



# Global Catastrophe Recap

October 2018

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# Executive Summary

- Michael leaves USD15+ billion in economic damage; fourth-strongest US hurricane landfall on record
- Multiple tropical cyclones impact Asia-Pacific as the financial toll reaches into the billions (USD)
- Storms and flooding in Italy leaves dozens dead & widespread damage to property and forestry

Hurricane Michael became the strongest tropical cyclone on record to strike the Florida Panhandle and the fourth strongest hurricane to strike the United States mainland, based on reliable data since 1851. At least 45 people were left dead in the U.S. Widespread wind and storm surge damage was incurred along the Florida Panhandle coast and additional wind and flood-related damage swept throughout parts of Georgia, Alabama, South Carolina, North Carolina, Virginia, and Maryland. Total economic losses – including physical damage and net loss business interruption – was anticipated to exceed USD15 billion. Public and private insurers were likely to incur payouts topping USD8 billion.

Rainfall from what would eventually become Hurricane Michael initially spawned flooding across multiple countries in Central America. Total economic damage minimally exceeded USD100 million.

October also featured several significant typhoon events in Asia-Pacific. The most notable was Super Typhoon Yutu, which crossed through the Northern Mariana Islands as a powerful Category 5 storm with 180 mph (290 kph) winds. This made Yutu one of the strongest tropical cyclones to ever impact a U.S. territory. Yutu would later make landfall in the Philippines. Japan was struck by multiple landfalling storms – Typhoon Trami and Typhoon Kong-Rey – as aggregated economic losses were expected to exceed USD1 billion. India faced landfall by Cyclone Titli as storm surge, high winds and inland flooding prompted economic damage topping USD920 million. At least 85 people were killed.

Two tropical systems impacted Mexico – Willa and Vicente – though widespread major damage did not occur. Cyclone Luban made landfall in the Arabian Peninsula, with unspecified impacts in Yemen.

A complex severe weather outbreak impacted much of Italy and other countries across Southern and Central Europe during the last week of October into early November. Nearly 30 people were killed in Italy alone as flooding, landslides, severe winds, and strong waves left widespread damage in the hardest-hit Italian regions of Liguria, Veneto, Lazio, and Trentino-Alto Adige. Total economic losses were likely to exceed USD3.4 billion, including a minimum of USD1.1 billion in Veneto alone. Further economic damage topping USD270 million was registered in Austria.

Other costly and deadly flood events swept elsewhere across Europe during the month – including the extratropical remnants of Hurricane Leslie coming ashore in Portugal – with the combined economic toll likely to minimally reach into the hundreds of millions (USD).

Additional major floods were also registered in Uganda, Iran, Jordan, Sri Lanka, and Indonesia.

Multiple outbreaks of severe weather were observed in the United States. Among the worst events impacted parts of Texas during mid-October as severe thunderstorms and torrential rainfall led to flash flooding in an area from Dallas/Fort Worth to Austin to San Antonio. Total economic losses were estimated to approach USD350 million.

A magnitude-5.9 earthquake struck off the northern coast of Haiti. At least 18 people were killed, more than 540 others injured, and nearly 20,000 homes were damaged or destroyed.

# United States

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
10/01-10/03	Flooding	Arizona, New Mexico, California	3	Hundreds	Millions
10/02	Severe Weather	Northeast	0	Hundreds	10s of millions
10/10-10/12	HU Michael	Southeast, Mid-Atlantic, Central America	45	350,000+	15+ billion
10/15-10/20	Flooding	Texas	2	20,000+	350+ million
10/31-11/01	Severe Weather	Plains, Southeast	2	Thousands	Millions

Remnant moisture from Hurricane Rosa led to flooding across the Southwest from October 1-3. Several inches of heavy rainfall fell in parts of Arizona, New Mexico, and California – which had been coping with severe drought conditions – and prompted flash flooding in several communities. Flood inundation was noted in homes, businesses, and vehicles. Total economic damage was likely to reach into the millions (USD).

Numerous rounds of severe thunderstorms swept across parts of the Northeast on October 2, leading to widespread damage. Most of the damage occurred in Pennsylvania, where no fewer than 14 tornadoes touched down – including four rated EF2. Additional tornadoes were confirmed in New York and Connecticut. Further non-tornadic damage due to straight-line winds or hail was noted in Ohio, West Virginia, Pennsylvania, New York, New Jersey, and Connecticut. Total economic and insured losses were expected to reach into the tens of millions (USD).

Hurricane Michael made landfall in the Florida Panhandle on October 10 as a 155 mph (250 kph) Category 4 storm, leaving at least 45 people dead in the United States. The cyclone caused significant wind and coastal storm surge damage in Florida as winds gusted beyond 120 mph (195 kph) and storm surge neared 9.0 feet (2.7 meters) in height. Additional wind and inland flood damage was noted in parts of Georgia, Alabama, the Carolinas, Virginia, and Maryland. Michael became the strongest storm to strike the Florida Panhandle and the fourth-strongest hurricane to strike the United States mainland. Total economic losses were expected to exceed USD15 billion. This includes USD2.3 billion in economic damage to the Florida and Georgia timber industries, and another USD2 billion in agricultural sector loss alone in Georgia. Public and private insurers – including the National Flood Insurance Program and the USDA's crop insurance program – were poised to make more than USD8 billion in payouts.

Days of heavy rainfall and thunderstorms swept across Central Texas from October 15-20, leading to widespread flash flooding in several communities. At least two people were killed. Some of the hardest-hit areas included an area from Dallas/Fort Worth to Austin to San Antonio after more than 10 inches (254 millimeters) of rain fell. Rainfall return periods ranged from 1-in-50 and 1-in-200 years; or having a 2 percent or 0.5 percent chance of occurring in any given year. This caused numerous rivers to overflow their banks and led to significant inundation. Total economic damage was estimated to exceed USD350 million. Public and private insurers cited payouts nearing USD175 million.

An outbreak of severe weather swept across southern sections of the United States on October 31 and November 1, killing at least two people. Powerful thunderstorms spawned tornadoes, damaging straight-line winds, and flooding rains across parts of Texas, Louisiana, Mississippi, Alabama, Kentucky, Florida, and Georgia. October 31 featured an estimated 55 tornado reports by NOAA's Storm Prediction Center, marking the largest single-day number of such reports in 2018. Total economic and insured losses were likely to reach well into the millions (USD).

## Remainder of North America (Non-U.S.)

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
10/06-10/07	Flooding	Central America	15	Thousands	100+ million
10/07	Earthquake	Haiti	18	20,000+	Millions
10/23	HU Willa	Mexico	0	Hundreds	50+ million
10/23	TS Vicente	Mexico	14	Unknown	Millions

Heavy rains triggered flooding across parts of Honduras, Nicaragua, El Salvador, and Costa Rica on October 6-7. At least 15 people were killed. These rains were spawned by a tropical disturbance in the western Caribbean Sea that would eventually become Hurricane Michael. The worst affected country was Honduras, with tens of thousands of people affected and eight killed. Due to widespread agricultural and infrastructural damage, total, aggregated economic losses well exceeded USD100 million.

A magnitude-5.9 earthquake struck near the northern coast of Haiti on October 7, killing at least 18 people and injuring 548 others. The tremor had an epicenter about 19 kilometers (11.8 miles) northwest of Ti Port-de-Paix. According to official damage assessments, 2,100 homes were destroyed and 15,932 sustained damage. Nord-Ouest province was the hardest-hit, with approximately 60 percent of the noted damaged buildings. Total economic losses were estimated to reach into the millions (USD).

Hurricane Willa – a one-time Category 5 storm – made landfall at Isla Del Bosque, Mexico on October 23 as a 120 mph (195 kph) Category 3. The cyclone brought hurricane-force winds and coastal storm surge before rapidly dissipating over land and spawning torrential rain and inland flooding. Widespread damage was noted in the hardest-hit Mexican states of Sinaloa, Nayarit, Jalisco, Durango, and Zacatecas. Total economic losses were expected to reach into the millions (USD). Agricultural damage in the Las Cañas River basin alone were listed at MXN200 million (USD10 million).

The remnants of Tropical Storm Vicente made landfall in the Mexican state of Michoacán on October 23, spreading heavy rains across multiple coastal areas. At least 14 people were killed in flood-related incidents, including 11 alone in the state of Oaxaca. Excessive rains prompted several rivers – including the Papaloapan River – to overflow their banks and inundate numerous villages.

## South America

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
10/19-10/24	Flooding	Trinidad & Tobago	0	4,300+	10s of millions

Torrential rains on October 19 resulted in widespread flooding across Trinidad & Tobago, with primary impacts in Eastern and Central Trinidad. Official assessments suggested up to 150,000 people being affected and 800 evacuated. Areas particularly affected by the flooding and landslides were Sangre Grande, Tunapuna/Piarco, Couva/Tabaquite/Talparo, and Mayaro/Rio Claro regions. Initial governmental expenses were expected to exceed TTD25 million (USD3.7 million); however, the eventual financial impact is expected to be much higher.

# Europe

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
10/04-10/05	Flooding	Italy	3	Hundreds	130+ million
10/08-10/10	Flooding	Spain	13	5,500+	150+ million
10/12-10/15	Flooding	Norway	0	500+	10s of millions
10/14-10/16	Ex-HU Leslie	Portugal, Spain, France	14	18,500+	500+ million
10/17-10/21	Flooding	Spain	0	10,000+	100+ million
10/24-10/25	Flooding	Russia	6	2,600+	10s of millions
10/28-11/04	Severe Weather	Italy, Austria	29	Thousands	3.7+ billion

A Mediterranean cutoff low-pressure area spawned heavy rainfall across the southern regions of Italy on October 4-5. Major regional flooding followed, with the worst impacts noted in Calabria. Severe storms caused local streams to overflow in all five provinces of the region. Three people died in the Lamezia Terme. Coldiretti Calabria, a local agricultural association, suggested that economic losses in the agricultural sector alone could reach EUR100 million (USD115 million). This includes damage to vegetable and olive farms due to landslides and swollen streams.

A torrential downpour on October 9 resulted in a deadly flash flooding on Mallorca Island, Spain, which killed 13 people. This became the deadliest flood on Mallorca since 1989. The floodwaters inundated dozens of homes and swept many vehicles away. According to official assessments, economic damage reached at least EUR91 million (USD105 million). Further flooding ensued in Catalonia. Emergency services registered at least 684 incidents, of which more than a half occurred in Tarragona. The local government allocated EUR22.7 million (USD26.3 million) for infrastructure repairs alone. Along with further flood-related claims in the Balears, Andalusia, Malaga and Tarragona, insured losses are expected to exceed EUR27 million (USD31 million).

Heavy rainfall and rapid snowmelt due to a sudden increase in temperatures caused water courses in Western Norway to overflow their banks and triggered landslides from October 12-15. Among the hardest-hit areas was in Skjåk, where many homes were under water. Total economic and insured losses were estimated to reach into the millions (USD) due to a high average claim value in Norway. Initial estimates placed the insured loss at NOK100 million (USD12.2 million), but likely to rise.

The extratropical remnants of Hurricane Leslie impacted parts of southern Europe between October 14-16. The storm became one of the strongest to ever impact Portugal and caused widespread notable damage, notably in the Coimbra district. Total economic losses were estimated at more than EUR100 million (USD115 million), with loss for insurers nearing half of that amount. Leslie's remnants later spawned substantial flooding in southern France. The worst impacts were noted in the Aude River catchment. The flooding caused a notable loss for insurers, initially estimated at EUR200 million (USD230 million) with 16,000 claims filed as of October 22.

Several days of torrential rain caused widespread flood-related damage across eastern and southern regions of Spain from October 17-21. Official estimates by the local insurance association suggest insured losses in the region of EUR50 million (USD57 million), with the most severe impacts in the provinces of Málaga, Castellón, Valencia and Tarragona. Total economic losses were even higher.

Severe storms swept across the Tuapse district in Eastern Russia's Krasnodar Region on October 24-25. Resultant floods killed six people and injured three, while 380 were evacuated. The Russian Ministry for Emergency Situations noted 2,530 residential property in 29 settlements affected by flooding, a majority of which were located in Tuapse district, but additional effects were also felt in Absheron, Lazarevsky, and Sochi city districts. Minor infrastructural damage was further registered, including on railway tracks, 4 railway stations and two bridges.

A complex pattern of severe weather impacted much of Italy from October 28 to November 4, leading to the deaths of at least 29 people. The inclement weather led to significant incidents of flooding, landslides, strong winds, waves, hail, and heavy snowfall that caused major damage in the regions of Veneto, Liguria, Toscana, Piemonte, Lazio, Sardegna, and elsewhere. Total economic losses resulting from physical damage to homes, businesses, vehicles, agriculture, and infrastructure were estimated to approach EUR3.0 billion (USD3.4 billion). An initial report from Veneto alone cited minimal economic damage at EUR1 billion (USD1.1 billion). Additional losses were incurred in Austria, where the preliminary financial toll reached EUR235 million (USD270 million).

## Middle East

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
10/05-10/06	Flooding	Iran	9	2,650+	166+ million
10/14	Cyclone Luban	Yemen, Oman	14	Hundreds	Millions
10/26	Flooding	Jordan	21	N/A	Millions

Notable flooding hit northern Iranian provinces following heavy rains on October 5-6. The heaviest damage was reported near the Alborz mountains on the shores of the Caspian Sea, particularly Gilan, Mazandaran, Golestan, North Khorasan, Isfahan, and Yazd. More than 150 towns and villages in 39 counties were affected and nine people were killed. At least 2,650 homes were damaged, including 82 which were destroyed. Local officials cited the economic cost at IRR7 trillion (USD166 million), with infrastructure damage alone at IRR5 trillion (USD120 million).

Cyclone Luban made landfall in southeastern Yemen near the border of Oman as a tropical depression on October 14. The storm, which rapidly weakened prior to coming ashore, spread periods of heavy rainfall across both Yemen and Oman that spawned flash flooding in some locations. At least 14 fatalities were reported. In Oman, the hardest-hit areas included Dhofar and Al-Wusta Governorates. Economic and insured losses were likely to reach into the millions (USD). Similar flood damage was noted in six districts in Yemen: Al Ghaydah, Al Masilah, Al Hawf, Huswain, Qishn, and Sayut. Thousands of families were left homeless due to inundation to their homes.

Deadly flash flooding killed 21 people, mostly schoolchildren on the shores of the Dead Sea in Jordan on October 26, while at least 35 were injured. The event was caused by a sudden spell of heavy rainfall, which triggered a flash flood in one of the dry valleys. One bridge collapsed, according to the authorities. Additional damage was incurred on local agricultural industry.

## Africa

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
10/11	Flooding	Uganda	51	Hundreds	Unknown

Mudslides and flash flooding impacted Eastern Uganda on October 11, killing at least 51 people. The disaster occurred in Bududa district, where hundreds of structures were damaged or destroyed.

## Asia

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
09/28-10/02	Typhoon Trami	Japan	4	Thousands	1+ billion
10/06-10/12	Flooding	Sri Lanka	12	2,700+	Millions
10/06-10/07	Typhoon Kong-Rey	South Korea, Japan	3	1,400+	Millions
10/11-10/13	Cyclone Titli	India	85	Thousands	920+ million
10/12	Flooding	Indonesia	27	500+	Unknown
10/30	Typhoon Yutu	Philippines	27	8,000+	75+ million

Typhoon Trami brushed by Okinawa, Japan as a Category 2 storm before making landfall in Wakayama prefecture on September 30. Between September 28-October 1, Typhoon Trami caused widespread disruption and damage on the Japanese mainland. At least 4 people were killed and more than 200 others were injured. Preliminary estimates by the Fire and Disaster Management Agency noted that more than 6,000 homes and other structures suffered damage due to wind and inundation. Total economic losses were expected to exceed USD1 billion.

Heavy rains fell in Sri Lanka from October 6-12 due to the retreating monsoon. This triggered major flooding and landslides across the country. The National Disaster Management Centre announced that more than 75,000 people were affected and 12 were killed. More than 12,000 people were displaced after 2,650 homes were damaged or destroyed.

A weakening Super Typhoon Kong-Rey grazed Okinawa before later making landfall in South Korea and Japan as a tropical storm on October 6. By October 7, Kong-Rey became extratropical while tracking through northern Japan. Kong-Rey brought strong winds and heavy rain to the region. At least 3 people died and nearly 1,400 buildings were damaged due to the passage of the storm. Total economic losses were estimated into the millions (USD).

Cyclone Titli made landfall near the border of the Indian states of Andhra Pradesh and Odisha on October 11, killing at least 85 people and injuring hundreds more. The storm brought coastal storm surge, high winds, and torrential inland rainfall. Titli caused widespread damage to homes, businesses, infrastructure, and agriculture in Andhra Pradesh and Odisha. In Andhra Pradesh, local officials reported that the financial damage to property and infrastructure was INR37 billion (USD507 million). Total economic damage in Odisha was estimated at INR30 billion (USD413 million).

Flash floods and landslides hit North Sumatra in Indonesia on October 12 after a prolonged period of heavy rainfall. The events resulted in a death toll of at least 27 people; many of them were students of a school in Muara Saladi village in Mandailing Natal Regency. According to local authorities, at least 500 homes were damaged or destroyed. Three bridges were destroyed in West Pasaman.



Typhoon Yutu made landfall in the Northern Philippines on October 30 as a Category 2 storm and brought periods of heavy rainfall and very gusty winds to an area still recovering from September's Super Typhoon Mangkhut. Widespread property, infrastructure, and agriculture damage was noted across Luzon Island. At least 27 people were killed and nearly 8,000 homes suffered varying extent of damage. A preliminary economic damage estimate of PHP2.9 billion (USD55 million) was incurred to local agriculture alone.

## Oceania (Australia, New Zealand, South Pacific Islands)

<b>Date</b>	<b>Event</b>	<b>Location</b>	<b>Deaths</b>	<b>Structures/ Claims</b>	<b>Economic Loss (USD)</b>
10/11	Severe Weather	Australia	0	1,000+	Millions
10/24	Typhoon Yutu	Northern Mariana Islands	2	Hundreds	Millions

Severe weather prompted large hail and tornadoes in parts of Australia's Queensland on October 11. In central Queensland, winds of up to 145 kph (90 mph) were noted in Blackwater; while hailstones across the southeastern part of the state were as large as tennis balls while destroying crops, houses and cars and covering fields and paddocks in ice. Local emergency services received hundreds of calls related to storm damage. Total economic and insured losses were estimated into the millions (USD).

Super Typhoon Yutu became the strongest tropical cyclone on record to impact the Northern Mariana Islands after passing directly over the island of Tinian on October 25 local time (October 24 UTC). The storm was a Category 5 with 180 mph (290 kph) winds – 1-minute average sustained – as it crossed over Tinian and the northern eyewall impacted Saipan. Catastrophic wind and storm surge damage was reported across each island to homes, structures, vehicles, infrastructure, and agriculture. At least two people were killed. Total economic damage was expected to reach well into the millions (USD).

# Appendix

## Updated 2018 Data: January-September

### United States

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/01-12/31	Drought	Nationwide	N/A	N/A	2.0+ billion
01/03-01/05	Winter Weather	Eastern & Central U.S.	22	60,000+	1.1+ billion
01/08-01/09	Flooding	California	21	6,500+	900+ million
01/14-01/17	Winter Weather	Plains, Midwest, Northeast, Southeast	16	Thousands	Millions
01/21-01/24	Winter Weather	Plains, Midwest	10	Hundreds	Millions
02/03-02/07	Winter Weather	Plains, Midwest, Northeast	7	Thousands	50+ million
02/07-02/10	Winter Weather	Plains, Midwest, Northeast	5	Thousands	50+ million
02/19-02/22	Flooding	Plains, Midwest, Southeast	10	25,000+	400+ million
02/23-02/27	Severe Weather	Plains, Midwest, Southeast	5	15,000+	175+ million
03/01-03/03	Winter Weather	Northeast	9	325,000+	2.3+ billion
03/07-03/08	Winter Weather	Northeast	1	60,000+	525+ million
03/12-03/15	Winter Weather	Northeast	0	Thousands	Millions
03/18-03/21	Severe Weather	Plains, Southeast, Northeast	0	100,000+	1.5+ billion
03/21-03/22	Flooding	California	0	Hundreds	Millions
04/03-04/04	Severe Weather	Plains, Midwest, Southeast	1	40,000+	335+ million
04/06-04/07	Severe Weather	Texas, Louisiana, Mississippi	0	80,000+	825+ million
04/07	Severe Weather	Idaho	0	12,500+	150+ million
04/13-04/17	Severe Weather	Plains, Midwest, Southeast, Northeast	6	110,000+	1.3+ billion
04/14-04/15	Flooding	Hawaii	0	1,000+	125+ million
04/17-04/18	Severe Weather	Rockies, Plains	0	20,000+	135+ million
04/22-04/23	Severe Weather	Southeast	0	Thousands	Millions
04/28-05/05	Severe Weather	Plains, Midwest	0	125,000+	1.4+ billion
05/03-07/30	Volcano	Hawaii	0	Hundreds+	Millions
05/12-05/16	Severe Weather	Rockies, Plains, Midwest, Northeast	5	115,000+	1.45+ billion
05/13-05/15	Flooding	Florida	0	Hundreds	Millions
05/19-05/20	Severe Weather	Plains, Midwest	0	30,000+	500+ million
05/28-06/01	Severe Weather	Rockies, Plains, Midwest, Mid-Atlantic	1	45,000+	525+ million
05/27-05/28	Flooding	Maryland	1	5,000+	100+ million
05/27-05/30	STS Alberto	Southeast, Midwest	5	10,000+	125+ million
06/03-06/07	Severe Weather	Plains, Midwest, Southeast	0	95,000+	1.1+ billion
06/11-06/13	Severe Weather	Rockies, Plains	0	60,000+	980+ million
06/13-06/14	Severe Weather	Northeast	0	2,000+	75+ million
06/17-06/21	Severe Weather	Rockies, Plains, Midwest	3	190,000+	2.4+ billion
06/19-06/21	Flooding	Texas	0	11,000+	225+ million
06/23-06/26	Severe Weather	Central/Eastern U.S.	0	20,000+	195+ million
06/23-07/10	Wildfires	West	0	Hundreds+	100s of Millions
06/27-06/29	Severe Weather	Plains, Midwest, Southeast	1	15,000+	150+ million
06/29-07/04	Severe Weather	Plains, Midwest	1	20,000+	250+ million

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
06/01-07/31	Wildfire	Western U.S.	1	Hundreds	100s of Millions
07/08-07/10	Flooding	Arizona	0	15,000+	200+ million
07/19-07/22	Severe Weather	Plains, Midwest, Southeast	18	85,000+	1.43+ billion
07/21-07/26	Flooding	Northeast, Mid-Atlantic, Southeast	1	30,000+	450+ million
07/22-07/24	Severe Weather	Colorado	0	12,500+	140+ million
07/26-07/29	Severe Weather	Rockies, Plains, Southwest	0	65,000+	890+ million
07/24-08/31	Wildfire	California	6	Thousands	400+ million
08/01-08/31	Wildfire	California	14	12,000+	1.8+ billion
08/06-08/08	Severe Weather	Rockies, Plains	0	65,000+	800+ million
08/11-08/15	Flooding	Northeast, Mid-Atlantic	0	10,000+	400+ million
08/14-08/16	Severe Weather	Oklahoma, Texas	0	Hundreds	Millions
08/20	Flooding	Wisconsin	0	2,000+	108+ million
08/22-08/26	HU Lane	Hawaii	0	Thousands	100s of Millions
08/27-08/29	Severe Weather	Midwest	0	35,000+	725+ million
09/04-09/09	TS Gordon	Southeast	2	15,000+	250+ million
09/01-09/15	Flooding	Midwest	2	Hundreds	100s of millions
09/12	HU Olivia	Hawaii	0	Unknown	Negligible
09/14-09/19	HU Florence	Southeast, Mid-Atlantic	53	350,000+	10+ billion
09/20-09/21	Severe Weather	Midwest	0	13,000+	200+ million
09/21-09/24	Severe Weather	Plains, Southeast	2	13,000+	250+ million
09/24-09/26	Severe Weather	Midwest, Northeast	1	10,000+	250+ million

## Rest of North America (Non-U.S.)

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/11-01/14	Flooding	Canada	0	5,000+	90+ million
02/16	Earthquake	Mexico	0	18,000+	Millions
02/19-02/22	Flooding	Canada	0	Thousands	75+ million
04/04-04/05	Winter Weather	Canada	0	15,000+	115+ million
04/14-04/17	Winter Weather	Canada	0	15,000+	295+ million
04/26-05/17	Flooding	Canada	0	Hundreds	10s of Millions
05/04-05/05	Severe Weather	Canada	3	65,000+	425+ million
05/26-05/29	STS Alberto	Cuba	7	Thousands	Millions+
06/03	Volcano	Guatemala	122	Thousands	Millions
06/13	Severe Weather	Canada	0	Unknown	10s of Millions
06/14	Severe Weather	Canada	0	10,000+	110+ million
06/28-06/30	Severe Weather	Canada	0	Thousands	Millions
07/01-07/31	Drought	Central America	0	Unknown	200+ million
07/07-07/10	Severe Weather	Canada	0	4,000+	45+ million
07/09-07/11	HU Beryl (Remnants)	Puerto Rico, Hispaniola	0	2,000+	Millions
07/13-07/14	Severe Weather	Canada	0	Thousands	Millions
08/02	Severe Weather	Canada	0	15,000+	100+ million
08/07-08/08	Flooding	Canada	0	4,500+	150+ million
09/05-09/07	Flooding	Mexico	3	2,500+	53+ million
09/20-09/23	Flooding	Mexico	20	300,000+	100s of millions

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
09/21	Severe Weather	Canada	0	15,000+	325+ million

## South America

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/14	Earthquake	Peru	2	2,541+	Millions
01/29-02/08	Flooding	Bolivia, Argentina	7	Thousands	138+ million
02/09	Severe Weather	Argentina	0	Thousands	Millions
02/15-02/21	Flooding	Brazil	4	Thousands	10s of Millions
01/01-03/31	Drought	Uruguay	N/A	N/A	500+ million
01/01-03/31	Drought	Argentina	N/A	N/A	3.4+ billion
03/20-03/21	Flooding	Brazil	3	Thousands	43+ million
03/12-04/17	Severe Weather	Colombia	14	Unknown	Millions
06/12	Severe Weather	Brazil	2	2,630+	Millions

## Europe

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/01-01/04	WS Eleanor & Carmen	Western & Central Europe	7	200,000+	1.3+ billion
01/06-01/07	Severe Weather	Spain	0	Hundreds	60+ million
01/08	Earthquake	Netherlands	0	3,000+	Millions
01/18	WS Friederike	Western & Central Europe	13	100,000+	2.75+ billion
01/20-02/01	Flooding	France	0	30,000+	500+ million
02/23-03/02	Winter Weather	Western, Central & Eastern EU	88	Thousands	1.6+ billion
03/09-03/14	WS Felix & Gisele	Portugal, Spain	0	Hundreds	10s of Millions
03/28	Flooding	Russia	2	1224	Unknown
03/25-04/05	Flooding	Greece, Turkey, Bulgaria	15	Thousands	Millions
04/29	Severe Weather	Germany, France, Belgium	0	Thousands	10s of Millions
05/10-05/16	Severe Weather	Central Europe	0	Thousands	10s of Million
05/25-05/31	Severe Weather	Western & Central Europe	1	30,000+	500+ million
06/01-06/07	Severe Weather	Central & Western Europe	2	Thousands	150+ million
06/08-06/13	Severe Weather	Central, Western & SE Europe	6	Thousands	100s of Millions
06/28-06/29	Flooding	Romania, Bulgaria, Ukraine	3	2,000+	50+ million
05/01-08/31	Drought	Northern & Central Europe	0	Unknown	7.5+ billion
07/03-07/05	Severe Weather	France, Germany, Italy	0	Hundreds	10s of millions
07/08-07/25	Wildfire	Sweden	0	Unknown	102+ million
07/15	Severe Weather	France, Germany	0	Hundreds	Millions
07/18-07/19	Flooding	Poland, Slovakia	0	Hundreds	50+ million
07/23-07/24	Wildfire	Greece	92+	1,645+	10s of millions
08/03-08/04	Wildfire, Heatwave	Portugal, Spain	1	Hundreds	25+ million
08/20	Flooding	Italy	10	N/A	N/A
08/23-08/25	Severe Weather	Central Europe	0	Thousands	Millions
09/19-09/22	WS Ali & Bronagh	Western & Northern Europe	1	Hundreds	10s of millions
09/23-09/24	WS Fabienne	Central Europe	1	Hundreds	10s of millions

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
09/29	Severe Weather	Greece	2	2,000+	Millions

## Africa

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/01-05/31	Drought	South Africa	N/A	N/A	1.2+ billion
01/03-01/07	Flooding	Democratic Republic of Congo	51	465	Millions
01/12-01/13	CY Ava	Madagascar	73	4,800+	Millions
01/15-01/18	CY Berguitta	Mauritius, La Reunion	0	Thousands	10s of Millions
01/16-01/22	Flooding	Mozambique	11	15,000+	5.1+ million
02/07-02/09	Flooding	Malawi	1	2,000+	Unknown
02/22-03/07	Flooding	Angola, Malawi, Rwanda	8	6,500+	Millions
03/17-03/18	CY Eliakim	Madagascar	21	17,228+	Millions
03/22-03/23	Flooding	South Africa, Lesotho	7	Thousands	Millions
01/01-05/31	Flooding	Rwanda	134	6,000+	28+ million
03/14-05/31	Flooding	Kenya	226	Thousands	350+ million
03/14-05/31	Flooding	Uganda	N/A	Thousands	150+ million
04/01-05/31	Flooding	Somalia	5	Thousands	80+ million
04/14-04/16	Flooding	Tanzania	15	Hundreds	Unknown
04/14-04/17	Flooding	Ethiopia	2	Thousands	Millions
04/24	TS Fakir	Réunion	2	Hundreds	18+ million
05/19	TS Sagar	Somalia, Djibouti, Yemen	55	Thousands	Millions
05/28	Flooding	Ethiopia	23	Unknown	Unknown
06/18-06/29	Flooding	Ivory Coast, Ghana, Nigeria	38	Thousands	Millions
07/13-07/16	Flooding	Nigeria	71	600+	Unknown
07/01-08/31	Flooding	Niger	22	18,140+	Millions
07/15-08/15	Flooding	Sudan	23	8,900+	Millions
08/31-09/20	Flooding	Niger, Ghana, Burkina Faso	39	Hundreds	Unknown
09/01-09/30	Flooding	Nigeria	199	17,816+	275+ million
09/04	Landslide	Ethiopia	12	Unknown	Negligible
09/22	Flooding	Tunisia	5	2,500+	36+ million

## Middle East

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/19-01/20	Winter Weather	Lebanon	15	N/A	Negligible
02/16-02/18	Flooding	Turkey, Iran, Iraq, Lebanon	3	Hundreds	Millions
03/07	Earthquake	Iran	0	5,500+	Millions
03/24	Severe Weather	Turkey	0	Thousands	Millions
04/25-04/26	Flooding	Israel	11	Hundreds	Millions
05/17-05/21	Flooding	Tajikistan	6	1,145+	Millions
05/23-05/27	TS Mekunu	Yemen, Oman, Saudi Arabia	30	5,000+	400+ million
07/08	Landslide	Turkey	24	N/A	Unknown
07/22	Earthquake	Iran	0	1,000+	Millions

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
08/26	Earthquake	Iran	2	2,600+	Millions

## Asia

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/01-01/07	Winter Weather	India, Nepal	94	N/A	Negligible
01/02-01/05	Winter Weather	China	21	3,500+	854+ million
01/13-01/17	Flooding	Philippines	11	1,900+	Millions
01/21-01/25	Winter Weather	Japan, China	5	Unknown	Millions
01/23	Earthquake	Indonesia	0	9,291+	Millions
01/24-01/29	Winter Weather	China	2	2,500+	1.45+ billion
02/03-02/12	Flooding	Malaysia	0	Hundreds	Millions
02/05-02/06	Flooding	Indonesia	4	7,228+	Millions
02/06	Earthquake	Taiwan	17	Thousands	100+ million
02/12-02/14	TS Sanba	Philippines	0	2,000+	<10 million
02/21-02/23	Flooding	Indonesia	20	20,000+	Millions
03/03	Severe Weather	China	14	59,000+	147+ million
03/10	Wildfire	India	17	N/A	N/A
03/15-03/18	Severe Weather	China	5	2,000+	50+ million
03/22-03/26	Flooding	Indonesia	3	1,092+	Unknown
03/29	Severe Weather	China	0	200+	30+ million
04/02-04/18	Winter Weather	China	0	Thousands	3.4+ billion
04/11	Severe Weather	India	42	Thousands	100+ million
04/17	Severe Weather	India	18	4,446+	100+ million
04/19-04/25	Severe Weather	China	1	2,200+	91+ million
04/29-04/30	Severe Weather	Bangladesh	33	Unknown	Unknown
05/02-05/03	Severe Weather	India	143	Thousands	24+ Million
05/06-05/09	Severe Weather	India	32	4,200+	Millions
05/07-05/15	Flooding	Afghanistan, Pakistan	78	Thousands	Millions
05/07-05/14	Flooding	China	2	2,000+	31+ million
05/12-05/17	Severe Weather	China	2	2,000+	67+ Million
05/13-05/16	Severe Weather	India	95	Hundreds	Millions+
05/17-05/20	Flooding	India	6	2,422+	10+ Million
05/28-05/29	Severe Weather	India	54	Thousands	Millions
05/28	Earthquake	China	0	15,900+	7+ Million
05/29-05/31	Flooding	India	12	1,000+	Millions+
05/29-05/30	Severe Weather	Myanmar	5	1,400+	Unknown
05/07-07/10	Flooding	China	108	150,000+	1.75+ billion
06/01-10/31	Drought	China	N/A	Unknown	3.55+ billion
06/01-06/06	Severe Weather	India	42	Hundreds	Millions
06/06-06/07	Severe Weather	China	2	800+	31+ Million
06/02-06/07	TS Ewinar	Vietnam, China	15	5,400+	573+ Million
06/09-06/12	Severe Weather	China	0	Thousands	91+ Million
06/08-06/12	Severe Weather	India	61	16,000+	100+ million
06/05-06/14	Flooding	Bangladesh, Myanmar	26	1,540+	Unknown

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
06/12-06/21	Severe Weather	China	2	12,000+	317+ million
06/18	Earthquake	Japan	4	166,000+	3.25+ billion
06/23-06/27	Flooding	Vietnam	33	3,776 +	23+ million
06/24-07/03	Flooding	India	52	Hundreds	Millions
06/28-07/05	Flooding	China	11	12,000+	278+ million
06/29-07/03	Severe Weather	China	5	8,000+	157+ million
07/02-07/03	TY Prapiroon	Japan, South Korea	4	Hundreds	10s of Millions
07/05-07/08	Flooding	Japan	230	65,000+	7.0+ billion
07/01-07/25	Heatwave	Japan, Korea, China	150+	N/A	Unknown
07/01-07/03	Flooding	Pakistan, India, Nepal	21	Hundreds	Millions
07/01-09/30	Flooding	China (south), Vietnam	38	50,000+	2.0+ billion
07/01-09/30	Flooding	China (north)	50+	175,000+	5.75+ billion
07/07-07/11	Severe Weather	China	1	300+	33+ million
07/08-07/25	Flooding	Russia	0	6,000+	16+ million
07/10-07/11	Flooding	China	19	18,300+	580+ million
07/10-07/12	STY Maria	China, Taiwan	2	15,000+	490+ million
07/13-07/20	Flooding	China	0	500+	53+ million
07/17-07/24	TS Sonh-Tinh	Vietnam, China, Laos	34	32,000+	235+ million
07/17-07/31	Flooding	Philippines	13	5,050+	88+ million
07/17-07/26	Flooding	Laos, Cambodia	150	2,000+	Millions
07/20-07/24	Flooding	India	20	8,300+	Unknown
07/22-07/25	TS Ampil	China	1	6,000+	175+ million
07/22-07/25	Severe Weather	China	6	15,000+	295+ million
07/27-08/03	TY Jongdari	Japan, China	0	Thousands	100+ Million
07/27-07/29	Flooding	India	33	300+	Unknown
07/28	Earthquake	Indonesia	17	15,000+	23+ million
07/28-07/30	Flooding	Myanmar, Thailand	19	Thousands	Unknown
08/05, 08/09	Earthquake	Indonesia	560	90,000+	528+ million
08/02-08/06	Flooding	India	5	1,100+	Millions
08/03-08/08	Severe Weather	China	6	1,000+	39+ million
08/07-08/20	Flooding	India	500	30,000+	5.5+ billion
08/13	Earthquake	China	0	6,000+	Millions
08/09-08/15	TS Yagi	Philippines, China	7	Thousands	74+ million
08/13-08/19	TS Bebinca	China, Vietnam	16	8,000+	236+ million
08/16-08/18	TY Rumbia	China	22	20,000+	4.3+ billion
08/19	Earthquake	Indonesia	12	Thousands	10s of millions
08/19-08/23	Flooding	China	5	3,100+	33+ million
08/23-08/25	TY Soulik	Japan, Korea Peninsula, China, Russia	71	2,000+	81+ million
08/23-08/26	TY Cimaron	Japan	0	Hundreds	Millions
08/23-08/26	Flooding	Taiwan	7	Hundreds	34+ million
08/24	Flooding	Afghanistan	11	Hundreds	Millions
08/28-08/29	Flooding	South Korea	1	Hundreds	Millions
06/01-10/01	Drought	India	N/A	N/A	1.1+ billion
08/29-09/07	Flooding	North Korea	150	12,000+	Unknown
09/01-09/06	Flooding	India	46	160+	10s of millions

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
09/03	Earthquake	China	0	2,630+	5.2+ million
09/04-09/05	TY Jebi	Japan	17	486,000+	Billions
09/06	Earthquake	Japan	41	36,000+	1.25+ billion
09/08-09/19	Winter Weather	China	0	N/A	23+ million
09/15-09/18	STY Mangkhut	N. Mariana Islands, Philippines, China, HK	102	250,000+	Billions
09/23-09/24	Flooding	India	25	Hundreds	Millions
09/28	Earthquake	Indonesia	2,256	70,000+	1.45+ billion

## Oceania (Australia, New Zealand, South Pacific Islands)

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/01-08/01	Drought	Australia	N/A	Thousands	1.2+ billion
01/04-01/07	Flooding	New Zealand	0	3,600+	50+ million
01/31-02/02	Flooding (Fehi)	New Zealand	0	Thousands	67+ million
02/09-02/20	CY Gita	Tonga, Fiji, Samoa, New Zealand	1	10,000+	225+ million
02/18-02/20	TS Kelvin	Australia	0	4,000+	25+ million
02/26	Earthquake	Papua New Guinea	160	Thousands	190+ million
03/03	CY Hola	Vanuatu, N. Caledonia, NZ	3	Unknown	Unknown
03/05-03/08	Earthquake	Papua New Guinea	36	Unknown	Millions
03/09-03/11	Flooding	Australia	0	2,000+	40+ million
03/17-03/19	Wildfire	Australia	0	1,039+	90+ million
03/17	CY Marcus	Australia	0	6,218+	75+ million
03/24-03/27	CY Nora	Australia	0	2,000+	25+ million
03/31	CY Josie	Fiji	6	Unknown	10+ million
04/10	CY Keni	Fiji	0	804+	Unknown
04/10-04/11	Severe Weather	New Zealand	0	12,523+	87+ million
04/27-04/29	Flooding	New Zealand	0	2,000+	25+ million
05/10-05/14	Flooding	Australia	0	8,800+	130+ million
06/11	Flooding	New Zealand	0	Unknown	10s of Millions

## Additional Report Details

TD = Tropical Depression, TS = Tropical Storm, HU = Hurricane, TY = Typhoon, STY = Super Typhoon, CY = Cyclone

Fatality estimates as reported by public news media sources and official government agencies.

Structures defined as any building – including barns, outbuildings, mobile homes, single or multiple family dwellings, and commercial facilities – that is damaged or destroyed by winds, earthquakes, hail, flood, tornadoes, hurricanes or any other natural-occurring phenomenon. Claims defined as the number of claims (which could be a combination of homeowners, commercial, auto and others) reported by various public and private insurance entities through press releases or various public media outlets.

Damage estimates are obtained from various public media sources, including news websites, publications from insurance companies, financial institution press releases and official government agencies. Damage estimates are obtained from various public media sources, including news websites, publications from insurance companies, financial institution press releases and official government agencies. Economic loss totals include any available insured loss estimates, which can be found in the corresponding event text. Specific events may include modeled loss estimates determined from utilizing Impact Forecasting's suite of catastrophe model products.



# Contact Information

**Adam Podlaha**

Head of Impact Forecasting  
Impact Forecasting  
Aon  
+44.20.7522.3820  
[adam.podlaha@aon.com](mailto:adam.podlaha@aon.com)

**Steve Bowen**

Director & Meteorologist  
Impact Forecasting  
Aon  
+1.312.381.5883  
[steven.bowen@aon.com](mailto:steven.bowen@aon.com)

**Michal Lörinc**

Catastrophe Analyst  
Impact Forecasting  
Aon  
+420.234.618.222  
[michal.lorinc@aon.com](mailto:michal.lorinc@aon.com)

**Anwasha Bhattacharya**

Senior Analyst  
Impact Forecasting  
Aon  
+ 91.80.6621.8575  
[anwasha.bhattacharya@aon.com](mailto:anwasha.bhattacharya@aon.com)

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