

March 2012 Global Catastrophe Recap



Empower Results



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Executive Summary

- U.S. severe weather outbreak leaves 41 people dead; insured losses top USD1.1 billion
- Magnitude-7.4 earthquake in Mexico causes more than USD163 million in insured losses
- Flooding leaves swath of damage in Australia's New South Wales and Victoria

A significant severe weather outbreak swept across parts of the Midwest, the Tennessee Valley and the Southeast in the United States during the first week of March, killing at least 41 people. According to the Storm Prediction Center (SPC), there were at least 65 confirmed tornado touchdowns, including two EF-4 tornadoes that caused extensive damage in parts of southern Indiana, Kentucky, Tennessee and southwest Ohio. Total economic losses were estimated at approximately USD2.0 billion, while various insurers reported that more than 170,000 claims had been filed with payouts in excess of USD1.1 billion.

Additional U.S. severe weather activity was recorded during the month, including a system that impacted the Great Lakes. In southeastern Michigan, an EF-3 tornado damaged or destroyed at least 207 homes in the town of Dexter. A few weeks later, another storm system spawned at least 46 tornado touchdowns across parts of the Plains, Midwest and the Southeast.

Tornadic activity was also recorded during the month in Indonesia and Australia.

A magnitude-7.4 earthquake rattled central and southern Mexico, causing damage and killing at least two people. The tremor's epicenter was located 25 kilometers (15 miles) east of Ometepec, Mexico, with the hardest-hit areas found in the states of Guerrero and Oaxaca. A combined 44,000 homes, businesses, hospitals and schools were damaged or destroyed. The Mexican Association of Insurance Institutions (AMIS) reported insured losses at approximately MXN2.07 billion (USD163 million).

In other earthquake activity, a magnitude-7.1 temblor struck central Chile though damage was largely minimal in Santiago and the regions of Maipu and Bio Bio. The tremor was labeled an aftershock from February 2010's magnitude-8.8 event. Total economic losses were expected to be below USD100 million.

In China's Xinjiang region, a magnitude-5.8 earthquake left 36,641 people homeless and caused direct economic losses of CNY523.5 million (USD82.7 million).

Flooding affected portions of Australia's New South Wales (NSW) and Victoria between the end of February and the first half of March as at least two people were killed. The Insurance Council of Australia declared a catastrophe for NSW Riverina, NSW Central West and northern Victoria as at least 8,914 claims were filed and payouts were listed at AUD108.2 million (USD112.5 million).

Additional flood events during the month were recorded in parts of the Philippines, Fiji, Ecuador, Chile, Colombia and the United States.

Cyclone Irina's landfall led to the deaths of at least 84 people in Madagascar, Mozambique and South Africa. More than 78,000 were left homeless and wide swaths of agriculture were submerged. Also in March, Cyclone Lua made landfall in Western Australia and caused minimal damage. Total economic losses of AUD217 million (USD230 million) came from lost business when Port Hedland briefly closed.

A wildfire in the U.S. state of Colorado left three people dead and destroyed at least 25 homes.



United States

Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
Severe Weather	Midwest, Southeast	41+	170,000+	2.0+ billion
Flooding	Hawaii	0	Hundreds+	Millions+
Flooding	Louisiana	0	1,500+	2+ million
Severe Weather	Great Lakes	0	20,000+	275+ million
Severe Weather	Plains, Midwest, Southeast	1+	1,000+	Millions+
Wildfire	Colorado	3+	25+	Unknown
Severe Weather	Plains, Midwest, Southeast	0	Thousands+	Millions+
	Or Type ¹ Severe Weather Flooding Flooding Severe Weather Severe Weather Wildfire	Or Type¹ Location Severe Weather Midwest, Southeast Flooding Hawaii Flooding Louisiana Severe Weather Great Lakes Severe Weather Plains, Midwest, Southeast Wildfire Colorado	Or Type¹LocationDeaths²Severe WeatherMidwest, Southeast41+FloodingHawaii0FloodingLouisiana0Severe WeatherGreat Lakes0Severe WeatherPlains, Midwest, Southeast1+WildfireColorado3+	Event Name Or Type1Location# of Deaths2Structures/Claims2,3Severe WeatherMidwest, Southeast41+170,000+FloodingHawaii0Hundreds+FloodingLouisiana01,500+Severe WeatherGreat Lakes020,000+Severe WeatherPlains, Midwest, Southeast1+1,000+WildfireColorado3+25+

A significant severe weather outbreak swept across parts of the Midwest, the Tennessee Valley and the Southeast in the United States on the 2nd and 3rd, killing at least 41 people and injuring more than 400 others. According to the Storm Prediction Center (SPC), there were at least 65 confirmed tornado touchdowns and nearly 900 additional reports of hail and damaging winds. The hardest-hit areas came in southern Indiana, Kentucky, Tennessee and southwest Ohio, where two EF-4 tornadoes touched down and caused extensive damage. Additional tornado damage occurred in Alabama, Mississippi, Georgia, Virginia and North Carolina. Total economic losses were estimated at USD2.0 billion, while various insurers reported that more than 170,000 claims had been filed with payouts in excess of USD1.1 billion.

Several consecutive days of torrential rains and strong thunderstorms in Hawaii between the 4th and the 9th led to widespread flash flooding and isolated reports of mudslides. A disaster was declared for the islands of Oahu and Kauai after damage occurred to homes, businesses and vehicles. Total economic losses were estimated in the millions of dollars (USD).

Torrential rains fell in southern Louisiana on the 12th, causing flash flooding in parts of five parishes (Lafayette, Acadia, St. Landry, St. Martin and Vermilion). More than 1,500 homes and other structures were damaged after some areas registered as much as 15 to 20 inches (38 to 50 centimeters) of rain in only a few hours' time. The town of Carencro was amongst the hardest-hit, where local officials estimated that 60 percent of the region was underwater. City engineers labeled the floods as a 500-year event. Total economic losses were preliminarily listed at USD2 million, but that figure was expected to rise.

Severe weather impacted the Great Lakes on the 14th and 15th, including at least three tornadoes that touched down across southeastern Michigan. The most significant damage came in the town of Dexter, where an EF-3 tornado with winds up to 140 mph (220 kph) damaged or destroyed at least 207 homes. Total economic losses were estimated at USD275 million, while various insurers received more than 20,000 claims with payouts in excess of USD150 million.

A slow-moving storm system brought heavy rain and periods of severe weather to a broad area of the central and southern U.S. between the 18th and the 25th, leaving at least one person dead. Isolated flooding was reported in parts of Texas, Oklahoma, Arkansas, Louisiana, Missouri, and Mississippi, inundating hundreds of homes and businesses. The storm system also spawned rounds of severe weather across the Plains, Midwest and the Southeast. At least 46 confirmed tornadoes touched down.



A wildfire burned an area in the greater Denver, Colorado region between March 26th and April 2nd, killing at least three people. The blaze, called the Lower North Fork Fire, was sparked from a controlled burn reigniting due to high winds. The fire burned 4,100 acres (1,659 hectares) of land, and destroyed at least 25 homes in the mountainous community of Conifer.

Rounds of severe weather led to widespread hail, wind and flood damage across portions of the Plains, Midwest and the Southeast between the 29th and the 31st. Clusters of strong thunderstorms wrapping around the outer periphery of a ridge of high pressure spawned the activity. The Rio Grande Valley in Texas sustained the most notable impacts, where baseball-sized hail and street flooding occurred.

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

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
3/20	Earthquake	Mexico	2+	44,000+	300+ million

A magnitude-7.4 earthquake rattled central and southern Mexico on the 20th, causing damage in areas closest to the epicenter and killing at least two people. The tremor struck at 12:02 PM local time (18:02 UTC) with an epicenter 25 kilometers (15 miles) east of Ometepec, Mexico at a depth of 20.0 kilometers (12.4 miles). The hardest-hit areas came in the states of Guerrero and Oaxaca, where a combined 44,000 homes, businesses, hospitals and schools were damaged or destroyed. In total, 56 municipalities were affected. Mexico City and Acapulco both were shaken by the temblor, but no major damage occurred. The Mexican Association of Insurance Institutions (AMIS) reported insured losses at approximately MXN2.07 billion (USD163 million). Total economic losses were anticipated to be well into the hundreds of millions of dollars (USD).

South America

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,} ⁴ (USD)
1/1-3/25	Flooding	Ecuador	30+	4,000+	Unknown
3/11-3/16	Flooding	Chile	0	6,500+	3.1+ million
3/24-3/31	Flooding	Colombia	5+	5,000+	Unknown
3/25	Earthquake	Chile	0	Hundreds+	100+ million

Excessive rainfall throughout much of Ecuador prompted state of emergency declarations for five provinces (El Oro, Manabi, Guayas, Los Rios and Loja). The rains, which occurred between early January and the end of March, led to flooding that damaged 4,000 homes. At least 30 people died.

Heavy rainfall prompted flooding and widespread damage across extreme northern and southern sections of Chile between the 11th and the 16th. No injuries or fatalities were reported. In the northern regions of Arica, Parinacota and Tamarugal, more than 2,500 residents were rendered homeless after the San Jose River overflowed its banks. In the southern province of Magallanes, at least 4,000 residents were left homeless after excessive rains prompted the Las Minas River to swell and flood homes, businesses, schools, hotels and a casino. Clean-up costs were listed at CHP1.5 billion (USD3.1 million).



Periods of heavy rainfall swept across 25 separate departments in Colombia during the last week of March, leading to the deaths of at least five people. The heavy rains prompted multiple rivers to overflow their banks as more than 5,000 homes were damaged or destroyed. Additional damage was reported to dozens of bridges and roads in the Andean Region.

A magnitude-7.1 earthquake central Chile on the 25th, with an epicenter located 27 kilometers (16 miles) north-northwest of Talca at a depth of 34.8 kilometers (21.6 miles). According to Chilean officials, at least 25,000 people were briefly evacuated from their homes. Damage was largely minimal, though there were reports of cracked walls and fallen ceilings in some homes, businesses and churches in Santiago and also the regions of Maipu and Bio Bio. Total economic losses were expected to be below USD100 million.

Europe

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,} ⁴ (USD)
3/26	Earthquake	Turkey	0	Hundreds+	Unknown

A magnitude-5.2 earthquake rattled eastern Turkey's Mus province on the 26th, damaging mud-brick homes and other outbuildings in the villages of Sultani and Bulanik. No injuries or fatalities were recorded.

Africa

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,} ⁴ (USD)
2/26-3/7	CY Irina	Madagascar, Mozambique	84+	35,000+	Millions+

Excessive rainfall from Cyclone Irina led to the deaths of at least 84 people across parts of Madagascar, Mozambique and South Africa between February 26th and March 7th. According to the Madagascar government, at least 72 people were killed, more than 78,000 were left homeless and wide swaths of agriculture were submerged by Irina's rains and winds. In Mozambique and South Africa, a combined 12 people died due to storm-related incidents.

Asia

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
3/4	Winter Weather	Afghanistan	50+	100+	Unknown
3/9	Earthquake	China	0	20,000+	82.7+ million
3/12	Winter Weather	Afghanistan	45+	50+	Unknown
3/15-3/18	Severe Weather	Thailand	0	200+	Unknown
3/16-3/20	Severe Weather	Indonesia	0	12,000+	Unknown
3/17	Flooding	China	0	578+	Unknown
3/20	Flooding	India	3+	15,862+	1+ million
3/27	Flooding	Philippines	11+	10,000+	2.1+ million



A large avalanche buried an entire village in northeastern Afghanistan's Badakhstan province on the 4th, killing at least 50 people and leaving dozens of others missing. Rescue officials noted that every home in the Dasty village of 200 residents had been destroyed.

A magnitude-5.8 earthquake struck China's Xinjiang region on the 9th, causing widespread damage in 16 counties though no injuries or fatalities were recorded. The tremor struck at 6:50 AM local time (22:50 UTC Thursday) with an epicenter 214 kilometers (132 miles) south-southeast of Aksu, China. According to the Ministry of Civil Affairs, the earthquake left 36,641 people homeless and caused direct economic losses of CNY523.5 million (USD82.7 million).

At least 45 people were killed in eastern Afghanistan's Nuristan Province after a large avalanche struck the region on the 12th. According to local officials, the avalanche crushed dozens of homes and blocked roads leading into the affected district of Mandol.

Strong thunderstorms affected multiple provinces in Thailand provinces between the 15th and the 18th. In Surin Province, storms destroyed at least 87 homes; while multiple southern provinces reported that inclement weather led to more than 100 homes being destroyed and 20 people sustaining injuries.

At least three tornadoes struck Indonesia between the 16th and the 20th. Tornado and other storm damage were recorded in the provinces of East Nusa Tenggara, West Nusa Tenggara and South Kalimantan. A combined 12,000 homes were damaged or destroyed and at least 17 people were injured.

Heavy rains combined with melting snow in northwest China's Xinjiang Province to cause flooding on the 17th. At least 578 homes and swaths of farmland were damaged in Ili Prefecture, in addition to the deaths of 687 heads of livestock.

At least three people were killed in India's Kashmir region on the 20th, after strong winds and heavy rains prompted flooding and avalanches. An additional 17 injuries were recorded as the inclement weather was blamed on damaging 15,862 homes and other structures in the city of Srinagar. Total economic losses were estimated at INR47 million (USD1 million).

Heavy rainfall on the 27th led to widespread flooding across central and southern sections of the Philippines. At least 11 people were killed as floods led to impacts in at least 19 municipalities in six separate provinces. More than 10,000 homes were damaged or destroyed in addition to the transportation infrastructure. Total economic losses were listed at PHP89.5 million (USD2.1 million).

Oceania (Australia, New Zealand and the South Pacific Islands)

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
2/24-3/16	Flooding	Australia (NSW, Victoria)	2+	8,914+	1.58+ billion
3/17	CY Lua	Australia (WA)	0	Hundreds+	230+ million
3/20	Severe Weather	Australia (Queensland)	0	150+	21+ million
3/29-4/3	Flooding	Fiji	7+	Hundreds+	Millions+



Flooding affected portions of Australia's New South Wales (NSW) and Victoria between February 24th and March 16th, leading to the deaths of at least two people. Flash flooding and rivers overflowing their banks were the biggest causes of the damage, and natural disaster declarations were made for dozens of regions and shires. Total combined economic losses were estimated by various state officials at upwards of AUD1.5 billion (USD1.58 billion), including damage costs to personal property, infrastructure and agriculture. The Insurance Council of Australia declared a catastrophe for NSW Riverina, NSW Central West and northern Victoria as at least 8,914 claims were filed and payouts were listed at AUD108.2 million (USD112.5 million).

Cyclone Lua made landfall in Western Australia (WA) on the 17th, bringing periods of heavy rain and gusty winds. No injuries or fatalities were recorded, and damage reports were largely minimal. The cyclone came ashore close to Pardoo Roadhouse, Tavern and Caravan Park, with the vast majority of the impacts coming from precautionary shutdowns of mining fields and oil production in the Pilbara region. The Port of Dampier and Port Hedland were also temporarily closed. The total economic impact from lost business during the temporary shutdown at Port Hedland was listed at AUD217 million (USD230 million).

An EF-2 tornado damaged the Queensland, Australia community of Townsville on the 17th, causing widespread damage and injuring at least 13 people. A natural disaster was declared for the region, after it was determined that more than 115 homes were damaged or destroyed in addition to a number of businesses in the Garbutt area. Total economic damages were listed at AUD20 million (USD21 million).

Multiple days of torrential rainfall between the 27th and the 31st led to flooding across the Western, Central and Eastern Divisions of Fiji's Viti Levu Island and prompting a natural disaster declaration. At least seven people were killed and more than 12,000 residents were forced to evacuate their homes as several towns saw floodwaters reach up to 7.0 feet (2.1 meters) in height. Both flash flooding and river flooding were blamed on the damage. Total economic losses were estimated to enter the millions of dollars (USD).



APPENDIX

Updated Jan. - Feb. 2012 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)
1/8-1/12	Winter Weather	Plains, Southeast, Northeast	0	Thousands+	Millions+
1/12-1/13	Winter Weather	Midwest, Ohio Valley, Northeast	0	Thousands+	Millions+
1/16-1/17	Severe Weather	Midwest, Southeast, Northeast	0	Thousands+	25+ million
1/17-1/22	Winter Weather	Pacific Northwest	3+	1,000+	100+ million
1/19-1/21	Wildfires	Nevada	0	29+	9.1+ million
1/22-1/23	Severe Weather	Southeast, Plains	3+	10,000+	175+ million
2/17-2/18	Severe Weather	Plains, Southeast	0	Hundreds+	Unknown
2/20	Severe Weather	Plains	1+	Thousands+	Millions+
2/22	Severe Weather	Southeast	1+	250+	1.6+ million
2/24	Severe Weather	Southeast, Mid-Atlantic	0	Hundreds+	Millions+
2/28-2/29	Severe Weather	Midwest, Plains, Southeast	14+	25,000+	475+ 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)
2/11-2/12	Flooding	Canada	0	200+	Unknown

South America

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
12/24-1/6	Wildfires	Chile	7+	Hundreds+	200+ million
1/1-1/10	Flooding	Brazil	39+	25,000+	Millions+
1/30	Earthquake	Peru	0	858+	Unknown
2/8-2/9	Flooding	Peru	14+	11,000+	Unknown
2/10-2/29	Flooding	Brazil, Bolivia	1+	37,300+	10+ million

Europe

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
1/3-1/4	WS Ulli	UK, Scandinavia	2+	5,000+	306+ million



Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
1/4-1/5	WS Andrea	UK, Northern Europe	0	Thousands+	350+ million
1/24-2/17	Winter Weather	Eastern/Central Europe	824+	Unknown	660+ million
2/7-2/8	Winter Weather	Ukraine	0	Unknown	2+ million
2/7-2/9	Flooding	Bulgaria, Greece	12+	Hundreds+	4.4+ million

Africa

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
1/16-1/17	Flooding	Mozambique, South Africa	10+	5,000+	Unknown
1/20-1/26	CY Funso	Mozambique, Malawi	40+	10,000+	100+ million
2/13	Severe Weather	Nigeria	15+	3,000+	1+ million
2/14	CY Giovanna	Madagascar	35+	50,000+	100+ million

Asia

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
1/1-1/31	Winter Weather	Japan	56+	Thousands+	Millions+
1/1-2/7	Winter Weather	China	0	10,000+	2.1+ million
1/5	Landslide	Philippines	42+	100+	Unknown
1/5	Severe Weather	Indonesia	0	500+	30+ million
1/8	Earthquake	China	0	9,000+	Unknown
1/16-1/17	Winter Weather	Afghanistan	46+	Unknown	Unknown
1/21	Earthquake	Indonesia	0	450+	1.3+ million
1/21-1/24	Winter Weather	China	0	1,000+	4.4+ million
1/25	Severe Weather	Indonesia	14+	2,000+	1+ million
2/6	Earthquake	Philippines	58+	53,000+	1+ billion
2/7-2/9	Winter Weather	China	0	10,000+	20.2+ million
2/15-2/16	Winter Weather	China	0	1,000+	4+ million
2/18	Landslide	India	6+	Unknown	Unknown
2/19	Flooding	Philippines	0	5,000+	Unknown
2/22	Winter Weather	India	16+	Unknown	Unknown
2/25	Severe Weather	Indonesia	5+	100+	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)
1/12	TC Heidi	Australia (Western Australia)	0	Unknown	Unknown
1/22-1/31	Flooding	Fiji	7+	Thousands+	17+ million
1/24	Landslide	Papua New Guinea	40+	Unknown	Unknown
1/24-2/15	Flooding	Australia (NSW, Queensland)	1+	5,657+	920+ 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 and official government agencies

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, financial institution press releases and official government agencies. These estimates can include insured or economic losses.



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About Impact Forecasting® LLC

Impact Forecasting® LLC is a catastrophe model development center of excellence within Aon Benfield whose seismologists, meteorologists, hydrologists, engineers, mathematicians, GIS experts, finance, risk management and insurance professionals analyze the financial implications of natural and man-made catastrophes around the world. Impact Forecasting's experts develop software tools and models that help clients understand underlying risks from hurricanes, tornadoes, earthquakes, floods, wildfires and terrorist attacks on property, casualty and crop insurers and reinsurers. Impact Forecasting is the only catastrophe model development firm integrated into a reinsurance intermediary. To find out more about Impact Forecasting® LLC, visit impactforecasting.com.

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