

September 2010 Monthly Cat Recap – Impact Forecasting

October 5, 2010

Table of Contents

Executive Summary	2
United States	3
Remainder of North America (Canada, Mexico, Caribbean Islands)	5
South America	7
Europe	8
Africa	8
Asia	8
Oceania (Australia, New Guinea, New Zealand, Micronesia, Guam, Northern Mariana Islands)	11
APPENDIX	12

Executive Summary

- Tropical activity increases in the Atlantic and the Western Pacific basins
- USGS-measured magnitude 7.0 earthquake strikes New Zealand; insured losses top USD1.4 billion
- Significant flooding causes billions of dollars (USD) worth of damage in Central America and Asia

Storm activity was prevalent in the U.S. during September, with several storms having effects. According to the Insurance Council of Texas, the remnants of Tropical Storm Hermine caused at least 25,000 insurance claims to be filed by residents, resulting in insured losses of USD115 million. Excessive rains from the remnants of Hurricane Karl flooded southern Texas before shifting northward through the Plains into Minnesota and Wisconsin. Both states recorded widespread floods late in the month. Moisture from the remnants of Tropical Storm Nicole contributed to bring significant rainfall on the 29th and 30th from southern Florida to New England, with the Carolinas sustaining the brunt of the precipitation.

Meanwhile, a large wildfire swept across Colorado during the month. According to the Rocky Mountain Insurance Information Association, at least 353 claims were filed in Colorado, with payouts totaling USD217 million – the most expensive wildfire in state history.

Elsewhere in North America, Hurricane Igor skirted Bermuda before eventually causing widespread damage to Newfoundland and Labrador in Canada. Total combined economic losses from Igor were estimated at nearly USD200 million.

In Central America, heavy rainfall from tropical cyclones Karl and Matthew brought continued flooding and landslides throughout the region, with Mexico sustaining the worst of the damage. Hundreds of thousands of homes were damaged or destroyed across the affected states of Tabasco, Veracruz, Chiapas and Oaxaca, with combined total economic losses in excess of MXN50 billion (USD4 billion). Additional heavy rains also caused substantial flood damage in Nicaragua, Honduras, Guatemala and El Salvador.

In New Zealand, a powerful magnitude-7.0 earthquake struck on the 4th, causing extensive damage across the city of Christchurch and in nearby towns. No fatalities were reported though more than 100 people were injured (two severely). The New Zealand Earthquake Commission anticipated to receive over 100,000 insurance claims with estimated insured losses at NZD2 billion (USD1.45 billion).

In Europe, wildfires affected areas of southern Russia, killing least eight people and injuring 17 others. According to the Russian government, more than 550 homes and other structures were destroyed, primarily in villages in the Volgograd region.

Meanwhile, heavy rains between the 26th and the 28th brought flooding to parts of Germany and Poland, resulting in a state of emergency being declared in Germany.

In Africa, heavy rains that began in early August reached their peak intensity on the 24th, leaving up to two million people homeless in Nigeria.

In Asia, multiple cyclones affected parts of China, Taiwan and South Korea. Tropical cyclones Kompasu, Meranti and Fanapi each caused economic losses in the hundreds of millions of dollars (USD). Also during the month, heavy monsoon rains brought significant floods to northern India. Economic losses were listed at INR75 billion (USD1.65 billion).

United States

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
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+	150+ million
9/6-9/14	Wildfire	Colorado	0	353+	225+ million
9/7	Wildfire	Michigan	0	85+	Unknown
9/15-9/16	Severe Weather	Ohio Valley, Northeast	2+	Thousands+	Millions+
9/18-9/28	Flooding	Minnesota, Wisconsin, Texas	1+	Thousands+	Millions+
9/18	Severe Weather	Missouri	0	Thousands+	Millions+
9/19-9/22	Severe Weather	Plains, Midwest, Northeast	0	Thousands+	Millions+
9/22-9/23	Flooding	Wisconsin, Minnesota	0	1,000+	75.8+ million
9/28-9/30	Flooding	Carolinas, New England	6+	Thousands+	Millions+

Hurricane Earl skirted the U.S. East Coast between the 1st and the 4th, bringing sporadic gusty winds and heavy rains. Emergency management officials from the Carolinas through New England reported only minimal damage and isolated power outages. The largest losses from Earl were business interruption costs, as hotels and restaurants lost high revenues that typically occur during the Labor Day holiday weekend.

Tropical Storm Hermine quickly developed in the southwestern Gulf of Mexico before making landfall in Mexico and heading into Texas on the 6th. Between the 6th and the 9th, Hermine brought rainfall totals ranging between five and 15 inches (127 and 381 millimeters). Areas in central Texas, particularly in the greater Austin and Arlington regions, dealt with widespread flash flooding that resulted in damage. At least six people were killed after several rivers and streams overflowed their banks. On the 8th, a series of tornadoes touched down in the greater Dallas region and caused additional damage to homes. According to the Insurance Council of Texas, at least 25,000 insurance claims were filed by residents and state-wide insured losses were at least USD115 million. Total economic losses were in excess of USD150 million.

The Fourmile Canyon Fire was ignited at 10:00 AM local time (16:00 UTC) on the 6th about six miles (ten kilometers) northwest of Boulder, Colorado. The blaze quickly spread as humidity levels dropped into the single digits and winds gusting to 45 mph (75 kph) sent hot embers throughout a forested region. Boulder County firefighters reported that at least 166 homes and structures were destroyed and 25 more were damaged as the fire covered over 6,365 acres (2,575 hectares) of land. There were no immediate reports of fatalities, though two firefighters were injured. According to the Rocky Mountain Insurance Information Association, at least 353 claims were filed with payouts totaling USD217 million, making it the most expensive wildfire in state history. Total economic losses were estimated at USD225 million.

High winds on the 7th in the greater Detroit, Michigan metropolitan area helped fan at least 85 separate fires. Spokesmen from DTE Energy reported that winds gusting to 50 mph (85 kph) snapped at least 750 power lines, which may have ignited the fires. The blazes covered three separate neighborhoods while destroying at least 85 homes.

Severe weather affected portions of the Ohio Valley and the Northeast on the 15th and 16th, causing a trail of damage and killing at least two people. The storms spawned tornadoes, damaging winds and large hail in Ohio, West Virginia, Pennsylvania, New Jersey and New York. In New York City, two tornadoes damaged hundreds of homes primarily in the Queens borough.

Excessive rains in association with the remnants of Hurricane Karl brought flooding to parts of southern Texas northward into Minnesota and Wisconsin between the 18th and the 28th. At least one person was killed. Karl's remnants combined with a persistent moist flow out of the Gulf of Mexico to bring torrential rains that flooded several neighborhoods near the Texas/Mexico border. The excess water also caused a sewer system in Corpus Christi to overflow. On the 23rd, persistent rains spread northward into parts of Minnesota and Wisconsin, leading to the evacuation of thousands of homes due to flooding. Hundreds of homes were damaged, and the floods caused the erosion of numerous century-old levees.

Severe weather spawned softball-sized hail and flooding rains across parts of the greater Kansas City metropolitan area on the 18th. Widespread hail damage was reported along the Interstate 70 corridor from the Truman Sports Complex eastward to Oak Grove. Flash floods also caused damage in Blue Springs and Independence as floodwaters trapped cars and stranded residents.

Waves of severe weather impacted central and eastern sections of the country between the 19th and the 22nd. An initial area of low pressure developed across the northern Rockies before a secondary low developed along the tail end of an attached frontal boundary as it moved across the Plains into the Great Lakes on the 20th. Severe weather occurred in Iowa, Illinois, Wisconsin and Michigan as straight-line winds and large hail downed trees and caused power outages. In the greater Chicago metropolitan area, a strong microburst heavily damaged homes and industrial buildings across a six-block area on the city's southwest side. On the 21st, the main frontal boundary pushed through the Ohio Valley into the Mid-Atlantic States and New England. High winds caused additional damage, power outages and downed trees throughout each region.

Heavy rains on the 22nd and 23rd led to several rivers and lakes rising and overflowing across parts of Minnesota and Wisconsin. The hardest-hit area was Portage County, Wisconsin, after floodwaters seeped through a 120-year-old earthen dike and flooded at least 483 homes and businesses. The most significant effects came to the agricultural and transportation infrastructures, as Portage County officials estimated that upwards of USD65 million in damages had been sustained to local crops. Road and bridge damage was estimated at USD9.1 million. In Minnesota, widespread damage was reported across Zumbro, Minnesota and Mississippi River valleys as dozens of towns in southern sections of the state reported flood damage. Damage estimates were listed at USD1.7 million.

A slow-moving frontal boundary stalled across the Atlantic seaboard from Florida to New England between the 28th and the 30th. Moisture from the remnants of Tropical Storm Nicole on the 29th and 30th enhanced the rainfall across these regions, particularly in the Carolinas. Throughout the rest of the Atlantic Coast, widespread damage was prevalent after floods washed out hundreds of roads and bridges while inundating thousands of neighborhood homes and businesses. The inclement weather forced flight and subway delays and cancellations as well as the closure of major highways in Washington, DC, Philadelphia and New York City. At least six people were killed and 30 others were injured in rain-related accidents.

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)
5/15-9/17	Flooding	Nicaragua	43+	6,300+	Millions+
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	12+	Thousands+	139+ million

An active rainy season continued in Nicaragua as rounds of heavy rains brought additional widespread flooding and landslides. Since the season began in mid-May, at least 43 people died. According to government officials, over 6,300 homes were damaged or destroyed in the departments of Masaya, Granada, Jinotega, Nueva Segovia and Boaco. Much of the damage occurred due to landslides and rivers and lakes overflowing their banks. Additional damage was reported to the agricultural sector (particularly coffee, beans, sorghum, peanut and banana crops) and the transportation infrastructure. Over 8,000 kilometers (4,970 miles) of roads and highways along the Pacific coastline sustained damage. Total economic losses from the event were expected to be in the millions of dollars (USD).

Persistent heavy rainfall beginning in early August continued through the first two weeks of September in southern sections of Mexico. At least 150,000 homes were damaged or destroyed across the affected states of Tabasco, Veracruz, Chiapas and Oaxaca – leaving more than 600,000 people homeless. Total economic losses were anticipated to reach the hundreds of millions of dollars (USD).

Remnants of Tropical Depression Eleven in the Pacific Ocean brought the heaviest rains in 60 years to Guatemala between the 3rd and the 8th, triggering over 200 landslides and extensive flooding. At least 54 people were killed and 56 more were injured. Government officials declared a state of emergency after the floods damaged over 75,000 homes and caused extensive damage to the transportation infrastructure. At least nine rivers burst their banks, causing 13 bridges to collapse and dozens of landslides and raging floodwaters to destroy long stretches of the main Inter-American Highway. Additional damage was reported to thousands of hectares (acres) of cropland. Total economic losses from the event were listed at GTQ12.7 billion (USD1.55 billion).

Hurricane Earl officially made landfall on the 4th at 10:00 AM local time near Western Head, Nova Scotia in Canada as a 70 mph (110 kph) tropical storm. Upon coming ashore, the system brought very gusty winds and torrential rains throughout the Canadian Maritimes. At least one person was killed in Halifax while trying to secure his boat. Only minor damage was reported in Canada from Earl, with the biggest issue coming from flooding. According to the Halifax Water Commission, heavy rains flooded the city's sewer treatment facilities and several pumping stations. Nova Scotia's agricultural fruit sector sustained only minimal effects as the primary apple crop was generally unaffected.

Tropical Storm Hermine quickly developed in the southwestern Gulf of Mexico before making landfall in Mexico on the 6th. As Hermine came ashore in Mexico, the system spread tremendous amounts of heavy rain and gusty winds. At least 20 homes were destroyed in the state of Hidalgo after rains caused several landslides. Mexican officials reported that 50,000 residents temporarily lost electricity (mostly in the town of Raymondville) and that 3,500 people had been evacuated in the town of Matamoros.

Major Hurricane Karl made two separate landfalls in Mexico between the 15th and the 17th, leaving at least 18 people dead. According to officials on the Yucatan Peninsula, Karl brought torrential rains, winds gusting to 70 mph (110 kph), flooding and landslides throughout the region. In the city of Chetumal in Quintana Roo state, flooding from the storm left over 600 homes damaged or destroyed. Similar effects from Karl were also felt throughout the peninsula. Following the second landfall, Karl damaged or destroyed over 100,000 homes as at least eight states sustained effects from Karl (with Veracruz, Tabasco and Oaxaca being hardest hit). Heavy rains, flash floods and landslides severely impacted the transportation, electrical and agricultural infrastructures as main roads were washed away. Over 385,000 hectares (952,000 acres) of cropland were submerged. Total economic losses were listed at MXN50 billion (USD3.9 billion), while insured losses were much less due to low insurance penetration at approximately MXN2.5 billion (USD200 million).

Major Hurricane Igor skirted Bermuda before later affecting coastal sections of Atlantic Canada between the 18th and the 22nd. At its closest point, the center of Igor passed approximately 40 miles (65 kilometers) to the west of Bermuda as winds up to 75 mph (120 kph) were recorded on the island. The biggest impacts on Bermuda from Igor were downed trees and utility poles. Several boats were washed ashore, but damage reports were generally minimal. Based on the number of claims being filed, Bermudan officials reported that insurers expected payouts to cost less than USD75 million, while total economic losses were around USD100 million. As Igor approached Canada, the cyclone's large wind field brought tropical storm and hurricane-force winds to much of Newfoundland and Labrador. Heavy rains caused widespread flooding that submerged hundreds of roads (including sections of the Trans-Canada Highway) and collapsed bridges. The hardest-hit area was the Burin Peninsula, where hundreds of homes sustained flood damage, though roof damage occurred as winds gusted over 140 kph (85 mph). According to government officials, total damages topped CAD100 million (USD97 million). At least four fatalities were associated to Igor, though none were directly related.

Heavy tropical rains caused a large landslide on the 20th in the small town of Villa Guerrero in Mexico. At least ten people were killed and 20 more were listed as missing as a wave of rock and mud tumbled down a hill onto a busy highway. In northern Mexico, floodwaters outside the city of Monterrey damaged hundreds of homes and left at least one person dead.

Severe weather was reported across Ontario Province in Canada on the 21st, leaving at least one person dead. According to Environment Canada, winds gusting to nearly 110 kph (70 mph) downed trees and damaged roofs.

Tropical Storm Matthew made two separate landfalls (in Nicaragua and Belize) on the 24th and the 25th, bringing tremendous rains throughout Central America. Nicaragua, Honduras, Belize, Guatemala, El Salvador and Mexico all reported effects from the cyclone, with at least 19 fatalities occurring. The hardest-hit area was Nicaragua, where substantial damage occurred to the transportation infrastructure as hundreds of roads and bridges were destroyed. Over 8,000 homes also sustained various forms of flood damage. In Guatemala, nearly 1,000 homes were damaged by flooding rains across twelve separate provinces. Additional damage was reported in Mexico and Honduras, where multiple fatalities were recorded due to both flooding and landslides.

A persistent flow of moisture off of the Bay of Campeche and the Caribbean Sea brought record rains to Mexico, Honduras and El Salvador. On the 28th, a landslide struck the town of Santa Maria Tlahuitoltepec in Oaxaca State, Mexico. The slide damaged or destroyed over 300 homes and left at least 16 people dead. According to rescue officials, an entire hillside collapsed that dragged homes, cars, livestock and light poles nearly 400 meters (1,300 feet) from their foundations. A series of large landslides also struck southern Mexico's Chiapas state, which destroyed over 215 homes and left at least 35 people dead or injured.

Tropical Storm Nicole was a quick-lived cyclone that came ashore in central Cuba on the 28th before dissipating near the Florida Straits on the 29th. While the system did not have powerful winds, it brought heavy rains across parts of Cuba, the Cayman Islands, Jamaica and the Bahamas. At least 12 people died in Jamaica after flash floods washed away homes, businesses, crops, roads and bridges. Damages in Jamaica from Nicole were estimated at JMD12 billion (USD139 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)
7/26-9/17	Flooding	Colombia	74+	122,000+	100+ million
9/27	Landslide	Colombia	30+	Unknown	Unknown

In Colombia, the rainy season remained active as landslides and floods left at least 74 people dead and 122 injured. According to government officials, over 400 municipalities in 27 of the country's 32 departments had sustained damage, with over 122,000 homes destroyed. The hardest-hit departments were in the northern sections of the country, including Sucre, Cordoba, Atlantico, Bolivar, Antioquia, Magdalena and Guajira. Total economic losses were listed at COP182 billion (USD100 million), though that figure was expected to increase.

Heavy rains triggered a large landslide on the 27th in northwest Colombia that crushed travelers on a busy highway. At least 30 people died after 100,000 cubic meters (3.5 million cubic feet) of earth collapsed on a stretch of road in the town of Giraldo in Antioquia province.

Europe

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
8/30-9/3	Wildfires	Russia	8+	550+	Millions+
9/26-9/28	Flooding	Germany, Poland	0	Hundreds+	Unknown

A wave of wildfires swept across parts of southern Russia between August 30th and September 3rd, leaving at least eight people dead and 17 others injured. According to the Russian government, over 550 homes and other structures were destroyed primarily in villages in the Volgograd region. Additional fires were reported in the Samara region as the fires and smoke forced shutdowns on highways. The new fires reportedly began after high winds caused power lines to snap.

Heavy rain between the 26th and the 28th brought flooding to parts of Germany and Poland. Multiple rivers, including the Oder, Nysa Luzycka, Bystrzyca, Sieniawka, Elbe and Spree rivers, overflowed their banks. In Germany, a state of emergency was declared and at least 2,500 people south of Berlin were evacuated after flooding was reported at eight separate locations in the states of Saxony and Bradenburg. In Poland, floods were reported at five locations in Lower Silesia. Zgorzelec County was most affected as several neighborhoods and roads in the town of Bogatynia were submerged.

Africa

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
8/1-9/30	Flooding	Nigeria	40+	350,000+	29+ million

Heavy rains that began in early August reached their peak intensity on the 24th, leaving up to two million people homeless in Nigeria. The northern states of Sokoto, Jigawa, Bauchi, Yobe, Borno and Kano were heavily affected as catastrophic floods destroyed over 350,000 homes and 90,000 hectares (222,400 acres) of crops. The majority of the floods came in response to several rivers, including the Niger, Rima, Hadejia and Jama'are rivers, overflowing their banks. At least 40 people died in flood-related incidents and total economic losses from the event were listed at NGN4.5 billion (USD29 million).

Asia

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
8/31-9/2	TY Kompas	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

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
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

Typhoon Kompasu made landfalls in Okinawa, Japan on August 31st and in Gyeonggi Province, South Korea on September 2nd. In Okinawa, reports indicated that the cyclone left at least five people injured as hundreds of homes, buildings and other structures were damaged or destroyed in the regions of Kunigami, Nago, Motobu and Yomitan. As Kompasu exited Okinawa, the weakened storm made landfall in Gyeonggi Province, South Korea. At least five people were killed in storm-related accidents. Winds gusting to 100 kph (65 mph) downed power lines and damaged electric power distribution systems in Seoul and surrounding provinces. Additional damage reports indicated that over 15,000 homes, businesses, other structures and vehicles were affected. Total economic losses were estimated at KRW585billion (USD500 million), with insured losses at KRW146 billion (USD125 million). In North Korea, state-run media reported that at least 50 people had died and over 3,550 homes and other structures were destroyed. At least 30,000 hectares (74,000 acres) of crops were also submerged.

Tropical Storm Lionrock made landfall in Zhangpu County, China in Fujian Province with 85 kph (50 mph) winds on the 2nd. Reports indicated that only minor damage occurred along with no injuries or fatalities.

Heavy monsoon rains inundated much of northern India and Bangladesh between the 8th and the 14th. In India, excess rainfall caused the Yamuna River to reach record levels and flood at least 125 villages in the Panipat and Yamunanagar districts in Haryana state. Additional flood damage was reported along the Yamuna in the states of Uttar Pradesh, Uttrakhand and Delhi. Over 1,000 homes were damaged. In Bangladesh, persistent rainfall caused the Jamuna River to overflow its banks and destroy at least 10,000 homes in the northern districts of Kurigram, Gaibandha, Bogra and Sirajganj.

Typhoon Meranti quickly developed and made landfall near Shishi, China in Fujian Province on the 10th. The cyclone brought torrential rains and winds gusting up to 100 kph (65 mph). According to Chinese authorities, at least three people were killed and over one million residents were affected by Meranti. The storm submerged thousands of hectares (acres) of cropland. Economic losses were listed at CNY800 million (USD118 million).

Torrential rains on the 11th led to widespread flooding on the popular tourist island of Borneo in Indonesia. At least ten people were killed as the heavy rains caused the Kinarum River to burst its banks.

At least five people were killed in the Philippines after monsoonal rains on the 13th triggered flash flooding in the city of Koronadal. A state of calamity was declared after over 4,000 homes and long stretches of roads were damaged or destroyed due to the floods and landslides.

Monsoonal rains between the 17th and the 27th in northern India led to the deaths of over 150 people. The most affected states were Uttar Pradesh, Bihar and Uttarakhand after heavy rains forced several Himalayan rivers, including the Gandhak and Ganges, to burst their banks at multiple locations. The heaviest rains in three decades caused flooding and landslides that affected more than three million people and damaged or destroyed nearly 150,000 homes. The floods also swamped over 500,000 hectares (1.2 million acres) of cropland. Significant damage was reported to the transportation infrastructure as train routes were suspended and long stretches of the Delhi-Dehradun-Rishikesh Highway were submerged. Total economic losses were listed at INR75 billion (USD1.65 billion), with INR35 billion (USD750 million) coming solely from destroyed crops.

Heavy monsoonal rains continued to affect southern Sindh Province in Pakistan as Lake Manchar overflowed its banks on the 17th. The floods left at least 100,000 people displaced from their homes and destroyed a wide swath of crops.

Several sections of Thailand endured heavy monsoonal rains between the 18th and the 22nd. According to the Ministry of Agriculture and Cooperatives, at least 210,000 people were affected by floods that also destroyed over 304,000 hectares (751,000 acres) of crops. Total economic losses were estimated at THB1.43 billion (USD47 million).

Typhoon Fanapi made landfalls in Taiwan and China on the 19th and the 20th. Fanapi made an initial landfall in Hualien County, Taiwan on the 19th with 195 kph (120 mph) winds. At least two people were killed as the cyclone caused extensive flooding and landslides throughout the country. The transportation, electrical, industrial and agricultural infrastructures all sustained major damage and over 2,300 homes and vehicles were damaged. The Economics Ministry reported that total damages from Fanapi were estimated at TWD5 billion (USD158 million). A weakened Fanapi made a second and final landfall in Fujian Province, China on the 20th. The cyclone spread heavy rains throughout southeast China, causing extensive flooding and landslides. Officials in Guangdong Province reported that over 50,000 homes were damaged or destroyed along with 66,400 hectares (164,000 acres) of crops. At least 75 people died, including several who perished following a dam break. Total economic losses from Fanapi in China were estimated at CYN5 billion (USD735 million).

A strong thunderstorm on the 21st in South Korea caused flash floods in parts of Seoul. An all-time September record of 300 millimeters (12 inches) of rain fell in just a few hours. The National Emergency Management Agency reported that 11,800 homes sustained damage along with numerous roads and subway lines. At least two people were swept away by a swollen river in Gangwon Province.

A USGS-measured magnitude-5.5 earthquake struck southern sections of Iran on the 27th, killing at least one person and injuring 32 others. The tremor struck at 2:52 PM local time (11:22 UTC) with an epicenter near Kazerun, Iran, or 670 kilometers (415 miles) south of the capital of Tehran. According to Iranian officials, widespread damage occurred to 30 percent of all buildings in four separate villages across the southern provinces of Fars and Bushehr.

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)
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

A USGS-measured magnitude-7.0 earthquake struck New Zealand on the 4th, causing extensive damage across the city of Christchurch and in nearby towns. The main tremor struck at 4:35 AM on the 4th local time (16:35 UTC on the 3rd) with an epicenter 50 kilometers (30 miles) west-northwest of Christchurch at a depth of five kilometers (3.1 miles). Over 300 aftershocks, including several with magnitudes greater than 5.0, rattled the region in the hours and days that followed. There were no fatalities and only two serious injuries, though over 100 people sustained minor injuries. According to government officials, the hardest-hit regions were in Christchurch, the surrounding towns of Canterbury, Sumner and Avonside as well as the districts of Selwyn, Timaru and Waimakariri. Over 100,000 homes sustained various amounts of damage, with nearly 3,000 deemed uninhabitable. Additional severe damage occurred to the transportation and electrical infrastructures. The New Zealand Earthquake Commission anticipated to receive at least 100,000 residential property damage claims, with estimated payouts of NZD2 billion (USD1.45 billion). Total economic losses were NZD4 billion (USD2.9 billion).

Heavy rains triggered flash flooding across parts of Victoria on the 4th and 5th while Sydney, Canberra and South Australia were hit with gale-force winds. At least 300 homes and businesses sustained damage in the Victorian town of Shepparton after the Ovens, Broken, Wimmera and Goulburn rivers overflowed their banks. According to Victoria's State Emergency Service (SES), more than 4,500 requests for assistance were received from distressed residents. Additional rainfall fell between the 6th and the 8th, further enhancing flood threats along swollen rivers in Victoria, New South Wales, the Australian Capital Territory, Queensland and the Northern Territory. The storm system also brought gale-force winds to much of the eastern half of Australia, with gusts ranging between 100 kph (65 mph) and 124 kph (77 mph). The Insurance Council of Australia deemed the event a catastrophe as insured losses exceeded AUD15 million (USD13.7 million) in Victoria alone due to damaged personal property, roads, bridges and other infrastructure. Total economic losses were anticipated to reach the tens of millions of dollars (AUD).

Severe weather affected much of New Zealand as power outages and storm damage was reported on both the North and South islands. A series of cold fronts brought winds gusting to 120 kph (75 mph) along with heavy rains and snow between the 18th and the 23rd. On the South Island, damage was reported to numerous homes and buildings, including Southland Stadium, after excessive snow caused roofs to collapse. On the North Island, a large section of the roof at an Auckland International Airport terminal was peeled off by high winds. The inclement weather also forced the closure of several main roads due to impassable conditions and the suspension of train services. Damage estimates were in excess of NZD51 million (USD37 million), with the Ministry of Agriculture and Forestry reporting that NZD50 million (USD36 million) of those losses came at the expense of farmers.

APPENDIX

Updated Jan. 2010 – Aug. 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
1/17-1/22	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	225,000+	2.5+ 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

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
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
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+	105,000+	750+ million
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

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	220,000+	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
5/15-9/13	Flooding	Nicaragua	43+	6,300+	Millions+
5/16	Earthquake	Puerto Rico	0	Dozens+	Unknown
5/26-5/31	Volcano	Guatemala	3+	Unknown	Unknown

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
5/28-5/31	Volcano	Ecuador	0	Unknown	Unknown
5/29-5/30	TS Agatha	Guatemala, Honduras, El Salvador	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

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	Nicaragua, Ecuador	1+	411+	Unknown
6/17-6/21	Flooding	Brazil	72+	50,000+	860+ million
7/17-7/24	Winter Weather	Peru, Argentina, Brazil, Chile, Bolivia, Paraguay, Uruguay	522+	Unknown	Unknown
7/26-9/17	Flooding	Colombia	72+	122,000+	100+ million
8/5-8/31	Wildfires	Bolivia	0	60+	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
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

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, Zimbabwe	20+	10,000+	Unknown

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
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

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
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

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/ Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
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	39+	20,000+	857+ million
6/13-6/30	Flooding	China	381+	879,000+	12.3+ billion
6/14-6/16	Flooding	Myanmar, Bangladesh	121+	20,000+	Unknown
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	1,802+	1.91+ million	20-43 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	205+	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

Event Date	Event Name Or Type ¹	Event Location	# of Deaths ²	# of Structures/Claims ^{2,3}	Damage Estimates ^{2,4} (USD)
8/31	TS Namtheun	China	0	Unknown	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

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.

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 www.impactforecasting.com.

About Aon Benfield: As the industry leader in treaty, facultative and capital markets, Aon Benfield is redefining the role of the reinsurance intermediary and capital advisor. Through our unmatched talent and industry-leading proprietary tools and products, we help our clients to redefine themselves and their success. Aon Benfield offers unbiased capital advice and customized access to more reinsurance and capital markets than anyone else. As a trusted advocate, we provide local reach to the world's markets, an unparalleled investment in innovative analytics, including catastrophe management, actuarial, and rating agency advisory, and the right professionals to advise clients in making the optimal capital choice for their business. With an international network of more than 4,000 professionals in 50 countries, our worldwide client base is able to access the broadest portfolio of integrated capital solutions and services. Learn more at aonbenfield.com.

Cat Alerts use publicly available data from the internet and other sources. Impact Forecasting® LLC summarizes this publicly available information for the convenience of those individuals who have contacted Impact Forecasting® LLC and expressed an interest in natural catastrophes of various types. To find out more about Impact Forecasting or to sign up for the Cat Reports, visit Impact Forecasting's webpage at www.impactforecasting.com.

Copyright © by Impact Forecasting® L.L.C. No claim to original government works. The text and graphics of this publication are provided for informational purposes only. While Impact Forecasting® LLC has tried to provide accurate and timely information, inadvertent technical inaccuracies and typographical errors may exist, and Impact Forecasting® LLC 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.

Copyright © by Aon Corporation. 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 Corporation.

