Gallagher Re

APRIL 2024

Natural Catastrophe and Climate Report: Q1 2024

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Global Overview

Q1 2024: Manageable Start for Catastrophe Losses as Looming Shift to La Niña Brings Early Atlantic Hurricane Season Focus

Preliminary YTD (Q1) Global Loss Totals: Economic (USD43 billion) and Insured (USD20 billion)

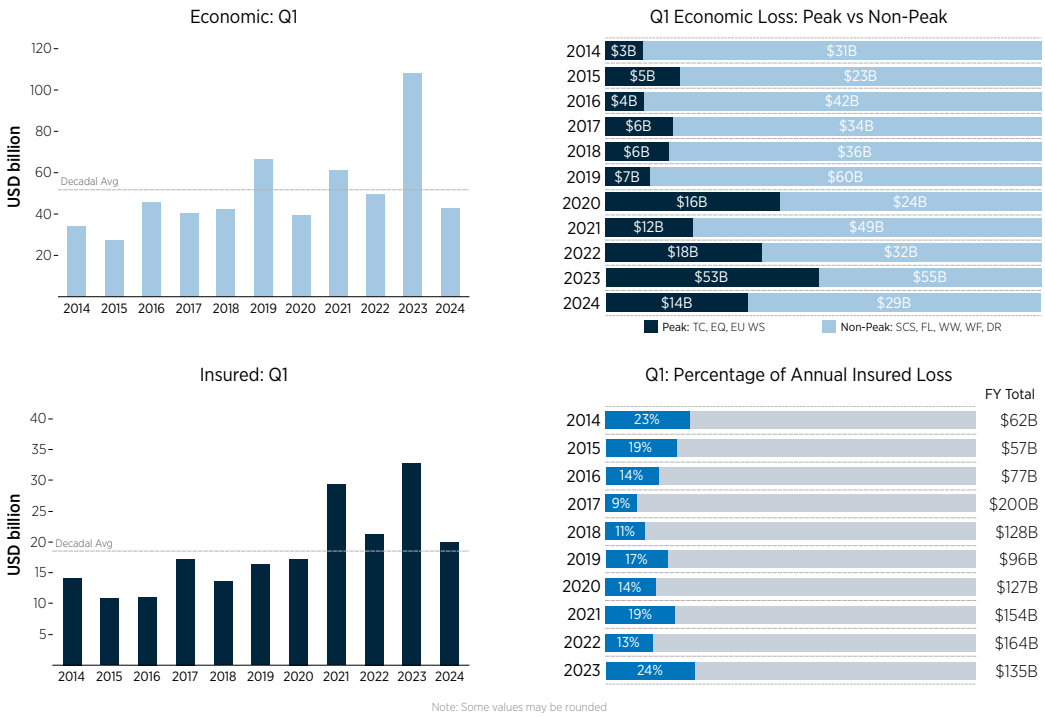
The financial cost of natural catastrophes starting in 2024 was manageable for federal governments and the insurance industry. The minimum USD43 billion in economic loss from all natural perils was 17% lower than the most recent 10-year Q1 average (USD52 billion). The portion covered by the private insurance market or public insurance entities totaled at least USD20 billion, or 10% higher than the decadal average (USD18 billion). The cost of Q1 2024 events was markedly lower than Q1 2023 (USD108 billion economic and USD33 billion insured). It is worth noting that Q1 loss totals often show robust loss development throughout the year. This is especially relevant when assessing the agricultural impact of weather-related effects on planting seasons and harvests. The Q1 2024 total(s) is expected to follow this pattern.

When looking solely at weather and climate-related disaster costs, which means excluding losses associated with earthquakes, volcanoes, or other non-atmospheric driven events, the economic cost was minimally USD31 billion. This was lower than the decadal average (USD43 billion). Insurers covered at least USD17 billion, equal to the decadal average (USD17 billion). For comparison's sake, Q1 2023 values were USD61 billion (economic) and USD26 billion (insured).

There is little correlation between the performance of catastrophe losses in the months of January, February, and March and how the rest of the calendar year would be expected to play out. As the spring and summer months (Q2 and Q3) begin across the Northern Hemisphere, this often brings a more volatile period for weather-related activity. The United States, which is the insurance industry's most active global market for filed claims, becomes a particular point of focus for severe convective storm activity, drought, and later for potential landfalling hurricane events. Europe and Asia also enter peak months for possible large-scale weather / climate disasters.

As we enter Q2 and Q3, there will be close focus on the expected quick transition from El Niño to La Niña conditions in the central and eastern Pacific Ocean. This has resulted in early projections for a potentially hyperactive Atlantic hurricane season. Whether this translates to more US landfalls is the critical question. It bears close watching, particularly as primary carriers are already responding to a difficult US market, but ample reinsurance market capital has the industry well positioned to navigate an active hurricane season. La Niña can also bring further weather extremes around the world. 2024 is currently projected to be one of the top three warmest years on record.

Global Natural Catastrophe Losses



Q1 2024: Notable Statistics

1.54°C / 2.78°F
Q1 2024 Global Land & Ocean Temperature Anomaly (NOAA Baseline: 1850-1900)

7.5
Earthquake magnitude in Japan on January 1, 2024

1.06 million
Acres burned in Texas & Oklahoma from the Smokehouse Creek Fire; Largest fire on record in Texas

427.93
Carbon dioxide parts per million (ppm) on March 15, 2024 at Mauna Loa, HI; Highest level in ~4 million years

Figure 1: Q1 2024 executive summary of natural catastrophe activity | **Data & Graphic:** Gallagher Re

*Note: All loss totals in this document are adjusted to 2024 USD unless explicitly stated otherwise. Totals were adjusted using the US Consumer Price Index and a construction index and cost of labor factor.

Economic Loss

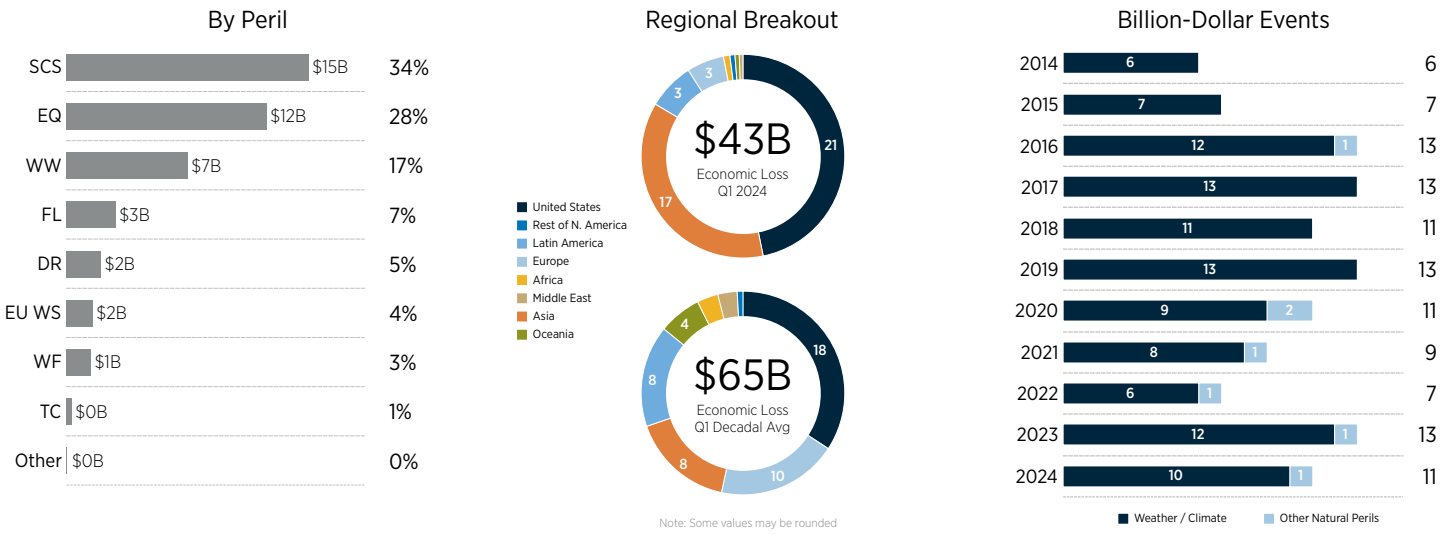
The total economic loss for Q1 2024 was preliminarily estimated at USD43 billion. The most expensive individual event occurred on the first day of 2024. A USGS-registered magnitude-7.5 earthquake struck Japan's Noto Peninsula on January 1 and left a tentatively estimated USD12 billion in direct economic losses. This accounted for 28% of the entire global Q1 total. In recent years, 2020, 2022, 2023, and 2024 have had an earthquake event as the costliest Q1 event. The exception was 2021 (US Polar Vortex).

Ten additional weather / climate-related billion-dollar economic loss events were recorded during Q1 2024. This included seven in the US (three severe convective storms (SCS), three winter weather, and one flooding), two in South America (drought in Brazil and wildfires in Chile), and one in Asia (winter weather in China). Despite an above-average volume of large hail reports (at least two inches or larger) in the US, overall SCS damage costs were lower than what was seen in the same period in 2023. As a reminder, 2023 started with lingering La Niña conditions, which aids in an earlier start to the SCS season, while 2024 started during strong El Niño conditions. Losses attributed to global flooding were also mild compared to their decadal average. Winter weather and extratropical cyclone activity were manageable from a loss and damage perspective in Europe, North America, and Asia.

In total, the SCS peril accounted for 34% of natural catastrophe economic losses in Q1. The USD15 billion in global SCS losses were 63% higher than the decadal Q1 average (USD9.2 billion). Earthquake (28%) and winter weather (17%) were the only other perils that accounted for at least 10% of economic losses. The continued slow decline of global inflation rates maintained some elevated impact on disaster costs, but not as significant as previously seen in 2022 and 2023. Several major federal finance agencies around the world further raised or sustained elevated interest rates to subdue any potential additional inflationary growth.

On an overall regional basis, the US accounted for a minimum of USD21 billion, or 49%, of economic disaster costs in Q1. This was equal to the decadal average, but the total was expected to grow. Asia accounted for at least USD17 billion, or 40%, of economic disaster costs in Q1. This was notably higher than the last decade's average (USD8 billion). Europe, Oceania, and Latin America were each well below its recent Q1 average.

For context, Q1 has accounted for just 14% of global economic losses for all perils during the past decade (2014–2023). When analyzing solely weather / climate perils, Q1 is slightly lower at 13%. As always, it takes just one major event to dramatically alter the size of annual catastrophe losses..



EQ: Earthquake | **SCS:** Severe Convective Storm | **TC:** Tropical Cyclone | **WW:** Winter Weather
DR: Drought | **EU WS:** European Windstorm | **WF:** Wildfire | **FL:** Flooding

Figure 2: Q1 2024 global economic loss statistics | **Data & Graphic:** Gallagher Re

Insured Loss

The preliminary view of insured losses during Q1 2024 showed a slightly higher than average total, but it was largely a manageable start to the year for the insurance industry. The minimum of USD20 billion in payouts was above the decadal average (USD18 billion). There were two events which topped USD3 billion in insured losses: a US SCS outbreak (March 12–17) and the January 1 Japan earthquake. Both estimates remained tentative. The Japan estimate was subject to further revision as claim filings and payouts after the April 1 renewal period may require another adjustment to the initial estimate.

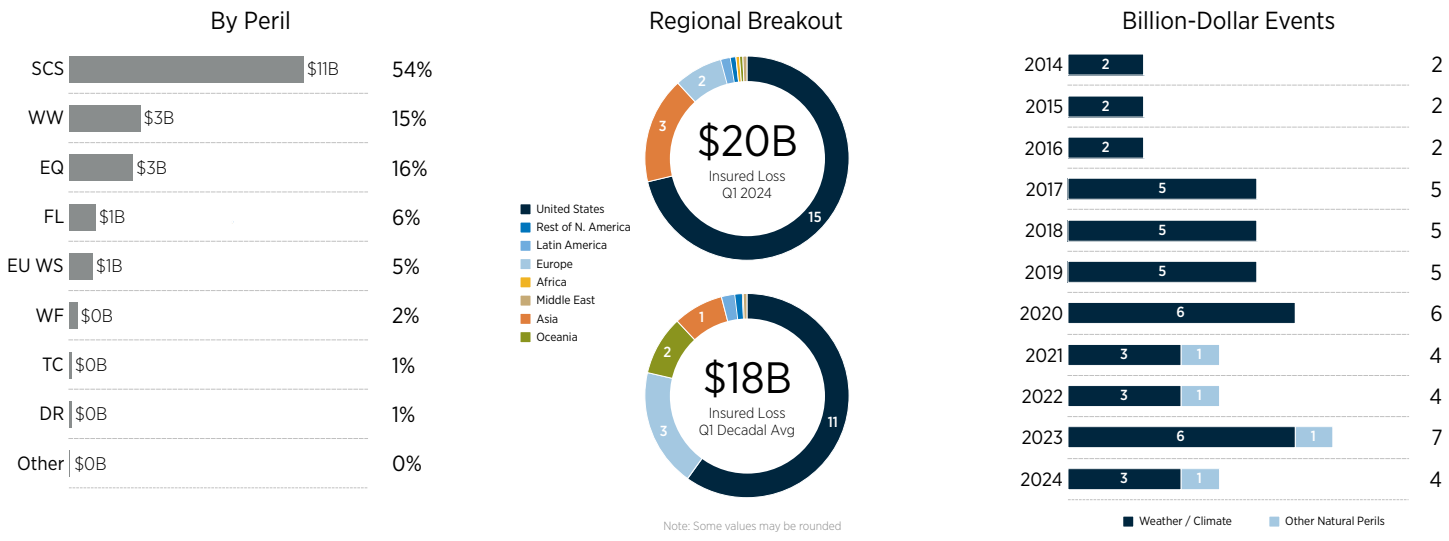
Overall, the costliest peril was SCS, with the early global estimate exceeding USD11 billion. Most of these losses were incurred in the United States, and further development was likely from the biggest Q1 SCS outbreaks, including three that are already billion-dollar events. Hail was again the primary sub-peril, driving the bulk of the insured costs across the central and eastern portions of the US. In any given year, hail drives 50% to 80% of all thunderstorm-related claims. For comparison, the record-setting SCS loss year in 2023 recorded USD15 billion in insured losses during the first three months of the year.

The other major perils all saw benign loss totals. An active European windstorm season did not result in any significant market-driven events, though parts of Scandinavia did see abnormally high local losses. The succession of storms did elevate rainfall totals in several parts of Northern Europe. Other boreal winter weather events in the US, Europe, and Asia only resulted in mild claim payouts.

The US accounted for more than USD15 billion, or 75%, of the Q1 total. This was above the region's decadal average of USD11 billion, but as previously mentioned, the expectation is that Q1 US losses will only further increase in the months ahead. The only region with above-average Q1 losses was Asia, driven by the Noto Peninsula earthquake.

For weather / climate events, Q1 is not annually a major driver of losses for private and public insurance entities. In the past decade, it has accounted for just 14% of annual insured losses. For no reason beyond timing and luck, the earthquake peril has recorded several historically significant events for insurers in Q1, including the Turkey Earthquake sequence (2023), the Great Tohoku (Japan) Earthquake and Tsunami (2011), the Christchurch (New Zealand) Earthquake (2011), the Maule (Chile) Earthquake and Tsunami (2010), Japan's Great Hanshin Earthquake (1995), and California's Northridge Earthquake (1994). Each of those events resulted in market-defining losses.

*Note: Gallagher Re uses the start date of an event to bucket losses into a specific month, quarter, or year. For example, the Christmas 2023 and New Year 2024 hailstorms in Australia are being treated by the local insurance market as a singular event. Thus, those losses are bucketed as Q4 2023 for this specific analysis.



EQ: Earthquake | **SCS:** Severe Convective Storm | **TC:** Tropical Cyclone | **WW:** Winter Weather
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Figure 3: Q1 2024 global insured loss statistics | **Data & Graphic:** Gallagher Re

Conversation Starters: Q1 2024

Loss Development Remains an Important Caveat in Industry Event Analysis

The concept of loss development, also sometimes referred to as "loss creep," is a familiar concept to the insurance industry. It is defined as the evolution of losses over an extended period that can remain ongoing for many months or even years after an event has occurred. The reality is that not every event exhibits major loss growth and often reasonably aligns with initial estimates. In other instances, some events may be overestimated. The most challenging for the industry, however, involves event loss underestimation, and the complexities of loss development can widely vary by peril and region. Other unique socioeconomic or fiscal factors, such as inflation, demand surge, litigation, delays in claim filing, the maturity of an insurance market, or involvement of third-party assessors, can quickly compound the eventual cost of an event.

A general practice for the insurance industry is to initially gauge market impact from accepted agencies such as Verisk's PCS, Perils AG, or country-focused associations (such as the German Insurance Association. These first estimates are often based on early reporting by primary carriers that can be mandated by industry data calls. Reinsurers and reinsurance brokers will also work with primary carriers to help assess the size of an event.

The biggest events often result in a prolonged period of loss development growth. As time goes on, the level of uncertainty is reduced as the volume of filed claims or paid losses begins to slow down. But in some cases, the most expensive claims (often from commercial entities) may be settled/closed last, given the propensity for extended assessments or claims litigation to determine how much a carrier is responsible to cover. For example, losses from Hurricane Irma (2017) continued to develop for more than three years. This means that initial estimates may eventually settle at a value that is double (or more) what was first reported.

An ongoing and recent example of sizeable loss development occurred following Italy's stretch of catastrophic hailstorms in July 2023. The current estimate of insured losses sits at roughly USD5.5 billion. This is a significant increase from early estimates that began in Q3 2023 into early 2024, which suggested losses in the low-single digit billions (USD). For an insurance market not used to SCS losses at this level, such major growth led to local industry shocks. The growth was tied to the timing of the event during a holiday period that delayed claim reporting. There were further delays due to the widespread nature of the event, which stretched thin an already limited number of available adjusters or assessors. This was further complicated by a high volume of auto claims, rising Italian home market prices, high-cost building improvements (solar panels, insulation systems, etc.), and elevated construction costs due to government incentives for retrofitting the energy performance of Italy's building stock.

Further challenges to assessing industry event costs are associated with preliminary estimates released by catastrophe model vendors. There are typically multiple rounds of scenario adjustments made available over the course of several weeks that try to better account for an event footprint and other factors that can drive significant loss costs that are not typically well modeled. Examples include business interruption, demand surge, or inflationary pressure. Further challenges may exist if the exposure footprint has not been accurately accounted or if other non-modeled risks drive the loss performance. Managing uncertainty is essential when using catastrophe model output, and the availability of event loss ranges is critical.

Moving forward, the insurance industry will need to continue to assess unexpected circumstances that extend event loss behavior. The social inflation component has proven to be a growing challenge for the industry. Investment strategies involving retrocession contracts, aggregate reinsurance covers, and various insurance-linked securities (ILS) funds will remain vital options for companies to protect themselves.

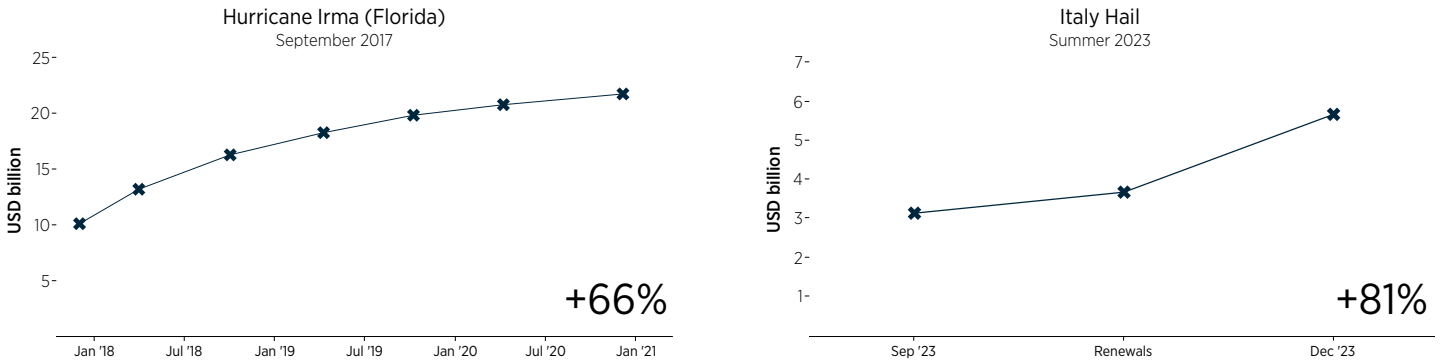


Figure 4: Recent major insured loss progression; Hurricane Irma (Florida-only; 2017) | **Data:** Gallagher Re and Florida OIR | **Graphic:** Gallagher Re

US SEC Releases Long-Awaited Climate Disclosure Requirements

The US Securities and Exchange Commission (SEC) on March 6, 2024 approved final rules regarding climate-related disclosures. This approval comes after the SEC first published an initial set of proposed guidelines in 2022, which underwent a lengthy and robust public feedback period. The rules require publicly traded companies to disclose climate-related information to investors. The rules are the first nationwide climate disclosure mandate in the US and are slated to go into effect beginning with annual reports for the year ending December 31, 2025. However, as anticipated, challenges against the rules were filed within days of passage, and litigation is pending.

Large accelerated filers (LAF) and accelerated filers (AF), other than Emerging Growth Companies (EGC), Small Reporting Companies (SRC), and non-accelerated filers (NAFs), will be required to publish Scope 1 and Scope 2 greenhouse gas (GHG) emissions of significance on an annual basis starting in 2027 with respect to 2026 information for LAFs and 2029 with respect to 2028 information for AFs. This information will require limited assurance starting in 2030, with respect to 2029 information, for LAFs, and 2032, with respect to 2031 information, for AFs. LAFs will be required to obtain reasonable assurance starting in 2034, with respect to 2033 information. These requirements will increase companies' spending on outside advisors, including assurance firms, to manage these disclosures.

All publicly traded companies will be required to disclose climate-related governance, risks, and transition information on an annual basis starting in 2026 with respect to 2025 information for LAFs, in 2027 with respect to 2026 information for AFs, and in 2028 with respect to 2027 information for EGCs, SRCs, and NAFs.

In addition, companies will need to include in their financials, subject to certain thresholds, their expenditures because of severe weather events and other natural conditions and those related to achieving publicly stated climate or net-zero goals, when a material component of the plans to achieve such goals are carbon offsets or renewable energy credits or certificates. Further, companies will be required to disclose certain climate-related impacts that materially affected their financials' estimates and assumptions.

The rules ended up being a partially scaled down version of what was included in the original 2022 proposal. Most notably, the requirement to include Scope 3 emissions, which are indirect emissions stemming from the value chain, was dropped. Pushback suggested a Scope 3 requirement would expand compliance costs and prove highly challenging to accurately quantify.

The rules mark an important step forward for the United States's climate-related disclosure mandates as it attempts to catchup to other parts of the world. The rules are modeled in part upon the framework developed by the Task Force on Climate-Related Financial Disclosures (TCFD) — a global baseline for corporate climate disclosure. The state of California released its own climate legislation, which is stricter than the SEC rules and is currently being challenged as well. The EU has been the global leader in mandating climate-related disclosures and various climate risk assessments.

The table below gives an overview of select differences among the US SEC rules, the European Union (EU) CSRD/ESRS, the ISSB disclosure requirements, and the California climate legislation.

	ISSB	EU CSRD/ESRS	California Climate Legislation	SEC Rules
First Reporting Year	2024	2024	2026	2025 for climate risks 2026 for emissions
Companies in Scope	Any company that voluntarily follows this framework. It may become mandatory for certain companies subject to adoption in each jurisdiction	Large EU companies and SMEs, and non-EU companies that operate in the EU, subject to certain thresholds being met	Companies doing business in California that meet revenue thresholds	Publicly-listed companies registered with the SEC
Climate Related Emission Scope	Scopes 1, 2 & 3	Scopes 1, 2 & 3: Subject to materiality assessment	Scopes 1, 2 & 3: Irrespective of materiality	Scope 1 & 2 for certain companies: Subject to materiality assessment
GHG Protocol	Required	Recommended but not required	Required	Not required, but need to disclose methodology
Materiality	Financial materiality	Double materiality (financial and impact)	Financial materiality	Financial materiality
Scenario Analysis on Climate Risks	Required	Required	Required in certain cases	Not required unless material

Weather / Climate Review

ENSO: All Eyes on the Looming Shift From El Niño to La Niña

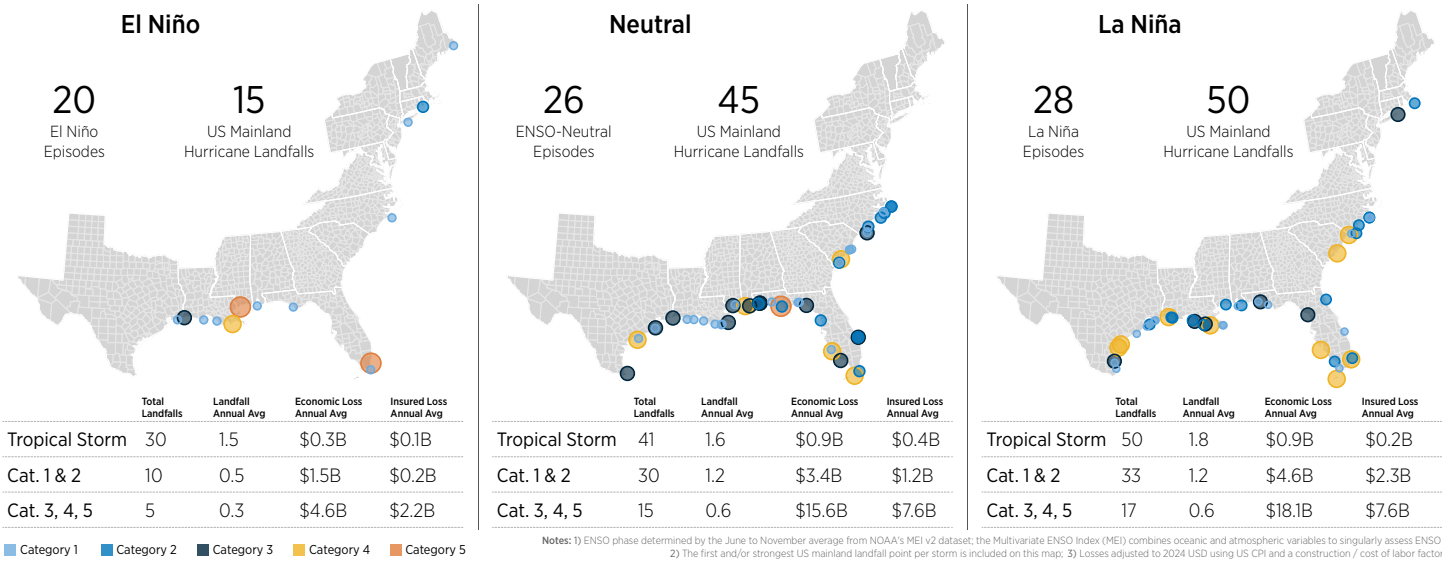
The El Niño Southern Oscillation (ENSO) is an irregular periodic variation in winds and sea surface temperatures (SSTs) over the tropical Pacific, with El Niño conditions associated with warmer SSTs in the central and eastern tropical Pacific. Conditions are reversed, meaning cooler conditions in the Pacific Ocean during a La Niña phase. These patterns are major drivers of seasonal changes in global atmospheric and oceanic circulations. The rapid emergence of El Niño in 2023 led to Earth's warmest year on record, influencing diminished cloudiness over land and stronger solar heating.

Through the end of March 2024, NOAA and other global agencies noted that El Niño conditions were still in place. However, oceanic indicators were signaling that El Niño peaked in December 2023 and has continued to weaken since that time. The growing trade winds are pushing more warm water towards the Asian continent and causing a quick propagation of upwelling (colder-than-normal waters rising to the ocean surface.) This rapid cooling is expected to bring a quick transition from El Niño to La Niña conditions during the next few months. The long-range ENSO forecast models currently suggest that ENSO-neutral conditions are expected to emerge by May or June, with the potential arrival of La Niña in time for peak Atlantic hurricane season.

It should be noted that ENSO predictions with long lead times should be interpreted with caution. In addition, the globe's oceans continue to endure record-setting warmth that is abnormal to what is typically expected during the various ENSO phases. Such abnormalities may result in atmospheric or oceanic behavior spawning more unusual weather / climate extremes. One likely result of the diminishing El Niño is the ongoing moderation of global temperatures since there is usually a delayed period of coupling between the atmosphere and oceans that should amplify the potential of record warmth in the coming months. NOAA currently projects 2024 as having a 99.9% chance of ending as one of the top five warmest years since 1850 and a 55% chance as the warmest year.

Of particular importance will be the looming Atlantic hurricane season. SSTs in the tropical Atlantic have remained at record highs for a full calendar year. Long-range model guidance suggests the abnormal ocean heat will persist across the Caribbean and Gulf of Mexico along with a reduction in wind shear and above-average precipitation. If this verifies, it will indicate very favorable conditions for a meteorologically active Atlantic hurricane season. As seen in Figure 5, the US mainland has historically recorded a higher frequency of hurricane (Category 1+) and major hurricane (Category 3+) landfalls during La Niña seasons.

While an active Atlantic hurricane season would mean more opportunity for US landfalls, it does not guarantee it. But the risk justifies close monitoring as the US insurance market, particularly in Florida, Louisiana, and elsewhere, remains mired in private insurance affordability and availability challenges.



El Niño	Total Landfalls	Landfall Annual Avg	Economic Loss Annual Avg	Insured Loss Annual Avg
Tropical Storm	30	1.5	$0.3B	$0.1B
Cat. 1 & 2	10	0.5	$1.5B	$0.2B
Cat. 3, 4, 5	5	0.3	$4.6B	$2.2B

Neutral	Total Landfalls	Landfall Annual Avg	Economic Loss Annual Avg	Insured Loss Annual Avg
Tropical Storm	41	1.6	$0.9B	$0.4B
Cat. 1 & 2	30	1.2	$3.4B	$1.2B
Cat. 3, 4, 5	15	0.6	$15.6B	$7.6B

La Niña	Total Landfalls	Landfall Annual Avg	Economic Loss Annual Avg	Insured Loss Annual Avg
Tropical Storm	50	1.8	$0.9B	$0.2B
Cat. 1 & 2	33	1.2	$4.6B	$2.3B
Cat. 3, 4, 5	17	0.6	$18.1B	$7.6B

Category 1 Category 2 Category 3 Category 4 Category 5

Notes: 1) ENSO phase determined by the June to November average from NOAA's MEI v2 dataset; the Multivariate ENSO Index (MEI) combines oceanic and atmospheric variables to singularly assess ENSO
2) The first and/or strongest US mainland landfall point per storm is included on this map; 3) Losses adjusted to 2024 USD using US CPI and a construction / cost of labor factor

Figure 5: US mainland tropical cyclone landfalls per ENSO phase since 1950 | **Storm Data:** NOAA | **Loss Data & Graphic:** Gallagher Re

Global Temperatures Continue Setting Monthly Modern Era Records

Global surface land and ocean temperatures were the warmest on record for Q1 2024. This included the individual months of January, February, and March that each set warmth records dating to 1850. According to data from NOAA's National Centers for Environmental Information (NCEI), the quarterly temperature anomaly was 1.35°C (2.43°F) above the 20th century average. When compared to the Pre-Industrial Baseline (1850–1900), the anomaly was +1.54°C (2.78°F).

Rank	Year	20th Century Baseline	Pre-Industrial Baseline
1	2024	1.35°C / 2.43°F	1.54°C / 2.78°F
2	2016	1.30°C / 2.34°F	1.49°C / 2.68°F
3	2020	1.17°C / 2.11°F	1.36°C / 2.45°F
4	2017	1.09°C / 1.97°F	1.28°C / 2.31°F
5	2023	1.05°C / 1.88°F	1.23°C / 2.22°F
6	2019	1.00°C / 1.79°F	1.18°C / 2.13°F
7	2022	0.97°C / 1.74°F	1.15°C / 2.08°F
8	2015	0.88°C / 1.58°F	1.07°C / 1.93°F
9	2018	0.87°C / 1.57°F	1.06°C / 1.90°F
10	2010	0.83°C / 1.50°F	1.02°C / 1.84°F

Table 1: Top 10 warmest Q1 global land and ocean temperature anomalies
Source: NOAA (Dataset: 1850–2024)

The most above-average warmth was found across parts of North America, Latin America, Europe, and Africa. For many of these areas, it was a continuation of highly anomalous temperature trends that have been ongoing since June 2023. The hottest daily global temperature thus far in 2024 was set at Carnarvon, Australia, on February 18. The 49.9°C (122°F) reading was the second hottest February temperature ever recorded in Australia and the eighth hottest temperature recorded in the country, regardless of month.

The influence of El Niño was apparent in temperature behavior in many regions of the world. In the Northern Hemisphere, the Great Lakes in the US and Canada saw record-low seasonal ice coverage in February, as much of the northeastern portion of the continent registered well above average wintertime warmth. Despite a stretch of seasonable or slightly cooler weather in March, most climate districts in the US Great Lakes region reported a top ten warmest Q1 dating back to the late 19th century. Elsewhere in the Northern Hemisphere, Europe recorded its second-warmest winter on record. Most of Africa remained well above average, too, which amplified drought conditions. In Asia, bitter cold swept across parts of Mongolia and China in February as temperatures dropped to -30°C (-22°F). This marked some of the coldest temperatures in this part of the world in nearly 50 years.

In the Southern Hemisphere, prolonged above-average summertime heat led to notable wildfire activity in Chile and in the Amazon. This was also influenced by ongoing El Niño conditions. The fire activity in the Amazon was particularly significant, as more than 10,000 fires had been detected by satellite monitoring. This marked the highest volume of fires to start a calendar year. It is concerning since the Amazon is such a critical component for naturally trapping and storing carbon dioxide.

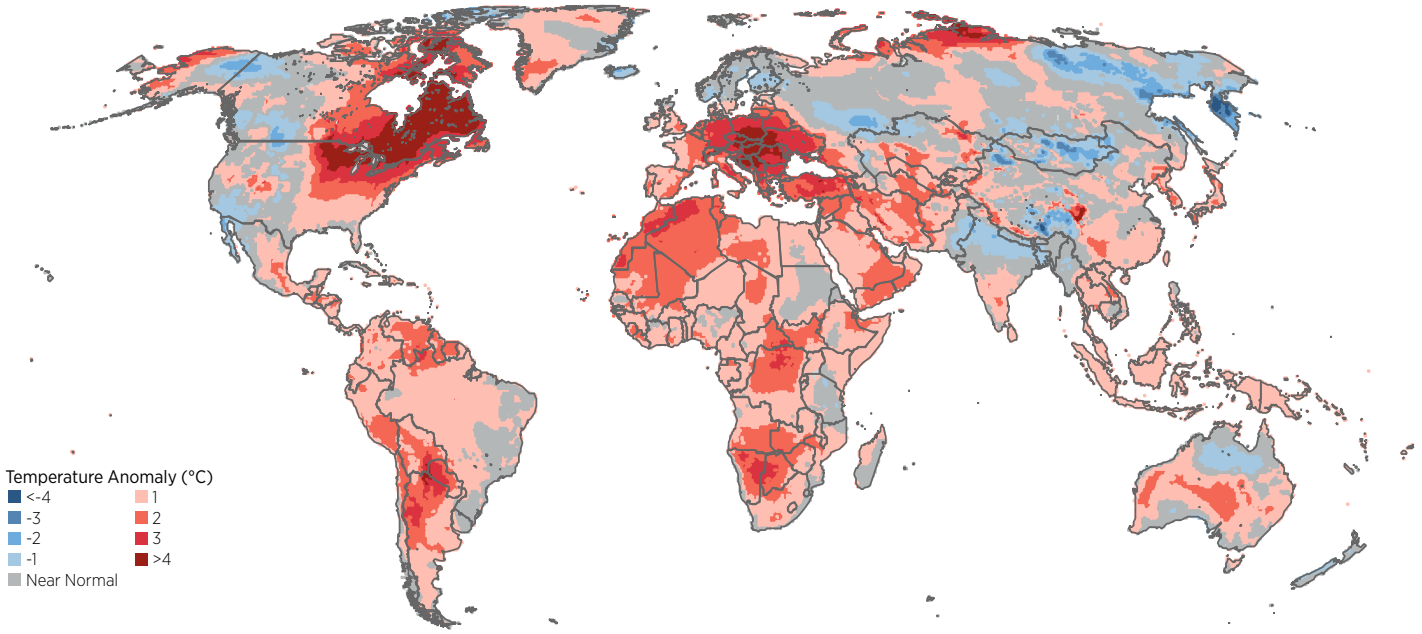


Figure 6: Q1 2024 global temperature anomalies compared to the 1991–2020 climatological normal | **Data:** Copernicus (ERA5) | **Graphic:** Gallagher Re

Precipitation extremes on both ends of the spectrum were observed during Q1 2024. Similarly to the earlier global temperature analysis, the influence of El Niño played a notable role in precipitation patterns. El Niño, in connection with other atmospheric oscillations, typically influences the direction of the sub-tropical and polar jet streams. This can dictate how much seasonal precipitation falls in various parts of the globe.

In North America, there were diverging precipitation anomalies. Wetter conditions emerged in the US West and Southwest as the region was impacted by a series of notable winter storms and atmospheric river events. California was particularly affected, albeit to a lesser degree than experienced during the same period in 2023. Much of Latin America was drier than normal, including parts of Chile, Argentina, and the Amazon Basin, where previously mentioned wildfires were ignited. However, in southeastern Brazil, notably Rio de Janeiro and surrounding states, there were episodes of severe flooding in January and March.

Most of continental Europe saw near-normal or above-average precipitation. This was largely due to an active series of windstorms and other extratropical systems that were prevalent in western and central Europe. Among the most notable rain-driven storms were Isha (Iris), Jocelyn (Jitka), Ingunn (Margrit), and Louis (Wencke). Several countries saw near-record rainfall throughout the meteorological winter months (Dec–Feb). Below-average precipitation was observed in southeastern Spain and the Balkans, where drought conditions remain a concern. As a reminder, there is no singular, consistent naming scheme for storm systems or areas of low pressure in Europe. This often leads to identical events being referred to by different names.

Erratic and below-average rainfall aided in worsening drought conditions in highly vulnerable regions of south-central Africa. Crop failures and water shortages had resulted in an ongoing humanitarian crisis, with millions of residents facing urgent food insecurity needs.

The Asian continent exhibited a mixed pattern of precipitation, with very wet conditions over North Asia in March. Kazakhstan faced its largest natural disaster in 80 years, with a state of emergency for floods covering ten regions of the country. On the other hand, dry conditions were particularly notable in mainland Southeast Asia, which exhibits a strong teleconnection pattern tied to El Niño. Exceptional drought conditions were prevalent in Vietnam, Cambodia, and Laos. Initial analysis suggested saltwater intrusion in the Mekong Delta was more severe than the 2016 drought. A 2024 study by the Water Resources Science Institute (part of the Vietnam government's environment ministry) cited agricultural impacts due to drought and saltwater-intrusion that could annually exceed USD3 billion in the Mekong Delta. Tien Giang province in Vietnam's south declared a state of emergency due to drought.

In Oceania, the remnants of two cyclones (Megan and Kirrily) brought torrential rains and flooding to parts of the Northern Territory and Queensland. Separately, a stationary trough over sparsely populated southeastern Western Australia brought six months' worth of rain in March. Most of New Zealand experienced drier than normal winter conditions. This was a dramatic shift from Q1 2023, which saw the two costliest weather disasters in the country's history, both of which were dominated by flood-related impacts.

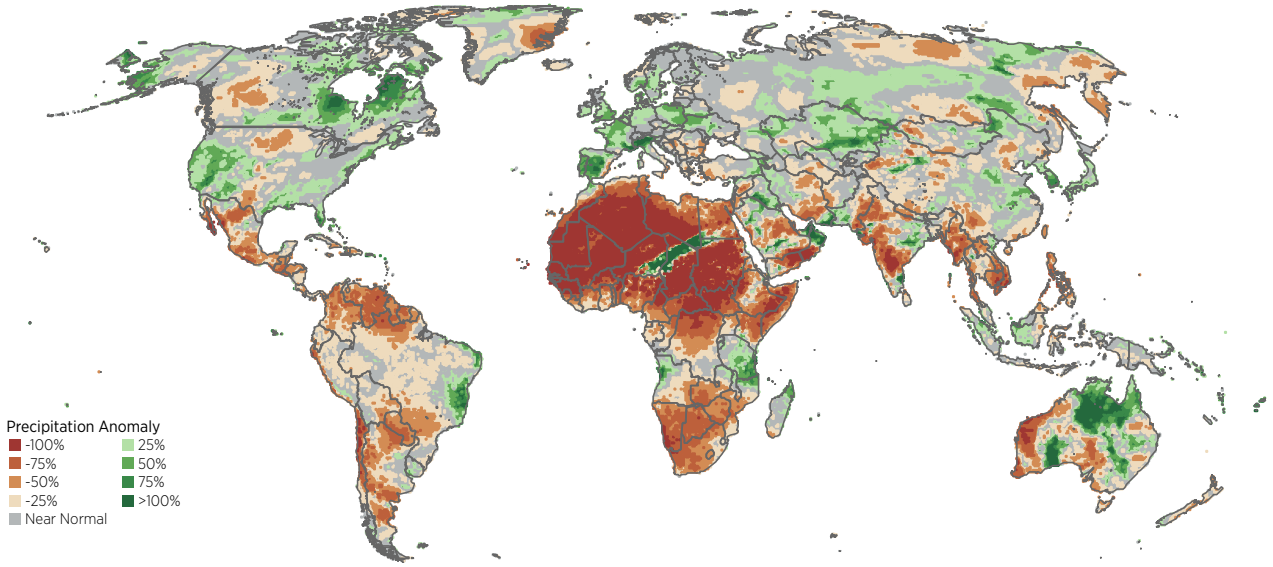
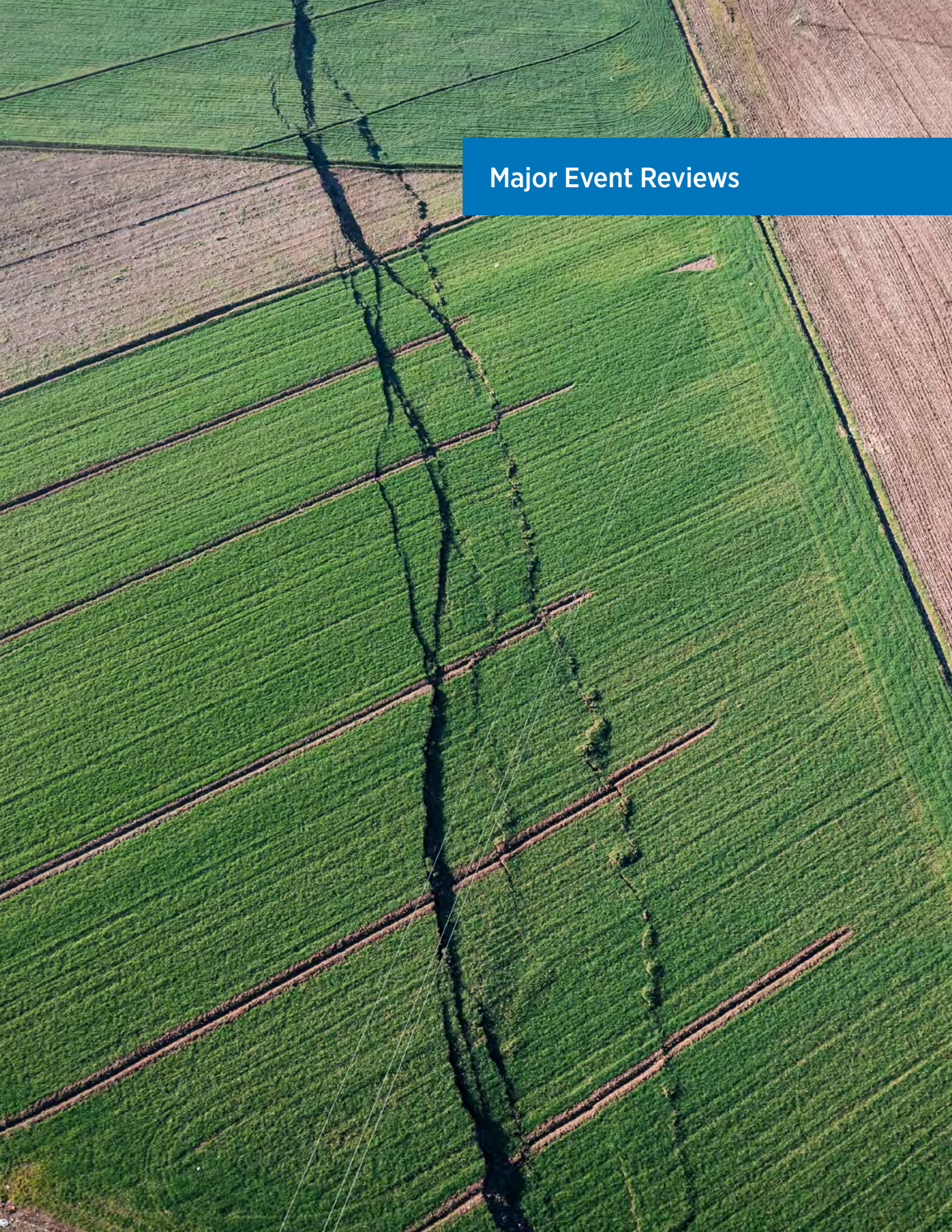


Figure 7: Q1 2024 global precipitation anomalies compared to the 1991–2020 climatological normal | **Data:** Copernicus (ERA5) | **Graphic:** Gallagher Re



Major Event Reviews

US Severe Convective Storms

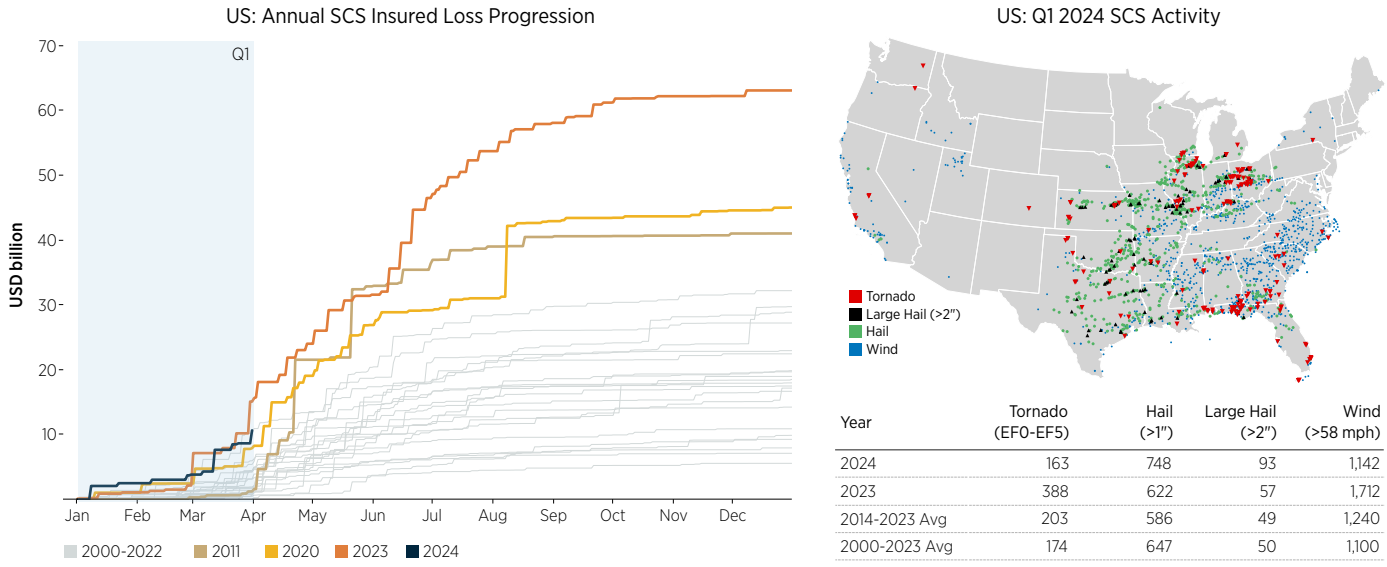
A costly first three months of US SCS activity resulted in the second-most expensive Q1 with the peril for insurers. More than USD10 billion total ranked only behind 2023's USD15 billion. 2024's events include at least three that topped the billion-dollar threshold for the insurance industry. Further loss progression will push this total higher in the months ahead. The typical peak season for US SCS runs from March through June.

- Preliminary: Economic losses tentatively stand at USD14 billion with insurers covering more than USD10 billion of the total
- 93: Record number of large hail reports (≥2.0 inches / 5.1 centimeters) drove much of the Q1 losses
- Costliest outbreaks: Jan 8–10, Mar 12–17, and Mar 31–Apr 4

Major focus persists on the US SCS peril following a record-setting year in 2023, which resulted in more than USD63 billion in insured losses. This was dominated by hail-related damage. 2023 was anomalous, but it maintained a consistent trend, with SCS losses bringing major challenges to primary carriers. With the reduction in aggregate coverage availability from reinsurance or the high cost of obtaining such coverage, this has resulted in increased direct loss costs for insurers that have eroded underwriting performance and quarterly earnings.

2024 started with a sprawling storm complex in early January that initiated a notable severe weather outbreak across the Gulf Coast and Southeast. An EF3 tornado came ashore in Panama City Beach, Florida, on January 9. This marked just the seventh F/EF3 tornado in Florida since 2000, and the first January F/EF3 in the state since 1979. The deadly March 12–17 outbreak generated hundreds of reports of severe hail and tornadoes. States were affected, from Texas to Ohio. Amid dozens of confirmed tornadoes, two EF3 tornadoes in eastern Indiana and western Ohio resulted in major damage to infrastructure and property. The end of Q1 into early Q2 saw a major multi-day outbreak from March 31 to April 4 that brought more than 75 confirmed tornado touchdowns and destructive hail to central and eastern portions of the country.

Preliminary data from the Storm Prediction Center (SPC) indicated Q1 had seen an above-average number of hail reports, and slightly lower than normal tornadoes and straight-line winds when compared to the last decade (2014–2023). Hail typically accounts for 50% to 80% of SCS claims in any given year. While there is a minimal long-term trend in the frequency of outbreaks, elevated losses in recent years have been aided by expanding urban footprints in SCS prone regions.



Year	Tornado (EF0-EF5)	Hail (>1")	Large Hail (>2")	Wind (>58 mph)
2024	163	748	93	1,142
2023	388	622	57	1,712
2014-2023 Avg	203	586	49	1,240
2000-2023 Avg	174	647	50	1,100

Figure 8: Daily loss progression of US insured SCS losses and an overview of Q1 2024 SCS activity | **Storm Data:** NOAA | **Loss Data & Graphic:** Gallagher Re

WHAT IT MEANS:

Insured costs associated with the US SCS peril have continued to drive a greater portion of annual losses in recent years. While there remains uncertainty regarding the scientific reasoning for loss acceleration, key factors include expanding populations in high-risk regions, increased replacement costs, and an aging housing stock. Peer-reviewed research suggests that future atmospheric conditions may prove to bring a continued easterly / southerly shift in storm activity and a greater number of days with favorable conditions for severe thunderstorms. This also includes a possible earlier start of SCS season in late winter.

Japan: Noto Peninsula Earthquake (January 1, 2024)

The first day of 2024 saw a powerful USGS-registered M7.5 (JMA Scale: Shindo 7) earthquake on Japan's Noto Peninsula in Ishikawa Prefecture. The shallow tremor generated tsunami waves and ignited a large fire in Wajima City. The total economic cost of buildings and infrastructure was estimated by Japan's Cabinet Office between USD7.5 billion and USD17.6 billion. The disaster put pressure on banks to maintain a negative interest rate and further weakened the yen. The event resulted in 245 fatalities, which marked Japan's deadliest earthquake since the 2011 Great Tohoku Earthquake.

- JMA: A tsunami runup of 5.8 meters (19 feet) was observed at Joetsu City, Niigata Prefecture, Japan
- FDMA: More than 116,000 buildings were damaged, of which 8,240 houses collapsed in Ishikawa Prefecture
- Japan's Cabinet Office: The highest end of potential losses could cost up to USD8.8 billion in Ishikawa; USD6 billion in Niigata; and USD3.4 billion in Toyama

The M7.5 earthquake originated along a 150-kilometer fault beneath the Noto Peninsula. It occurred due to shallow reverse faulting, which happens when one slab of surface moves on top of another. This was evident during a geographical survey where uplift and westward ground displacement were observed in western Wajima and northern Suzu. The uplifting of the peninsula and disruption of the sea floor in turn triggered the tsunami. It was suspected that the continuous upward migration of crustal fluids through existing fault networks has driven the earthquake swarm in this area since late 2020.

The 2024 Noto earthquake became one of six earthquakes to measure "Shindo 7," the highest level on Japan's seismic ground surface shaking intensity scale, since 1948. The severe to violent shaking caused buildings to collapse. In Wajima, there was also a large fire due to damaged electrical wiring and the high density of wooden houses. Additionally, buildings situated on sand dunes or reclaimed land suffered considerable liquefaction. Some locations cited more liquefaction with the 2024 event than that of the 1995 Great Hanshin Earthquake. The occurrence of this earthquake during the winter season also made rescue work challenging. More than 10% of fatalities were tied to hypothermia or freezing.

Residential earthquake insurance in Japan is provided mainly by the government in combination with the private sector. It is administered through the Japan Earthquake Reinsurance Company (JER). As of 2022, the residential take-up rate was 29% in Ishikawa and 26% in Niigata and Toyama. Early claims payments as of March 8 solely for residential filings were USD430 million and rising. These totals from the Japan General Insurance Association (GIAJ) exclude commercial and industrial claims, and those from mutual insurers. Market loss estimates have been determined based on initial claims filings and various publicly disclosed vendor model estimates.

	Damaged Structures*			GIAJ**
Prefecture	Destroyed	Major / Partial	Grand Total	Claims
Ishikawa	8,241	68,348	76,589	48,853
Niigata	102	21,967	22,069	22,889
Toyama	238	16,518	16,756	30,838
Fukui	0	591	591	3,469
Nagano	0	18	18	N/A

*Per FDMA's 92nd Event Response Report

**As of March 8, 2024

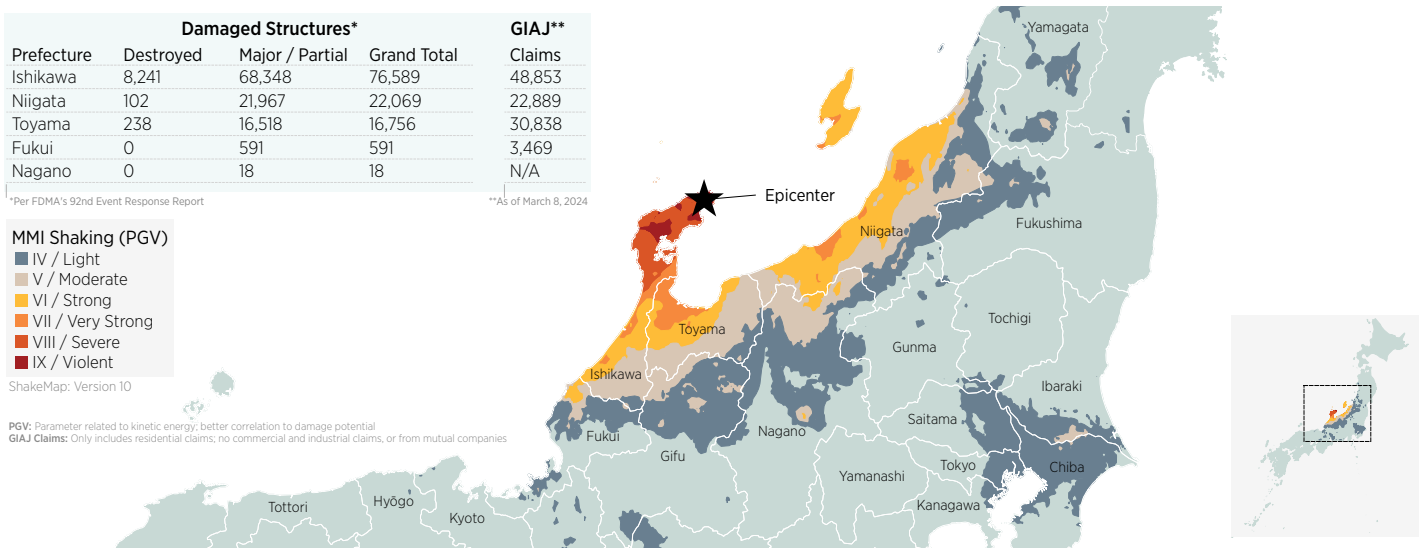


Figure 9: USGS ShakeMap showing Peak Ground Velocity (PGV) during the January 1, 2024 M7.5 earthquake event | **Data:** USGS | **Graphic:** Gallagher Re

WHAT IT MEANS:

A sizeable portion of insured residential earthquake claims are expected to be absorbed by the Japanese government via its Japan Earthquake Reinsurance (JER) scheme. For most primary insurance carriers in Japan, the highest retained losses from earthquake events come from commercial, Kyosai, auto, or casualty lines of business. While the January 1, 2024, event was a notable multi-billion-dollar event for the insurance industry, losses were not large enough to impact the earthquake excess-of-loss layer. This in turn led to minimal disruption during the April 1 reinsurance renewal cycle.

European Windstorm: 2023/24 Seasonal Recap

The 2023/24 European windstorm season has been manageable from a financial loss perspective, despite being active in the sheer number of storms. European windstorms are named by multiple naming groups, including the Western, Southwestern, and Northern parts of the continent and the Free University of Berlin. Names are given based on the countries affected, the storms anticipated impact, and the likelihood of its occurrence. This means some areas of low pressure can have multiple names assigned to it. The season spans from September to August but is historically most active in the northern hemisphere during the fall and winter months.

- Storm Ciarán: Generated an economic loss of more than USD5 billion in November 2023; costliest of the season
- Preliminary: Combined insured EU windstorm losses in Q1 2024 topped USD1 billion
- Active season driven by favorable upper-level winds and jet stream dynamics linked to positive phases of the North Atlantic Oscillation (NAO)
- Future frequency of EU windstorms remains uncertain amid large annual and decadal variability

The Western naming group (UK, Ireland, and the Netherlands) assigned names to 10 areas of low pressure by the end of Q1. An 11th storm was named in early April, tying the record set during the 2015/16 season — the year in which naming began. Subjective metrics and a short record of named storms make using names to assess weather and climate trends unreliable. Any such analysis should be supplemented by longer climatic records.

The active 2023/24 season was driven by a robust jet stream, an upper-level band of high winds which is a crucial factor in dictating weather patterns. The intensity and location of the jet aided in deepening and directing storms toward the European continent. The most significant during 2023/24 was Ciarán, which generated at least USD2.4 billion in insured losses, a majority of which occurred in France. The November 2023 storm brought record winds to northern France and set the record for the lowest monthly sea level pressure in the UK (a lower pressure is indicative of a stronger storm). In Q1 2024, notable events included compounded impacts from Isha (Iris) and Jocelyn (Jitka), as well as Ingunn (Margrit) and Louis (Wencke), all of which affected Europe in either January or February.

The succession of storms and favorable storm tracks brought wet conditions to northern and western Europe during the winter months. Denmark experienced their second wettest meteorological winter season (Dec–Feb) since 1874, while the UK recorded their eighth wettest. In northern France, multiple stations have measured near-to-record-breaking rains since October 2023, with reliable records extending back through 1959.

While uncertainty remains in the future frequency of European windstorms amid inherent large natural variability, a warming climate will increase the odds of rapidly intensifying storms and storms with greater precipitation extremes. Recent research indicates an eastward extension of wintertime storm tracks, which could steer additional storms toward Europe.

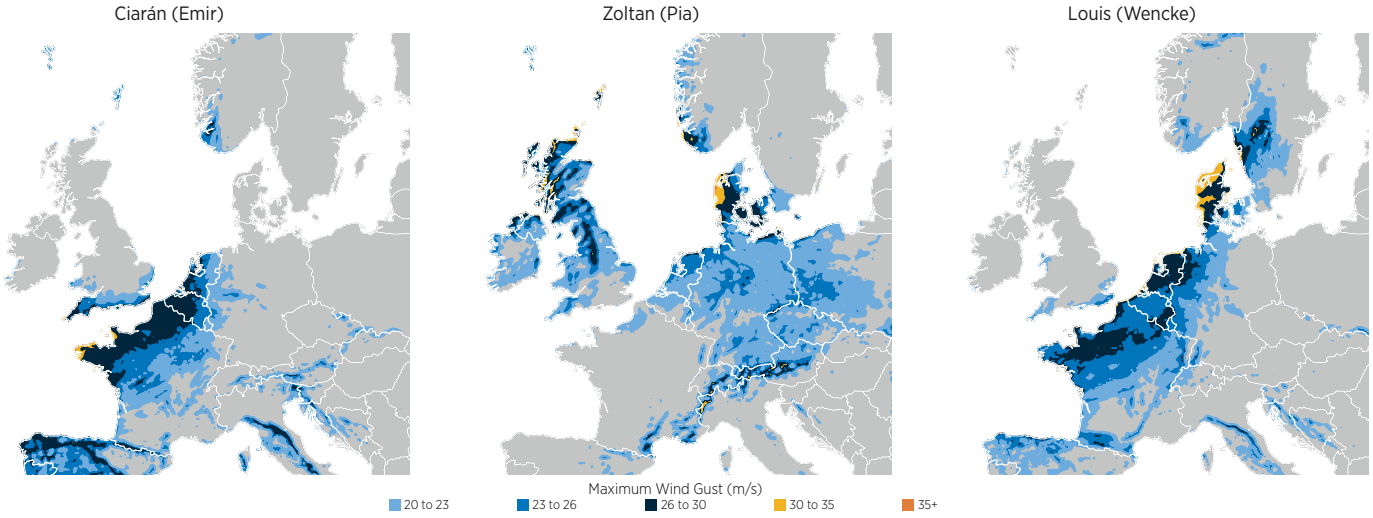


Figure 10: Footprints of select notable windstorms during the 2023/24 season | **Data:** EuroTempest | **Graphic:** Gallagher Re

WHAT IT MEANS:

While being considered a “peak” risk for the European (re)insurance market, the peril has not had a truly exceptional calendar loss year (>USD10 billion) for the industry since 2007. EU windstorms, however, remain a consistent annual loss driver for the market with the decadal average annual loss (2014–2023) exceeding USD3 billion (2024 USD). Annual volatility will always be expected, but a large risk potential does exists given the volume of heavily exposed population areas across the European continent. The climate influence remains uncertain, but the continued use of modeling tools will be key in evaluating future windstorm risk.

Global Wildfire Review

The wildfire peril featured several locally significant events across sections of the globe in Q1 2024, including parts of Latin America, the US, and Asia-Pacific (APAC).

- Chile: February wildfires in central regions claimed 134 lives, with economic losses likely reaching USD1 billion
- US: The Smokehouse Creek wildfire in Texas became the state's largest fire on record at 1.06 million acres
- APAC: Large fires in Port Hills, New Zealand, and southwest China, fueled by dry conditions and high winds

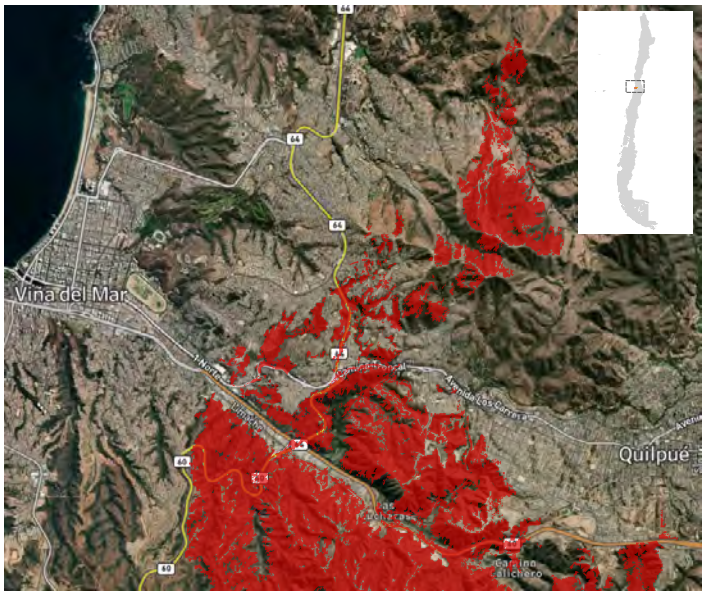
The most consequential wildfires of Q1 2024 occurred in Chile. An anomalous early February (summer) heat wave across central Chile was aided by the ongoing El Niño conditions. This helped to fuel devastating wildfires in the Valparaiso, O'Higgins, and Araucanía regions. The deadliest fire occurred in Valparaiso and spread into urbanized districts near Viña del Mar and Quilpué, claiming at least 134 lives. It became Chile's deadliest natural disaster since the 2010 Maule earthquake. Initial estimates indicated nearly 15,000 impacted structures, including 7,000 listed as destroyed. More than 1,260 insurance claims had been filed.

The deadly February wildfires followed the hyperactive 2022/23 fire season (July–June) which ranked as Chile's second largest in terms of area burned. Extreme fire conditions were further enhanced by regional multi-year drought. Colombia and other areas in the Amazon Basin were likewise impacted by vast wildfires in Q1, several of which burned in biodiverse and unique high-altitude wetlands.

In the US, the Smokehouse Creek wildfire, burned across more than 1.06 million acres (0.43 million hectares) of grassland in parts of the Texas Panhandle and neighboring Oklahoma. This ranked as the largest wildfire ever officially recorded in Texas. Hundreds of homes were damaged or destroyed, and notable impacts were incurred to agribusiness and infrastructure. The Smokehouse Creek fire is another recent example of a significant fire event occurring outside the traditionally expected high-risk zones in the western US. Large and rapidly spreading wildfires can occur anywhere and at any time of year given ample fuel and favorable conditions.

Wildfires developed in Port Hills, south of Christchurch, New Zealand in February. A local state of emergency was declared for Christchurch as the fires burnt through 1,700 acres (700 hectares). Losses were minimal. Areas of dry to very dry conditions were present in the eastern South Island by the end of 2023. Fires also ignited in southwest China during spring, the peak season for forest fires. At least five died during firefighting in Guizhou and Yunnan provinces, and more than 20 homes were destroyed in Sichuan Province.

Chile



Texas (US)

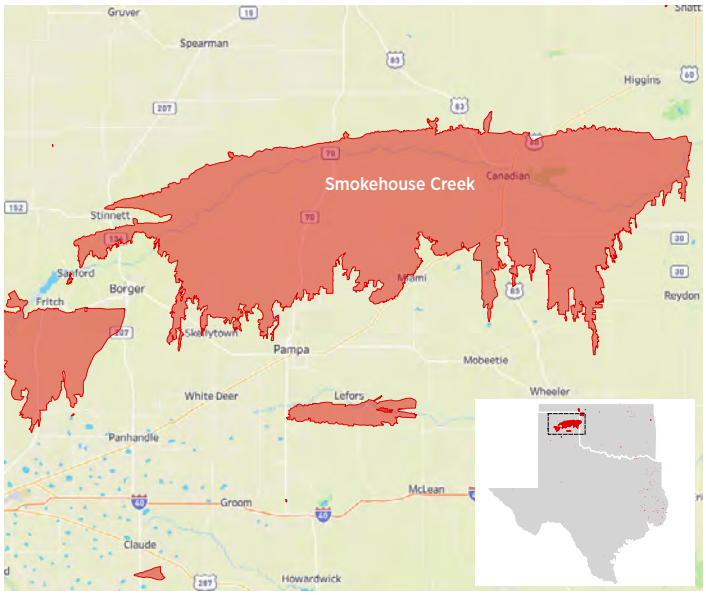


Figure 11: Footprints of wildfires near Viña del Mar, Chile (left) and the Smokehouse Creek wildfire (right) | **Data:** Copernicus / NIFC | **Graphic:** Gallagher Re

WHAT IT MEANS:

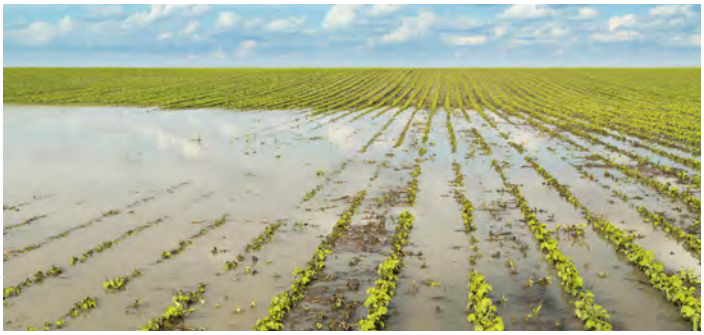
Wildfire continues to represent a traditionally "non-peak" peril that has exhibited increasing importance to the re/insurance industry. Recent activity has further reinforced that wildfires can be a threat in regions not typically considered "high-risk" areas and ignite wherever conditions are right, regardless of the season. With increasing volumes of population and exposure entering higher-risk Wildland Urban Interface (WUI) areas, this will only enhance the loss potential as climate change makes ground conditions more susceptible to erratic fire behavior.

Miscellaneous Events (Q1)

US / Canada

Aided by El Niño conditions and favorable upper-level winds, multiple storm complexes and atmospheric river events throughout Q1 brought heavy rains, damaging gusts, and high elevation snowfall to the western US, particularly California. This included notable flash flooding in San Diego. Combined insured losses from these events reached well into the hundreds of millions (USD). For a second consecutive winter season, near-to-above-average California rainfall and snowpack were beneficial to the state's water supply and continued to minimize drought conditions. A series of powerful coast-to-coast winter storms and an Arctic air outbreak resulted in widespread losses across the country in mid-January. The adverse weather was directly attributed to more than 90 fatalities, with a large number occurring in Tennessee and the Pacific Northwest. Three of these events generated USD1+ billion in economic losses, one of which resulted from extensive damage due to ice impacts in the Pacific Northwest between January 12–15.

In Canada, a mid-January surge of Arctic air resulted in several days of frigid temperatures in parts of Alberta, Saskatchewan, and British Columbia. In southern British Columbia, extensive damage was noted to cherry and grape crops, which had already begun to sprout due to unseasonably mild temperatures earlier in the season. Industry losses were expected to top USD140 million.



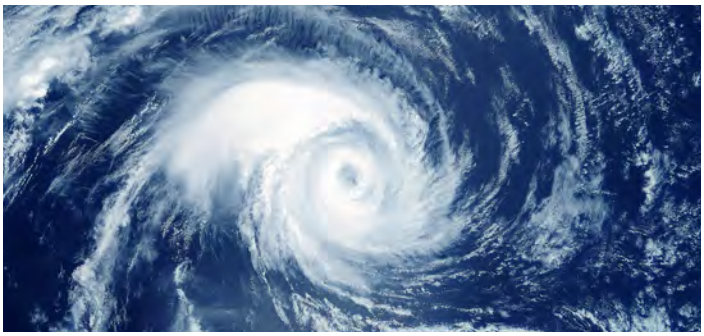
Latin America

Heavy rains and flooding impacted regions of Argentina, Brazil, Bolivia, Ecuador, Peru, and Uruguay in Q1. In late February, Peru declared a state of emergency in 17 departments due to the impact of heavy rains. In Ecuador, more than 25,000 homes were damaged or destroyed by flooding. In Bolivia, at least 52 people have been killed since the beginning of the rainy season in November 2023. In Brazil, exceptional late-March floods claimed at least 27 lives in Espirito Santo and neighboring Rio de Janeiro state.

March likewise brought several days of notable SCS outbreaks to Argentina. Supercells pelted regions in the central provinces with very large hail that caused significant property damage and agricultural losses. Torrential rains led to flooding in Buenos Aires and La Plata. Between March 10–13 several stations in the Buenos Aires Metropolitan Area reported rainfall totals exceeding 9.0 inches (230 millimeters), including Morón, where 10.2 inches (258 millimeters) were measured.

Europe

While several countries across Europe dealt with riverine floods and spells of rainy weather in Q1, eastern Spain continued to contend with multi-year drought conditions. In February, the government of Catalonia declared a drought emergency, which enforced water restrictions on residents. The ongoing drought was expected to lead to further challenges for the agricultural sector. Major harvest losses previously resulted in high crop insurance payouts in both 2022 and 2023.



Africa

Cyclone Belal passed over France's Réunion Island in the Indian Ocean at hurricane strength, prompting authorities to issue the highest, "violet," alert level. It resulted in more than USD100 million in insured losses in La Réunion and Mauritius. Cyclone Gamane struck northern Madagascar in late March which left 19 people dead and displaced 20,000 others.

In mainland Africa, ongoing drought conditions in Zimbabwe were expected to persist in the coming months, exacerbating poor harvests. Many livestock and elephants were killed last year due to starvation and water shortages. In neighboring Zambia, drought was declared a national emergency, and nearly 2.5 million acres (1 million hectares) of maize crops failed during the 2023/24 season.

Asia

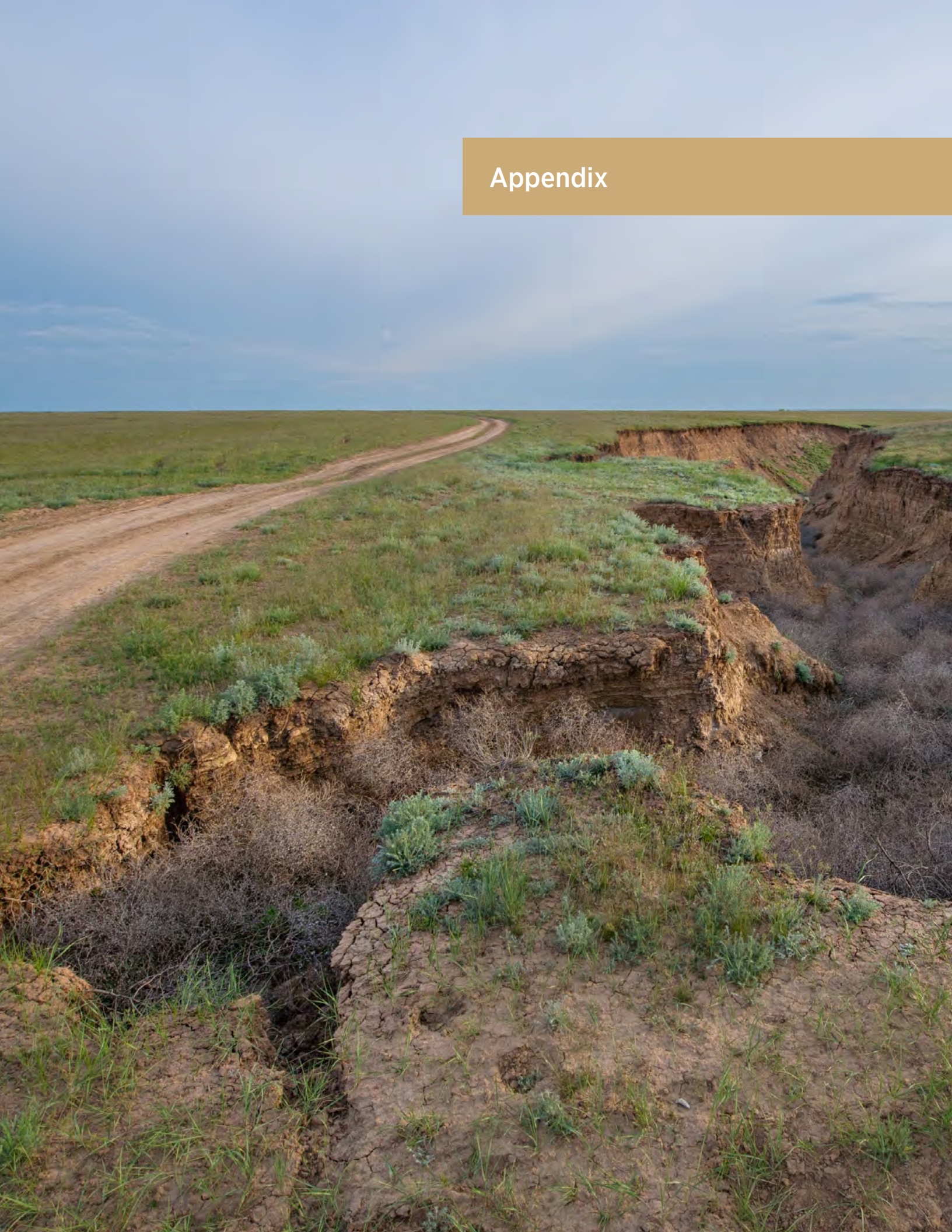
Heavy snow affected wide areas of China and Japan during the Northern Hemisphere winter. A major snow and freezing rain event affected China from February 1–5 that was noted as the most considerable since 2009. In Japan, more than 240 people across Kanagawa, Saitama, and Tokyo cities were injured from snow-related incidents.

Elsewhere in Asia, torrential rains on March 7 fell in West Sumatra Province, Indonesia. Some areas received close to 11.8 inches (300 millimeters) of rain in just six hours. The death toll from floods and landslides was at least 32 in the state. In total, 116 were killed, 202 injured, and more than three million people were displaced Indonesia in natural disasters in Q1 2024.

Oceania

Severe convective storms in the Victoria region, Australia led to significant property damage on February 14. A Significant Event declaration was made by the Insurance Council of Australia, and as of mid-April, nearly 25,000 claims had been filed. March, close to 20,000 claims had been lodged. This followed a major series of hailstorms that affected parts of Queensland, New South Wales, and Victoria from late December 2023 into early January 2024 and resulted in nearly USD630 million in insured losses.

Appendix



January–March 2024 Events: Preliminary Statistics

Please note that the appendix solely includes a listing of global events that resulted in >USD100 million in economic loss and/or >10 fatalities. It typically does not include a listing of aggregated loss totals from agencies that are not easily attributed to an individual event. Economic losses are provided in USD millions and are adjusted to year-to-date dollar values using the US Consumer Price Index and further implementation of CPI variables such as a construction index and a cost of labor factor. Totals may be rounded and are subject to future development.

Drought

Event Name	Date	Region	Countries	Economic Loss	Fatalities
China Drought	Jan 1–Mar 31	Asia	CN	100+	-
Spain Drought	Jan 1–Mar 31	Europe	ES	100s of millions	-
Brazil Drought	Jan 1–Mar 31	Latin America	BR	1,500+	-
US Drought	Jan 1–Mar 31	US	US	100+ million	-

Earthquake

Event Name	Date	Region	Countries	Economic Loss	Fatalities
Noto Peninsula EQ	Jan 1	Asia	JP	12,000+	245

European Windstorm

Event Name	Date	Region	Countries	Economic Loss	Fatalities
Isha (Iris)	Jan 20–22	Europe	BE, CH, DE, DK, FR, GB, IE, NL, NO	600+	5
Jocelyn (Jitka)	Jan 23–24	Europe	GB, IE, DE, DK, NL, NO, PL	160+	-
Ingunn (Margrit)	Jan 31–Feb 1	Europe	NO, GB, IE, SW	150+	-
Louis (Wencke)	Feb 21–23	Europe	FR, BE, NL, DE, DK, SE	600+	1
Nelson (Nadja)	Mar 27–29	Europe	FR, PT, ES, GB	100+	4+

Flooding / Landslides

Event Name	Date	Region	Countries	Economic Loss	Fatalities
Congo Floods Q1	Jan 1–17	Africa	CD	Millions	238
South Africa Jan Flood	Jan 10–20	Africa	ZA	10s of millions	13
Nairobi Floods	Mar 24–26	Africa	KE	-	10
Caraga & Davao Flood	Jan 16–19	Asia	PH	Millions	18
Zhenxiong Landslide	Jan 22	Asia	CN	-	44
Mindanao Flood/ Landslide	Jan 28–Feb 6	Asia	PH	65+	120
Nuristan Landslide	Feb 18	Asia	AF	-	25
Afghanistan Floods	Feb 20–Mar 4	Asia	AF	-	60
Pakistan Q1 Floods	Feb 28–Mar 4	Asia	PK	-	36
West Sumatra Floods	Mar 7–8	Asia	ID	25+	32
Central Java Floods	Mar 13–14	Asia	ID	-	13
Henk / Annelie & Flooding	Jan 1–5	Europe	BE, DE, FR, NL, GB	610+	3
Bolivia Q1 Floods	Jan 1–Mar 31	Latin America	BO	10s of millions	38
Colombia Landslide	Jan 12	Latin America	CO	Millions	36
Rio De Janeiro Jan Floods	Jan 13–14	Latin America	BR	40+	12
Southeast Brazil Floods	Mar 22–23	Latin America	BR	10s of millions	27
Chimbu Floods	Mar 13–19	Oceania	PG	50+	23
S. California Flash Flood	Jan 19–22	US	US	500+	-
Western Atmospheric River	Jan 31–Feb 1	US	US	100+	-
CA Atmospheric River #1	Feb 3–6	US	US	1,000+	9
CA Atmospheric River #2	Feb 17–21	US	US	150+	-

Tropical Cyclone

Event Name	Date	Region	Countries	Economic Loss	Fatalities
Cyclone Belal	Jan 14–16	Africa	RE, MU	275+	4
Cyclone Gamane	Mar 27–29	Africa	MG	Millions	19

Severe Convective Storm

Event Name	Date	Region	Countries	Economic Loss	Fatalities
Para March SCS	Mar 5	Latin America	BR	200+	-
Argentina Hail & Floods	Mar 8–21	Latin America	AR	250+	1
UAE Hail & Floods	Feb 11–13	Middle East	AR, OM	250+	4
Victoria Valentine's Day SCS	Feb 14	Oceania	AU	140+	-
Early Jan SCS & WW	Jan 8–10	US	US	2,700+	6
Jan Southern SCS & Flood	Jan 22–26	US	US	560+	-
Early Feb Outbreak	Feb 8–13	US	US	680+	-
Polar Front & SCS	Feb 26–29	US	US	860+	-
Western US Storm	Feb 28–Mar 4	US	US	140+	-
Early March Storm Complex	Mar 6–11	US	US	600+	-
Mid-March SCS Outbreak	Mar 12–17	US	US	4,250+	3
San Antonio Hail & SCS	Mar 21–23	US	US	700+	-
Late March Southern SCS	Mar 24–28	US	US	200+	-
Early April Outbreak	Mar 31–Apr 3	US	US	2,500+	1+

Wildfire

Event Name	Date	Region	Countries	Economic Loss	Fatalities
Central Chile Wildfires	Feb 1–Mar 22	Latin America	CL	1,000+	134
Smokehouse Creek Fire	Feb 26–Mar 15	US	US	400+	2

Winter Weather

Event Name	Date	Region	Countries	Economic Loss	Fatalities
China January Freeze	Jan 12–23	Asia	CN	365+	3
China Feb Winter Freeze #1	Feb 1–5	Asia	CN	2,000+	7
China Feb Winter Freeze #2	Feb 17–22	Asia	CN	500+	-
Western Canada Freeze	Jan 12–15	N. America	CA	300+	-
US January Freeze	Jan 11–14	US	US	1,150+	7
Northwest Winter Storm #1	Jan 12–15	US	US	1,100+	12
US Jan Polar Vortex	Jan 15–17	US	US	1,100+	70
Northwest Winter Storm #2	Jan 16–18	US	US	490+	8
Rockies Winter Storm	Mar 11–15	US	US	100+	-

Country Name	Abbreviation
Afghanistan	AF
Aland Islands	AX
Albania	AL
Algeria	DZ
American Samoa	AS
Andorra	AD
Angola	AO
Anguilla	AI
Antarctica	AQ
Antigua and Barbuda	AG
Argentina	AR
Armenia	AM
Aruba	AW
Australia	AU
Austria	AT
Azerbaijan	AZ
Bahamas	BS
Bahrain	BH
Bangladesh	BD
Barbados	BB
Belarus	BY
Belgium	BE
Belize	BZ
Benin	BJ
Bermuda	BM
Bhutan	BT
Bolivia	BO
Bonaire, Saint Eustatius, and Saba	BQ
Bosnia and Herzegovina	BA
Botswana	BW
Bouvet Island	BV
Brazil	BR
British Indian Ocean Territory	IO
Virgin Islands (UK)	VG
Brunei	BN
Bulgaria	BG
Burkina Faso	BF
Burundi	BI
Cambodia	KH
Cameroon	CM
Canada	CA
Cape Verde	CV
Cayman Islands	KY
Central African Republic	CF

Country Name	Abbreviation
Chad	TD
Chile	CL
China	CN
Christmas Island	CX
Cocos Islands	CC
Colombia	CO
Comoros	KM
Cook Islands	CK
Costa Rica	CR
Croatia	HR
Cuba	CU
Curacao	CW
Cyprus	CY
Czech Republic	CZ
Democratic Republic of the Congo	CD
Denmark	DK
Djibouti	DJ
Dominica	DM
Dominican Republic	DO
East Timor	TL
Ecuador	EC
Egypt	EG
El Salvador	SV
Equatorial Guinea	GQ
Eritrea	ER
Estonia	EE
Ethiopia	ET
Falkland Islands	FK
Faroe Islands	FO
Fiji	FJ
Finland	FI
France	FR
French Guiana	GF
French Polynesia	PF
French Southern Territories	TF
Gabon	GA
Gambia	GM
Georgia	GE
Germany	DE
Ghana	GH
Gibraltar	GI
Greece	GR
Greenland	GL
Grenada	GD

Country Name	Abbreviation
Guadeloupe	GP
Guam	GU
Guatemala	GT
Guernsey	GG
Guinea	GN
Guinea-Bissau	GW
Guyana	GY
Haiti	HT
Heard Island and McDonald Islands	HM
Honduras	HN
Hong Kong	HK
Hungary	HU
Iceland	IS
India	IN
Indonesia	ID
Iran	IR
Iraq	IQ
Ireland	IE
Isle of Man	IM
Israel	IL
Italy	IT
Ivory Coast	CI
Jamaica	JM
Japan	JP
Jersey	JE
Jordan	JO
Kazakhstan	KZ
Kenya	KE
Kiribati	KI
Kosovo	XK
Kuwait	KW
Kyrgyzstan	KG
Laos	LA
Latvia	LV
Lebanon	LB
Lesotho	LS
Liberia	LR
Libya	LY
Liechtenstein	LI
Lithuania	LT
Luxembourg	LU
Macao	MO
Macau	MO
Macedonia	MK

Country Name	Abbreviation
Libya	LY
Liechtenstein	LI
Lithuania	LT
Luxembourg	LU
Macao	MO
Macedonia	MK
Madagascar	MG
Malawi	MW
Macedonia	MK
Malaysia	MY
Maldives	MV
Mali	ML
Malta	MT
Marshall Islands	MH
Martinique	MQ
Mauritania	MR
Mauritius	MU
Mayotte	YT
Mexico	MX
Micronesia	FM
Moldova	MD
Monaco	MC
Mongolia	MN
Montenegro	ME
Montserrat	MS
Morocco	MA
Mozambique	MZ
Myanmar	MM
Namibia	NA
Nauru	NR
Nepal	NP
Netherlands	NL
Netherlands Antilles	AN
New Caledonia	NC
New Zealand	NZ
Nicaragua	NI
Niger	NE
Nigeria	NG
Niue	NU
Norfolk Island	NF
North Korea	KP
Northern Mariana Islands	MP
Norway	NO
Oman	OM

Country Name	Abbreviation
Pakistan	PK
Palau	PW
Palestinian Territory	PS
Panama	PA
Papua New Guinea	PG
Paraguay	PY
Peru	PE
Philippines	PH
Pitcairn	PN
Poland	PL
Portugal	PT
Puerto Rico	PR
Qatar	QA
Republic of the Congo	CG
Reunion	RE
Romania	RO
Russia	RU
Saint Kitts and Nevis	KN
Saint Lucia	LC
Saint Martin	MF
Saint Pierre and Miquelon	PM
Saint Vincent & The Grenadines	VC
Samoa	WS
San Marino	SM
Sao Tome and Principe	ST
Saudi Arabia	SA
Senegal	SN
Serbia	RS
Serbia and Montenegro	CS
Seychelles	SC
Sierra Leone	SL
Singapore	SG
Sint Maarten	SX
Slovakia	SK
Slovenia	SI
Solomon Islands	SB
Somalia	SO
South Africa	ZA
South Georgia and the South Sandwich Islands	GS
South Korea	KR
South Sudan	SS
Spain	ES
Sri Lanka	LK

Country Name	Abbreviation
Sudan	SD
Suriname	SR
Svalbard and Jan Mayen	SJ
Swaziland	SZ
Sweden	SE
Switzerland	CH
Syria	SY
Taiwan	TW
Tajikistan	TJ
Tanzania	TZ
Thailand	TH
Togo	TG
Tokelau	TK
Tonga	TO
Trinidad and Tobago	TT
Tunisia	TN
Turkey	TR
Turkmenistan	TM
Turks and Caicos Islands	TC
Tuvalu	TV
Virgin Islands (U.S.)	VI
Uganda	UG
Ukraine	UA
United Arab Emirates	AE
United Kingdom	GB
United States	US
Uruguay	UY
Uzbekistan	UZ
Vanuatu	VU
Vatican	VA
Venezuela	VE
Vietnam	VN
Wallis and Futuna	WF
Western Sahara	EH
Yemen	YE
Zambia	ZM
Zimbabwe	ZW

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