian Ocean.

The origins of Cyclone Ditwah can be found in a weak circulation noted offshore to the southwest of Sri Lanka (around 5 degrees north latitude) on November 24, 2025. Within days, nurtured by exceptionally warm seas (28°C–30°C) and low wind shear, the circulation had become cyclonic and on November 27, now at 6.9 degrees north, was named Ditwah.

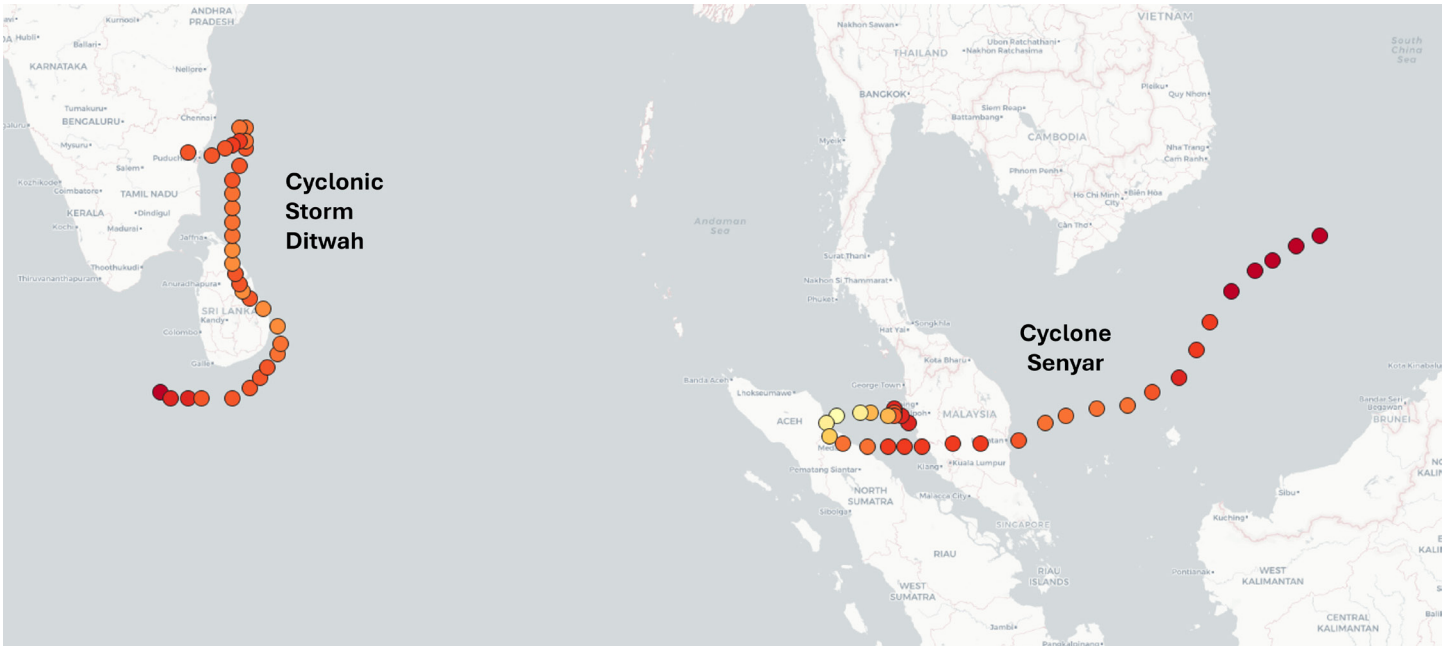
The storm's formation latitude was historically rare but not unprecedented. In 2004, also at the end of November, Cyclone Agni crossed over the equator to the southwest of India, with its center reaching 0.5 degrees south, before returning and intensifying to continue its path as a northern hemisphere storm, eventually reaching the coast of Somalia.

Ditwah reached its peak intensity as a cyclonic storm with sustained winds of 75 km/hr while on a slow northwestward track. On November 28, Ditwah made landfall near Trincomalee on Sri Lanka's eastern coast. It then proceeded slowly across the island at 5 km/hr–10 km/hr, with heavy rainfall sustained for many hours. After emerging into the Bay of Bengal, a weakened Ditwah eventually curved along India's Coromandel Coast before dissipating over land by December 3.

In Sri Lanka, more than 1.4 million people were affected across all 25 districts. Nearly 233,000 people were displaced with 565 houses destroyed and over 20,000 partially damaged. In rural areas, the storm brought heavy flooding and landslides, killing more than 600 people and causing over US$1.6 billion of damage.

Simultaneously, Tropical Storm Senyar began as a circulation in the Malacca Strait on November 24, 2025. This rotation migrated west and formed into a tropical storm at a similar latitude to Ditwah albeit about 20 degrees of longitude further west.

By November 26, the India Meteorological Department upgraded it to a cyclonic storm and named it Senyar, with the storm intensified at 3.8 degrees north latitude



Tracks of Cyclonic Storm Ditwah and Cylone Senyar
Source: data from ATCF, map from Moody's

with peak sustained winds of 75 km/hr–85 km/hr and a central pressure of 1,000 hPa. (Only one storm is known previously to have formed at such low latitude in the South China Sea: Cyclone Vamei formed at 1.4 degrees north in 2001.)

Senyar moved west and made landfall in Aceh Province on November 26; it then slowly doubled back around the coast of Sumatra, crossing the Malacca Strait before heading across Malaysia and dissipating in the South China Sea. Its slow forward speed of 5 km/hr–10 km/hr meant the storm brought extreme rainfall totals and catastrophic flooding. Hardest hit was northern Sumatra where 2.6 million people were affected; there were 753 fatalities, and many villages and roads were devastated by landslides. In Aceh Province, the total damage reportedly cost US$4 billion. The flooding also impacted the southern Thailand province of Songkhla, with 335 mm of rain in 24 hours in the city of Hat Yai, leading to streets inundated by 2 meters of water and resulting in 300 deaths and US$15.5 billion in economic damage.

The Ditwah floods in Sri Lanka and the Senyar floods in Aceh were the worst disasters in their respective territories since the 2004 Indian Ocean tsunami. However, the actual locations of destruction were different. In Sri Lanka, the human impact, including fatalities, was most heavily concentrated in the hill country communities of central and south-central districts. In 2004, the tsunami flood damage was all coastal.

The simultaneous formation of these twin storms is linked with warmer ocean temperatures and La Niña conditions. If tropical cyclones form close to the equator, with snail's pace forward speeds, one can expect similar regional floods, which could also occur along South America's northern coast.

At the same time, there was a third tropical cyclone in the wider region, albeit farther east. Cyclone Koto developed off the eastern coast of Mindanao, Philippines, on November 23 and then tracked westward across the islands before emerging over the South China Sea, where it strengthened into a typhoon. The storm became virtually stationary off the coast of Vietnam before dissipating on December 3.

However, the catastrophe year 2025 was not entirely dominated by climate.

In the middle of the day on July 30, 2025, there was the largest earthquake worldwide by magnitude since 2011. This giant Mw8.8 earthquake was located on the subduction zone plate boundary off the eastern coast of the Kamchatka Peninsula in far-eastern Russia. The earthquake was 120 km distant from the only major port town in the region, Petropavlovsk. The fault displacement was on the subduction zone plate boundary and involved a rupture about 300 km in length. The plate boundary is moving at 83 mm per year. The last similar (but larger) earthquake on the same plate boundary was in 1952, since when the fault could have accumulated 6.3 meters of displacement. Although there was an accompanying tsunami, the combination of earthquake size and distance from major coastal settlements meant the waves caused little damage.

Dire situation unfolds as wildfires rage in Southern California
Source: NASA

Wildfire

Reflections on Southern California's January 2025 wildfires

Palisades and Eaton Fires continue to burn near LA
Source: NOAA

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From January 7–31, 2025, multiple destructive wildfires spread across the greater Los Angeles metropolitan area. The two largest fires, the Palisades Fire and the Eaton Fire, were the second- and third-most damaging wildfires in California's history, respectively, resulting in the destruction of more than 18,000 structures and claiming the lives of 30 people.

By the time the two fires were fully contained on January 31, they had burned an estimated 37,728 acres (15,267 hectares). On January 17, Moody's RMS Event Response estimated that the insured losses from the Palisades and Eaton Fires in Southern California would range between US$20 billion and US$30 billion.

Trifecta of conditions sets the stage for fire weather

Conditions in early January 2025 in Southern California set the stage for an explosive fire event. The 2022–23 wet season (October to April) had been among the top-10 wettest on record for much of the region, and the following winter of 2023–24 also saw above-average rainfall across much of Southern California. These back-to-back above-average wet seasons had allowed vegetation across the region to grow and flourish.

A shift toward La Niña conditions in late 2024 brought dry conditions to Southern California and a very dry start to the wet season. Between October 1, 2024, and January 7, 2025, downtown Los Angeles had only received 0.16 in (4.1 mm) of rainfall, which was just 4% of the season-to-date normal.

"This pattern of consecutive wet winters followed by extreme heat and record dryness resulted in an excess of flammable fuel, which primed the landscape for devastating firestorms."

By January 7, 2025, about 61% of California was experiencing some level of drought conditions, and the entirety of Los Angeles County was under moderate drought (D1) or severe drought (D2) conditions. The western half of the county closest to the coast, where the Palisades and Eaton Fires would later ignite, was under D2 severe drought conditions. These dry conditions, along with near-record high temperatures in the summer and fall of 2024, dried out the abundant vegetation across Southern California. This pattern of consecutive wet winters followed by extreme heat and record dryness resulted in an excess of flammable fuel, which primed the landscape for devastating firestorms.

At the start of 2025, as drought conditions had reached their peak, a strong high-pressure system over the Great Basin region created a steep northerly pressure gradient across Southern California, which triggered a powerful Santa Ana wind event across the region. Santa Ana winds are a well-known meteorological phenomenon that occur when high-pressure systems develop over the interior western US. The clockwise circulation of such a high-pressure system pushes air westward toward the lower-pressure areas along the California coast. As these winds flow over the Sierra Nevada and Santa Ana mountains, the sinking air becomes compressed, heats up, and its relative humidity drops. This dry, hot air accelerates as it descends over the mountains and is funneled through canyons, producing the strong, gusty katabatic winds characteristic of Santa Ana events. These winds are notorious for fueling intense wildfires, particularly in the Los Angeles Basin, where they create ideal conditions for rapid fire spread.

Warnings issued

On January 2, the National Interagency Fire Center (NIFC) warned that conditions in Southern California fostered above-normal significant fire potential, and the National Weather Service (NWS) issued a Fire Weather Watch for the region due to the potential for intense fires.

Between January 3 and 23, the Storm Prediction Center (SPC) warned of multiple episodes of critical and extremely critical risk for fire weather across Southern California. On January 6, 2025, the NWS issued a rare late-season red flag warning, which cautioned about strong and damaging winds with dangerous fire weather conditions. Strong Santa Ana wind gusts were forecast to reach 60 mph to 80 mph (97 km/hr to 129 km/hr) across Los Angeles and Ventura Counties, with ridgetops gusts up to 90 mph (144 km/hr). The following day, on January 7, the

“Driven by the worsening Santa Ana conditions, both wildfires had become a conflagration and spread rapidly. Firefighters reported flying embers, which were setting structures on fire nearly 1 mi (1.6 km) away.”

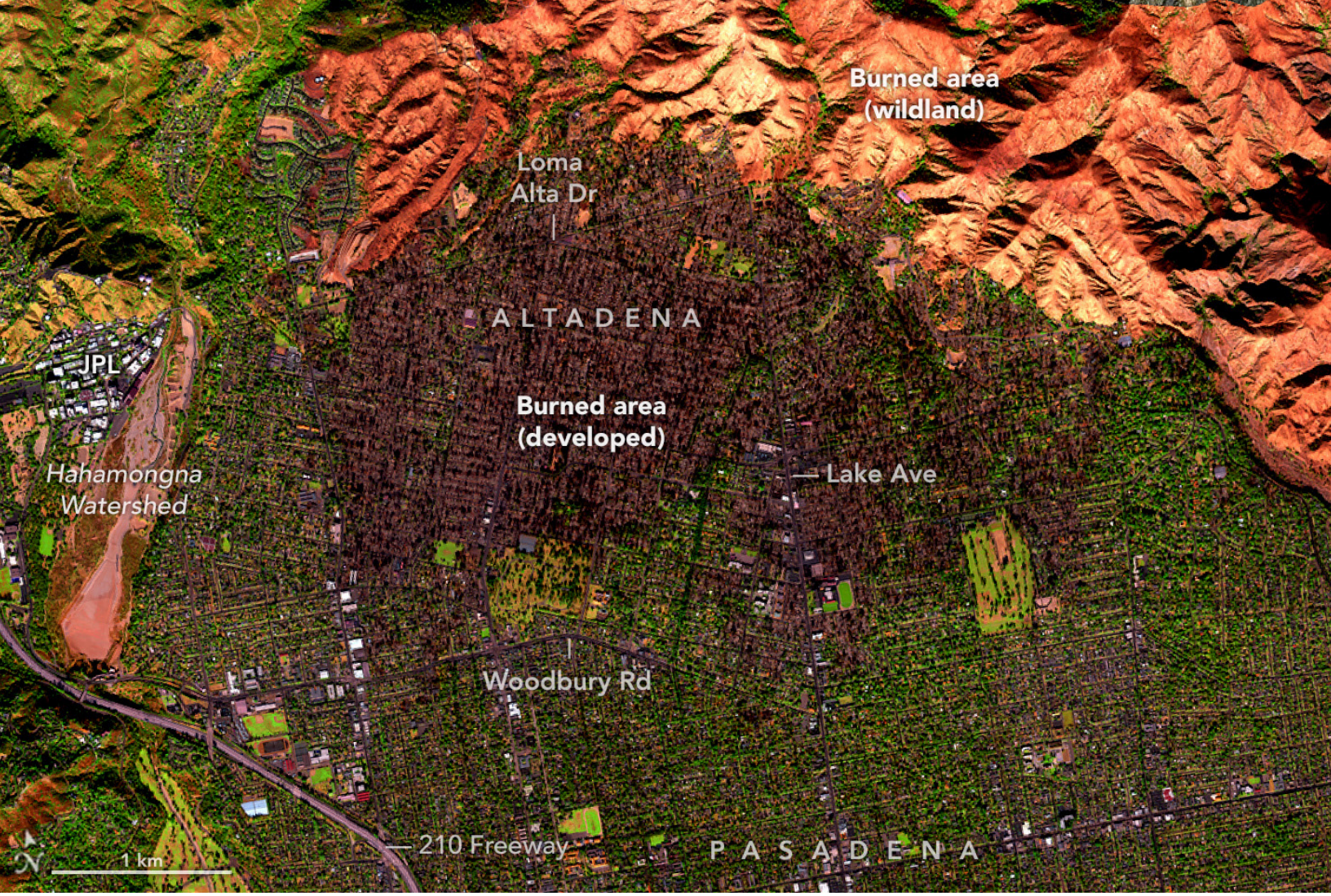
NWS issued a “particularly dangerous situation” red flag warning and emphasized the increased risk for the rapid spread of extreme fire behavior due to life-threatening and destructive windstorm conditions.

Fires ignite

The Palisades Fire was first reported on the morning of January 7 near the Pacific Palisades neighborhood in Los Angeles. In just 90 minutes, it had quickly grown and consumed over 200 acres (81 hectares) and engulfed dozens of structures and vehicles, with the fire active on both sides of Palisades Drive. Evacuation orders were issued in effect down to the Pacific Coast Highway and later expanded to nearby areas. By mid-afternoon, the wildfire had grown sixfold to 1,262 acres (511 hectares) and become uncontrollable.

Investigators later explored a possible link to the Lachman Fire, which had ignited on New Year’s Eve in an area near to where the Palisades Fire began from the careless setting off of fireworks near a popular hiking trail; the Lachman Fire was limited to 8 acres (3 hectares), did not destroy any structures, and was extinguished on New Year’s Day. An official cause of the Palisades Fire was not determined, but on October 8, federal authorities charged an individual with three felony counts of arson related to the Lachman Fire that reignited days later to become the Palisades Fire.

In the evening of January 7, a brush fire in the Altadena region of Los Angeles on the hillside above Eaton Canyon Wash was first reported. Evacuations commenced in Altadena as the Eaton Fire spread quickly into the evening and overnight.



Eaton Fire leaves California landscape charred
Source: NASA

In the early hours of January 8, the NWS reported that the Santa Ana event could become Southern California's strongest wind event of 2025, particularly in the valleys surrounding Los Angeles. Wind gusts between 70 mph and 100 mph (113 km/hr and 161 km/hr) were reported around the area. High winds inhibited aerial fire containment efforts as strong gusts grounded firefighting aircraft, which hindered efforts to manage the fires' spread.

Driven by the worsening Santa Ana conditions, both wildfires had become a conflagration and spread rapidly. Firefighters reported flying embers, which were setting structures on fire nearly 1 mi (1.6 km) away.

By midday on January 8, the Eaton Fire had burned through 10,600 acres (17,059 hectares) of residential communities and was 0% contained; entire neighborhoods had already been razed to the ground. Across the county, the Palisades Fire had burned 14,500 acres (23,335 hectares) in one day as it moved through the urban areas of Pacific Palisades, Topanga Beach, Big Rock, Las Flores, and eastern Malibu.

Numerous firefighting teams from across California continued to work nonstop on containing and extinguishing the wildfires in the days that followed. By January 9, the Eaton Fire had burned 14,000 acres (22,530 hectares), and by January 12, the Palisades Fire had burned 23,000 acres (37,015 hectares).

At the peak of the firefighting efforts, crews from across the western US, Mexico, Canada, and across the world combated the blazes. Firefighters continued to extinguish hot spots around smoldering structures, battled containment lines, and fought ongoing fire spread in the Eaton Fire's inaccessible canyons. Calmer conditions over the following week reduced fire activity and firefighters made good progress in securing containment lines; fire activity was limited to smoldering, creeping, and rollouts in heavy fuels.

The prolonged Santa Ana wind event that drove the destructive wildfires abated by late January. Los Angeles received its first measurable rainfall on January 26–27, with

areas of the county recording up to 1 in (25 mm) of rainfall. Although not enough to resolve drought conditions in Southern California, the rain brought much-needed relief to the burn area and aided containment efforts.

The Palisades and Eaton Fires were announced as fully contained on January 31, 24 days after their ignition.

Per the most recent estimates from CAL FIRE, the Eaton Fire burned 14,021 acres (22,564 hectares); destroyed 9,414 residential, commercial, and other structures; damaged a further 1,074 structures; and caused 19 civilian fatalities. The fire destroyed swathes of residential sections of Altadena and Pasadena.

The Palisades Fire burned 23,448 acres (37,736 hectares); destroyed 6,837 residential, commercial, and other structures; damaged a further 973 structures; and caused 12 civilian fatalities. Much of Pacific Palisades was destroyed, including almost every building in the area north of Sunset Boulevard and in the neighborhood's downtown area. Buildings in multiple locations along the Pacific Coast Highway were also burned.

Several other smaller fires ignited across Southern California over the same period, including the Hughes, Border 2, Hurst, Kenneth, Lidia, Lilac, Laguna, Auto, Sepulveda, Archer, Sunset, Pala, Tyler, Rose, and Clay Fires. Collectively, these caused limited structural damage.

What on-site reconnaissance revealed

Three months after the Palisades and Eaton Fires were contained, a team from Moody's traveled to the impacted areas. The goal was to move beyond satellite imagery and data to get a ground-level view to understand not just what burned but why. This on-site investigation yielded critical insights that were essential to validate the underlying assumptions of the Moody's RMS US Wildfire HD Model and our industry loss estimate.

One of the most interesting observations was why some pockets of homes survived untouched amid widespread destruction. This was seen in several cases, such as a large, defensible structure like a school or a set of homes on a defensible ridgeline. This effort created a "shadow" downstream, shielding the houses behind it from the ember-driven, house-to-house spread that defines an urban conflagration. It's a powerful demonstration that defending one key asset can save an entire neighborhood.

"This on-site investigation yielded critical insights that were essential to validate the underlying assumptions of the Moody's RMS US Wildfire HD Model and our industry loss estimate."

The advance of the urban conflagration in Altadena was not random. Its westward spread was halted decisively by an unlikely feature: a large cemetery. The irrigated grass and lack of combustible structures from the Mountain View Mortuary and Cemetery in Altadena created a natural firebreak that was impassable for continued house-to-house fire spread. Even in a dense urban grid, features like parks, golf courses, and wide boulevards can provide firefighters a critical advantage and serve as definitive boundaries for a fire's growth.

In areas where one house was destroyed and its neighbor was not, the difference often came down to small details. Reconnaissance confirmed the importance of "ember accumulators," which are architectural features like dormers, eaves, and corners where wind-blown embers can gather and ignite the structure. It also highlighted the danger of "connected fuels." High building density, small lots, and flammable wooden fences or overgrown shrubbery that touch the house create a direct bridge for fire to travel from one property to the next, which accelerated the conflagration.

Even in homes that were structurally sound and not directly touched by flame, the evidence of significant loss was clear. Streets were lined with discarded carpets, furniture, and mattresses — items that absorb the pervasive, acrid smoke. This scene, more reminiscent of a flood cleanup, underscored that smoke damage is a major financial component of a wildfire event, often leading to tens of thousands of dollars in claims for a single, unburned property.

These on-the-ground observations are not just interesting anecdotes but also crucial datapoints. They validate the Moody's RMS model assumptions about suppression and provide real-world evidence for how phenomena like urban conflagration, ember transport, and secondary modifiers for mitigation work in practice, allowing the model to reflect the complex reality of a modern wildfire.

Market impacts

The recent challenging homeowners insurance market in California has led to a significant reduction in insurance penetration, particularly in high wildfire-risk areas including several neighborhoods affected by the January 2025 wildfires. Specifically, over 1 million policies in the state were not renewed in the last few years. While the California FAIR Plan almost tripled its exposure during this time, it only accounted for a portion of the nonrenewed policies, leaving a notable section of high-risk properties potentially uninsured. In addition, the coverage provided by the FAIR Plan is also limited compared with a typical homeowners policy, suggesting potential underinsurance even among those properties with coverage in wildfire-prone areas.

Pressure on the FAIR Plan

The series of significant wildfire events in California over the past five years combined with regulatory constraints that prevent the incorporation of wildfire loss costs based on catastrophe models into ratemaking have led insurers to a position of heightened caution.

As private insurers have withdrawn, the state-backed California FAIR Plan has grown. As of September 2025, the FAIR Plan's total exposure has reached US$696 billion, which reflects a 52% increase since September 2024 (the prior year's fiscal year end) and a 317% increase since September 2021 (fiscal year-end 2021).

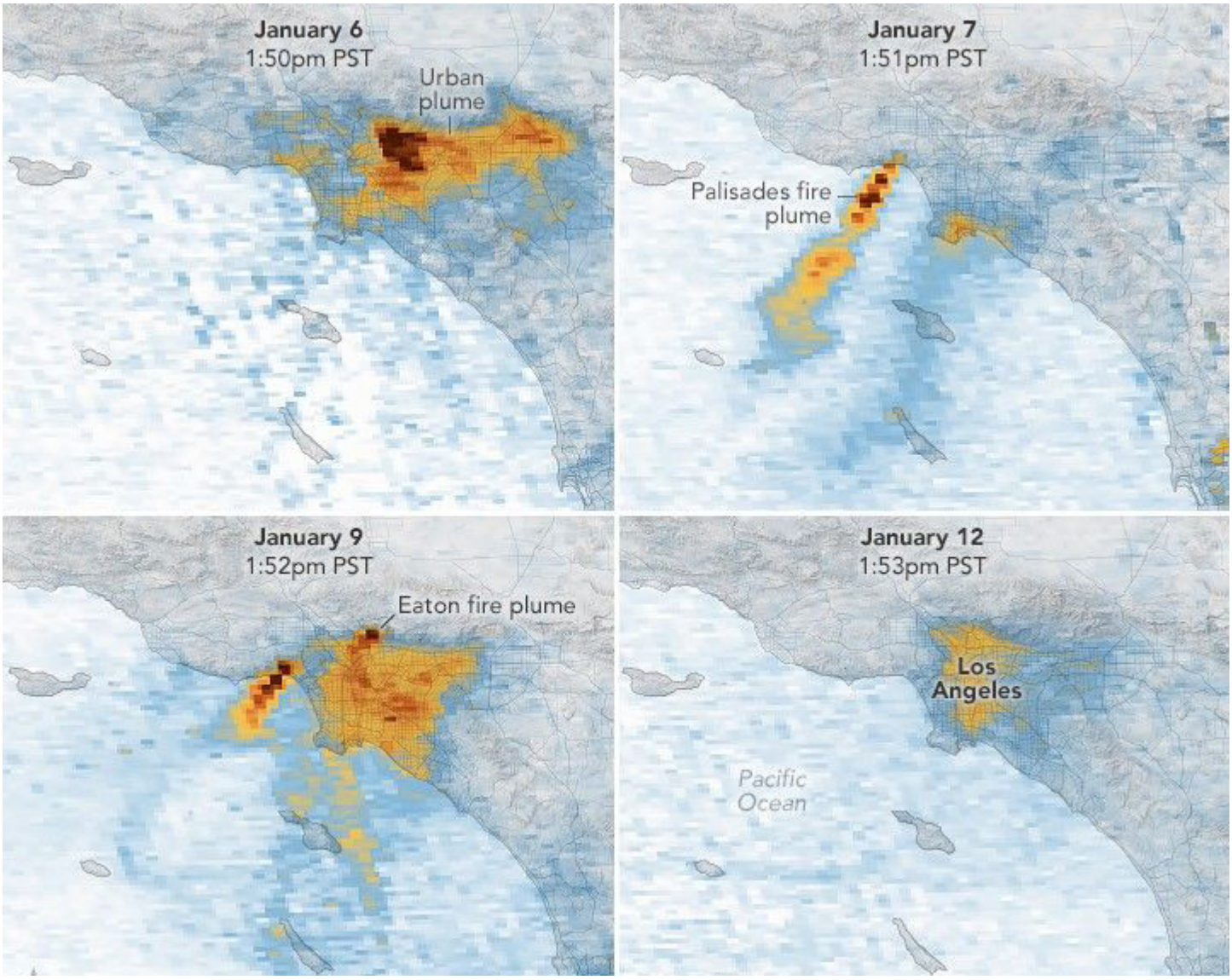
Before the wildfires, in September 2024, the exposure in Los Angeles County was US$112.2 billion with a year-over-year growth of 53%; the county's exposure represented approximately 23.1% of the entire California FAIR Plan portfolio. The City of Pacific Palisades is considered to be in the top five in terms of exposure concentration in Southern California with US$5.9 billion in exposure (around a 7-mile radius where risk is concentrated).

"The FAIR Plan is meant to be a crucial backstop for homeowners and businesses left without options but even for affluent homeowners in Pacific Palisades, the FAIR Plan has seen a remarkable surge in policies and total exposure."

The Pacific Palisades represents a typical example of the state of wildfire insurance coverage and why there is a need for new risk management and mitigation strategies for California. The FAIR Plan is meant to be a crucial backstop for homeowners and businesses left without options but even for affluent homeowners in Pacific Palisades, the FAIR Plan has seen a remarkable surge in policies and total exposure.

In the Pacific Palisades ZIP code, from September 2020 to September 2024, the FAIR Plan residential total exposure experienced a significant jump of approximately 576%, growing from $US436.2 million to an eye-opening US$2.95 billion. Similarly, commercial total exposure in the area skyrocketed by about 2,770%, from US$8.46 million to US$241.5 million.

After the 2025 Los Angeles wildfires, California's FAIR Plan secured regulatory approval for a US$1 billion assessment on admitted insurers to maintain solvency and continue paying claims, which marked its first such levy in more than 30 years. This assessment is tied to roughly US$4 billion in projected losses from the Palisades and Eaton Fires.



Unhealthy skies over Los Angeles County
Source: NASA

Regulatory change

California's insurance market is undergoing a pivotal transformation. Recent regulatory advancements by the California Department of Insurance — most notably the acceptance of Pre-Application Required Information Determination (PRID) petitions — will empower insurers to utilize sophisticated catastrophe models in the ratemaking process for wildfire insurance. This marks a significant shift toward more reliable, risk-based policy pricing, helping insurers more accurately calculate wildfire risks and offer coverage and premiums that better reflect the true risk to properties. By leveraging advanced modeling, insurers can now incorporate mitigation measures such as home hardening and community-level resilience directly into rate filings. This approach not only promotes greater

"This marks a significant shift toward more reliable, risk-based policy pricing, helping insurers more accurately calculate wildfire risks and offer coverage and premiums that better reflect the true risk to properties."

equity and encourages shared responsibility among insurers, communities, and individuals but also lays the foundation for long-term market stability.

The Moody's RMS US Wildfire HD Model Version 2.0's successful completion of the PRID process stands as a regulatory milestone, supporting the state's objectives for a more stable, accessible, and resilient insurance market, especially in high-risk areas where coverage has become increasingly scarce.

This approach also plays a crucial role in driving broader community resilience efforts. Homeowners are incentivized to adopt fire-resistant building materials, create defensible spaces, and implement other risk reduction measures, potentially lowering their insurance costs while enhancing safety. A recent blog covers the California wildfire risk landscape and its evolving dynamics.

The way forward

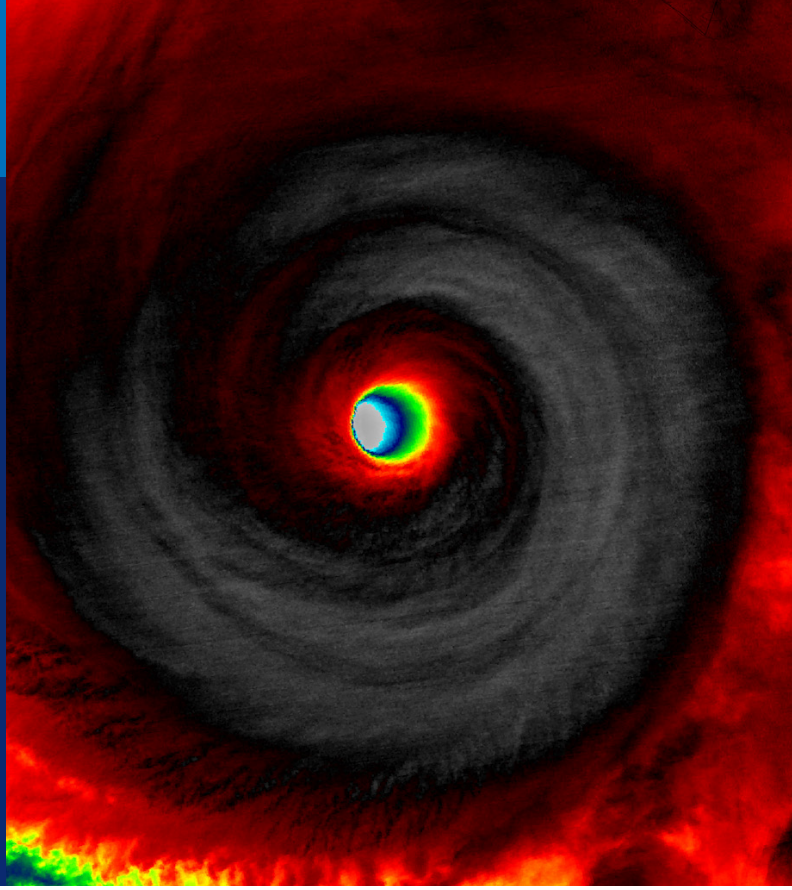
The Los Angeles wildfires were a stark reminder of how quickly conditions can align to create catastrophic outcomes. From consecutive wet seasons fueling vegetation growth to severe drought and record-breaking Santa Ana winds, the event highlighted the dynamic nature of wildfire risk in California.

The events proved that wildfire is a complex interplay of hazard, fuel, and topography as well as human intervention and market dynamics. To underwrite, price, and manage this risk, the industry needs tools built for this specific reality. By embracing the insights from these events and leveraging advanced models, insurers can move from simply reacting to losses to proactively building a more resilient future.

As we look ahead to 2026 and beyond, the lessons from this event will continue to shape market dynamics, inform resilience strategies, and drive collaboration across communities, insurers, and policymakers.

"The Los Angeles wildfires were a stark reminder of how quickly conditions can align to create catastrophic outcomes."

Meet the authors



A very intense Hurricane Melissa seen from Joint Polar Satellite System satellites over the Caribbean Sea
Source: NOAA

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