

October 2010 Monthly Cat Recap – Impact Forecasting

November 3, 2010

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Executive Summary

- Significant flooding inundates parts of Asia, Africa and Europe
- Magnitude-7.7 EQ spawns large tsunami in Indonesia, killing over 430 people
- Super Typhoon Megi makes landfall in the Philippines as a Category 5 cyclone

The second strongest non-tropical or post-tropical low pressure system ever recorded in the continental U.S. brought severe weather, extremely gusty winds, torrential rains and heavy snows to eastern sections of the country in Missouri, Illinois and Wisconsin. At least 75 separate tornado touchdowns were confirmed, along with 521 separate reports of damaging winds.

A trio of hurricanes hit the Caribbean. Hurricane Paula affected parts of the Caribbean and Cuba which knocked out electricity to much of Havana but damage reports were minimal. Hurricane Richard made landfall just south of Belize City and the National Emergency Coordinator listed overall economic losses from the event at BZD49.2 million (USD24.5 million), with the agriculture sector sustaining 70% of the losses. The Caribbean Catastrophe Risk Insurance Facility reported that claims losses were anticipated to exceed USD12.8 million for Hurricane Tomas which impacted Barbados, St. Lucia, St. Vincent and the Grenadines.

The breadth of natural catastrophes occurring this month is evident from a large tornado in Argentina, flooding in Russia's Krasnodar Territory and extensive flooding in western and central Africa.

Heavy rains from Tropical Depression Fourteen and other tropical moisture impacted southern sections of China. Up to 2.7 million people were affected on the island province of Hainan as the worst rains since 1961 triggered floods that damaged or destroyed over 50,000 homes and other structures. Total economic losses were listed at CNY1.13 billion (USD169 million).

Elsewhere in Asia, monsoon rains and flooding left significant impacts to Indonesia's West Papua, Vietnam, Thailand, Cambodia and Japan. The flooding events in Vietnam, Thailand and Cambodia combined to affect over 1.6 million homes and caused economic losses in excess of USD1.03 billion.

Super Typhoon Megi made two separate landfalls in the Philippines and China with winds gusting in excess of 325 kph (200 mph) and rains that triggered flash flooding and landslides. Substantial damage was caused to the agricultural, electrical and transportation infrastructures with total damages listed at PHP12.01 billion (USD281 million) in the Philippines and total economic losses of CNY2.8 billion (USD412 million) in China.

A powerful magnitude-7.7 earthquake rocked western Indonesia, triggering a large tsunami that left 431 people dead, 454 injured and 96 more missing. Water from the tsunami reportedly reached 600 meters (1,968 feet) inland, and damage reports indicated catastrophic effects occurred to nearly every infrastructure type on the remote Mentawai Islands. Within 24 hours, Mount Merapi erupted on the provincial border of Central Java and Yogyakarta. The volcanic eruption shot ash over 1.5 kilometers (0.93 miles) into the air before covering in excess of 30,000 homes in hot ash. Damages were listed at IDR150 billion (USD16.8 million).

Heavy rains and gusty winds in New South Wales, Australia led to the worst flooding in over 80 years in isolated locations. Damage consisted primarily of roof damage and flooded homes and was estimated at AUD40 million (USD39 million), most of which is expected to be covered by insurance.

United States

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
10/5-10/6	Severe Weather	Arizona	0	150,000+	1.25+ billion
10/22-10/24	Severe Weather	Plains, Mississippi Valley	0	Thousands+	Millions+
10/25-10/28	Severe Weather	Midwest, Northeast, Southeast	2+	Thousands+	Millions+

Severe weather crossed portions of northern Arizona on the 5th and the 6th, leaving damage in its wake. On the 5th, strong thunderstorms affected the city of Phoenix, bringing torrential rains that flooded roads and interstates and high winds that ripped roofs off of homes. Early on the 6th, the focus shifted to northern sections of the state where four pre-dawn tornadoes touched down in the greater Flagstaff metropolitan area. Considerable damage was reported in the tornado-affected areas with hundreds of homes being damaged or destroyed, while large hail punctured holes in home and vehicle roofs and windows. High winds also derailed 28 Burlington Northern Santa Fe train cars. Regional insurers received over 150,000 claims with total payouts estimated at USD750 million. Total economic losses were listed at over USD1.25 billion.

A slow-moving storm system brought tornadoes, damaging winds and large hail across northeast Texas, Arkansas, Mississippi, Alabama, southern Tennessee and northern Georgia between the 22nd and the 24th. A strong EF2 tornado with 135 mph (215 kph) winds left a trail of destruction to homes, schools and vehicles in the town of Rice, Texas.

The second strongest non-tropical or post-tropical low pressure system ever recorded in the continental U.S. brought severe weather, extremely gusty winds, torrential rains and heavy snows to eastern sections of the country between the 25th and the 28th. On the 25th, the Storm Prediction Center recorded multiple tornado touchdowns in Illinois and damaging wind reports across Missouri, Illinois and Wisconsin. By the 26th, the storm system explosively developed as severe weather became widespread ahead of the advancing frontal boundary. Powerful clusters of thunderstorms traversed across the Great Lakes and Ohio Valley before later affecting the Tennessee Valley and the Southeast. At least 52 separate tornado touchdowns were confirmed, while 336 separate reports of damaging winds led to widespread damage. At least two people were killed and dozens more were injured. On the 27th, the frontal boundary pushed eastward, bringing severe weather to portions of North Carolina, Georgia, Virginia and Maryland. Behind the front, near-blizzard conditions occurred in the Dakotas. By the 28th, the system weakened.

Remainder of North America (Canada, Mexico, Caribbean Islands)

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
10/1-10/5	Flooding	Mexico	0	50,000+	Millions+
10/12-10/15	HU Paula	Honduras, Mexico, Cuba	1+	500+	Unknown
10/16-10/17	Flooding	Haiti	12+	100+	Unknown
10/24	HU Richard	Belize	2+	4,000+	24.5+ million
10/30-10/31	HU Tomas	Windward Islands	5+	1,000+	16.8+ million

Persistent heavy rains in southeast Mexico brought additional flooding to the state of Tabasco between the 1st and the 5th. The state governor reported that 13 of 17 municipalities suffered substantial damage, and more than 200,000 people were affected. At least 50,000 homes were damaged after several rivers (including the Carrizal River) overflowed their banks.

Hurricane Paula affected parts of the Caribbean and Cuba between the 12th and the 15th, killing at least one person. In Honduras and southern Mexico, at least 100 homes were damaged or destroyed by floods and high winds before Paula made landfall as a tropical storm near Puerto Esperanza, Cuba. As the small storm came ashore, it brought heavy rains and gusty winds and knocked out electricity to much of Havana. Damage reports were rather minimal, with homes sustaining roof damage and power poles being knocked down by fallen trees.

Steady rains on the 16th and 17th in Port-au-Prince, Haiti led to the deaths of 12 people after floods swept through earthquake refugee camps. The floods were triggered after rainwater rolled down mountainsides into the city, turning dirt streets into rivers. According to civil protection officials, the floods destroyed at least 100 separate tent ground areas.

Hurricane Richard made landfall just south of Belize City, Belize on the 24th as a 90 mph (150 kph) storm, leaving at least two people dead. According to government officials, Richard brought gusty winds, torrential rains and a 1.21-meter (four-foot) storm surge as it came ashore. The majority of the damage was minor in nature to approximately 4,000 homes, though the entire country lost electricity as the national power grid failed and sustained serious damage. The National Emergency Coordinator listed overall economic losses from the event at BZD49.2 million (USD24.5 million), with the agriculture sector sustaining BZD34.7 million (USD17.3 million) in losses. The other BZD14.5 million (USD7.2 million) came from property damage.

Hurricane Tomas quickly developed and slowly crossed the Windward Islands on the 30th and the 31st, leading to the deaths of at least five people. According to the governments of Barbados, St. Lucia and St. Vincent and the Grenadines, Tomas brought high winds, torrential rains and flooding leading to widespread damage to the electrical, agricultural and transportation infrastructures. At least 1,000 homes were damaged or destroyed across the region. The Caribbean Catastrophe Risk Insurance Facility reported that claims losses were anticipated to exceed USD12.8 million. An additional USD4 million in damages were reported in east Trinidad from Tomas.

South America

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
10/21	Severe Weather	Argentina	6+	873+	Unknown

A strong tornado struck the town of Pozo del Tigre in Argentina's Formosa province near the Paraguay border on the 21st. At least six people were killed and 116 more were injured as the twister destroyed 873 homes. The storm also knocked out power to 80 percent of the town.

Europe

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
10/16	Flooding	Russia	15+	2,000+	65.7+ million
10/30-10/31	Flooding	Italy	3+	500+	Unknown

Torrential rains inundated the Tuapse district of southern Krasnodar Territory in Russia on the 16th, spawning flash floods in 24 separate communities. At least 15 people died as the floods damaged over 2,000 homes and washed away seven bridges. Thousands of hectares (acres) of crops were also submerged. Total economic losses from the floods were listed at RUB2 billion (USD65.7 million).

Heavy rains on the 30th and the 31st led to widespread flooding and mudslides across parts of northern and central Italy. In northern Tuscany, at least three people were killed after a mudslide collapsed on several homes. Several northern rivers overflowed their banks which spawned flooding in Venice and Vincenzo. The swollen rivers also submerged several roads, while mudslides derailed train cars.

Africa

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
10/1-10/22	Flooding	Central and Western Africa	377+	1.5+ million	150+ million

Significant rains lasting throughout the month of October led to extensive flooding across central and western Africa. According to a United Nations report, at least 377 people died and more than 1.5 million others were affected. Fatalities were reported in Nigeria (118), Ghana (52), Sudan (50), Benin (43), Chad (24), Mauritania (21), Burkina Faso (16), Cameroon (13) and Gambia (12). Local governments throughout central and western Africa reported widespread extensive damage to transportation, electrical and agricultural infrastructures. Overall combined economic losses from Africa were listed at USD150 million.

Asia

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
9/30-10/6	Flooding	China	1+	50,000+	169+ million
10/1-10/6	Flooding	Indonesia	149+	25,000+	Unknown
10/2-10/7	Flooding	Vietnam	64+	70,000+	138+ million
10/10-10/19	Flooding	Thailand	69+	1.2+ million	670+ million
10/10-10/20	Flooding	Cambodia	8+	50,000+	70+ million
10/12	Flooding	Indonesia	11+	8,000+	Unknown
10/14-10/18	Flooding	Vietnam	75+	280,000+	150+ million
10/15-10/17	Flooding	China	0	50,000+	232+ million
10/17-10/23	STY Megi	Philippines, China, Taiwan	51+	150,000+	695+ million
10/20-10/21	Flooding	Japan	2+	2,000+	Unknown
10/22	CY Giri	Myanmar	27+	70,000+	Unknown
10/25	EQ/Tsunami	Indonesia	431+	15,000+	Unknown
10/25	Volcano	Indonesia	38+	30,000+	16.8+ million
10/30-10/31	Flooding	Vietnam	9+	7,724+	Unknown

Heavy rains from Tropical Depression Fourteen and other tropical moisture impacted southern sections of China between September 30th and October 6th. Up to 2.7 million people were affected on the island province of Hainan as the worst rains since 1961 triggered floods that damaged or destroyed over 50,000 homes and other structures. The floods also submerged over 166,700 hectares (412,000 acres) of crops. Total economic losses were listed at CNY1.13 billion (USD169 million).

Monsoon rains brought flooding and landslides to eastern Indonesia's West Papua province between the 1st and the 6th. According to the National Disaster Management Agency, at least 149 people died and 957 more were injured during the event. Severe damage to the electrical and transportation infrastructures made communication difficult as power lines fell, bridges collapsed and the local airport was non-operational. Reports noted that over 25,000 homes and other structures had been damaged.

Monsoonal moisture combined with affects of Tropical Depression Fourteen leading to heavy rainfall between the 2nd and the 7th in Vietnam. According to the Vietnamese government, at least 64 people died in the hardest-hit provinces of Ha Tinh, Quang Binh, Nghe An, Thua Thien-Hue and Quang Tri. Reports indicated that at least 70,000 homes and tens of thousands of hectares (acres) of cropland were destroyed by the floods and landslides. The transportation infrastructure was severely impacted as the main National Highway 1 and several rail lines connecting Hanoi with Ho Chi Minh City were submerged or washed away. Total economic losses were listed at VND2.75 trillion (USD138 million).

The worst flooding in decades affected 29 provinces in Thailand between the 10th and the 19th. At least 69 people were killed, and 1.2 million homes, structures and farms were submerged as floodwaters up to three meters (9.8 feet) in depth swept a large portion of the country. According to the Department of Disaster Prevention and Mitigation, over 647,497 hectares (1.6 million acres) of agricultural land was damaged and the transportation infrastructure had several main roads and railways washed away or submerged. Floods also affected the capital city of Bangkok after the Chao Phraya River overflowed its banks. Total economic losses from the event were estimated at THB20 billion (USD670 million).

Heavy monsoonal rains that fell between the 10th and the 20th in Cambodia led to the deaths of at least eight people. The National Committee for Disaster Management reported that at least 50,000 homes were destroyed in 13 provinces, and significant damage occurred to roads, bridges and irrigation systems. Reports noted that 10,000 hectares (24,700 acres) of rice fields were submerged. Total economic losses from the floods were estimated at KHR299 billion (USD70 million).

The Indonesian provinces of West Papua and Central Sulawesi saw continued monsoon rains that prompted additional flooding and landslides on the 12th. At least 11 people were killed and 18 more were injured. Officials reported that over 8,000 homes were destroyed.

The second major flood event in October affected central sections of Vietnam between the 14th and the 18th, with 321 communities across the provinces of Ha Tinh, Nghe An and Quang Binh sustaining the most significant damage. At least 75 people died and 18 more were injured. According to the Vietnamese government, more than 280,000 homes were submerged after nearly 1,400 millimeters (55 inches) of rain fell. The floods caused significant damage to the transportation infrastructure, as the main national Highway 1A along with hundreds of other main thoroughfares and various parts of the North-South railway system. Floodwaters also destroyed 56,000 hectares (138,000 acres) of rice fields. Total economic losses were listed at VND3 trillion (USD150 million).

Heavy monsoon rains fell between the 15th and the 17th in China, inundating at least 200 villages on the island province of Hainan. According to regional officials, floods led to over 50,000 homes, businesses and other structures sustaining damage. No injuries or fatalities occurred. The Ministry of Civil Affairs reported that total economic losses from the event stood at CNY1.52 billion (USD232 million).

Super Typhoon Megi made two separate landfalls in the Philippines and China between the 17th and the 23rd. As Megi came ashore in the Philippines, it brought winds gusting in excess of 325 kph (200 mph) and rains that triggered flash flooding and landslides. The hardest-hit municipalities were Maconacon, Palanan and Divilican along coastal Isabela province. At least 36 people died and 42 more were injured, and the storm damaged or destroyed over 148,222 homes. According to the National Disaster Coordinating Council (NDCC), Megi left substantial damage to the agricultural, electrical and transportation infrastructures with total damages listed at PHP12.01 billion (USD281 million). As Megi made landfall in China on the 23rd, the cyclone destroyed thousands of homes and 36,050 hectares (89,081 acres) of crops. Total economic losses were listed at CNY2.8 billion (USD412 million). In Taiwan, Megi's initial effects left at least 15 people dead after heavy rains triggered flooding and rock slides. Losses to agriculture were listed at TWD67.7 million (USD2.2 million).

The combination of a stalled cold front and moisture from Typhoon Megi brought a record 647 millimeters (25.88 inches) of rain in a 24-hour period to the southern Japanese island chain of Amami on the 20th and the 21st. Flash flooding, overflowing rivers and landslides led to two deaths and over 2,000 homes, businesses and vehicles damaged.

Cyclone Giri made landfall in Rakhine state in Myanmar as a borderline Category 4/Category 5 storm on the 22nd. According to limited data released by the Myanmar government, at least 27 people were killed and 15 more remained missing. Giri damaged or destroyed over 70,000 homes, monasteries, schools and government buildings and seriously impacted the transportation, electrical and telecommunications infrastructures.

A powerful USGS-registered magnitude-7.7 earthquake rocked western Indonesia on the 25th, triggering a large tsunami that left 449 people dead, 454 injured and 96 more missing. The main tremor struck at 9:42 PM local time (14:42 UTC) with an offshore epicenter 240 kilometers (150 miles) west of Bengkulu, Indonesia and a depth of 20.6 kilometers (12.8 miles). As damage assessments began in the remote Mentawai Islands, officials discovered that a tsunami estimated in excess of three meters (ten feet) completely washed away several villages. Water from the tsunami reportedly reached 600 meters (1,968 feet) inland, and damage reports indicated catastrophic effects occurred to nearly every infrastructure type. Over 15,000 mostly wooden and bamboo homes were destroyed along with businesses, schools, hospitals, roads, bridges, railways and agriculture.

Within 24 hours of the earthquake and tsunami event, Mount Merapi erupted on the provincial border of Central Java and Yogyakarta. The volcanic eruption shot ash over 1.5 kilometers (0.93 miles) into the air before covering in excess of 30,000 homes in hot ash. More than 40,000 people were evacuated from their homes after at least 38 people were killed following the initial eruption. Damages were listed at IDR150 billion (USD16.8 million).

Heavy rains in central Vietnam on the 30th and the 31st led to the deaths of at least nine people. Widespread flooding was reported in the provinces of Khanh Hoa, Phu Yen, Ninh Thuan and Ha Tinh, where thousands of hectares (acres) of crops were submerged and at least 7,724 homes were destroyed.

Oceania (Australia, New Guinea, New Zealand, Micronesia, Guam, Northern Mariana Islands)

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
10/8-10/11	Flooding	Queensland	0	1,360+	Unknown
10/16	Flooding	New South Wales	0	1,550+	39+ million

A slow-moving low pressure trough brought heavy rains and gusty winds to southeast Queensland between the 8th and the 11th. According to Queensland's State Emergency Service (SES), at least 1,360 reports of damaged roofs, flooded homes and washed-out infrastructure came into the agency between the Sunshine Coast and the New South Wales border. The inclement weather also knocked out electricity to over 3,000 Energex customers in the Caboolture area.

An advancing cold front brought heavy rains and gusty winds to parts of New South Wales on the 16th. The hardest-hit area was in southwestern sections of the state, where some places saw the worst flooding in over 80 years. The State Emergency Service (SES) responded to over 1,550 damage requests of primarily roof damage and flooded homes. Officials noted that the floods also damaged local businesses, roads, bridges and other public infrastructure. Natural disaster declarations were made in six separate areas including Wagga Wagga, Albury City, Tumut Shire, Tumbarumba Shire, Greater Hume Shire and Lockhart Shire. Damage estimates were listed at AUD40 million (USD39 million), most of which is expected to be covered by insurance.

APPENDIX

Updated Jan. 2010 – Sept. 2010 Data

United States

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
1/2-1/13	Winter Weather	Southeast, Plains, Midwest, Northeast	25+	25,000+	1.38+ billion
1/9	Earthquake	Northern California	0	463+	43+ million
10/17-10/22	Severe Weather	California, Arizona, Pacific Northwest	10+	50,000+	150+ million
1/20-1/24	Severe Weather	Southeast, Tennessee Valley	1+	500+	Unknown
1/27-1/30	Winter Weather	Plains, Southeast, Mid-Atlantic	13+	1,000+	Millions+
2/4-2/6	Winter Weather	Mid-Atlantic, Northeast	15+	35,000+	300+ million
2/6	Flooding	California	0	43+	31+ million
2/9-2/11	Winter Weather	Midwest, Mid-Atlantic, Northeast	6+	150,000+	1.5+ billion
2/10	Earthquake	Illinois	0	Unknown	Unknown
2/10-2/11	Winter Weather	Southeast	0	Unknown	Unknown
2/23-2/28	Winter Weather	Northeast, Mid-Atlantic, Midwest	10+	93,000+	500+ million
3/8	Severe Weather	Plains	0	Dozens+	Unknown
3/10-3/12	Severe Weather	Plains, Southeast	1+	Hundreds+	Unknown
3/13-3/15	Flooding	Northeast, Mid-Atlantic States	11+	175,000+	1.5+ billion
3/13-3/22	Flooding	Northern Plains	0	Unknown	Unknown
3/28-3/29	Severe Weather	Southeast	0	2,368+	4.4+ million
3/28-3/30	Flooding	Northeast	0	45,000+	350+ million
4/4	Earthquake	California	0	Unknown	91+ million
4/4-4/7	Severe Weather	Plains, Midwest, Northeast	0	60,000+	450+ million
4/22-4/25	Severe Weather	Mississippi Valley, Southeast	12+	32,000+	500+ million
4/20-7/31	Oil Spill	Gulf of Mexico	0	Unknown	Billions+
4/30-5/3	Severe Weather	Mississippi Valley, Tennessee Valley, Southeast	32+	75,000+	3+ billion
5/7-5/8	Severe Weather	Ohio Valley, Northeast	0	17,500+	200+ million
5/10	Severe Weather	Oklahoma, Kansas	5+	72,500+	1+ billion
5/12-5/16	Severe Weather	Plains, Midwest, Northeast, Tennessee Valley	0	230,000+	2.75+ billion
5/22-5/26	Severe Weather	Plains, Midwest, Northeast	0	65,000+	750+ million
6/1-6/3	Severe Weather	Northern Plains	0	25,000+	250+ million
6/4-6/6	Severe Weather	Midwest, Ohio Valley, Northeast	7+	20,000+	250+ million
6/6-6/9	Flooding	Utah	0	50+	1+ million

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
6/8-6/9	Flooding	Texas	1+	100+	Unknown
6/10-6/16	Severe Weather	Plains, Midwest, Southeast	0	82,500+	600+ million
6/10-6/11	Flooding	Arkansas	20+	Unknown	Unknown
6/13-6/14	Flooding	Oklahoma	1+	Thousands+	Millions+
6/14	Earthquake	Southern California	0	50+	Unknown
6/17-6/20	Severe Weather	Midwest	5+	85,000+	600+ million
6/21-6/24	Severe Weather	Midwest, Plains, Northeast	0	75,000+	500+ million
6/25-6/28	Severe Weather	Midwest, Plains, Northeast	1+	40,000+	225+ million
6/30-7/1	Severe Weather	Montana	0	20,000+	175+ million
7/1-7/10	Flooding	Texas	0	2,000+	40+ million
7/4-7/7	Heat Wave	Northeast, Midwest, Southeast	10+	Unknown	Unknown
7/7	Earthquake	Southern California	0	Dozens+	Unknown
7/10	Flooding	Massachusetts	0	1,000+	10+ million
7/10-7/16	Severe Weather	Plains, Midwest, Southeast, New England	0	Hundreds+	Millions+
7/17-7/18	Severe Weather	Plains, Midwest, Southeast, New England	2+	25,000+	250+ million
7/20-7/25	Severe Weather	Plains, Midwest, Southeast, New England	7+	110,000+	1+ billion
7/26	Severe Weather	Montana	2+	Dozens+	Unknown
7/26-7/31	Wildfires	Southern California	0	87+	23.4+ million
8/8-8/12	Severe Weather	Midwest, Mid-Atlantic States	1+	25,000+	150+ million
8/18	Flooding	Tennessee, Kentucky	0	500+	3+ million
9/1-9/4	HU Earl	Mid-Atlantic States, Northeast	0	Unknown	Unknown
9/6-9/9	TS Hermine	Texas, Oklahoma, Kansas	6+	25,000+	200+ million
9/6-9/14	Wildfire	Colorado	0	1,500+	225+ million
9/7	Wildfire	Michigan	0	85+	Unknown
9/15-9/16	Severe Weather	Ohio Valley, Northeast	2+	70,000+	500+ million
9/18-9/28	Flooding	Minnesota, Wisconsin, Texas	1+	1,000+	75.8+ million
9/18	Severe Weather	Missouri	0	35,000+	250+ million
9/19-9/22	Severe Weather	Plains, Midwest, Northeast	0	Thousands+	Millions+
9/28-10/1	Flooding	Carolinas, New England	8+	32,500+	200+ million

Remainder of North America (Canada, Mexico, Caribbean Islands)

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
1/2	Winter Weather	Canada	3+	Unknown	Unknown
1/12	Earthquake	Haiti	230,000+	350,000+	8+ billion
1/18-1/22	Flooding	Mexico	3+	800+	5+ million
2/4-2/10	Flooding	Mexico	43+	6,500+	15+ million
2/5	Winter Weather	Canada	0	Dozens+	80,000+
2/25-2/26	Winter Weather	Canada	0	Unknown	Unknown
3/29	Severe Weather	Bahamas	3+	Dozens+	Unknown
4/4	Earthquake	Baja California	2+	5,000+	1+ billion
5/15-10/4	Flooding	Nicaragua	66+	6,300+	Millions+
5/16	Earthquake	Puerto Rico	0	Dozens+	Unknown
5/26-5/31	Volcano	Guatemala	3+	Unknown	Unknown
5/28-5/31	Volcano	Ecuador	0	Unknown	Unknown
5/29-5/30	TS Agatha	Guatemala, Honduras	205+	110,000+	1+ billion
6/6	Severe Weather	Canada	0	Thousands+	118+ million
6/17	Severe Weather	Canada	0	500+	64+ million
6/23	Severe Weather	Canada	0	400+	25+ million
6/23	Earthquake	Canada	0	Hundreds+	16.3+ million
6/26-6/30	HU Alex	Mexico, Belize	51+	50,000+	1.9+ billion
6/30	Earthquake	Mexico	1+	100+	Unknown
7/1-7/10	Flooding	Mexico	5+	100,000+	100+ million
7/12-7/13	Severe Weather	Canada	0	60,000+	472+ million
8/21-8/24	HU Frank	Mexico	4+	30,000+	Unknown
8/28-8/29	Landslides	Honduras	5+	300+	Unknown
8/29-8/31	HU Earl	Leeward Islands, Puerto Rico	0	Hundreds+	75+ million
8/1-9/10	Flooding	Mexico	0	150,000+	Millions+
9/3-9/8	Flooding	Guatemala	54+	75,000+	1.55+ billion
9/4-9/5	HU Earl	Canada	1+	Unknown	Unknown
9/6	TS Hermine	Mexico	0	20+	Unknown
9/15-9/17	HU Karl	Mexico	16+	100,600+	3.9+ billion
9/18-9/22	HU Igor	Bermuda, Canada	4+	Thousands+	197+ million
9/20	Flooding	Mexico	11+	Hundreds+	Unknown
9/21	Severe Weather	Canada	1+	Hundreds+	Unknown
9/24-9/29	TS Matthew	Nicaragua, Guatemala, Mexico	19+	10,000+	Millions+
9/28-9/29	Flooding	Mexico	44+	515+	Unknown
9/28-9/29	TS Nicole	Jamaica, Cuba, Bahamas	13+	Thousands+	151+ million

South America

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
1/1-1/7	Flooding	Brazil	201+	10,000+	145+ million
1/21-1/27	Flooding	Peru, Bolivia	30+	35,312+	300+ million
2/5-2/8	Flooding	Bolivia	15+	36,163+	138,000+
2/8-2/9	Flooding	Uruguay	0	Unknown	Unknown
2/11	Flooding	Peru	0	20,150+	Unknown
2/17	Flooding	Argentina	0	Hundreds+	Unknown
2/27	Earthquake	Chile	500+	1.5+ million	30+ billion
3/1-3/5	Flooding	Bolivia	16+	46,200+	2.5+ million
4/1-4/2	Flooding	Peru	28+	120+	Unknown
4/5-4/7	Flooding	Brazil	256+	25,000+	13.1+ billion
4/19-4/20	Severe Weather	Ecuador	1+	411+	Unknown
6/17-6/21	Flooding	Brazil	72+	115,000+	860+ million
7/17-7/24	Winter Weather	Peru, Argentina, Brazil, Chile, Bolivia, Paraguay, Uruguay	522+	Unknown	Unknown
7/26-9/17	Flooding	Colombia	74+	122,000+	100+ million
8/5-8/31	Wildfires	Bolivia	0	60+	Unknown
9/27	Landslide	Colombia	30+	Unknown	Unknown

Europe

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
1/1-1/31	Winter Weather	UK, Central Europe, Northern Europe	276+	1,100+	4.63+ billion
1/1-1/15	Flooding	Albania, Bosnia, Croatia	0	2,489+	8+ million
2/1-2/2	Flooding	Canary Islands	1+	Hundreds+	Unknown
2/1-2/12	Winter Weather	Austria	15+	Unknown	Unknown
2/13-2/17	Flooding	Southern Europe	4+	Hundreds+	9.6+ million
2/20	Flooding	Madeira	43+	560+	1.89+ billion
2/23-2/24	Flooding	Spain	2+	400+	Unknown
2/27-2/28	Windstorm Xynthia	France, Portugal, Spain, Belgium, Germany	62+	100,000+	4.5+ billion
3/30-3/31	Winter Weather	United Kingdom	1+	Unknown	Unknown
4/15-4/26	Volcano	Central and Northern Europe	0	Unknown	2.8+ billion
5/12-5/28	Flooding	Central Europe	34+	102,000+	4.4+ billion
5/24	Severe Weather	Germany	1+	Dozens+	Unknown
6/2-6/10	Flooding	Central Europe	4+	50,000+	2.05+ billion
6/5-6/9	Flooding	France, Spain	27+	45,000+	1+ billion
6/19-6/21	Flooding	Bosnia	0	4,000+	1.5+ million

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
6/22-6/30	Flooding	Romania, Ukraine	22+	3,200+	Millions+
6/15-8/15	Heat Wave	Northern, Central, Eastern Europe	15,000+	Unknown	970+ million
7/1-8/18	Wildfires	Russia	52+	3,000+	15+ billion
7/29-7/30	Severe Weather	Finland	0	Hundreds+	99+ million
8/4	Severe Weather	Finland	0	Hundreds+	25+ million
8/6-8/8	Flooding	Central Europe	15+	25,000+	529+ million
8/8	Severe Weather	Finland	1+	Dozens+	Unknown
8/15-8/17	Flooding	Spain, Slovakia	5+	500+	14.2+ million
8/26-8/27	Flooding	Turkey	12+	100+	Unknown
8/30-9/3	Wildfires	Russia	8+	550+	Millions+
9/20-9/22	Flooding	Slovenia, Croatia	3+	500+	100+ million
9/26-9/28	Flooding	Germany, Poland	0	Hundreds+	Unknown

Africa

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
1/1-1/15	Flooding	Kenya	35+	30,000+	57+ million
1/17-1/18	Flooding	Egypt	15+	1,856+	36.2+ million
2/16	Flooding	South Africa	4+	Hundreds+	5.3+ million
2/22	Flooding	Zambia	9+	1,000+	Unknown
3/2	Flooding	Uganda	86+	Hundreds+	1+ million
3/6-3/12	Flooding	Kenya, Mozambique, Uganda	20+	10,000+	Unknown
3/10	TS Hubert	Madagascar	83+	7,000+	Unknown
5/7	Winter Weather	South Africa	6+	10+	Unknown
6/20	Flooding	Ghana	35+	17,458+	Unknown
7/16-7/27	Flooding	Sudan	18+	2,133+	Unknown
7/27-8/4	Flooding	Congo	0	1,500+	Unknown
8/1-9/30	Flooding	Nigeria	40+	350,000+	29+ million

Asia

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
1/1-5/1	Drought	China	0	Unknown	3.5+ billion
1/2	Earthquake	Tajikistan	0	1,098+	1.5+ million
1/2-1/12	Winter Weather	China, South Korea, India	43+	100,000+	29+ million
1/3-1/9	Earthquake	Solomon Islands	0	1,857+	Unknown
1/4	Landslide	Pakistan	19+	332+	50,000+
1/9	Flooding	Indonesia	3+	5,713+	Unknown

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
1/17-1/18	Flooding	Israel, Jordan	2+	163+	Millions+
1/17-1/23	Winter Weather	China	21+	38,000+	96+ million
1/21	Flooding	Indonesia	8+	2,000+	Unknown
1/31	Earthquake	China	1+	4,910+	4.4+ million
2/5	Winter Weather	Iran	8+	10+	Unknown
2/8-2/11	Winter Weather	India	21+	Unknown	Unknown
2/9	Winter Weather	Afghanistan	204+	3,800+	Unknown
2/13-2/19	Flooding	Indonesia	0	2,469+	215+ million
2/18	Winter Weather	Pakistan	116+	652+	Unknown
2/25	Winter Weather	China	7+	Unknown	Unknown
2/25	Earthquake	China	0	3,172+	882,000+
2/28-3/1	Winter Weather	China	0	5,883+	274+ million
3/4	Earthquake	Taiwan	0	1,000+	10.3+ million
3/8	Earthquake	Turkey	41+	Hundreds+	Unknown
3/11-3/13	Flooding	Kazakhstan	41+	2,000+	127,000+
3/27-3/28	Winter Weather	China	0	12,649+	530,000+
3/28-3/31	Severe Weather	India	7+	16,000+	Unknown
4/6	Earthquake	Indonesia	0	1,005+	Unknown
4/13	Severe Weather	India, Bangladesh	137+	300,000+	30+ million
4/14	Earthquake	China	2,698+	61,000+	4.7+ billion
4/14-4/19	Heatwave	India	107+	Unknown	Unknown
4/17-4/26	Flooding	China	1+	4,600+	65+ million
4/18-4/19	Severe Weather	India	1+	980+	Unknown
4/19	Earthquake	Afghanistan	11+	300+	Unknown
4/19-4/22	Flooding	China	2+	1,275+	10+ million
4/21	Severe Weather	India	4+	2,000+	Unknown
4/24-4/26	Sandstorm	China	7+	21,369+	117+ million
3/15-5/3	Flooding	China	0	8,321+	Unknown
5/1-5/2	Severe Weather	Bangladesh	23+	1,000+	Unknown
5/5-5/10	Flooding	Tajikistan	40+	4,500+	5.3+ million
5/5-5/24	Flooding	China	115+	95,000+	2.23+ billion
5/6	Severe Weather	China	36+	10,980+	17.7+ million
5/7	Severe Weather	India	54+	Hundreds+	Unknown
5/14-5/16	Severe Weather	China	7+	2,365+	Unknown
5/15-5/18	Severe Weather	Sri Lanka	20+	1,270+	100+ million
5/16-5/20	Severe Weather	India	13+	1,000+	Unknown
5/20	CY Laila	India	36+	23,000+	106+ million
5/30-6/3	Flooding	China	53+	11,000+	176+ million
6/4-6/5	CY Phet	Oman, Pakistan	44+	20,000+	1+ billion
6/13-6/30	Flooding	China	381+	879,000+	12.3+ billion
6/14-6/16	Flooding	Myanmar, Bangladesh	121+	20,000+	Unknown

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
6/16	Earthquakes	Indonesia	17+	3,922+	Unknown
6/16	Flooding	Singapore	0	Dozens+	22+ million
6/28	Landslide	China	99+	1,000+	Unknown
7/1-8/10	Flooding	China	829+	750,000+	18+ billion
7/6-7/8	Flooding	India	53+	28,000+	428+ million
7/10-7/16	Flooding	Japan	9+	Hundreds+	3.5+ million
7/13-7/17	TY Conson	Philippines, China, Vietnam	107+	48,737+	148+ million
7/19-7/25	Heat Wave	Japan	57+	Unknown	Unknown
7/20	Earthquake	Iran	1+	500+	Unknown
7/21-8/10	Flooding	Pakistan	1,980+	1.66+ million	9.7-30+ billion
7/22	TY Chanthu	Philippines, China	2+	2,915+	355+ million
7/23-7/25	Flooding	Indonesia	21+	3,000+	Unknown
7/24	Flooding	India	6+	Hundreds+	Unknown
7/28	Flooding	Afghanistan	65+	1,000+	Unknown
7/30-7/31	Earthquake	Iran	0	700+	Unknown
8/3-8/4	Flooding	Indonesia	0	3,000+	Unknown
8/5-8/8	Flooding	India-Kashmir	234+	10,000+	Unknown
8/6	Volcano	Indonesia	4+	100+	Unknown
8/8-8/9	Landslides	China	1,471+	4,000+	50+ million
8/8-8/11	TS Dianmu	Philippines, China, South Korea	6+	3,130+	Unknown
8/11-8/24	Flooding	China	84+	168,600+	1.52+ billion
8/18	Landslides	India	18+	Dozens+	Unknown
8/24	TS Mindulle	Vietnam	10+	47,000+	44+ million
8/26	Flooding	Nepal	0	600+	Unknown
8/27	Earthquake	Iran	3+	2,000+	Unknown
8/29	Earthquake	China	0	7,354+	Unknown
8/31	TS Namtheun	China	0	Unknown	Unknown
8/31-9/2	TY Kompasu	Japan, South Korea, North Korea	55+	18,550+	500+ million
9/2	TS Lionrock	China	0	Unknown	Unknown
9/8-9/14	Flooding	India, Bangladesh	0	11,000+	Unknown
9/10	TY Meranti	China	3+	30,000+	118+ million
9/11	Flooding	Indonesia	10+	Unknown	Unknown
9/13	Flooding	Philippines	5+	4,000+	Unknown
9/17-9/27	Flooding	India	150+	150,000+	1.65+ billion
9/17	Flooding	Pakistan	0	Thousands+	Unknown
9/18-9/22	Flooding	Thailand	0	Thousands+	47+ million
9/19-9/20	TY Fanapi	Taiwan, China	77+	52,300+	893+ million
9/21	Severe Weather	South Korea	2+	11,800+	Unknown
9/27	Earthquake	Iran	1+	500+	Unknown

Oceania (Australia, New Guinea, New Zealand, Micronesia, Guam, Northern Mariana Islands)

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
1/1-1/15	Flooding	New South Wales, Queensland	2+	Unknown	3.2+ million
1/22	CY Magda	Western Australia	0	Unknown	Unknown
1/24-1/30	CY Olga	Queensland	0	Unknown	Unknown
2/4-2/5	CY Oli	French Polynesia	1+	1,000+	70+ million
2/5-2/7	Flooding	New South Wales, Queensland	5+	3,000+	Unknown
2/11	CY Pat	Cook Islands	0	504+	10+ million
2/12-2/15	Flooding	New South Wales	2+	1,538+	16+ million
2/14	CY Rene	Tonga	1+	263+	Unknown
3/1-3/3	Flooding	Queensland	0	7,500+	123+ million
3/6	Severe Weather	Victoria	0	105,000+	1.25+ billion
3/12	Severe Weather	New Zealand	1+	500+	900,000+
3/13-3/16	TC Tomas	Fiji	2+	4,000+	33+ million
3/15-3/21	TC Ului	Solomon Islands, Queensland	0	812+	18+ million
3/22	Severe Weather	Western Australia	0	165,000+	1.25+ billion
4/20	Earthquake	Western Australia	0	100+	4.6+ million
5/24-5/27	Flooding	New Zealand	0	500+	3.3+ million
6/1	Flooding	New Zealand	0	500+	6.6+ million
6/3-6/4	Severe Weather	New South Wales	0	392+	1.04+ million
8/10-8/12	Severe Weather	Victoria	0	434+	Unknown
9/4	Earthquake	New Zealand	0	100,000+	2.9+ billion
9/4-9/8	Flooding	Australia	0	4,500+	13.7+ million
9/18-9/23	Severe Weather	New Zealand	0	Hundreds+	37+ million

¹ TD = Tropical Depression, TS = Tropical Storm, HU = Hurricane, TY = Typhoon, STY = Super Typhoon, CY = Cyclone

² As reported by public news media sources

³ **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 insurance companies through press releases or various public media outlets.

⁴ Damage estimates obtained from various public media sources, including news websites, publications from insurance companies and financial institution press releases. These estimates can include insured or economic losses.

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