

# September 2013 Global Catastrophe Recap



## Table of Contents

<b>Executive Summary</b>	<b>3</b>
<b>United States</b>	<b>4</b>
<b>Remainder of North America (Canada, Mexico, Caribbean, Bermuda)</b>	<b>4</b>
<b>South America</b>	<b>5</b>
<b>Europe</b>	<b>6</b>
<b>Africa</b>	<b>6</b>
<b>Asia</b>	<b>6</b>
<b>Oceania (Australia, New Zealand and the South Pacific Islands)</b>	<b>8</b>
<b>Appendix</b>	<b>9</b>
<b>Contact Information</b>	<b>16</b>

## Executive Summary

- Tropical cyclone landfalls in Mexico and Asia cause more than USD10 billion in economic losses
- Major flooding destroys 20,000 homes in Colorado as economic losses top USD2.0 billion
- Two powerful earthquakes (M7.7 & M6.8) kill at least 825 people in Pakistan

Hurricanes Manuel and Ingrid made separate landfalls within 24 hours on opposite sides of Mexico, bringing tremendous rainfall and gusty winds that caused extensive damage across more than two-thirds of the country. At least 192 people were killed or listed as missing. Manuel made separate landfalls in the states of Colima and Sinaloa while slowly tracking along the Mexico's Pacific coastline, and Ingrid made landfall in the state of Tamaulipas. The government estimated total economic losses from both storms at MXN75 billion (USD5.7 billion), with the Mexican Association of Insurance Institutions estimating insured losses minimally at MXN12 billion (USD915 million).

Super Typhoon Usagi made landfall in China after first skirting the Philippines and Taiwan. At least 37 people were killed. Usagi's landfall in China marked one of the strongest typhoons to come ashore in Guangdong Province in nearly 40 years. Property damage was widespread in five Chinese provinces as Usagi damaged at least 101,200 homes. The Ministry of Civil Affairs (MCA) estimated total economic losses at CNY23.5 billion (USD3.8 billion).

Typhoon Wutip made landfall in Vietnam, bringing periods of heavy rainfall and very gusty winds to several central provinces. Fourteen people were killed and 225 others were injured. Officials reported that more than 224,000 homes and 1,100 schools, public buildings and hospitals were damaged by flooding and high winds. Economic losses were estimated at VND5.0 trillion (USD240 million).

Japan sustained two tropical storm landfalls in September (Toraji and Man-yi), though damage was not substantial.

Record rainfall prompted historic flash flooding across the U.S. state of Colorado, killing at least nine people. The most significant damage occurred in Boulder, Larimer and El Paso counties after several major rivers and creeks crested at all-time highs. The Office of Emergency Management reported that nearly 20,000 homes were damaged or destroyed in addition to thousands of businesses and other structures. One person was also killed by flooding in New Mexico. Total economic losses were estimated to exceed USD2.0 billion. Preliminary insured losses to private insurers were roughly USD150 million, though the overall insured impact will increase once NFIP totals are included.

The combination of seasonal monsoon rains and the remnants of tropical cyclones led to flooding across parts of Asia. China (17 dead; USD343 million economic loss), Thailand (30 dead; 15,000 homes damaged), Laos (USD61 million economic loss), Cambodia (83 dead; 120,000 homes damaged), Philippines (32 dead), and Vietnam (15 dead; 15,000 homes damaged) were all affected.

Flood events in September were also recorded in Romania, Ukraine, Mexico, Bolivia, and the Solomon Islands.

A major magnitude-7.7 earthquake and a subsequent magnitude-6.8 aftershock struck southwest Pakistan, killing at least 825 people and injuring 824 others. Both tremors were centered in Awaran district. The most severe damage was concentrated in a 500-kilometer area (310-mile) area in Baluchistan Province, where roughly 21,000 poorly constructed mud-brick homes collapsed. Total economic losses were estimated at USD100 million.

A prolonged stretch of winter weather throughout the second half of September led to extensive agricultural damage in central Chile. A state of emergency was declared after farmers reported that frigid air had destroyed 61% of stoned fruit crops, 57% of almonds, 48% of kiwi crops, and 20% of table grapes. Heavy damage to vineyards also affected wine productivity. Total economic losses were listed at CLP575 billion (USD1.15 billion).

Severe weather swept across New Zealand, prompting hurricane-force winds and flooding rains on both the North and South islands. Local insurers anticipated payouts to total beyond NZD15 million (USD12.5 million).

## United States

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
9/9-9/15	Wildfire	California	1	211+	10+ million
9/9-9/16	Flooding	Colorado, New Mexico	10	25,000+	2.0+ billion
9/29-9/30	Severe Weather	Washington, Oregon	0	Hundreds+	Millions+

The Clover Fire burned across northern California's Shasta County between the 9th and 15th, damaging or destroying at least 211 structures. One resident was killed, and six others were injured. The fire charred 8,073 acres (3,267 acres) of land. Firefighters noted that the blaze destroyed 68 homes and 128 outbuildings, and damaged an additional five homes and 10 outbuildings. Total economic costs and damages were listed at USD10 million.

Record rainfall prompted historic flash flooding across the state of Colorado between the 9th and 16th, killing at least nine people. Nine counties were declared federal major disaster areas, with the most significant damage occurring in Boulder, Larimer and El Paso counties. Most of the damage was attributed to several major rivers and creeks cresting at all-time levels. The Office of Emergency Management reported that nearly 20,000 homes were damaged or destroyed in addition to thousands of businesses and other structures. Infrastructure sustained catastrophic damage as well. Heavy rains and flooding also affected New Mexico, where one person was killed. Total economic losses were estimated to approach or exceed USD2.0 billion. Preliminary insured losses to private insurers were roughly USD150 million, though the overall insured impact will increase once NFIP totals are included.

A powerful storm system swept across parts of the Pacific Northwest on the 29th and 30th, causing widespread damage in Washington and Oregon. The system spawned record rainfall and winds gusting to 65 mph (100 kph) that led to downed trees and power lines onto homes, businesses and vehicles. Also, a rare EF-1 tornado with 110 mph (175 kph) winds touched down in Fredrickson, WA and damaged roofs at several businesses.

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

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
9/5-9/8	Flooding	Mexico	13	Hundreds+	Unknown
9/6	Earthquake	Guatemala	1	500+	Millions+
9/10-9/11	TS Gabrielle	Bermuda	0	Unknown	Unknown
9/13-9/17	HU Ingrid	Mexico	23	10,000+	1.5+ billion
9/13-9/20	HU Manuel	Mexico	169	35,000+	4.2+ billion

Multiple days of heavy rains affected the eastern Mexico state of Veracruz between the 5th and 8th, killing at least 13 people. The rains led to flash flooding and landslides, including one massive landslide in the town of Manzanatitla.

A magnitude-6.6 earthquake struck southern Guatemala on the 6th, killing one person and injuring 52 others. The tremor was registered at 6:13 PM local time (0:13 UTC on the 7th) with an epicenter 5 kilometers (3 miles) east-southeast of Ciudad Tecun Uman, Guatemala. Structural damage was largely limited, with only 104 buildings had been affected. Hundreds of others sustained cracking or fallen indoor contents.

Tropical Storm Gabrielle tracked past Bermuda on the 10th and 11th, though impacts were largely minimal. Sustained winds of 40 mph (65 kph) and periods of heavy rainfall were recorded on the island at the storm's peak, but damage was very minor.

Hurricane Ingrid made landfall along Mexico's Gulf Coast near the town of La Pesca on the 15th, spawning several days of heavy rainfall that led to extensive flooding. At least 23 people were killed. Among the hardest-hit areas came in the states of Veracruz, Hidalgo and Puebla, where officials estimated that at least 10,000 homes had been damaged or destroyed due to landslides and overflowing rivers. Economic losses were estimated at MXN20 billion (USD1.5 billion), with the Mexican Association of Insurance Institutions anticipating insured losses up to MXN3.0 billion (USD230 million).

Hurricane Manuel made multiple landfalls along Mexico's Pacific coast between the 13th and 20th, as torrential rainfall prompted massive flooding in more than two-dozen states. At least 169 people were killed or missing. The hardest-hit state was Guerrero, particularly in the greater Acapulco region, where major flooding caused extensive damage to residential and commercial property. Additional damage from Manuel was recorded in the states of Oaxaca, Jalisco, Michoacán, and Sinaloa. More than 300 municipalities were declared disaster areas and at least 35,000 homes were damaged or destroyed. Economic losses were estimated at MXN55 billion (USD4.2 billion), with the Mexican Association of Insurance Institutions anticipating insured losses up to MXN9.0 billion (USD685 million).

## South America

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
9/10-9/30	Winter Weather	Chile	0	Unknown	1.15+ billion
9/21-9/22	Severe Weather	Brazil, Paraguay	4	20,000+	115+ million
9/23	Flooding	Bolivia	19	Unknown	Unknown
9/25	Earthquake	Peru	0	1,411+	Unknown

A prolonged stretch of cold temperatures, snow and frost throughout the second half of September led to extensive agricultural damage in central Chile. A state of emergency was declared after farmers reported that frigid air had destroyed 61% of stoned fruit crops, 57% of almonds, 48% of kiwi crops, and 20% of table grapes. Heavy damage to vineyards also affected wine productivity. Total economic losses were listed at CLP575 billion (USD1.15 billion).

A large storm system swept across parts of southern Brazil and Paraguay on the 21st and 22nd, killing four people. In Brazil, a state of emergency declared in the state of Santa Catarina after 4,000 homes in 71 towns were damaged by flooding and hail. A strong tornado killed two people and injured 64 others in the town of Taquaritiba in the state of Sao Paulo, destroying more than 600 homes and 26 businesses. Total economic losses in the town were listed at BRL200 million (USD90 million). In Paraguay, large hail pelted the departments of Central, Cordillera, Caaguazú, Alto Paraná, and Amambay. At least 10,000 homes were damaged in addition to extensive crop damage. Total economic losses were estimated minimally at PYG110 billion (USD25 million).

Excessive rains triggered a large mudslide in central Bolivia's Yungas region on the 23rd, killing at least 19 people and injuring 29 others. The mudslide occurred in the village of Caranavi along the Caranavi-La Paz Highway near the Cajones Bridge, causing a bus to be swept 40 meters (131 feet) into a ravine and a minibus to be buried.

An offshore magnitude-7.0 earthquake rattled Peru on the 25th, injuring at least 29 people. The tremor struck at 11:42 AM local time (16:42 UTC) with an epicenter 50 kilometers (31 miles) south of Acari, Peru. Peru's Civil Defense noted that the most significant damage was recorded in 17 provinces across the departments of Arequipa, Ayacucho, and Ica. At least 1,411 homes, schools and other buildings were damaged or destroyed, primarily to structures built with adobe construction.

## Europe

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
9/11-9/15	Flooding	Romania	9	2,000+	11+ million
9/14-9/15	Flooding	Ukraine	2	Hundreds+	21+ million

Excessive rainfall led to major flooding across the eastern Romania between the 11<sup>th</sup> and 15<sup>th</sup>, killing at least nine people. The counties of Galati, Braila and Tulcea were the hardest-hit. In Galati alone, more than 1,800 homes were damaged or destroyed. Overflowing rivers also submerged 3,042 hectares (7,500) acres of farmland and washed away stretches of infrastructure. Total economic costs were listed at EUR8.0 million (USD11 million).

Heavy rains affected southern Ukraine's Odesa region on the 14th and 15th, killing at least two people. Regional officials reported that at least 450 homes were damaged (including 53 which were destroyed) in addition to gas pipeline and railroad tracks. Roughly 4,000 head of livestock and poultry were also killed. Total economic damages were listed at UAH170 million (USD21 million).

## Africa

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
8/5-9/25	Flooding	Mauritania	8	1,000+	Millions+

Persistent rainfall prompted flooding across parts of Mauritania during the months of August and September, killing at least eight people. The floods affected four regions (Akjoujt, Ouad Naga, Moudjeria, and Rosso) as more than 1,000 homes were destroyed. Additional damage was prevalent to infrastructure and agriculture.

## Asia

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
9/1-9/30	Flooding	Thailand	30	15,500+	Millions+
9/2-9/4	Severe Weather	Japan	0	1,288+	Millions+
9/3-9/4	Flooding	Vietnam	8	Hundreds+	Unknown
9/3-9/5	TS Toraji	Japan	1	1,439+	Millions+
9/10	Flooding	Afghanistan	24	500+	Unknown
9/16-9/17	TS Man-yi	Japan	4	10,049+	Millions+
9/16-9/18	Flooding	China	17	30,000+	343+ million
9/16-9/18	TD 18	Vietnam, Laos	7	15,000+	61+ million
9/20-9/23	STY Usagi	China, Philippines, Taiwan	37	105,000+	3.8+ billion
9/23-9/27	Flooding	Philippines	32	1,000+	4.0+ million
9/24 & 9/28	Earthquake	Pakistan	825	21,000+	100+ million
9/29-10/2	TY Wutip	Vietnam, China	20	225,448+	240+ million

Seasonal monsoon rains in Thailand inundated parts of 250 districts in 33 provinces during the month of September, killing at least 30 people. Among the hardest-hit provinces were Lamphun and Ayutthaya, where at least dozens of districts sustained residential and commercial flood damage. Much of the damage was attributed to the Chao Phraya and Noi rivers (and their tributaries) overflowing. The Thai government reported that at least 14,703 homes, 857,000 acres (347,000 hectares) of crops, 4,947 roads, 201 bridges, and 599 schools, temples and public buildings were damaged. Total economic losses were estimated well into the millions of dollars (USD).

Rare tornadoes affected parts of Japan between the 2nd and 4th, injuring at least 67 people. The Japan Meteorological Agency (JMA) confirmed that six tornadoes touched down, with the most significant being an F2 that struck an area from Saitama Prefecture's city of Saitama to Noda in Chiba Prefecture. Hundreds of homes were damaged or destroyed. The stretch was also highlighted by heavy rains which prompted flooding in at least six other prefectures. Japan's Cabinet Office reported that 1,288 homes and structures were affected during the stretch. Total economic losses were expected to reach into the millions of dollars (USD).

Heavy rains prompted flooding and landslides across central and northern Vietnam on the 3rd and 4th, killing at least eight people and injuring 17 others. Hundreds of homes were damaged and thousands of hectares (acres) of agricultural land was left submerged.

Tropical Storm Toraji made landfall in Japan's southern Kagoshima Prefecture on the 4th with 80 kph (50 mph) winds. One person was killed and 19 others were injured as the system brought heavy rainfall and periods of gusty winds. Sporadic damage was recorded throughout the country, though impacts were largely minor in nature. Japan's Cabinet Office reported that a combined 1,439 homes and other structures were damaged.

Heavy rains prompted a large landslide in Afghanistan's northeast province of Badakhshan on the 10th, killing at least 24 people. The rains also caused widespread flooding, as hundreds of homes were damaged in the district of Zibak. Hundreds of cattle died and agricultural lands were submerged as well.

Tropical Storm Man-yi made landfall in Japan's Aichi Prefecture on the 16th before crossing the rest of the mainland and bringing periods of very heavy rainfall and gusty winds. At least four people were killed and 141 others were injured. Excessive rainfall totals prompted several rivers to overflow their banks, including the Katsura and Yura rivers in Kyoto Prefecture. Japan's Fire and Disaster Management Agency indicated that at least 10,049 homes and other structures were damaged or destroyed by the typhoon-strength winds and floodwaters. The storm also hampered transportation, as hundreds of flights were cancelled and train service was shut down due to fears of track damage.

Torrential rains and strong thunderstorms swept across parts of China between the 16th and 18th, killing at least 17 people and injuring 30 others. The provinces of Gansu, Sichuan and Shandong were the hardest-hit, as flooding and hail caused widespread damage to residential and agricultural properties. According to the Ministry of Civil Affairs (MCA), a combined 30,000 homes were damaged or destroyed. Total economic losses were estimated at CNY2.1 billion (USD343 million).

Flooding rains affected central sections of Vietnam and Laos between the 16th and 18th, killing at least seven people. The rains were prompted by the arrival of Tropical Depression 18. In Vietnam, the provinces of Dak Lak, Quang Tri, Quang Ngai, Quang Nam, and Kon Tum were hardest-hit, with at least 5,000 homes damaged or destroyed and thousands of hectares (acres) of cropland submerged. In Laos, Saravane and Champasak provinces were heavily affected with at least 10,000 homes and other structures were damaged. Total economic losses were estimated at LAK482 billion (USD61 million).

Super Typhoon Usagi made landfall in China on the 22nd, after first skirting the Philippines and Taiwan. At least 37 people were killed. Heavy rains led to overflowing rivers and landslides in the Philippines, as homes, infrastructure and agriculture were damaged. In Taiwan, exceptional rain totals affected four counties, as the Council of Agriculture estimated losses at TWD179 million (USD6.1 million). Usagi's landfall in China marked one of the strongest typhoons to come ashore in Guangdong Province in nearly 40 years. Property damage was widespread in five provinces as Usagi damaged at least 101,200 homes, knocked out electricity, and forced the cancellation of business and air travel (including in Hong Kong). The MCA estimated total economic losses at CNY23.5 billion (USD3.8 billion).

Heavy monsoon rains fell across central and northern sections of the Philippines between the 23rd and 27th, causing floods that killed at least 32 people. The hardest-hit areas came in the provincial region of Zambales, where states of calamity were declared for the municipalities of Busuanga, Palawan and Olongapo City. Floodwaters reached up to 2.0 meters (6.6 feet) in height as several rivers overflowed their banks and swept through residential and commercial areas. Total economic costs to agriculture and infrastructure were estimated at PHP170 million (USD4.0 million).



A major magnitude-7.7 earthquake and a subsequent magnitude-6.8 aftershock struck southwest Pakistan on the 24th and 28th, killing at least 825 people and injuring 824 others. Both tremors were centered in Awaran district. The most severe damage was concentrated in a 500-kilometer area (310-mile) area in Baluchistan Province, particularly in Awaran and Kech districts, where roughly 21,000 poorly constructed mud-brick homes collapsed. Gwadar, Panjgur, Chaghi, and Khuzdar districts were also affected. Total economic losses were estimated at USD100 million.

Typhoon Wutip made landfall in Vietnam on the 30th, bringing periods of heavy rainfall and very gusty winds to several central provinces. Damage was widespread throughout Vietnam, with the hardest-hit areas in Quang Binh, Ha Tinh, Quang Tri, and Thua Thien Hue provinces. Fourteen people were killed and 225 others were injured. Officials reported that more than 224,000 homes and 1,100 schools, public buildings and hospitals were damaged by flooding and high winds. Tens of thousands of hectares (acres) of agricultural land and fisheries were also submerged. Economic losses were estimated at VND5.0 trillion (USD240 million). Also, six people were killed after three Chinese fishing boats were sunk. Heavy rains also affected Laos and Thailand, though damage was minimal.

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

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
8/29-9/2	Flooding	Solomon Islands	0	2,055+	Millions+
9/10-9/11	Severe Weather	New Zealand	0	2,000+	20+ million

Multiple days of heavy rainfall at the end of August and early September led to severe flooding in the Solomon Island's northeast region of Guadalcanal. No serious injuries or fatalities were reported, though the floods damaged at least 2,055 homes. Additional damage occurred to regional infrastructure and cropland. Total economic losses were estimated to reach the millions of dollars (USD).

Severe weather swept across New Zealand on the 10th and 11th, prompting hurricane-force winds and flooding rains on both the North and South islands. No serious injuries or fatalities were reported. The most heavily affected areas came in the regions of Canterbury, Wellington, Hawkes Bay, and Gisborne. In total, the fire service responded to more than 1,800 calls for damage to residential properties. Agricultural damage was significant as well, with farmers reporting that winds had flattened crops, destroyed fencing and damaged 800 irrigators. Local insurers received more than 2,000 claims with payouts totalling NZD15 million (USD12.5 million). Total economic losses were even higher.



## APPENDIX

### Updated 2013 Data: January – August

#### United States

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
1/8-1/10	Severe Weather	Southeast	0	500+	10+ million
1/11-1/17	Winter Weather	California	0	Unknown	28+ million
1/29-1/30	Severe Weather	Southeast, Midwest, Plains	3	25,000+	350+ million
2/8-2/9	Winter Weather	Northeast, Mid-Atlantic	15	10,000+	100+ million
2/9-2/11	Winter Weather	Midwest, Plains, Southeast	1	7,500+	100+ million
2/21-2/22	Winter Weather	Plains, Midwest, Southeast	2	Thousands+	Millions+
2/24-2/27	Winter Weather	Plains, Midwest, Northeast	3	100,000+	1.0+ billion
3/4-3/8	Winter Weather	Plains, Midwest, Northeast	5	Thousands+	50+ million
3/18-3/20	Severe Weather	Southeast, Northeast	2	225,000+	2.0+ billion
3/23-3/25	Winter Weather	Plains, Midwest, Northeast	0	Unknown	Unknown
3/29-3/31	Severe Weather	Plains, Southeast	0	35,000+	325+ million
4/1-4/2	Severe Weather	Texas	0	25,000+	250+ million
4/7-4/11	Severe Weather	Nationwide	3	135,000+	1.75+ billion
4/17-4/19	Severe Weather	Central and Eastern U.S.	3	75,000+	900+ million
4/17-4/30	Flooding	Midwest, Mississippi Valley	4	25,000+	325+ million
4/26-4/28	Severe Weather	Plains, MS Valley, Southeast	0	45,000+	350+ million
4/29	Severe Weather	Midwest	0	12,500+	125+ million
5/8-5/11	Severe Weather	Texas, Oklahoma, Kansas	0	30,000+	200+ million
5/15-5/17	Severe Weather	Plains, Southeast	6	25,000+	500+ million
5/18-5/22	Severe Weather	Plains, Midwest, Northeast	29	100,000+	4.5+ billion
5/19	Flooding	Georgia	0	Hundreds+	10+ million
5/23	Severe Weather	Texas	0	Thousands+	Millions+
5/25	Flooding	Texas	3	Thousands+	Millions+
5/26-6/2	Severe Weather	Plains, Midwest, Northeast	27	120,000+	2.0+ billion
5/30-6/8	Wildfire	California	0	58+	21.4+ million
6/6-6/8	TS Andrea	Florida, Eastern Seaboard	3	Hundreds+	Unknown
6/11-6/20	Wildfire	Colorado	2	4,500+	500+ million
6/12-6/13	Severe Weather	Midwest, Northeast, Mid-Atlantic	4	65,000+	525+ million
6/20-6/28	Severe Weather	Central and Eastern U.S.	2	80,000+	800+ million
6/28-7/10	Wildfire	Arizona	19	129+	Millions+
7/8-7/10	Severe Weather	Central and Eastern U.S.	1	20,000+	175 + million
7/19-7/20	Severe Weather	Plains, Midwest, Northeast	1	25,000+	215+ million
7/21-7/24	Severe Weather	Plains, Rockies, Midwest	0	20,000+	275+ million
7/27-7/28	Flooding	North Carolina, Pennsylvania	2	Hundreds+	25+ million
8/1	Severe Weather	Rockies, Plains	0	Thousands+	50+ million
8/2-8/3	Severe Weather	Rockies	0	30,000+	400+ million
8/5-8/7	Severe Weather	Midwest, Plains	2	80,000+	1.0+ billion

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
8/5-8/12	Flooding	Plains, Tennessee Valley	3	5,000+	25+ million
8/22	Severe Weather	Colorado	0	15,000+	250+ million
8/17-9/20	Wildfire	California	0	111+	175+ million
8/30-8/31	Severe Weather	Plains, Midwest	0	20,000+	170+ million

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

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
1/1-5/31	Drought	Panama	0	Unknown	200+ million
2/7-2/10	Winter Weather	Canada	3	Thousands+	4.0+ million
4/18	Severe Weather	Canada	0	Hundreds+	Unknown
4/15-5/10	Flooding	Canada	0	2,000+	Millions+
5/22	Flooding	Bahamas	0	1,000+	45+ million
5/28-5/30	HU Barbara	Mexico, Central America	4	5,000+	Unknown
6/19-6/24	Flooding	Canada	4	25,000+	5.3+ billion
6/20-6/21	TS Barry	Mexico, El Salvador, Belize	3	2,000+	Unknown
7/5-7/9	HU Erick	Mexico	2	Hundreds+	Unknown
7/8	Severe Weather	Canada	0	25,000+	1.65+ billion
7/9-7/11	TS Chantal	Caribbean	1	Unknown	10+ million
7/19-7/20	Severe Weather	Canada	1	Hundreds+	Millions+
7/20-7/21	Severe Weather	Canada	0	Hundreds+	Millions+
8/21	Earthquake	Mexico	0	Hundreds+	Unknown
8/25-8/26	TS Fernand	Mexico	14	1,000+	Millions+
8/28-8/29	TS Juliette	Mexico	1	Unknown	Unknown

## South America

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
1/1-5/31	Drought	Brazil	0	Unknown	8.3+ billion
1/1-1/20	Flooding	Brazil	4	10,000+	Millions+
1/1-2/20	Flooding	Peru	31	12,000+	Unknown
1/24	Flooding	Ecuador	10	Dozens+	Unknown
1/28-2/15	Flooding	Bolivia	24	582+	2.5+ million
1/30	Earthquake	Chile	1	Hundreds+	Unknown
2/9	Earthquake	Colombia	0	4,050+	4.0+ million
2/21-2/22	Wildfire	Chile	0	100+	Unknown
3/15-3/18	Flooding	Colombia	0	11,200+	Unknown
3/17-3/18	Flooding	Brazil	30	1,000+	1.5+ million
4/2-4/4	Flooding	Argentina	86	105,000+	1.3+ billion
4/23	Flooding	Ecuador	14	Dozens+	Unknown
6/20-7/19	Flooding	Paraguay, Argentina, Brazil	0	13,000+	Unknown
7/16	Earthquake	Peru	0	691+	Millions+

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
8/24-8/31	Winter Weather	Bolivia, Peru, Paraguay	15	Thousands+	Millions+

## Europe

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
1/17-1/22	Winter Weather	Western Europe	7	7,000+	715+ million
1/28	Flooding	Turkey	7	Unknown	Unknown
2/15	Meteor Explosion	Russia	0	108,000+	33+ million
2/22	Flooding	Greece	1	1,000+	Millions+
2/24-2/26	Flooding	Macedonia, Serbia	1	2,000+	Millions+
3/12-3/31	Winter Weather	West/Central/East Europe	30	150,000+	1.8+ billion
3/14	Severe Weather	Azores	3	500+	45+ million
4/23	Earthquake	Hungary	0	600+	Unknown
5/3	Severe Weather	Italy	0	5,000+	13.1+ million
5/11-5/14	Severe Weather	Turkey	3	1,000+	Unknown
5/12	Severe Weather	Armenia	0	12,800+	61+ million
5/22	Severe Weather	Russia	0	250+	3.2+ million
5/30-6/15	Flooding	Central Europe	23	100,000+	22+ billion
6/18-6/19	Severe Weather	France, Spain	3	75,000+	1.25+ billion
6/20-6/21	Severe Weather	Switzerland	0	25,000+	250+ million
7/19	Flooding	Georgia	0	3,800+	Unknown
7/27-7/28	Severe Weather	Germany, France	0	200,000+	3.5+ billion
8/4-8/7	Severe Weather	Central/Western Europe	0	50,000+	500+ million
8/4-8/31	Flooding	Russia	0	11,500+	1.0+ billion

## Africa

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
1/1-8/31	Drought	Namibia	0	Unknown	64+ million
1/10-2/28	Flooding	Southern Africa	175	125,000+	525+ million
1/10-3/31	Flooding	Namibia	0	12,000+	Unknown
1/27-2/2	CY Felleng	Madagascar, Seychelles	18	9,965+	10+ million
2/13	Flooding	Mauritius	0	1,500+	30+ million
2/20-2/23	CY Haruna	Madagascar	26	16,449+	25+ million
3/4	Severe Weather	Central African Republic	0	1,314+	Unknown
3/30	Flooding	Mauritius	11	Thousands+	Millions+
3/1-4/30	Flooding	Ghana	5	10,000+	Unknown
3/10-4/30	Flooding	Kenya	66	35,000+	36+ million
4/6-4/7	Flooding	Angola	9	1,000+	Unknown
4/10-4/30	Flooding	Ethiopia	0	5,256+	2.2+ million
5/1-5/5	Flooding	Uganda	10	5,000+	3.1+ million
6/1	Severe Weather	South Africa	3	547+	Unknown
7/17	Earthquake	Algeria	0	Thousands+	Unknown

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
7/15-8/19	Flooding	Niger	20	15,000+	Unknown
8/1-8/4	Flooding	Sudan	73	40,000+	7.0+ million
8/9	Flooding	Nigeria	1	1,000+	Unknown
8/28	Flooding	Mali	55	1,000+	Unknown

## Asia

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
1/1-1/20	Winter Weather	India, Bangladesh, Nepal	329	Unknown	Unknown
1/1-8/31	Drought	China	0	Unknown	10+ billion
1/3-1/9	Winter Weather	China	0	7,500+	204+ million
1/6-1/9	Winter Weather	Middle East	11	5,000+	345+ million
1/11	Flooding	China	46	63+	48+ million
1/15-1/23	Flooding	Philippines	10	5,000+	2.8+ million
1/17-1/18	Winter Weather	India	0	Thousands+	185+ million
1/20-1/27	Flooding	Indonesia	41	100,274+	3.31+ billion
1/22	Earthquake	Indonesia	1	100+	Unknown
1/25-1/27	Flooding	Sri Lanka	1	2,164+	Unknown
1/27	Flooding	Indonesia	21	100+	Unknown
1/28	Earthquake	Kazakhstan, China	1	8,900+	29+ million
2/15-2/22	Flooding	Indonesia	17	11,608+	Millions+
2/18-2/20	TD Two	Philippines	5	5,000+	1.68+ million
2/18-2/21	Winter Weather	China	2	2,700+	124+ million
2/19-2/20	Earthquakes	China	0	3,271+	67+ million
2/26-2/28	Flooding	Indonesia	3	3,000+	Unknown
2/23-3/3	Winter Weather	Japan	9	384+	14.2+ million
3/3	Earthquake	China	0	85,542+	56+ million
3/9-3/13	Severe Weather	China	1	46,650+	161+ million
3/11	Earthquake	China	0	864+	Unknown
3/17-3/18	Flooding	China	0	7,000+	13+ million
3/18-3/20	Severe Weather	China	25	279,600+	259+ million
3/22	Severe Weather	Bangladesh	35	3,387+	Unknown
3/25	Flooding	Indonesia	13	10+	Unknown
3/26-4/2	Severe Weather	Vietnam	1	25,000+	14.4+ million
3/27	Earthquake	Taiwan	1	1,000+	1.0+ million
3/29-3/30	Severe Weather	China	3	5,000+	26+ million
3/29-3/30	Severe Weather	Bangladesh, India	11	5,004+	Unknown
4/6-4/9	Severe Weather	Japan	3	555+	Unknown
4/7-11	Flooding	Indonesia	11	22,830+	Unknown
4/9	Earthquake	Iran	41	3,100+	600+ million
4/13	Earthquake	Japan	0	2,802+	Unknown
4/16	Earthquake	Iran, Pakistan	36	3,500+	Unknown
4/17	Earthquake	China	0	16,109+	38+ million

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
4/17-4/19	Severe Weather	China	2	57,100+	309+ million
4/20	Earthquake	China	196	620,000+	14+ billion
4/20-5/15	Flooding	Maldives	0	1,000+	Unknown
4/22	Flooding	China	11	Unknown	Unknown
4/23-4/24	Flooding	Afghanistan	20	2,100+	Unknown
4/24	Earthquake	Afghanistan	18	2,000+	Unknown
4/25	Earthquake	China	1	29,000+	47+ million
4/28-5/1	Severe Weather	China	12	43,400+	154+ million
5/1	Earthquake	India	2	12,000+	4.6+ million
5/6-5/10	Flooding	China	19	51,000+	293+ million
5/13-5/16	CY Mahasen	Bangladesh, Myanmar, India	52	150,000+	200+ million
5/14-5/16	Flooding	China	55	60,000+	935+ million
5/19-5/23	Flooding	China	12	20,000+	445+ million
5/24-5/27	Flooding	China	12	40,000+	333+ million
6/1	Earthquake	Taiwan	4	500+	1.1+ million
6/1-6/3	Earthquake	Philippines	0	500+	Unknown
6/1-8/31	Flooding	Laos	20	20,000+	33+ million
6/5-6/8	Flooding	China	15	5,000+	277+ million
6/8-6/10	Severe Weather	Sri Lanka	58	4,295+	Millions+
6/14-6/18	Flooding	India, Nepal	6,500	25,000+	1.1+ billion
6/14-6/21	Flooding	China	11	56,100+	555+ million
6/21-6/23	TS Bebinca	China, Vietnam	0	1,000+	45+ million
6/23-6/25	Severe Weather	China	11	10,000+	118+ million
6/29-7/3	Flooding	China	55	125,000+	1.4+ billion
6/29-7/2	TY Rumbia	China, Philippines	7	4,500+	178+ million
7/1-7/31	Flooding	North Korea	33	6,000+	Unknown
7/1-8/31	Flooding	Nepal	118	10,000+	Unknown
7/2	Earthquake	Indonesia	39	20,333+	134+ million
7/7-7/17	Flooding	China	125	375,000+	4.5+ billion
7/9-7/10	Flooding	India	174	Thousands+	Millions+
7/13-7/15	STY Soulik	China, Taiwan	9	10,000+	460+ million
7/16-7/18	TS Cimaron	China, Philippines	1	10,000+	253+ million
7/21-7/25	Flooding	China	36	143,700+	1.4+ billion
7/22	Earthquake	China	95	80,000+	3.25+ billion
7/25-7/28	Flooding	Myanmar, Thailand	13	20,000+	97+ million
7/25-8/1	Flooding	China	10	25,000+	571+ million
7/28	Flooding	Japan	2	2,178+	Millions+
7/28-7/30	Flooding	Vietnam	5	1,000+	6.5+ million
7/28-7/30	Flooding	Indonesia	12	1,628+	Unknown
8/1-8/9	Flooding	Philippines	11	Hundreds+	36+ million
8/2-8/4	TS Jebi	China, Vietnam	7	2,000+	21+ million
8/3-8/15	Flooding	Afghanistan	75	10,000+	Unknown
8/3-9/30	Flooding	Pakistan	234	79,208+	1.9+ billion

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
8/4-8/8	Flooding	China	18	20,000+	490+ million
8/5-9/30	Flooding	Cambodia	83	120,000+	Millions+
8/9-9/5	Flooding	China	118	215,000+	5.0+ billion
8/10-8/14	Flooding	Afghanistan	31	500+	Unknown
8/12-8/15	STY Utor	China, Philippines	81	126,053+	2.6+ billion
8/14-9/4	Flooding	Yemen	37	10,000+	Unknown
8/18-8/21	Flooding	Philippines	27	Thousands+	2.2+ billion
8/19-8/21	Flooding	China	43	51,000+	457+ million
8/21-8/23	TY Trami	China, Taiwan	2	11,100+	388+ million
8/23-8/26	Flooding	Japan	2	1,861+	Millions+
8/22-8/27	Flooding	India	73	Thousands+	Unknown
8/23-8/27	Flooding	China	12	9,000+	278+ million
8/27-8/31	TS Kong-rey	Philippines, Taiwan, Japan	4	1,000+	25+ million
8/31	Earthquake	China	3	107,600+	155+ million

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

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
1/1-5/10	Drought	New Zealand	0	Unknown	1.6+ billion
1/1-1/17	Wildfires	Australia (TAS, NSW, VIC)	1	3,500+	175+ million
1/21-1/30	Flooding	Australia (QLD, NSW)	6	87,843+	2.5+ billion
2/6	Earthquake	Solomon Islands	13	1,066+	Millions+
2/22-2/24	Severe Weather	Australia (NSW, QLD)	1	6,000+	16+ million
2/25-2/27	CY Rusty	Australia (WA)	0	Unknown	Unknown
3/21	Severe Weather	Australia (VIC, NSW)	0	1,198+	21+ million
4/20-4/21	Flooding	New Zealand	0	1,500+	39+ million
6/18-6/21	Winter Weather	New Zealand	0	9,500+	40+ million
7/21	Earthquake	New Zealand	0	4,612+	50+ million
8/3	Severe Weather	Australia (South Australia)	0	100+	9.1+ million
8/16	Earthquake	New Zealand	0	2,945+	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 insurance companies 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.



## Contact Information

**Steve Jakubowski**

President

Impact Forecasting

+1 312 381 5890

steven.jakubowski@aonbenfield.com

**Adam Podlaha**

Head of International

Impact Forecasting

+ 44 (0)20 7522 3820

adam.podlaha@aonbenfield.com

**Adityam Krovvidi**

Head of Asia Pacific

Impact Forecasting

+ 65 6239 7651

adityam.krovvidi@aonbenfield.com

**Steve Bowen**

Senior Scientist/Meteorologist

Impact Forecasting

+1 312.381.5883

steven.bowen@aonbenfield.com



Scan here to access all editions of the Annual Global Climate and Catastrophe Report

## About Impact Forecasting

Impact Forecasting® 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, visit [impactforecasting.com](http://impactforecasting.com).

## About Aon Benfield

Aon Benfield, a division of Aon plc (NYSE: AON), is the world's leading reinsurance intermediary and full-service capital advisor. We empower our clients to better understand, manage and transfer risk through innovative solutions and personalized access to all forms of global reinsurance capital across treaty, facultative and capital markets. As a trusted advocate, we deliver local reach to the world's markets, an unparalleled investment in innovative analytics, including catastrophe management, actuarial and rating agency advisory. Through our professionals' expertise and experience, we advise clients in making optimal capital choices that will empower results and improve operational effectiveness for their business. With more than 80 offices in 50 countries, our worldwide client base has access to the broadest portfolio of integrated capital solutions and services. To learn how Aon Benfield helps empower results, please visit [aonbenfield.com](http://aonbenfield.com).

## Impact Forecasting

200 E. Randolph Street

Chicago, Illinois 60601

t +1.312.381.5300

f +1.312.381.0160

[impactforecasting.com](http://impactforecasting.com)

© Impact Forecasting, 2013. No claim to original government works. The text and graphics of this publication are provided for informational purposes only. While Impact Forecasting® has tried to provide accurate and timely information, inadvertent technical inaccuracies and typographical errors may exist, and Impact Forecasting® does not warrant that the information is accurate, complete or current. The data presented at this site is intended to convey only general information on current natural perils and must not be used to make life-or-death decisions or decisions relating to the protection of property, as the data may not be accurate. Please listen to official information sources for current storm information. This data has no official status and should not be used for emergency response decision-making under any circumstances.

© Aon plc. All rights reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise. Impact Forecasting® is a wholly owned subsidiary of Aon plc.

