

Summary of Natural Catastrophe Events 2020

Willis Re eVENT™ Update

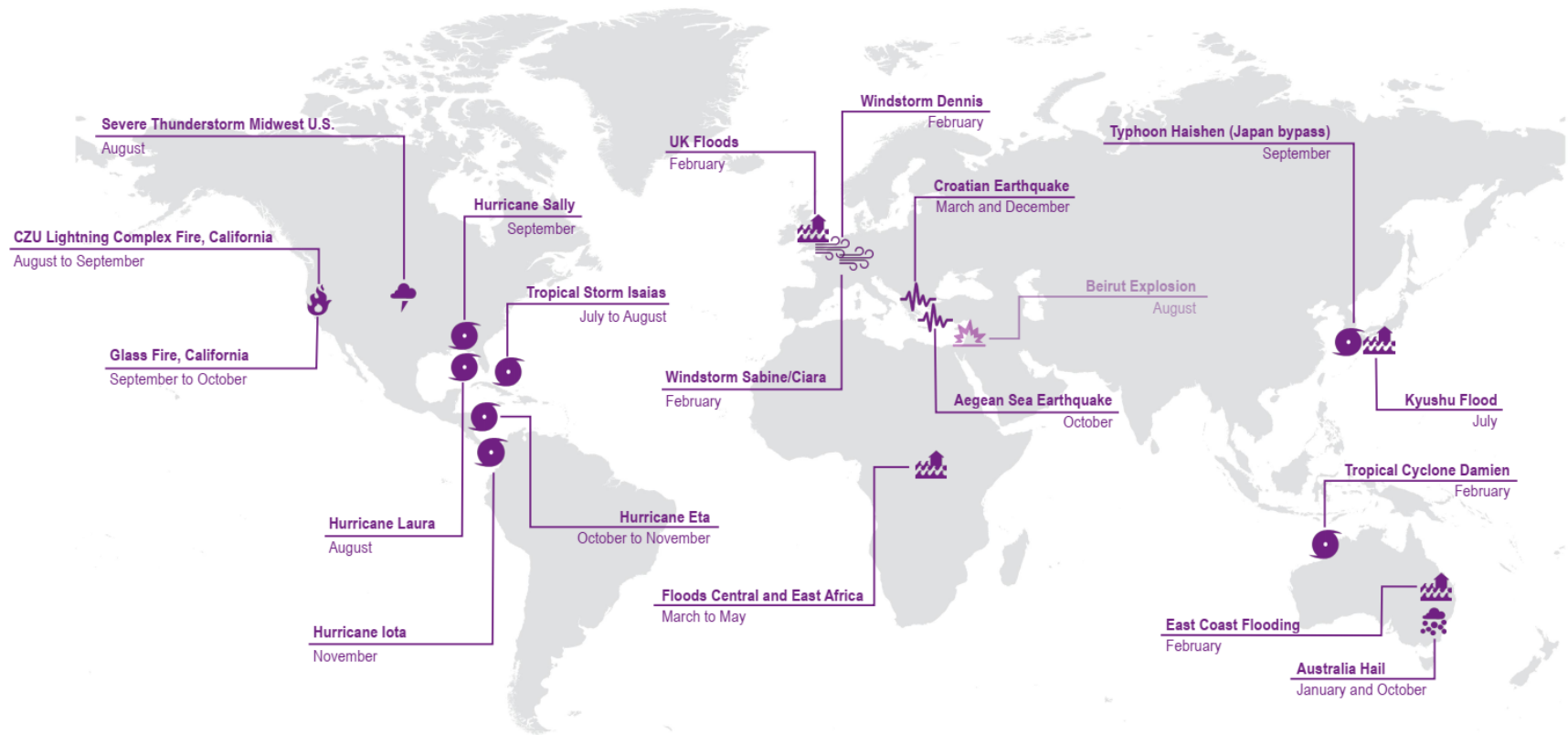
Insured losses and economic impact due to
natural disasters

Volume 9

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Major natural catastrophes in 2020 per region based on insured losses



*The man-made explosion at Beirut port is included in the map due to its impact.

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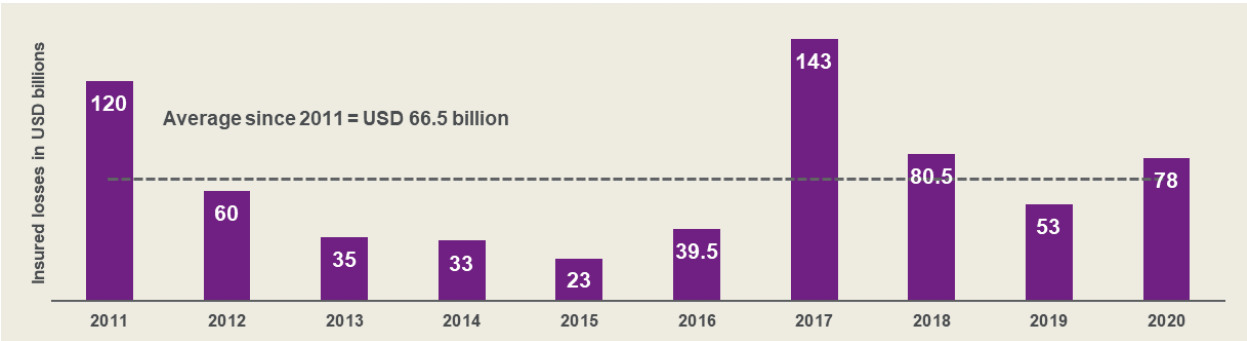
Introduction

This report summarizes economic and insured losses from the most relevant natural catastrophe events that occurred during 2020. The loss values presented herein include those reported by Willis Re, catastrophe model vendors, reinsurance companies and third-party organizations. Loss estimates are presented in U.S. dollars (USD), for which rates of exchange at December 1, 2020, have been used.

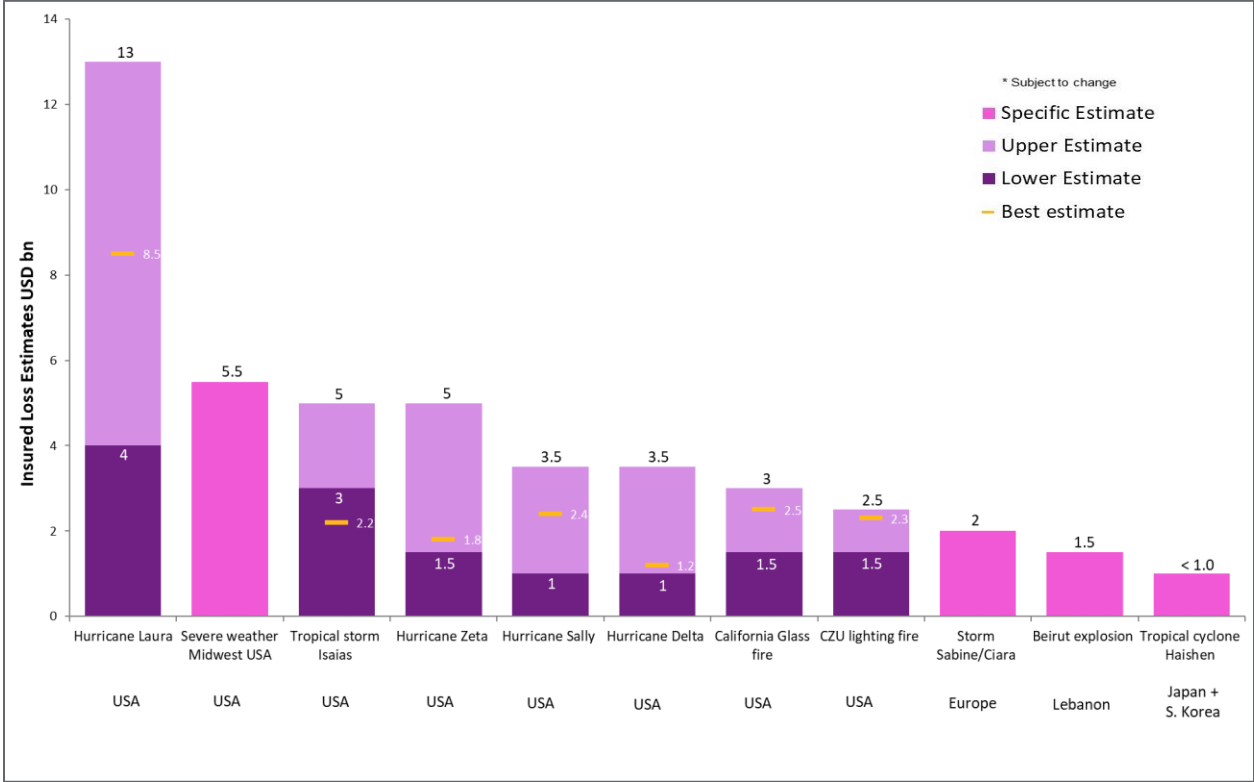
Our insured loss estimates from major natural catastrophes in 2020 of about USD 78 billion are the fourth largest since the 2011 annual market losses of USD 120 billion and 17% larger than the average annual losses over the past 10 years (see figure below). In spite of the 2020 insured losses being above average, they are only close to half of the losses from the peak observed in 2017 of USD 143 billion. It is important to highlight that these estimates do not include losses to the industry coming from neither COVID-19 (see the In Focus section in this report) nor man-made insured losses, such as the riots in late May in the U.S. or the explosion at the port of Beirut in early August. We estimate that overall man-made disasters would add USD 5.5 billion to the insured losses.

In the U.S., in spite of the significantly above average hurricane activity in the North Atlantic, the number of landfalling events did not follow this basin activity. The largest insured losses from a single event in the U.S. came from Hurricane Laura in late August with approximately USD 8 billion to 9 billion in losses, and from the severe weather in the Midwest in early August with around USD 5 billion to 6 billion in losses. In Europe, the largest loss-causing event came in early February when Windstorm Sabine/Ciara affected more than 10 countries producing close to USD 2 billion in insured losses. A point worth noting during 2020 for Europe is the clustering of windstorms that were observed (see the In Focus section). In Asia, Tropical Cyclone Haishen (Kristine) passed by Japan and South Korea in early September causing less than USD 1 billion in insured losses, which contrasts with the tropical cyclone losses observed in Japan during 2019. In the Middle East, the largest insured loss event in 2020 was the man-made explosion at Beirut's port with estimated insured losses of USD 1.5 billion, while in Latin America and the Caribbean, the largest event of 2020 was hurricane Iota in November with an estimated economic loss in the order of USD 1.3 billion.

The aforementioned events, along with others having lower insured losses, are described in detail in the second part of this report, listed in chronological order, while a summary of events is provided in the tables at the end of the document, organized by peril/region affected in chronological order.



Insured losses from natural catastrophes since 2011 (Willis Re estimates)



Largest insured losses from single Natural Catastrophe events during 2020. Note the top eight are USA related though it is key to note their losses are significantly lower than those from recent past years such as Hurricanes Harvey, Irma or Maria in 2017 or the California Wildfires in 2018.

1. In focus

The 2020 Japan tropical cyclone season

The tropical cyclone (TC) season within the Western North Pacific (WNP) basin came to an end in 2020 just below the historical average in terms of TC frequency after a slow start to the year. In Japan no TCs made landfall, in contrast to recent seasons where activity was close to or slightly above average.

Seasonality: TC activity can be measured in multiple ways; these can include activity in the WNP basin as a whole or landfalls. The number of TCs in the WNP basin so far (23) is close to the seasonal average (approximately 25) while the zero-landfall count for Japan during 2020 highlights that landfalls are not wholly correlated to basin activity.

The absence of landfalls in Japan (Figure 1) highlights that general seasonality and weather-related steering conditions still form a part of how a TC season can impact a given country.

2018 – 2019: The zero landfall season for Japan in 2020 comes as a stark contrast to the activity in 2018 and 2019. Historical landfall observations (Figure 2) indicate that 2018 and 2019 were not exceptional compared with historical averages, and that zero landfalls do occur (2020, 2008 and 1988).

One of the key learnings from previous seasons with events such as Typhoon Jebi is that loss experience is not exclusively driven by the landfalling TC intensity but is heavily dependent on where the TC makes landfall; but first, landfall must take place.

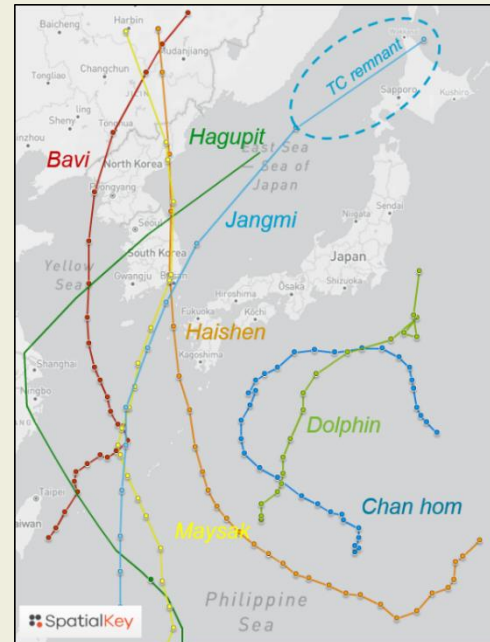


Figure 1. Tropical cyclone activity in the WNP basin, recorded as tracks (Kinetic Corp.), observed seven TCs bypass Japan to the west and to the south

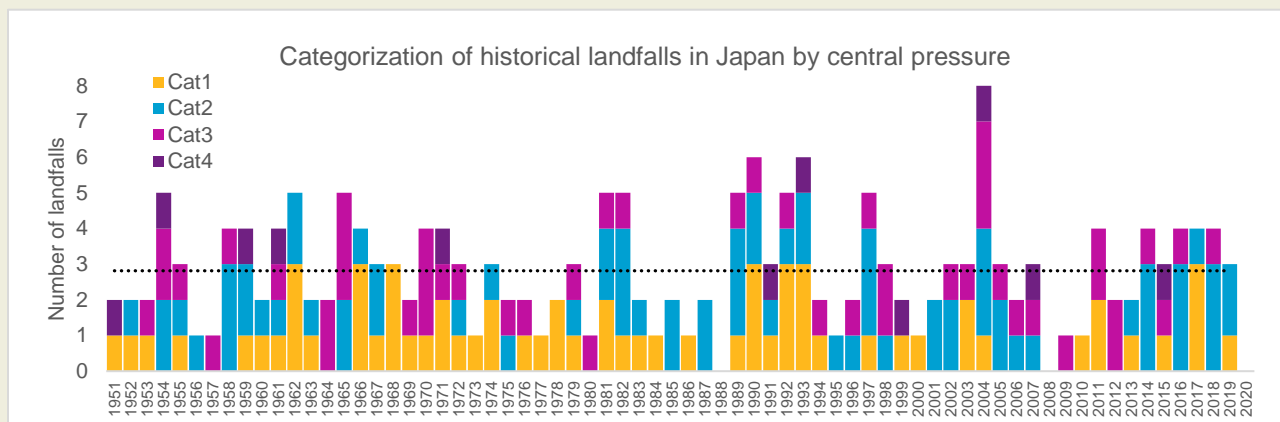


Figure 2. Willis Re landfall analysis of IBTrACS observed activity by equivalent Saffir-Simpson hurricane scale and view of average annual landfall (black dotted line)

Latin America and Caribbean: Highest number of storms on record

In the Latin America and Caribbean region, the losses and impacts of natural catastrophes were notably low in 2020. The largest losses may not be from natural catastrophes but from COVID-19, which were intensified by the hurricane season.

For the 2020 season, the National Oceanic and Atmospheric Administration (NOAA) recorded 30 named storms, of which 13 became hurricanes, including six major hurricanes. This is the most storms on record, surpassing the 28 from 2005, and the second-highest number of hurricanes recorded.

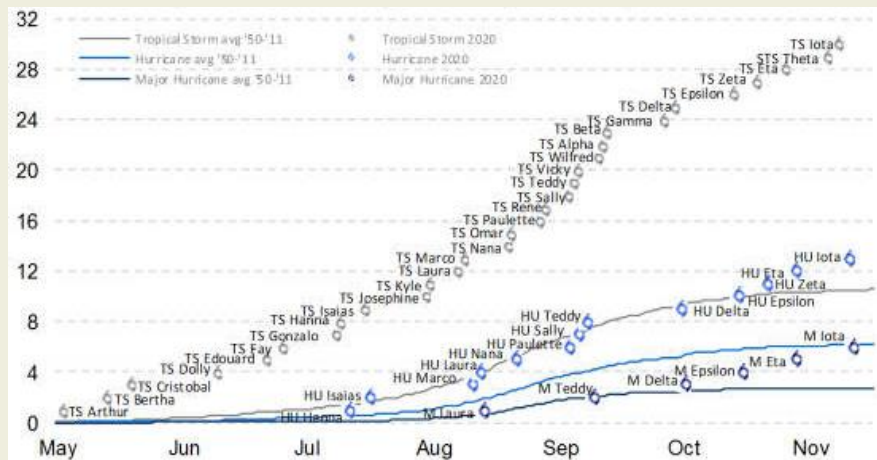


Figure 3. 2020 activity versus average activity for the years 1950 – 2011 (Source: Willis Re eVENT Report)

Considering the number of storms during 2020, only a few notable hurricanes in the 2020 season affected the Latin America and Caribbean region, in particular, hurricanes Eta and Iota, which caused catastrophic flooding over Central America. Iota made landfall in Nicaragua on November 17 as a powerful Category 4 and affected an area that had been hit by Eta, also a Category 4, less than two weeks before, with hundreds of casualties. It was the first time on record the Atlantic has had two major hurricane formations in November at a time of year when the season is normally winding down. In Central America, Eta and Iota caused unprecedented chaos in the region, which was already affected by COVID-19 conditions, creating a humanitarian crisis that has left thousands of people without homes and at a constant risk of contracting the virus.

In the lead-up to January 1, 2021 renewals, one of the main discussion points in the industry has been the reinsurance market's reactions to COVID-19. From a life perspective, COVID-19 has been a challenge for many companies in the region. Pandemic is often excluded from life treaties; generally, legislation across Latin America requires that the cover is interpreted in favor of the insured with the onus on insurers to prove the application of any exclusions; however, depending on the country, death rates for people under age 60 have been higher than the expected. This has resulted in more life insurance claims in the insured population compared with other regions. Additionally, we will see COVID-19 continue to play a role in renewal discussions, as many portfolios in the region have had difficulties quantifying the final impact due to a delay in the reporting of losses because of extended lockdowns.

The U.S. in 2020: A year that broke many records

In the U.S., 2020 industry losses were well above average annual loss (2010 to 2020), with at least 19 events exceeding USD 1 billion and two events exceeding USD 5 billion. In contrast, 2019 had only four events greater than USD 1 billion, whereas 2018 and 2017 had not more than 12 events each exceeding USD 1 billion.

The year's most significant severe thunderstorm insured loss event was an outbreak across the northern Midwest regions of the U.S. producing multiple rounds of thunderstorms between August 8 and 11 (Figure 4). A powerful derecho (a particular kind of storm) swept across the region bringing strong wind from Nebraska through the Ohio Valley. Some locations reported wind gusts over 100 mph. In addition, there were 15 tornadoes across northeastern Illinois, several affecting the Chicago metropolitan area. Economic losses for this event are estimated to be between USD 5 billion to 10 billion (NOAA).

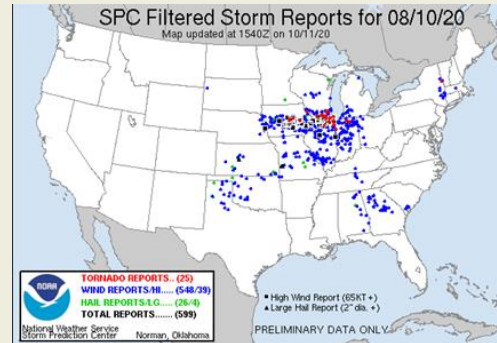


Figure 4. Thunderstorm reported on August 10, 2020 (Source: SPC, NOAA)

The 2020 Atlantic hurricane season was the most active with 30 named storms, including 13 hurricanes and six major hurricanes. This makes 2020 the most active season on record, breaking the previous record of 28 storms set back in 2005 (NOAA). Among the year's most significant insured loss events for U.S. regions are Hurricane Laura, Hurricane Sally, Hurricane Delta, Hurricane Zeta and Tropical Storm Isaias. Total insured losses for these five events exceeded USD 15 billion. Hurricane Laura made landfall as a Category 4 hurricane near Cameron, Louisiana (Figure 5) with maximum sustained winds of 145 mph and a minimum central pressure of 938 mb. All the other mentioned hurricanes made landfall as Category 2 on the U.S. coastlines. 2020 was only the second year in history that Greek letter names were used as storm names after exhausting the usual rotating list of 21 names (2005 is the only other year this has been done), and it marked a record fifth consecutive year with at least one Category 5 hurricane. It was also the fifth consecutive above-average Atlantic hurricane season from 2016 onward.

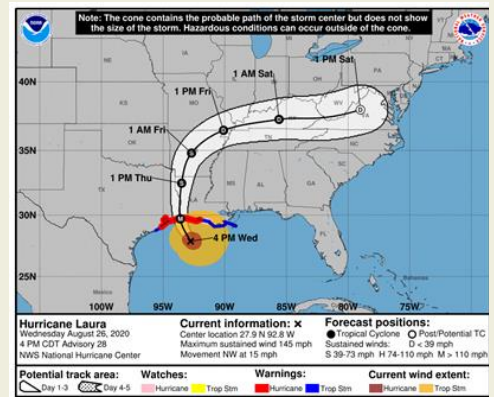


Figure 5. Hurricane Laura's path as of August 28, 2020 (Source: NOAA)

The 2020 wildfire season was highly active in comparison with 2019. There were as many as 17 wildfire events this year (PCS). Severe thunderstorms in the month of August ignited wildfires across California, Oregon and Washington. Of the 17 wildfire events, four of them (LNU Lighting, CZU Lighting, Beachie Creek and Glass Fire) caused insured losses exceeding \$7 billion. In total, these four events burned more than 600,000 acres of land. The LNU Lighting Complex Fire (Figure 6), August 17 to September 16, is believed to have been caused by nearly 11,000 lightning strikes that occurred within a 72-hour span. According to CalFire, the 2020 wildfire season saw around 10,488 structures destroyed and more than 31 fatalities.

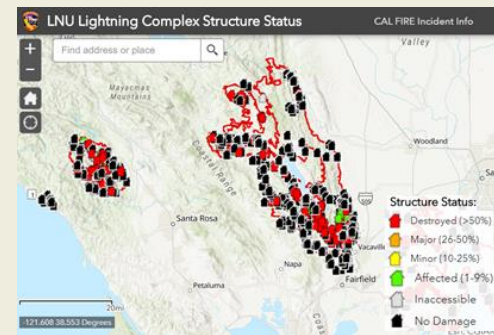


Figure 6. FEMA extent of the LNU Lighting Wildfire (source: FEMA Geospatial Resource Center)

Pan-European windstorms drive 2020 EMEA NatCat insured losses

The main driver of Europe, Middle East and Africa (EMEA) NatCat losses in 2020 was extratropical cyclone activity (ETC), notably storms Ciara and Dennis. However, the year was also characterized by exceptional subtropical storms, particularly Alpha and Ianos, affecting Portugal and Greece during the summer season.

Reflections on potential European windstorm clustering

At the peak of the 2019/2020 storm season in February, Northwestern Europe experienced several significant windstorms in short succession, with storms Ciara, Ines, Dennis and Jorge all occurring within a two-week period. Clusters of this type have the potential to cause large economic and insured losses as a result of accumulated precipitation and wind damage. This was demonstrated in 2020 by **the U.K. experiencing its wettest February on record**, partially due to the impact of Storm Ciara, followed by a series of smaller low-pressure frontal systems and culminating with impacts from Storm Dennis. Heavy rainfall persisted within the two-week period, which caused severe flooding from otherwise moderate events. Regulators are increasingly showing interest over the material impact of windstorm clustering for capital requirements. The February succession of windstorms this year acts as a reminder of the importance of efficient insurer systems to manage and distinguish concurrent peak events, for both claim handling and regulatory reporting.

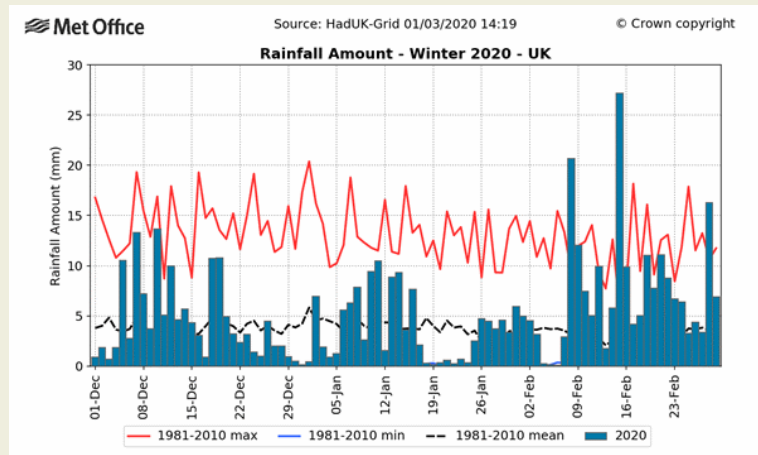


Figure 7. U.K. winter 2020 rainfall rates (Met Office)

Evolving windstorm risk in Southern Europe?

While much focus in the European windstorm market is generally placed on extratropical systems, 2020 has also highlighted the potential impacts of strong subtropical storms in Southern Europe. The 2020 windstorm season saw two notable but rare subtropical events, Storm Alpha and Medicane Ianos. Storm Alpha was the most easterly for the formation of an Atlantic named storm and the first tropical or subtropical cyclone recorded to have hit Portugal. Medicane Ianos was a particularly strong tropical-like system that skirted southern Italy and peaked just prior to landfall in Greece.

While these systems did not lead to significant insured losses of the likes of Ciara or Dennis, they do highlight the potential damaging impacts of powerful subtropical storms affecting Mediterranean regions. While future climate models predict a reduction in the frequency of medicane events specifically, their severity is expected to increase, making these an important consideration for the Southern European insurance market.



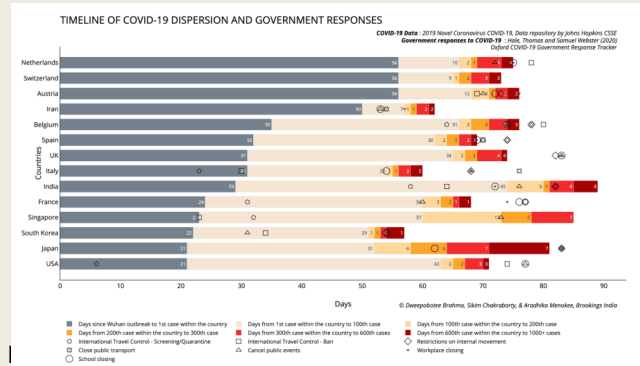
Figure 8. Subtropical Storm Alpha impacting Portugal (EOSDIS)

COVID-19 pandemic

The ongoing COVID-19 pandemic has dominated the global news throughout 2020. The coronavirus was first identified in Wuhan, China, before the World Health Organization (WHO) was notified of the outbreak on December 31, 2019. Government interventions, including national lockdowns, have been seen across the globe, with many countries implementing different levels of restrictions.

COVID-19

COVID-19 is the disease caused by a new coronavirus called SARS-CoV-2, which causes respiratory illness. Global government interventions have tried to curb the spread of the virus, most commonly national lockdowns, work-from-home orders, and the closures of nonessential businesses and schools. Variants of the strain have been reported in multiple countries, including the U.K. when the SARS-CoV-2 variant was announced on December 14, 2020.



As of today, multiple countries have approved several vaccines against the COVID-19 disease. In the West, the U.K. was first to do this on December 2, 2020, when the Pfizer vaccine was approved for mass use, while currently the AstraZenca and Moderna vaccines have also been approved in Western countries.

Global economic effects

The COVID-19 pandemic escalated worldwide only a few short weeks after the WHO was notified. Many sources were predicting the global economy would suffer its worst recession since World War II. Government restrictions to minimize the risk caused by COVID-19 have triggered steep downturns in economic growth.

The pandemic is still ongoing, and thus the full scale of the effects will not be seen for years to come due to the impact seen across a wide number of global industries.

Insured losses so far

Willis Re has published multiple reports covering the ongoing pandemic, which are available online. To date, the actual losses booked in 2020 amount to 23 billion, and the average industry loss estimate is 68 billion, assuming full development of losses, which may take years. Specific details on these numbers can be found through your Willis Re account executive or our [website](#).



Figure 2. Booked losses and industry loss estimates

Source: Company disclosures, Dowling & Partners, Barclays Research, Autonomous Research, BofA Global Research, Lloyd's, Berenberg, Moody's, Willis Towers Watson

1: Willis Towers Watson's \$32 billion to \$80 billion estimate corresponds to its Moderate to Severe scenarios. Willis Towers Watson has also published Optimistic and Limited Success scenarios. These are represented by the hashed portions of the WTW bar and widen the range to \$11 - \$140 billion.

2. Major natural catastrophes in 2020

ST Midwest U.S.A. January 10 to 12, 2020

Midwest &
Southern U.S.A.



Insured losses
(in USD millions)

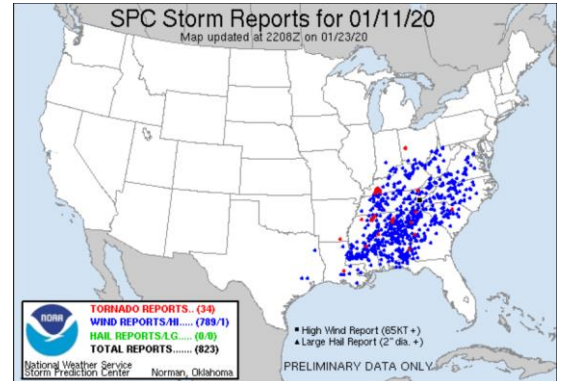
- <1,000 (PCS)

Timeline and meteorology

- An upper level trough positioned over the western-central U.S. moved eastward, an area of low pressure at the surface began to organize and strengthen over the central-southern Plains.
- Thunderstorms when severe, formed a squall line, producing hail (1-1.75 inches in diameter) and 50-60+ mph wind gusts across much of the southern Plains.

Impact

- Tornadoes were reported in Missouri, Arkansas, Oklahoma and Texas and had caused damage to property and power lines.
- In total during the two-day span, over 550 wind and at least 12 tornado reports were submitted to the National Weather Service's Storm Prediction Center.
- Close to 70,000 properties were affected by power outages.



Thunderstorm reported on January 11 (source: SPC, NOAA)

Turkey

Magnitude: 6.7
Depth: 11.9 km



Insured losses
(in USD million)

- Unknown

Economic Losses
(in USD million)

- 40% probability of losses between 100 and 1000 (USGS)

Fatalities

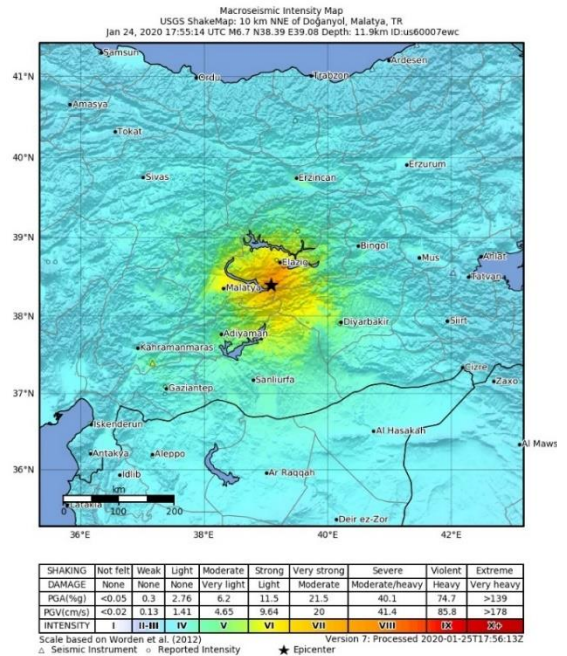
- 41 (AFAD)

Timeline and Seismology

- On 24th January 2020 at 20:55 (local time), a Mw 6.7 earthquake struck eastern Turkey. The earthquake was felt widely across eastern Turkey, with significant damage caused in the immediate surroundings of the epicenter (USGS).
- The epicenter was located approximately 9km northeast of Doganyol district, at a depth of 11.9km, and occurred on the East Anatolian Fault (USGS).
- A number of aftershocks were detected, some having a magnitude greater than 4.0, with the largest being 5.1 that occurred on 25th January at 16:30 (local time) (Daily Sabah).
- The region has seen significant historical seismic activity with the last destructive earthquake being a Mw 6.1 in 2010, located ~100 km north east of the 24th January 2020 event.

Impact

- There were 41 fatalities and over 1,600 injured following the event (AFAD).
- Structural damage was reported up to 40 km from the epicenter, 19 towns and 200 villages were affected (Relief Web).
- During surveys following the earthquake, 81 buildings were found to be heavily damaged and 53 partially damaged while 30 structures had collapsed (Anadolu Agency).



USGS shaking intensity (MMI) footprint for the 24/01/20 Mw6.7 event

South and Northeast U.S.A.



Insured losses
(in USD millions)
<1,000 (PCS)

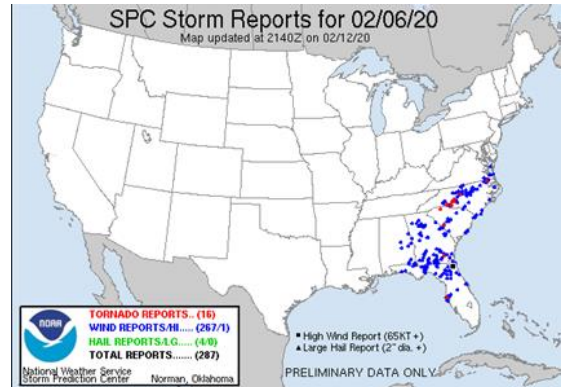
Timeline and meteorology

- An upper level trough was located over the central U.S. and an area of low pressure at the surface, and its associated frontal boundaries began to strengthen over the lower Mississippi Valley.
- Hail measuring 1 to 1.75 inches in diameter and winds gusting to 50-60+ mph was observed across Arkansas, Louisiana, Mississippi, and Alabama.
- Localized areas of Louisiana, Mississippi, Alabama, Georgia, South Carolina, North Carolina, Tennessee, Kentucky, and Virginia received upwards of 3 to 5+ inches of rain throughout the day.
- A Winds gusting to 50-60+ mph was recorded across northern and central Florida, Alabama, Georgia, the Carolinas, and Virginia.
- The system moved fully into New England by the morning-afternoon hours on February 7th, bringing heavy rainfall and strong wind gusts (40-50+ mph) to Rhode Island and Massachusetts.

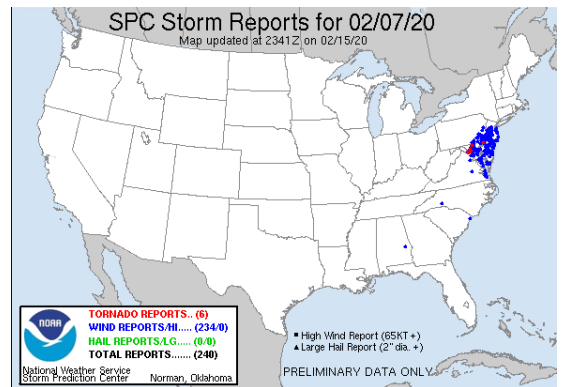
Impact

- Several tornadoes were reported in Mississippi and Alabama, which caused damage to buildings and power lines.
- Many properties were without electricity across the Southeast, Mid-Atlantic, and areas of the Northeast.
- Several other southern states were also hit hard by flooding, including Kentucky, South Carolina, and Tennessee.

Flash flood emergencies were declared in Pickens County, South Carolina, where people had to be rescued from swamped homes and buildings.



Thunderstorm reported on February 6 (source: SPC, NOAA)



Thunderstorm reported on February 7 (source: SPC, NOAA)

Austria, Belgium, Czech Republic, Denmark, France, Great Britain, Germany, Ireland, Netherlands, Norway, Switzerland



Insured losses

(in USD millions)

- **1,100** (Munich Re)
- **1,900** (PERILS)
- **2,200– 2,400** (Willis Re estimate)

Economic losses

(in USD millions)

- **1,800** (Munich Re)

Fatalities

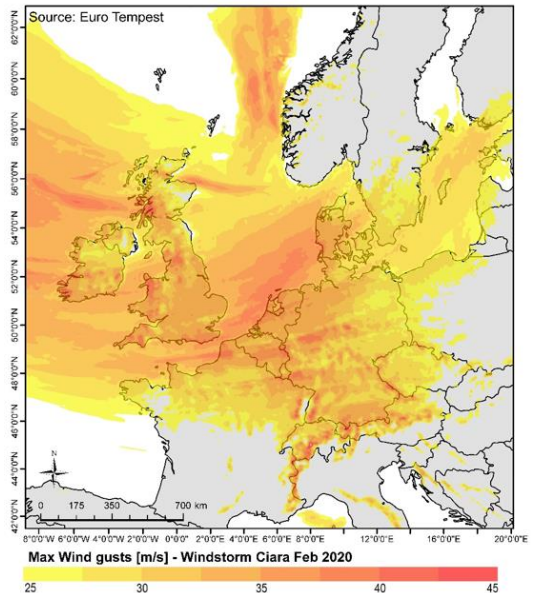
- **14** (Insurance Journal)

Timeline and Meteorology

- On February 8th, 2020, an extratropical cyclone formed in the Atlantic and developed into a powerful European windstorm.
- From February 9th to February 11th, the centre of the cyclone tracked eastward across the north of the UK with a minimum pressure of 950mb, and subsequently moved up the coast of Norway.
- Unusually high wind speeds inland of up to 130 km/h affected the UK, Germany, Denmark, northern France, Belgium and the Netherlands causing damage to buildings and power disruptions.
- Some regions including the UK and Netherlands were also hit by heavy rain with rainfall totals reaching 179.8 mm during the period, causing severe flooding (Met Office).
- Damaging winds were also experienced in Poland, Czech Republic and southern regions of Norway and Sweden.

Impact

- At least 13 fatalities were reported with three deaths in the UK and Poland, two in Sweden and one in France, Germany, Italy, Slovenia and Switzerland (Insurance Journal).
- A wide area across the British Isles and Continental Europe was impacted by damaging wind gusts. Additionally, the conditions persisted unusually long for an extended period of over 48 hours in many countries (PERILS).
- >200 flights and several events were cancelled. Severe restrictions in the train traffic also occurred (NY Times).
- The city center of Hamburg and the Altona fish market were flooded by 2.6 m of water (Federal Maritime and Hydrographic Agency).
- Windstorm Ciara/Sabine represents the largest loss from a European Windstorm since Friederike in 2018. The majority of insurance losses (>600mn USD) were reported in Germany (PERILS).



Storm Ciara/Sabine, Peak Wind Gust Footprint 9th Feb (source: Euro Tempest)

Belgium, Germany, Denmark, France, Luxembourg, United Kingdom, Republic of Ireland, Iceland, Norway, Sweden, Netherlands



Insured losses

(in USD millions)

- **372 (PERILS)**

Fatalities

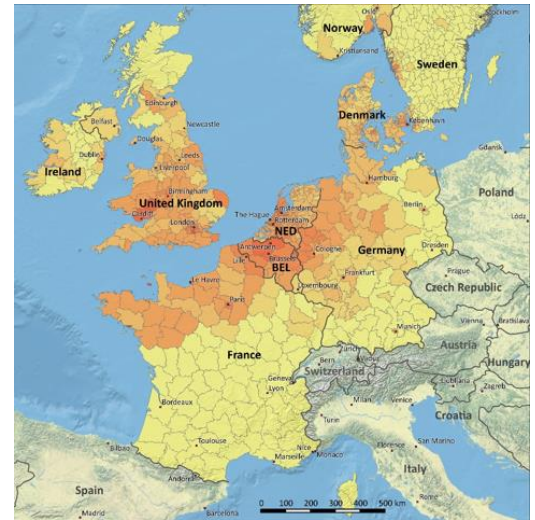
- **13 (PERILS)**

Timeline and Meteorology

- 13th named storm in the 2019-2020 season
- Struck less than a week after storm Ciara
- Originating over the US, the storm was named by the Met Office on the 11th of Feb (PERILS).
- The system underwent explosive cyclogenesis where the system dropped rapidly to a low pressure of 920hPa and accelerated rapidly towards Europe (PERILS).

Impact

- Red warnings issued in the United Kingdom by the Met Office
- 60,000 homes without power in France, 45,000 in the UK, 3,500 in Ireland and 17,000 in Sweden (Perils)
- Travel disruptions and flight cancellations were seen in all affected countries, mainly flights travelling to the UK were affected (PERILS).
- Severe flooding in the UK and Ireland, due to storm Ciara and Dennis being only 1 week apart.
- Record breaking number of Environment Agency flood warnings (Met Office).



Market Loss per CRESTA (PERILS)

UK – Northern England, Wales, Ireland and Scotland



Industry Loss

(in GBP millions)

- **375**
(PERILS)

Fatalities

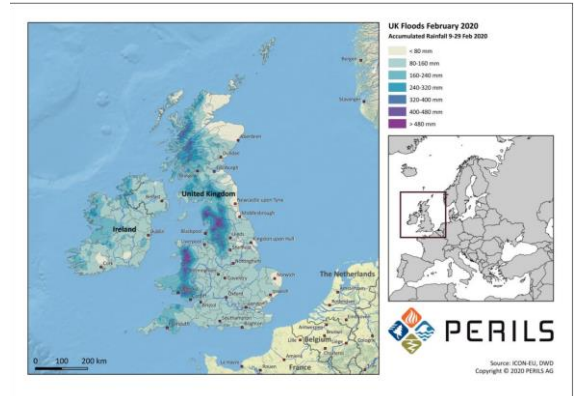
- **At least 2 deaths were reported as a result of flooding**
(Copernicus)

Timeline and Meteorology

- Record breaking rainfall on saturated grounds led to extensive river flooding across the UK, impacting Northern England, parts of Wales, Ireland and Scotland (PERILS).
- The heavy rainfall was associated with the storms: Ciara, Dennis and Jorge which all hit the UK successively in February 2020.

Impact

- It was the wettest February on record for England (Met Office) and the costliest flood event in the UK since the December 2015 winter floods (Copernicus).
- Properties, business and schools were flooded with widespread disruption to travel including flights, ferries and trains (JBA).
- Over 200 flood warnings were issued over England by the Environment Agency (JBA) with a deployment of over 6km of flood barriers and 90 mobile pumps (Environment Agency).
- Rivers in Wales and the West Midlands burst their banks, prompting immediate evacuations and left some communities cut off (Copernicus).
- Parts of Cumbria received nearly three quarters of February's rainfall in 24 hours with approximately 550 properties affected (Floodlist).
- In Scotland, the River Nith burst its banks in areas of Dumfries causing widespread flooding (Floodlist).
- Coastal flooding in areas surrounding Dublin were recorded due to high waves and high tides (Floodlist).



Accumulated rainfall in mm for the UK Floods of February 2020

Midwest & Southern U.S.A.



Insured losses

(in USD millions)

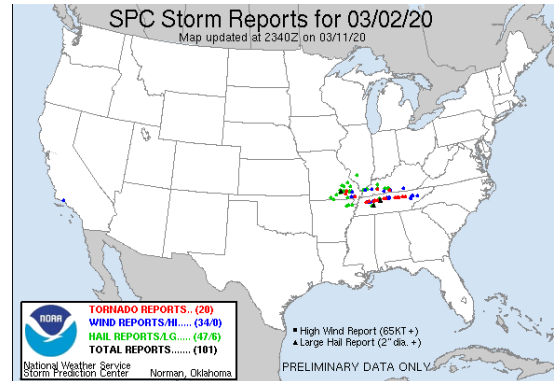
- >1,000 (PCS)

Timeline and meteorology

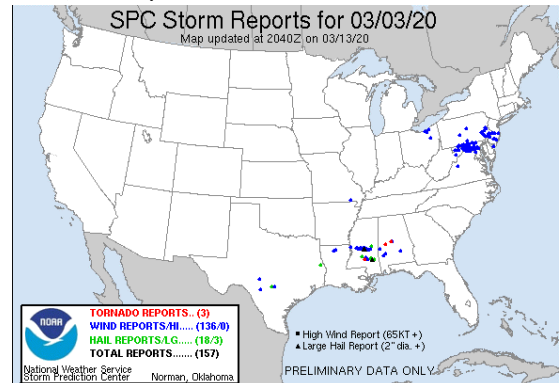
- A cold frontal boundary extended from the Great Lakes southwestward through the southern Plains, advancing eastward, brought some rain showers and thunderstorms for the state of Missouri, Illinois, Kentucky, Tennessee, Mississippi, and Alabama.
- Hail measuring upwards of 2 to 2.5 inches in diameter was recorded in parts of Missouri and Tennessee.
- Strong wind gusts (50 to 60+ mph) were also recorded across parts of Missouri, Tennessee, and Kentucky.

Impact

- A few tornadoes were reported from the greater Nashville, TN area and caused numerous fatalities.
- Extensive damage to property and power lines occurred in localized areas.
- The National Weather Service in Birmingham said an EF0 tornado hit Hale County, south of downtown Greensboro.
- A State of Emergency was declared in Tennessee.
- Approximately, more than 100 buildings were damaged.
- Close to 300,000 properties were affected by power outages.



Thunderstorm reported on March 2 (source: SPC, NOAA)



Thunderstorm reported on March 4 (source: SPC, NOAA)

Croatia

Magnitude: 5.3
Depth: 10 km



Insured losses
(in USD million)

- **64-80** (Croatian Insurance Bureau)

Economic Losses
(in USD million)

- **1,100** (Munich Re)

Fatalities

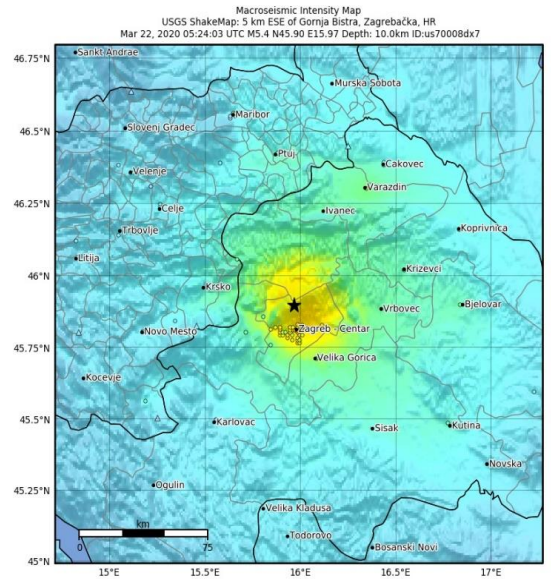
- **1** (The Guardian)

Timeline and Seismology

- On 22nd March 2020 at 06:24 (local time), a Mw 5.3 earthquake struck northern Croatia (USGS). The earthquake was felt widely within Zagreb, which was biggest in last 140 years (The Guardian).
- The epicenter was located approximately 7km north of Zagreb, at a depth of ~10 km (USGS).
- A number of aftershocks were detected, with the largest being Mw 4.9 that occurred on 22nd January at 07:00 (local time) (Geosciences).
- The region has not seen significant recent seismic activity with the last destructive earthquake being a Mw 6.9 in 1880, located in the vicinity of the 22nd March 2020 event (Geosciences).

Impact

- There was 1 fatality and over 16 individuals were injured as a result of the event (The Guardian).
- Structural damage was reported in an area of 165 km by 56 km, covering Zagreb and the surrounding region (Geosciences).
- During post-event surveys, 266,197 buildings were found to be damaged and 1,900 were designated as uninhabitable due to earthquake damage (Geosciences).



SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	None	None	None	Very light	Light	Moderate	Moderate/heavy	Heavy	Very heavy
PGA(%g)	<0.05	0.3	2.76	6.2	11.5	21.5	40.1	74.7	>139
PGV(cm/s)	<0.02	0.13	1.43	4.65	9.64	20	41.4	85.8	>178
INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X

Scale based on Worden et al. (2012) Version 7: Processed 2020-03-23T05:25:08Z
 △ Seismic Instrument ○ Reported intensity ★ Epicenter

USGS shaking intensity (MMI) footprint for the 22/03/20 Mw5.4 event

Midwest & Southern U.S.A.



Insured losses
(in USD millions)

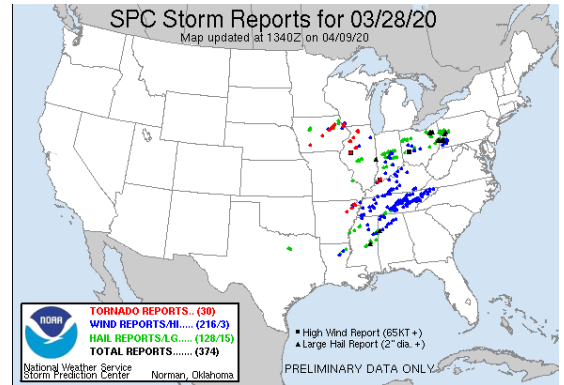
- **>1,000** (PCS)

Timeline and meteorology

- A low-pressure system developed over the central plains, created an unstable environment across portions of central Plains and middle Mississippi Valley
- Hails up to 1.75-inches were reported in regions of Iowa, Illinois, Indiana, Kansas, Massachusetts and Mississippi. Whereas, more than 2-inch hail were reported in regions of Missouri, Ohio, Oklahoma, Pennsylvania and West Virginia.
- Wind speeds up to 60, 70, 90 were reported in few in regions of Kansas, Iowa, Kentucky.

Impact

- High winds were reported downing trees and power lines in many areas in the state of Illinois, Indiana, Kansas, Louisiana, New York, West Virginia.



Thunderstorm reported on March 28 (source: SPC, NOAA)

Rwanda, Uganda, Kenya, Somalia, Sudan, South Sudan, Democratic Republic of the Congo, Ethiopia, Tanzania and Burundi.



Overall losses in Rwanda, Uganda and Kenya

(in USD millions)

- **>US\$70 mn** (Munich Re)

Fatalities in Rwanda, Uganda and Kenya

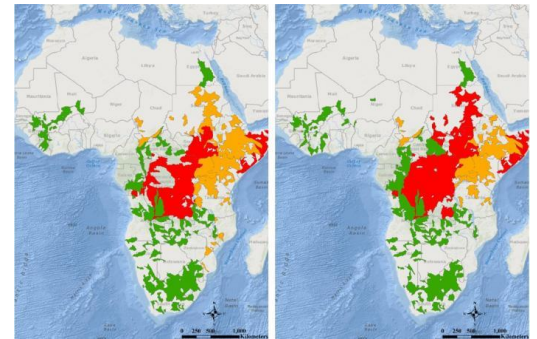
- **Approx. 281** (Munich Re)

Timeline and Meteorology

- Floods lasted between March through to May 2020, the wettest period the region had seen since 1981 (OCHA).
- Heavier and widespread rainfall during the “long-rains” season lead to transboundary flooding across multiple countries (NASA).
- The 2019 October to December rains over East Africa were one of the wettest seasons on record (Wainwright et al., 2020).
- This was then followed by above average rainfall in January and February (Wainwright et al., 2020).

Impact

- The rising water levels caused overflow of rivers and mudslides, impacting vulnerable settlements along the riverbanks.
- Houses, roads and bridges were damaged or destroyed and crops were washed away.
- Above average rainfall promoted the breeding of locusts and caused an outbreak across the region, threatening the main season crops (OCHA).
- Over 200 people died in Kenya, impacting 29 of the country’s 47 counties. (Floodlist).
- Torrential rain caused flash flooding and landslides in Rwanda, killing over 60 people (Floodlist).
- 86,000 people were made homeless in the Democratic Republic of the Congo (OCHA).
- Uganda was impacted by several major flash flood events, with over 10,000 people affected in the district of Kasese by severe flooding in early May (Floodlist).
- Lake Victoria, Eastern Uganda, reached record breaking water levels due to the above average long rains and caused an evacuation of over 3,800 people (Floodlist/Wainwright et al., 2020).
- The heavy rain also causes landslides, one of which buried a two-story house, killing at least 10 people in Ethiopia (Floodlist).



Watersheds in Africa that experienced a flood watch (red), warning (orange), or advisory (green) conditions on May 5th and 6th as determined by model outputs from the ROSES A.37 “Advancing Access to Global Flood Modeling and Alerting” project.

Northeast & Midwest U.S.A.



Insured losses
(in USD millions)

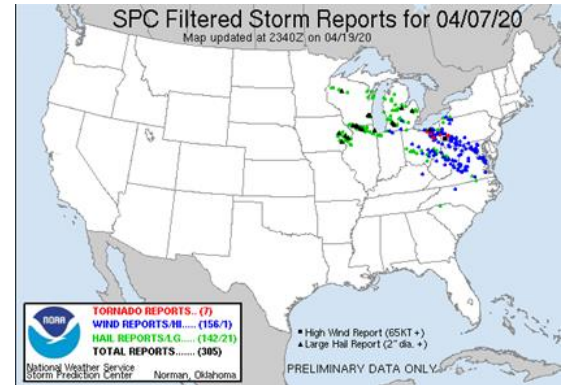
- **>1,000** (PCS)

Timeline and meteorology

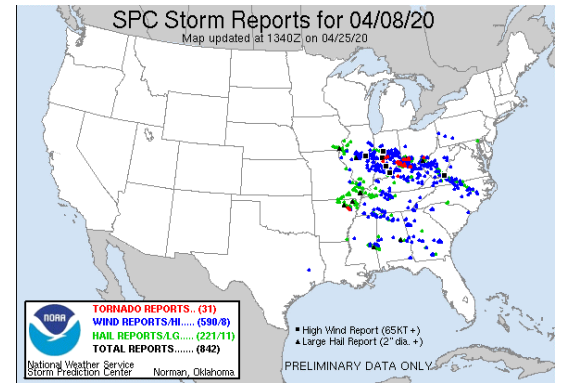
- An upper level trough moving southeastward from the Canadian Prairies towards the Midwest region and at the surface, a low-pressure system began to strengthen to the west of the Great Lakes created severe thunderstorm produced hail measuring upwards of 2-2.5 inches in diameter across portions of Wisconsin and Michigan.
- Hail and strong wind gusts impacted West Virginia, Virginia, North Carolina, Kentucky, Tennessee, Ohio, Indiana, Illinois, Iowa and Missouri.
- Total rainfall from April 7th through the 9th reached 1 to 2+ inches in some areas of the impacted states

Impact

- Strong wind gusts also impacted parts of West Virginia and Virginia.
- There were multiple reports of trees being knocked down and causing damage to vehicles.
- Winds caused damage to residential structures and commercial buildings.
- Strong wind up to 70 mph were experienced in New Jersey also, leading to multiple reports of trees being knocked down and leading to some isolated power outages.
- Close to 80,000 properties were affected by power outages.



Thunderstorm reported on April 7 (source: SPC, NOAA)



Thunderstorm reported on April 8 (source: SPC, NOAA)

Midwest & Southern U.S.A.



Insured losses
(in USD millions)

- **>1,000** (PCS)

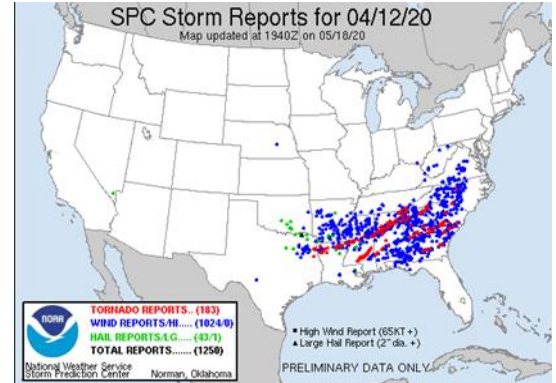
Fatalities: 16

Timeline and meteorology

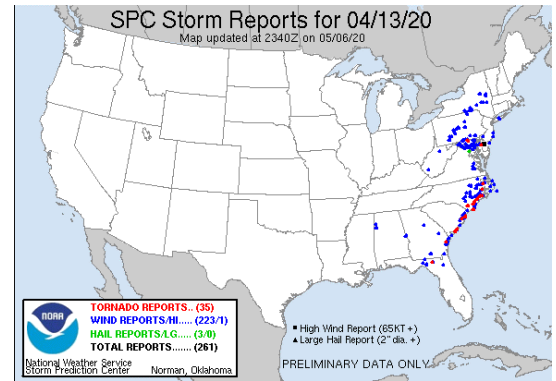
- An upper level low over the Southwest slowly progressed eastward and at the surface, moisture moved into western Texas. This combined with daytime heating helped create an unstable airmass.
- Storms produced hail over portions of west Texas, where golf ball size hail and larger fell over some areas.
- Several strong tornadoes were observed in Louisiana, Texas, Mississippi, Georgia, Tennessee, South Carolina, and North Carolina and produced extensive damage.

Impact

- Damaging wind gusts (50-60+ mph) also occurred across all states in the Southeast and southern Mid-Atlantic.
- Hail was mainly concentrated in northeastern Texas, southern Oklahoma, Arkansas, northern Louisiana, Arkansas, Mississippi, and Alabama and measured upwards of 1-2 inches in diameter.
- Heavy rainfall produced flooding in several areas across the Southeast
- Close to 1,400,000 properties were affected by power outages.



Thunderstorm reported on April 12 (source: SPC, NOAA)



Thunderstorm reported on April 13 (source: SPC, NOAA)

Southern U.S.A.



Insured losses

(in USD millions)

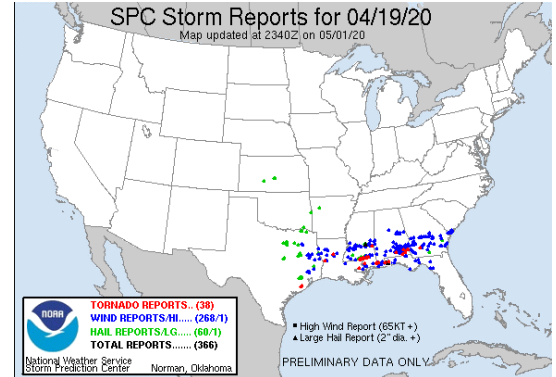
- >1,000 (PCS)

Timeline and meteorology

- An upper level trough moving southeastward from the Canadian Prairies towards the Midwest region and a low-pressure system at surface, lead to strengthening of storm to the west of the Great Lakes.
- Severe thunderstorms produced hail measuring upwards of 2-2.5 inches in diameter across portions of Wisconsin and Michigan.

Impact

- A Hail and strong wind gusts impacted West Virginia, Virginia, North Carolina, Kentucky, Tennessee, Ohio, Indiana, Illinois, Iowa and Missouri.
- Large hail (2 to 2.5+ inches) and 40 to 60+ mph winds were recorded in parts of Arkansas, Alabama, Mississippi and Georgia.
- Close to 75,000 properties were affected by power outages.



Thunderstorm reported on April 19 (source: SPC, NOAA)

Southern U.S.A.



Insured losses

(in USD millions)

- **>1,000** (PCS)

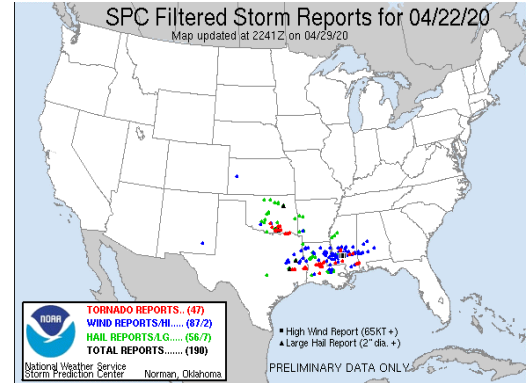
Fatalities: 1

Timeline and meteorology

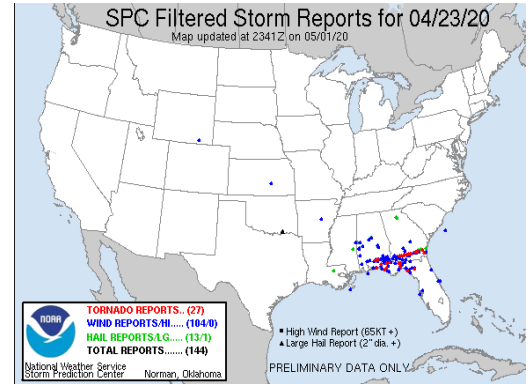
- An area of low pressure formed near the Texas Panhandle and several discrete thunderstorms cells formed during this time and moved southeastward across Oklahoma and northern Texas.
- Hail up to 1.75 inches was reported in regions of Arkansas, Georgia and Louisiana.
- Hail up to 2 to 2.75 inches was reported in regions of Oklahoma and Texas.
- Wind gust up to 70 mph were reported in Florida.

Impact

- Many reports of shingles blown off roofs, windows blown out, and damage to home and vehicles according to NWS.
- Close to 20,000 properties were affected by power outages.



Thunderstorm reported on April 22 (source: SPC, NOAA)



Thunderstorm reported on April 23 (source: SPC, NOAA)

ST Southern U.S.A. April 24 to 26, 2020

Southern U.S.A.



Insured losses
(in USD millions)

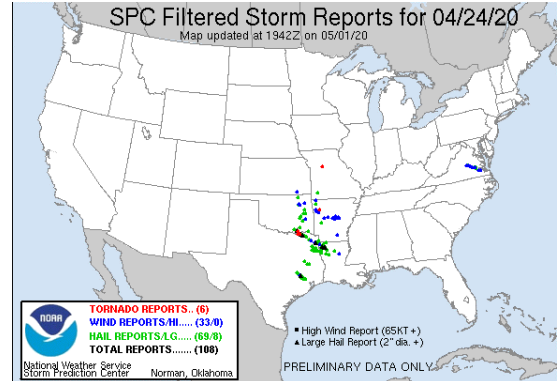
- **>1,000 (PCS)**

Timeline and meteorology

- Low-pressure system took shape over the southern plains on as an upper-level trough was set up over the Plains region.
- Strong winds, large hail and a couple tornadoes primarily impacted areas from eastern Texas and eastern Oklahoma into northern Louisiana and Arkansas.

Impact

- Wind gust up to 70 mph were reported in these few regions of Florida and Oklahoma.
- Large hail of greater than 2 inches were significantly reported in Oklahoma, Colorado, Illinois, Nebraska and Pennsylvania, Indiana.
- Strong to severe storms again developed within the warm sector of this system, impacted areas from the Mid-South into the Carolinas.



Thunderstorm reported on April 24 (source: SPC, NOAA)

ST Southern U.S.A. April 27 to 30, 2020

South and Northeast U.S.A.



Insured losses
(in USD millions)

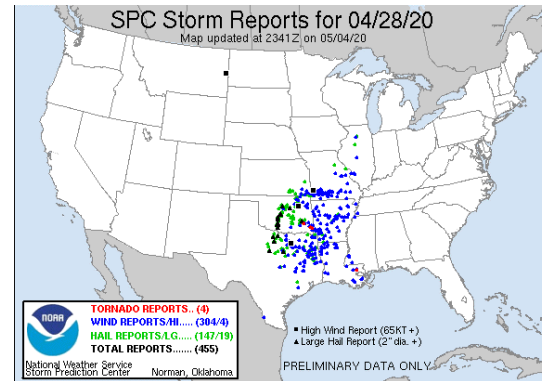
- **>1,000 (PCS)**

Timeline and meteorology

- A system moved across the western U.S. towards the Central Plains and a dry line developed across central/western Texas, resulted in severe thunderstorms in the region.
- The storms resulted in scattered, large hail across north-central Texas.
- Heavy rainfall resulted in flash flooding across areas of lower Mississippi Valley.
- There were multiple reports of hail greater than 2 inches across central and eastern Oklahoma.

Impact

- Damaging wind gusts and heavy rainfall continued across the region and one tornado was reported near Gretna, Florida.
- High winds of up to 70 mph knocking down trees and power lines were reported in several cities including Benton, Cabot, Greenwood, Hope, Jacksonville, Jonesboro, Little Rock and Russellville.



Thunderstorm reported on April 28 (source: SPC, NOAA)

ST Southern U.S.A. May 2 to 3, 2020

Southern U.S.A.



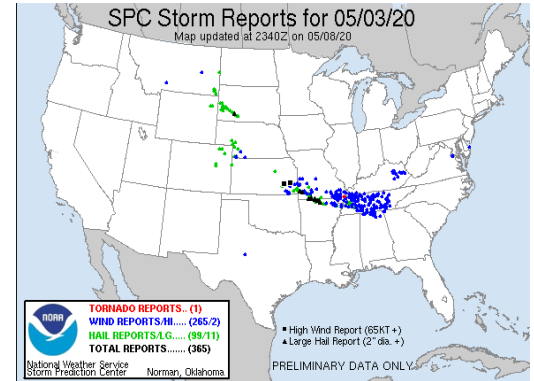
Insured losses
(in USD millions)
▪ >1,000 (PCS)

Timeline and meteorology

- A strengthening storm system gradually moved southeastward into northwestern Kansas resulted in rain showers and thunderstorms over central-eastern Kansas.
- There were multiple reports of trees being knocked down including Huntsville, Florence, and Athens.

Impact

- Hail up to 2 to 2.75 inches were reported in regions of Arkansas and up to 1.75 inches in region of Tennessee and Missouri.
- Close to 130,000 properties were affected by power outages.
- Damages have also been caused by downed trees and power lines in these regions.



Thunderstorm reported on May 3 (source: SPC, NOAA)

ST Southern U.S.A. May 4 to 5, 2020

Southern U.S.A.



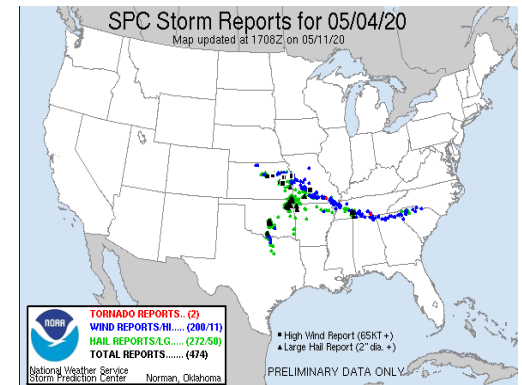
Insured losses
(in USD millions)
▪ >1,000 (PCS)

Timeline and meteorology

- A frontal system moved out of the central Rockies and into the northern Plains which produced isolated thunderstorms across the northern and central Plains.
- Storms resulted in strong wind gusts as high as 70 mph and widespread, large hail, with some reports of hail up to 2" in regions of Kansas damaged many property and vehicles.

Impact

- Hail ranging from 1 to 1.75 were reported in Missouri, South Carolina and Tennessee.
- Winds brought down trees in multiple locations causing damage to vehicles and property.
- Reports of significant damage to roofs and siding on residential and commercial buildings throughout the areas have been received.



Thunderstorm reported on May 4 (source: SPC, NOAA)

South and Northeast U.S.A.



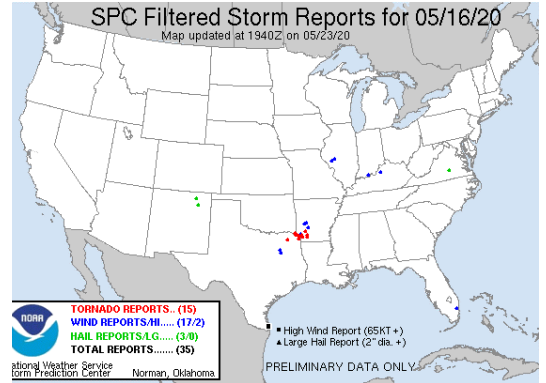
Insured losses
(in USD millions)
▪ **>1,000** (PCS)

Timeline and meteorology

- An upper level trough positioned over the central US helped to produced multiple areas of severe weather across the Great Plains and Midwest.
- The severe thunderstorm brought heavy rainfall, hail, and strong wind gusts to southern Oklahoma and central-eastern Texas.
- Flooding occurred throughout the Midwest, particularly for areas of Michigan.

Impact

- Heavy rainfall and some scattered thunderstorms also began to impact Virginia and the Carolinas by May 18, resulting in additional flooding.
- Large hail greater than 2 inches in diameter impacted portions of central Florida overnight, as well as some stronger wind gusts.
- EF-0, EF-1 tornado was reported in states of Texas with wind speed of 85 to 95 mph.
- Reports of significant damage to roofs and siding on residential and commercial buildings throughout the areas have been received.



Thunderstorm reported on May 16 (source: SPC, NOAA)

Southern U.S.A.



Insured losses

(in USD millions)

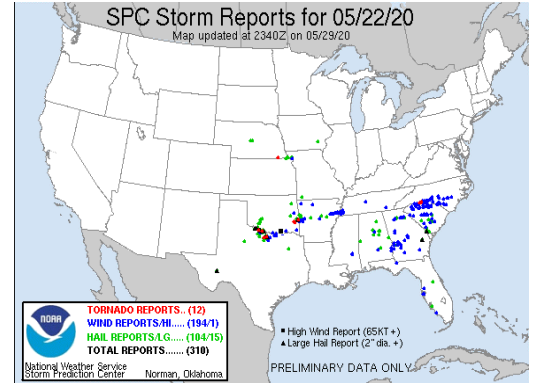
- **>1,000 (PCS)**

Timeline and meteorology

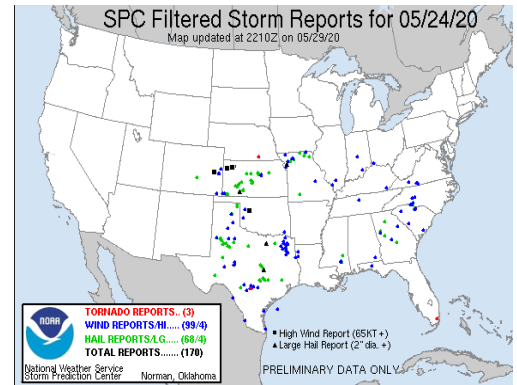
- A small area of upper-level energy moved into northern Texas combined with strong daytime heating resulted in some severe thunderstorms which developed over northern central Texas by the afternoon.
- Thunderstorm spread into central Texas, bringing more hail, strong wind gusts, and heavy rainfall.
- Additional storms progressed from the low-pressure area along a stationary frontal boundary positioned into the Southeast.

Impact

- Hail and strong wind gusts were reported from Illinois and Indiana. Several tornadoes were also reported from northern-central Illinois.
- A weak frontal boundary extended eastward from the upper-central Ohio River Valley to the Carolinas, resulting in some strong wind gusts in those areas.
- Hails up to 1.75 inches in diameter were reported in regions of Arkansas, Georgia, Indiana, and Texas, whereas about up to 2.75 inches were reported in Oklahoma and South Carolina and a maximum of 4 inches hail was reported in regions of Texas.
- A Local media has reported that repair shops and roofing companies are busy due to the hail activity.
- Reports of significant damage to roofs and siding on residential and commercial buildings throughout the areas have been received.



Thunderstorm reported on May 22 (source: SPC, NOAA)



Thunderstorm reported on May 24 (source: SPC, NOAA)

All regions U.S.A.

Insured losses

(in USD millions)

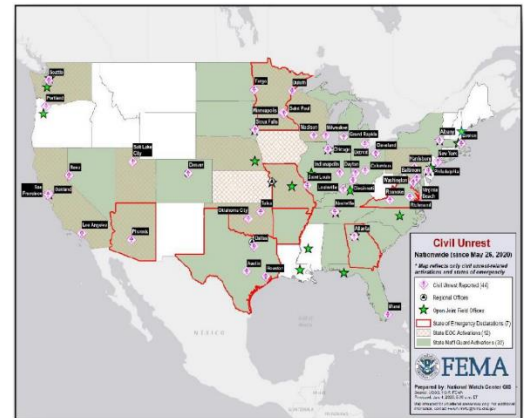
- >1,000 (PCS)

Timeline

- Protestors for the death of George Floyd gathered in the streets of Minneapolis and marched towards the 3rd Precinct around 6 pm central on Tuesday, May 26.
- As the protestors proceeded, a smaller group started to vandalize the building and squad cars with spray paint, eventually shattering a window at the precinct.
- Riots also erupted throughout other U.S. cities also sparked by the death of George Floyd.
- On Thursday, May 28, Governor of Minnesota issued Emergency Executive Order 20-64, activating the Minnesota National Guard and declaring a Peacetime Emergency to provide safety and protection to the people of Minneapolis, St. Paul, and the surrounding communities.

Impact

- Over 200 buildings have been listed as being damaged or looted in Minneapolis and St. Paul ranging from spray paint to burned with heavy structural damage.
- Damage and looting took place at the Apple store, Urban Outfitters, Crate & Barrel, and the nearby Mercedes-Benz dealership in the state of Arizona.
- In San Leandro, between 73 and 100 cars were stolen from a Chrysler Dodge Jeep Ram auto dealer on Sunday, June 1, 2020. Some of the sports cars cost as much as \$60,000.
- There were reports of severe damage in downtown D.C. Looters damaged coffee shops, banks and one office building after another
- Rioters broke windows and sales displays in Manhattan causing damage to stores ranging from cosmetics sellers to high-end clothing department stores. Chicago, Los Angeles, Detroit and multiple other cities saw people causing damage to vehicles, residential buildings and commercial establishments.
- Over \$100,000 in merchandise was reported to be stolen from a Walmart in Hillsborough County, Florida. Over 40 businesses reported damage in north Tampa.



Civil Disorder reported areas in USA (source: FEMA)

ST Texas U.S.A.

May 27 to 28, 2020

Texas U.S.A.



Insured losses (in USD millions)

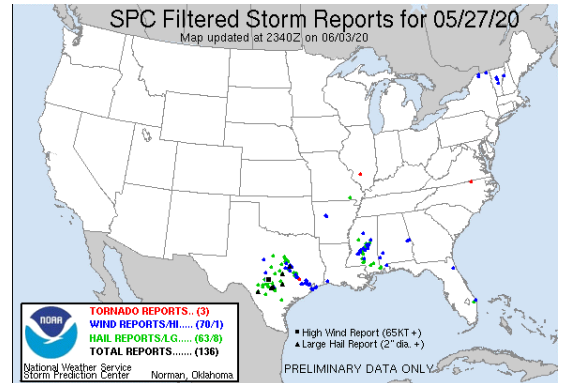
- >1,000 (PCS)

Timeline and meteorology

- A low-pressure system intensified over the southern Plains and lower Mississippi Valley aiding in increased instability over central Texas and widespread thunderstorms.
- The stronger storm cells also resulted in high wind gusts to the northwest of near Houston

Impact

- A total of 188 high wind and large hails were reported in Texas.
- Large hail up to 2.75 inches in diameter were reported in the region.
- Wind gust up to 80 mph were reported causing downed trees and power lines.



Thunderstorm reported on May 27 (source: SPC, NOAA)

ST Northeast U.S.A.

June 2 to 3, 2020

Northeast U.S.A.



Insured losses (in USD millions)

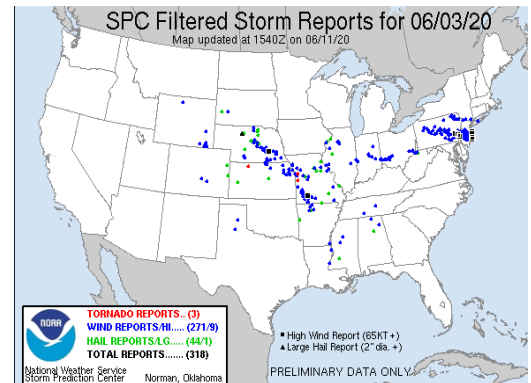
- >1,000 (PCS)

Timeline and meteorology

- An area of low pressure and its associated frontal boundaries extended across the Great Lakes region.
- Hail measuring upwards of 2-2.5 inches in diameter, 50-60+ mph wind gusts, and localized heavy rainfall were observed in central-southern portions of the state.
- A strong wind gusts and localized heavy rainfall impacted Pennsylvania and New Jersey.

Impact

- Reports of significant damage to roofs and siding on residential and commercial buildings throughout the areas have been received.
- Damages have also been caused by downed trees and power lines.
- Vehicle damages include broken windshields, mirrors and extensive body damage.
- Close to 250,000 properties were affected by power outages throughout the region.



Thunderstorm reported on June 3 (source: SPC, NOAA)

Midwest U.S.A.



Insured losses

(in USD millions)

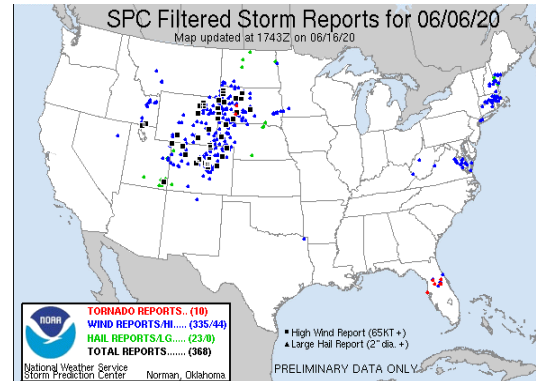
- >1,000 (PCS)

Timeline and meteorology

- An a broad upper-level trough moved over the western US, extending inland leading to strong wind gusts (50-60+ mph) impacting parts of the Great Basin-Intermountain West region.
- Some scattered showers and thunderstorms also formed over parts of Utah, Colorado, and Wyoming.
- A Widespread strong wind gusts and hail measuring 1-1.75 inches impacted Utah, Colorado, Wyoming, the Dakotas, and Nebraska.

Impact

- Localized heavy rainfall caused flash flooding in some areas, and a few tornadoes were also reported from South Dakota.
- Wind speeds up to 110 mph were reported in state of Colorado, whereas up to 80 mph were recorded in Indiana, North and South Dakota.
- Major hail affected region were, Minnesota, North and South Dakota, Nebraska and Utah reporting up to 2.5 inches of hail.
- Close to 100,000 properties were affected by power outages throughout the region



Thunderstorm reported on June 6 (source: SPC, NOAA)

Midwest U.S.A.



Insured losses

(in USD millions)

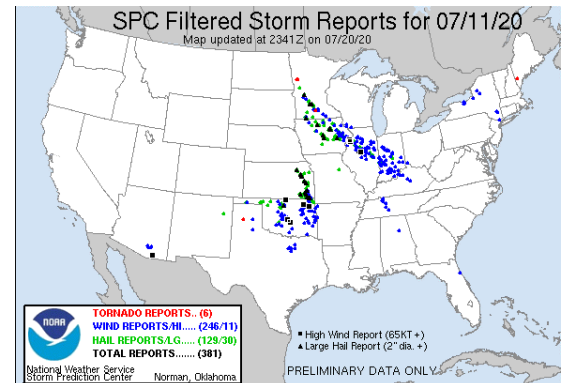
- >1,000 (PCS)

Timeline and meteorology

- An area of low pressure and its associated frontal boundaries advanced from the northern-central Plains into the Midwest during the afternoon and evening hours.
- A line of severe thunderstorms impacted parts of the Dakotas into Nebraska, resulting in large hail up to 3 inches in diameter in parts of southwestern South Dakota and central Northeast.

Impact

- Largest hail up to 3.25 inches in diameter were reported in South Dakota and 2.75 inches in Iowa. In other regions hails ranging from 1.75 to 1.25 inches were reported in Illinois and Indiana.
- Two tornadoes of maximum wind speed of 110 mph touched down in the state of South Dakota.
- Close to 40,000 properties were affected by power outages throughout the region.



Thunderstorm reported on July 11 (source: SPC, NOAA)

South & Northeast U.S.A.



Insured losses (in USD millions)

- >1000 (PCS)
- 3000-5000 (RMS)

Fatalities: 1

Timeline and Meteorology

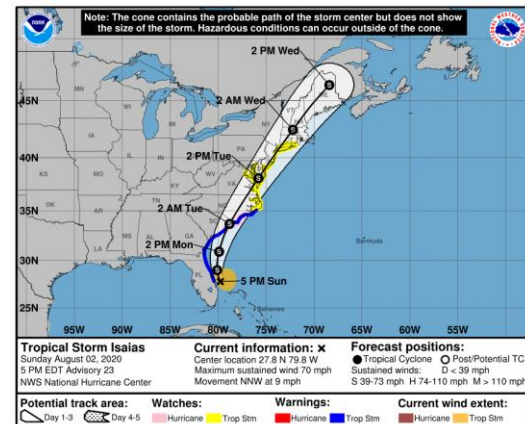
- Tropical Cyclone Nine was declared by the National Hurricane Center (NHC) on Tuesday, July 28th, nearly 600 miles east of the Leeward Islands. Later on, July 29th, the system was declared Tropical Storm Isaias.
- On 30th the system strengthened and officially became hurricane, but next day despite Isaias reaching its maximum intensity of 85 mph sustained winds Isaias ultimately began to weaken, becoming a tropical storm by the evening hours, prior to tropical storm force winds reaching southern Florida.
- Tropical storm conditions impacted the east coast of Florida, including gusty winds, heavy rainfall, flash flooding, and storm surge.
- On 3rd August by the evening hours, Isaias had regained hurricane strength and made landfall near Ocean Isle Beach, North Carolina.
- Tropical storm-force winds, heavy rainfall, flash flooding, and storm surge impacted the Mid-Atlantic region, and several tornadoes were also reported from North Carolina, Virginia, Maryland, Delaware, and New Jersey.
- Post-tropical Cyclone Isaias shifted to the north of New England and into Eastern Canada during the overnight hours into August 5th.

Impact

- The large amount debris not only slowed traffic, it also led to power outages in Connecticut.
- Torrential rain and damaging winds have buffeted South Carolina leading to flooding in multiple locations.
- The Florida Governor stated the state is anticipating power outages from Isaias while officials are working to prepare shelters for people to be safe while being mindful of social distancing.
- New Jersey Governor Phil Murphy issued a state of emergency for New Jersey starting at 5 am on Tuesday, 2nd August.
- Broken trees and wind led to power outages throughout the state, while falling branches and debris also damaged vehicles and homes in across affected regions.
- Close to 1,000,000 properties were affected by power outages throughout the affected regions.



Wind speed and path of Tropical Storm Isaias (source: NASA, NHC)



Tropical storm Isaias's path as of August 2 (source: NOAA)

Lebanon

Economic losses
(in USD millions)

- **\$4.6 - 7.5bn (WBG / ACAL)**

Insured losses
(in USD millions)

- **\$1.5bn (ACAL)**

Fatalities

- **220 (OCHA)**

The Port of Beirut explosion was a notable man-made event and is included here due to the significant impact on property and marine insurance.

Timeline

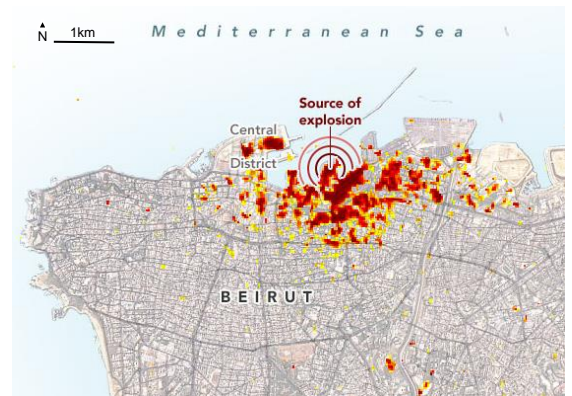
- On Tuesday 4th August 2020 at 18:07 local time a fire was closely followed by an explosion at the Port of Beirut.
- The explosion was caused by 2,750 tonnes of ammonium nitrate improperly stored in a warehouse since 2013.
- A state of emergency was declared in Beirut for two weeks following the event.

Impact

- The explosion destroyed the port creating a 125-meter-wide crater.
- Reports indicate the blast caused >6,500 injuries and >300,000 homeless (WBG).
- The port is the critical link in the supply chain for Lebanon handling 60% of Lebanon's imports and storing both food and medical reserves. It is also one of the top 10 seaports in the Mediterranean handling approximately 1,300,000 containers a year (POB) with the explosion causing supply-chain losses and loss of cargo.
- The explosion exacerbated ongoing civil unrest, socio-economic crisis and the COVID-19 pandemic.
- Property insurers bore the brunt of insured losses (ACAL) with additional significant marine and cargo losses.



Aftermath of the Port of Beirut explosion (Insurance Journal)



Damage Proxy Map (ARIA/EOS) – damage grades from dark red (severe damage or total collapse) to yellow (moderate or partial damage).

Midwest U.S.A.



Insured losses

(in USD millions)

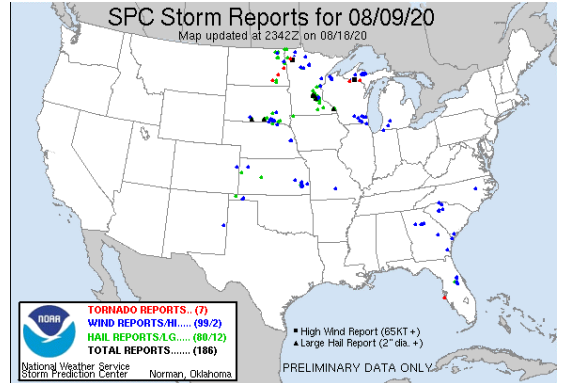
- **>1,000** (PCS)

Timeline and meteorology

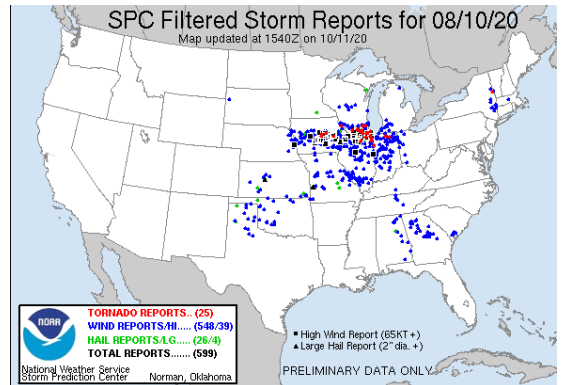
- An upper level trough was positioned over the Northwest U.S.- Western Canada this feature combined with regional instability and moisture helped to produce multiple rounds of severe thunderstorms for the northern Midwest.
- Locally heavy rainfall, hail measuring 1 to 1.5", and 50-60+ mph wind gusts impacted Minnesota and the upper Midwest-Plains at the start of this storm.
- Toward later part of this storm, a derecho swept across the region bringing strong wind from Nebraska through the Ohio Valley.

Impact

- Some locations in Iowa reported wind gusts over 110 mph and brought hail of 1-2" across parts of the region.
- Wind speeds up to 80, 70 and 65 were reported in regions of Minnesota, Nebraska and Wisconsin.
- Close to 400,000 properties were affected by power outages throughout the region



Thunderstorm reported on August 9 (source: SPC, NOAA)



Thunderstorm reported on August 10 (source: SPC, NOAA)

Oregon, U.S.A.



Insured losses

(in USD millions)

- >1,000 (PCS)
- 150-500 (RMS)

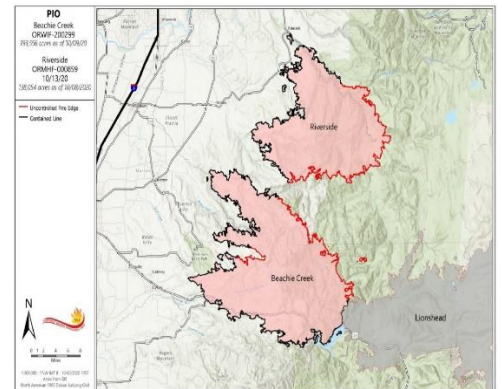
Fatalities: Unknown

Timeline

- The Beachie Creek Wild Fire was first detected on August 16, 2020 approximately 2 miles south of Jaw Bones flats in rugged terrain deep in the Opal Creek Wilderness.
- The fire grew slowly but consistently and was roughly 200 acres by September 1st, fueled by hot and dry conditions.
- The winds were 50-75 miles per hour, and the fire growth rate was about 2.77 acres per second in areas of the Beachie Creek fire.
- The unique wind event on September 7th created an extreme environment in which the fire was able to accelerate.
- A new fire start began at the Incident Command Post forcing immediate evacuation of the Team and fire personnel.
- From the night of September 7th, these fires became collectively known as the Santiam Fire
- At the end of the wind event, the Lionshead Fire also merged with the Beachie Creek Fire having burned through the Mount Jefferson Wilderness.

Impact

- At the beginning of October, seasonal fall weather moved over the fire producing several inches of rain.
- During these weeks, a BAER (Burned Area Emergency Response) team assessed the burned landscape and habitats to try to evaluate damage.
- On October 8th, PNW Team 8, a Type 2 team took over management of the fire. Focus efforts on the ground shifted from suppression and mop-up to suppression repair.
- The acreage topped out at close to 190,000 acres. Closures remain in place to keep the public safe from hazards like falling trees and ash pits that can remain hot and smolder for months after the wildfire event.



Extent of the Beachie Creek Wildfire
(source: InciWeb)

California, U.S.A.



Insured losses

(in USD millions)

- **>1,000** (PCS)
- **750-1,100** (RMS)

Fatalities: 5

Timeline

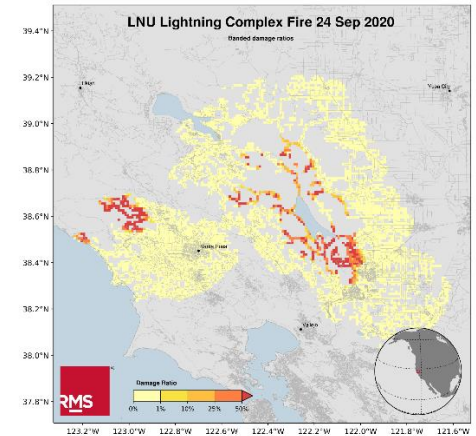
- The LNU Lightning Complex Wild Fire Napa, Sonoma, Lake, Yolo, and Solano Counties started on Monday August 17.
- The complex fire included the Hennessey, Gamble, 15-10, Spanish, Markley, 13-4, 11-16, and Walbridge Fires.
- Many of the fires are believed to have been caused by lightning strikes as northern and central California began experiencing an unusually active sequence of largely dry lightning strikes earlier in the week.
- Some reports indicate that nearly 11,000 lightning strikes occurred in California in a 72-hour time span.
- The LNU Lightning Complex Fire was fully contained on Friday October 2.

Impact

- The LNU Lightning Complex had burned 363,220 acres and has destroyed 1,491 structures and damaged a further 232 structures.
- 64,600 residents had been evacuated from San Mateo, Santa Cruz counties.
- Mandatory evacuations had been ordered for all non-essential personnel on Travis Air Force
- The largest portion is the Hennessey Fire, which is burning in Lake and Napa counties, in which, 305,651 acres have burned.
- The LNU Lightning Complex is the fourth-largest wildfire in California.



FEMA extent of the LNU Lightning Wildfire (source: FEMA Geospatial Resource Center)



FEMA extent of the LNU Lightning Wildfire (source: FEMA Geospatial Resource Center)

California, U.S.A.



Insured losses (in USD millions)

- >1,000 (PCS)
- 1,500-2,500 (RMS)

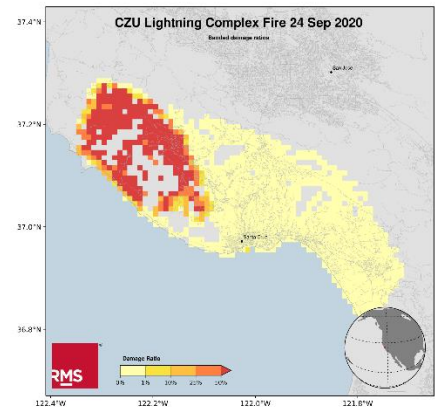
Fatalities: 1

Timeline

- The CZU August Lightning Complex Fire in the counties of Santa Cruz and San Mateo started on Tuesday August 18.
- The complex fire included the Waddell Fire, Warrenella Fire, 5-14 Fire, 5-15 Fire, and 5-18 Fire.
- Many of the fires are believed to have been caused by lightning strikes as northern and central California began experiencing an unusually active sequence of largely dry lightning strikes earlier in the week.
- Some reports indicate that nearly 11,000 lightning strikes occurred in California in a 72 hour time span.
- The CZU Lightning Complex Fire was fully contained on Wednesday September 23.

Impact

- The CZU Lightning Complex had burned 86,509 acres of land and destroyed 1,490 structures and damaged 140 further structures.
- The Big Basin Redwoods State Park has been badly damaged by the fires, according to the California Parks and Recreations Department.
- According to the San Mateo County park system, the fires have burned an estimated 2,800 acres of Pescadero Creek County Park, but did not reach Memorial Park or Sam McDonald County Park.
- On September 3, the director of Santa Cruz County Public Works reported that the CZU fire has caused an estimated US\$310 million in damage to private infrastructure, which includes homes, and US\$30 million in damage to public infrastructure.



RMS extent of the CZU Lightning Wildfire (source: RMS)

Southern U.S.A.

Category 4 at landfall



Insured losses
(in USD millions)

- >1000 (PCS)
- 9,000-13,000 (RMS)
- 4,000-8,000 (AIR)

Fatalities: Unknown

Timeline and Meteorology

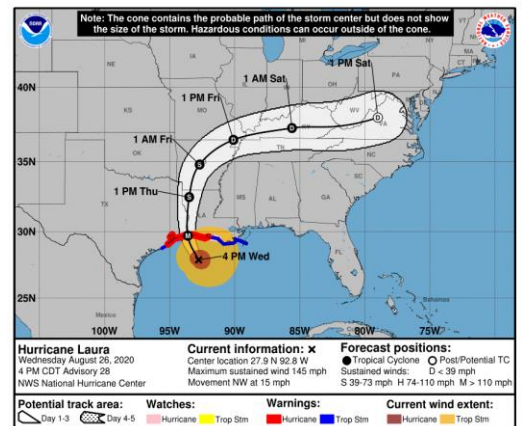
- On August 21st, Tropical Depression Thirteen was upgraded to Tropical Storm Laura. Laura impacted parts of the northern Leeward Islands, the Virgin Islands, and Puerto Rico.
- Laura became a major hurricane (Category 3) during the morning on the 26th and continued its strengthening trend.
- By the afternoon-evening, Laura became a dangerous Category 4 hurricane, reaching maximum sustained winds of 150 mph and a minimum central pressure of 938 mb.
- Laura made landfall at this intensity near Cameron, LA just after midnight on Thursday, August 27th.
- Hurricane-force winds impacted northern-coastal Texas and southern-central Louisiana, particularly the Lake Charles, LA area.
- Tropical storm-force winds extended into eastern Texas, northern Louisiana, southern Arkansas, and western Mississippi.
- Laura had later weakened to a tropical storm over north-central Louisiana and south-central Arkansas.

Impact

- Governors' had declared a state of emergency ahead of Hurricane Laura in states of Arkansas, Louisiana, Mississippi and Texas.
- The main rail line and industry lead tracks around Lake Charles, Louisiana, were out of service after the storm. They suffered heavy damage during the storm and the company had issued embargoes.
- Hurricane toppled more than 1,000 massive towers with the high voltage transmission lines, damaged water and wastewater systems and knocked out cell towers that provide mobile phone service.
- According to the Louisiana Oil Spill Coordinator's Office, roughly 15,000 gallons of crude oil were spilt just east of Cameron during Hurricane Laura.
- The I-10 was shut down in Louisiana due to a chemical fire that broke out.
- Close to 1,000,000 properties were affected by power outages throughout the affected regions.



Wind speed and path of Hurricane Laura (source: NASA, NHC)



Hurricane Laura's path as of August 26 (source: NOAA)

Southern U.S.A.

Category 2 at landfall



Insured losses
(in USD millions)

- >1000 (PCS)
- 2,000-3,500 (RMS)
- 1,000-3,000 (AIR)

Fatalities: Unknown

Timeline and Meteorology

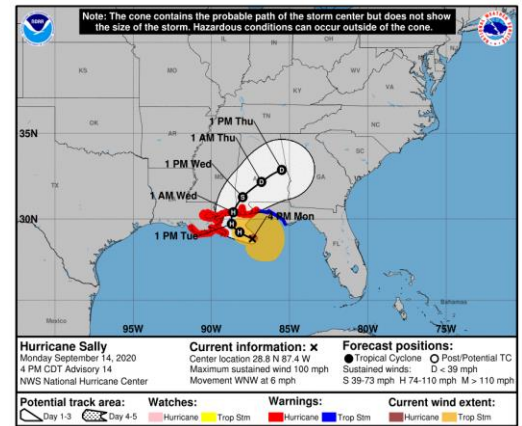
- On September 11th, a tropical depression nineteen formed off the southeast coast of Florida bringing gusty winds and heavy rain across the southern Florida peninsula.
- By the afternoon, the storm was upgraded to Tropical Storm Sally as it moved into the Gulf of Mexico, bringing tropical storm conditions to southern Florida.
- Sally continued to track west-northwest toward Louisiana and had strengthened, becoming a hurricane, with maximum sustained winds reaching 100 mph, a strong Category 2 Hurricane.
- Tropical storm-force winds and heavy rainfall began to impact coastal areas of Mississippi, Alabama, and the Florida Panhandle.
- Sally was later downgraded to a tropical storm. Which continued moving northeastward and later by 6th, it was downgraded to a tropical depression.
- Heavy rainfall and dangerous flooding continued to be the major impact in regions of Georgia and northern Florida.

Impact

- Alabama, Louisiana and Mississippi were approved for an emergency disaster declaration from FEMA,
- A state of emergency was declared for Escambia and Santa Rosa counties in the Florida Panhandle.
- Heavy rainfall has brought flooded streets to numerous areas in parts of southern and central Georgia.
- Flash flooding was reported in many areas throughout South Carolina on Thursday.
- Reports of power lines and trees blown down across multiple areas of the state from significant wind gusts.
- Close to 400,000 properties were affected by power outages across the affected regions.



Wind speed and path of Hurricane Sally (source: NASA, NHC)



Hurricane Laura's path as of August 2 (source: NOAA)

MD Ianos (Medicane)

September 17 to 19, 2020

Greece, Italy



Insured losses (in USD millions)

- **Unknown**

Economic losses (in USD millions)

- **>180m** (Greek Ministry of Infrastructure and Transport)

Fatalities

- **4+** (BBC)

Timeline and Meteorology

- 'Medicanes' are rare storms with tropical characteristics, such as a distinctive eye feature, that develop over the Mediterranean Sea.
- From September 17th to 19th, Medicane Ianos tracked northeastwards across the Ionian Sea, causing flash flooding and strong winds across western and central Greece, before moving south over Crete.
- Rainfall intensity reached rates of 23 mm/hr during the period the storm affected the island of Cephalonia and significant flash flooding also occurred in the region surrounding Karditsa city (GEER).
- Wind gusts of up to 120 km/hr were recorded in the city of Karditsa (BBC).
- Using satellite techniques, the Geotechnical Extreme Events Reconnaissance organisation mapped >1,400 landslides that occurred during the event (GEER).

Impact

- Four fatalities were reported to have occurred due to flash flooding (BBC).
- >5,000 structures were damaged in Karditsa city as a result of flash flooding (BBC).
- Significant infrastructure damage occurred with flash flooding leading to the collapse of many bridges and landslides damaging roads and railway networks across Thessaly (GEER).
- Significant crop losses occurred, particularly in the region of Thessalia, caused by heavy rain and flooding and to which the Greek government responded with >180m USD in monetary relief for compensation and repairs (USDA) (EN24).



Medicane Ianos, 17th Sept (source: EOSDIS)

California, U.S.A.



Insured losses

(in USD millions)

- **>1,000** (PCS)
- **1,500-3,000** (RMS)

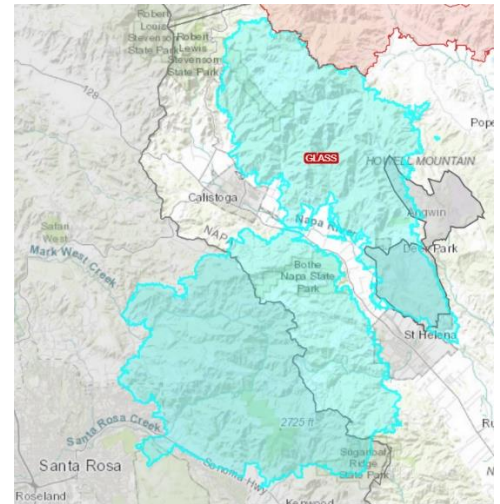
Fatalities: Unknown

Timeline

- The Glass Fire began on September 27 forcing tens of thousands of people to evacuate in Napa and Sonoma Counties.
- The fire ignited in Napa County and later expanded quickly into Sonoma County.
- Nearly all residents of Calistoga were forced to evacuate as the Glass Fire made its way towards the city, causing severe damage to wineries along its path.
- Glass Fire was fully contained as of 09:00 UTC on Thursday October 22

Impact

- According to CalFire update from October 20th, the Glass Fire had burned 67,484 acres across Napa and Sonoma Counties.
- The Glass Fire impacted 1,837 structures in which 1,555 of the structures were destroyed and 282 of the structures were damaged.
- The Santa Rosa Fire Department said the smoke generated over 60 911 calls & multiple reports to their closest Fire Station.
- Governor issued an emergency proclamation for Napa and Sonoma counties due to the Glass Fire.
- According to media reports, there were 27 Napa Valley wineries that saw some type of structural damage caused by the Glass Fire, a figure that far exceeds that of the 2017 fires which had burned six Napa wineries.



Extent of the Beachie Creek Wildfire
(source: napacounty. maps)

United Kingdom,
Spain, Portugal,
France, Italy,
Austria, Poland,
Czech Republic



Insured losses

(in USD millions)

- **340** (FFA & CCR) for both flood and storm losses

Fatalities

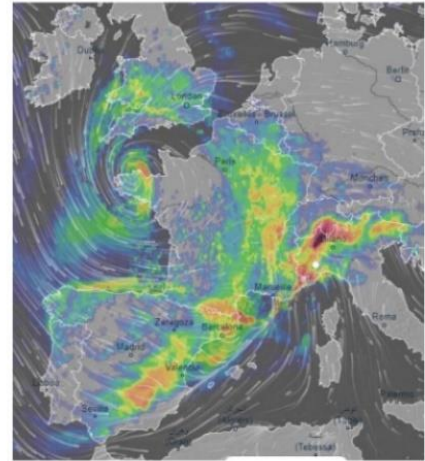
- **At least 5 deaths reported** (CCR)

Timeline and Meteorology

- Early-season extratropical cyclone.
- The storm was named on the 30th September by AEMET and MétéoFrance.
- The storm underwent explosive cyclogenesis before landfall (MétéoFrance).
- A Mediterranean episode was triggered by the advection of Mediterranean air northwards where the coastal topography produced a heavy rainfall in southeast France (WMO).

Impact

- Red weather alerts were sent out across regions of France (MétéoFrance).
- Italy had 630 mm of rain in 24 hours, and France saw 500mm in the same period (Floodlist).
- Wind gusts have reached up to 115 mph in parts of France (NOAA).
- 100,000 homes in Brittany without power (NOAA).
- Landslides, bridge collapses and roads were destroyed by the flood aftermath in Italy and France (floodlist).



Precipitation of Storm Alex over Europe (Ventusky)

France, Italy



Insured losses
(in USD millions)

- 252m (CCR & FFA)

Fatalities

- At least 5 deaths reported and 20 missing (CCR)

Timeline and Meteorology

- Windstorm Alex caused heavy flooding in the Alpes-Maritimes region in southeastern France and regions of Northern Italy.
- Italy had 630 mm of rain in 24 hours, and France saw 500mm in the same period (Floodlist).

Impact

- The estimated insured loss of €210 million is split between homes (72%), professional and agricultural property (25%) and cars (3%) (CCR & FFA).
- A total of 14,000 flood related claims are expected to be filed in France (CCR & FFA).
- Major flooding impacted the regions around rivers Roya, Boréon and Vésubie which completely destroyed more than 100 locations. The river discharge in these areas exceeded the 100-year return period for such an event. An example of the increased river flows is the increase on la Vésubie at Utelle from 5 m³/s to over 640 m³/s (CCR).
- A section of the bridge over the Sesia river in Piedmont's Vercelli province collapsed (BBC).
- In Italy, the Fire Department carried out 2,500 interventions in Piedmont, Liguria and Lombardy (Floodlist).



Flood map of the Sesia river in Piedmont obtained from satellite data.

Flood Map of Alpes-Maritime obtained from satellite data.

Southern U.S.A.

Category 2 at landfall



Insured losses

(in USD millions)

- >1000 (PCS)
- 2,000-3,500 (RMS)
- 1,000-3,000 (AIR)

Fatalities: Unknown

Timeline and Meteorology

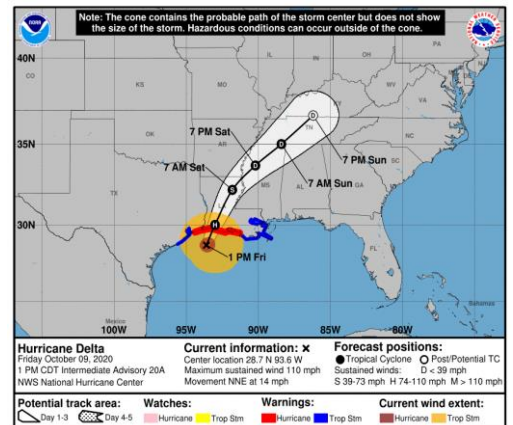
- On October 4th, Tropical Cyclone Twenty-Six was declared by the National Hurricane Center (NHC) on the south of Jamaica.
- It was upgraded to Tropical Storm Delta. Overnight, which continued to rapidly intensify, becoming a Category 2 Hurricane, with sustained winds of 110 mph and a minimum central pressure of 962 mb.
- Delta made landfall as a category 2 hurricane, with sustained winds of 100 mph, near Creole, Louisiana.
- Delta brought very heavy rain, especially across portions of southern Louisiana, where some locations received over a foot of rain.
- Storm surge levels reached just over 5 feet in Sabine Pass, TX and Calcasieu Pass, LA.

Impact

- More than 3,000 National Guardsmen were supporting emergency operations and about 25% of utility customers in the state of Louisiana had no power.
- Several power lines have been reported down in Natchez and Adams County, Mississippi and some communities are still blocked from travel by downed trees.
- Multiple trees have been reported down in Gwinnett county, Georgia.
- An EF-1 tornado was reported in Columbus county, South Carolina which damaged buildings on 7 Creeks Highway.
- Large swells and rip currents prompted beach closures as far west as the mouth of the Rio Grande, Texas.
- Close to 150,000 properties were affected by power outages across the affected regions



Wind speed and path of Hurricane Delta (source: NASA, NHC)



Hurricane Delta's path as of October 9 (source: NOAA)

Southern U.S.A.

Category 2 at landfall



Insured losses (in USD millions)

- >1000 (PCS)
- 3,000-5,000 (RMS)
- 1,500-3,500 (AIR)

Fatalities: Unknown

Timeline and Meteorology

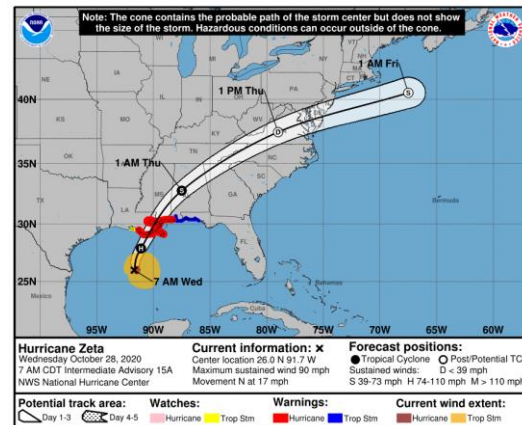
- On October 25th, Tropical Depression Twenty-Eight was named in the western Caribbean Sea, about 250 miles south of Cuba.
- The storm was upgraded to Tropical Storm Zeta on the 25th with maximum sustained winds around 40mph, with tropical storm-force winds extending 80 miles from the center.
- Zeta was upgraded to a Category 1 hurricane. Later, hurricane Zeta strengthened to a Category 2 hurricane as it approached the southeastern LA coastline and made landfall. with max sustained winds near 110 mph.
- Wind gusts measured at 90 to 100+ mph were recorded along the coast as the center of Zeta moved over New Orleans, LA and towards the MS coast.
- Dangerous storm surge flooded the northern Gulf Coast, with storm surge up to 10 ft impacting

Impact

- Multiple areas throughout the state of Alabama had trees being uprooted causing damage to residential/commercial buildings as well as to automobiles.
- Morgan city's drainage pump system broke down on October 25.
- Many businesses closed prior to the storm's arrival in anticipation of the heavy winds in state of Mississippi.
- Winds over 50 mph caused trees to be knocked over and causing damage to power lines, residential/commercial structures, and vehicles in state of North and South Carolina.
- Close to 1,000,000 properties were affected by power outages across the affected regions.



Wind speed and path of Hurricane Zeta (source: NASA, NHC)



Hurricane Zeta's path as of October 8 (source: NOAA)

Greece, Turkey

Magnitude: 7.0
Depth: 21.0 km



Insured losses
(in USD millions)

- **68** (PERILS)

Economic losses
(in USD millions)

- **35% probability of losses between 100 and 1000** (USGS)

Fatalities

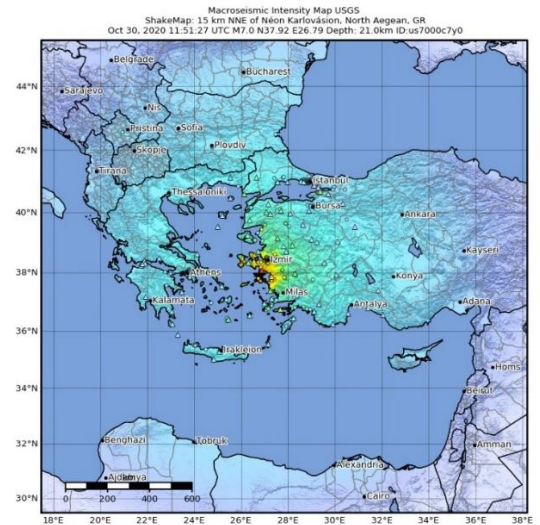
- **119** (AFAD, BBC)

Timeline and Seismology

- On 30th October 2020 at 01:51 pm (local time – 11:51 UTC), a Mw 7.0 earthquake struck offshore, ~13 km north of Samos Island (Greece) and ~15 km south of the Turkish coast (USGS).
- The earthquake occurred as a result of normal faulting at a shallow crustal depth within the Eurasian Plate (USGS).
- A tsunami was generated, causing coastal flooding in port cities surrounding the epicenter with waves reaching a maximum height of 6 m and penetrating farthest inland about ~1.3 km. (Anadolu Agency).
- Within Izmir, the period of vibration of the predominant seismic waves was ~1 second, resulting in 10-14 storey height structures undergoing greater shaking and contributing significantly to observed building collapses.

Impact

- The earthquake caused significant structural damage in the surrounding region with the Turkish city of Izmir being particularly affected.
- In Turkey, 117 fatalities were reported, mainly due to building collapses. 13 buildings were reported to have been destroyed with >3000 heavily damaged (AFAD).
- In Greece, 2 fatalities occurred with some structural damage reported primarily in historical, unreinforced masonry buildings from the early 1900s. Notably the Church the Assumption of Mary in Karlovasi city was heavily damaged (CNN).
- Due to the destruction of homes, thousands were left homeless and seeking temporary shelter provided by AFAD, Izmir Municipalities, and NGOs. This however impacted the ongoing Covid-19 pandemic situation, increasing the risk of transmission (Relief Web).



SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	None	None	None	Very light	Light	Moderate	Moderate/heavy	Heavy	Very heavy
PGA(m/s ²)	<0.046	0.297	2.76	6.2	11.5	21.5	40.1	74.7	>139
PGV(cm/s)	<0.021	0.135	1.41	4.65	9.64	20	41.4	85.8	>178
INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X

Scale based on Worden et al. (2012) Version 7, Processed 2020-10-31T11:52:26Z
 △ Seismic instrument ○ Reported intensity ★ Epicenter □ Rupture

USGS shaking intensity (MMI) footprint for the 30/10/20 Mw7.0 event

Queensland (QLD)



Insured Loss Estimate

(in USD millions)

- 905 (PERILS)

Fatalities

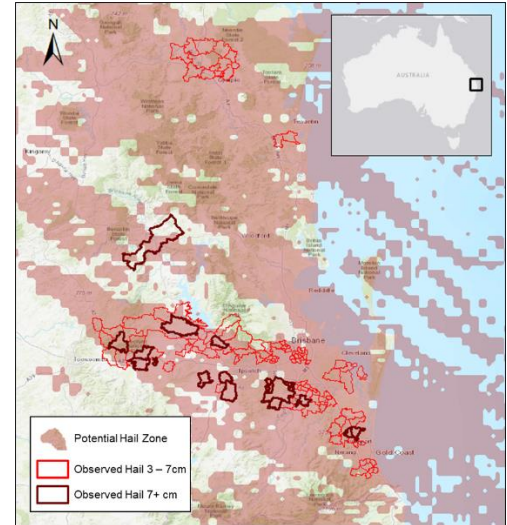
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Timeline and Meteorology

- 19th October: The Bureau of Meteorology (BoM) issued a forecast for potentially severe thunderstorm activity to impact Eastern Australia on the weekend of the 24th.
- 24th October: A large mass of tropical moist air combined with a stagnant upper level frontal trough system stretching from the Gulf of Carpentaria to Victoria. After bringing heavy rain to parts of Victoria, the system would eventually move east, triggering a multi-state, multi-day severe thunderstorm outbreak across Queensland (QLD) and New South Wales (NSW).
- 29th October: BoM forecast models indicated that a second frontal trough system could facilitate very severe thunderstorm conditions for QLD and NSW over the following weekend.
- 31st October: As predicted, an interaction between warm lower-level air to the east of the trough and cold upper-level air to the west would eventually generate giant hail and become known as the 'Southeast Queensland Halloween Hailstorms'.

Impact

- On the afternoon of the 31st, supercell thunderstorms broke out to the west and south of Brisbane within the Ipswich and Logan City Council Areas, the Lockyer Valley, Scenic Rim and the Gold Coast.
- The largest hail was observed in Hillcrest (13 cm) and Forestdale (14 cm), the latter **matching the largest recorded hail size on record**.
- Other severely impacted localities included Adare, Amberley, Rosewood, Springfield and Boronia Heights. Hail measuring 7 cm was also recorded in Gympie, located 150 km north of Brisbane.
- In addition to hail, the supercells produced **damaging wind gusts**, with some gusts over 110 km/h recorded around Moreton Bay.
- The giant hail and strong winds caused widespread damage to motor vehicles and property (including roofs, windows, solar panels and collapsed ceilings).



Potential hail zone on 31st October extracted from radar imagery. Red (3-7 cm) and dark red (7+ cm) polygons depict localities with confirmed hail observations (Willis Re/BoM).



The largest hail stones were observed in Hillcrest (top) and Forestdale (bottom).

Central America, Colombia, Jamaica, Cayman Islands, Cuba, Bahamas, USA

Max. Category 5
Category 4 at landfall in Nicaragua



Insured losses (in USD billions)
 ■ Minimal (AM Best)

Economic losses (in USD billions)
 ■ 5.0 (UNOCHA)

Fatalities
 ■ ~185 (Relief Web)

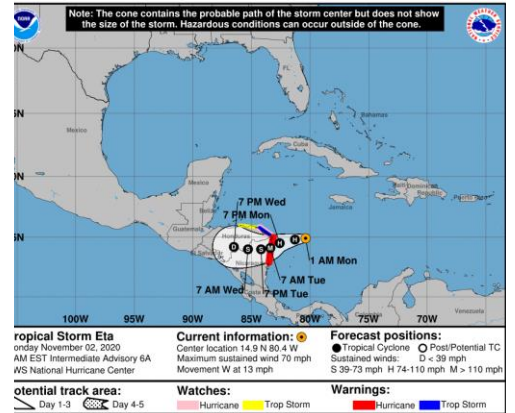
Eta was the twenty-eighth named storm of the 2020 Atlantic Hurricane Season. It was the third most intense November Atlantic hurricane on record behind the 1932 Cuba hurricane and 2020 Hurricane Iota.

Timeline and Meteorology

- Eta formed on October 31 from a tropical wave in the eastern Caribbean Sea. The system rapidly organized as it progressed west, reaching its peak strength at Category 4 intensity on November 3, with maximum sustained wind speeds of 150 mph (NHC).
- The system made landfall near Puerto Cabezas, Nicaragua, on November 3 as a Category 4.
- Eta weakened to a tropical storm quickly after landfall as it moved inland over northern Nicaragua.
- The system meandered slowly across Central America, specifically Nicaragua, Honduras and Guatemala, for two days which resulted in torrential rain, destructive floods and mudslides.
- It later reorganized over the Caribbean as it accelerated towards Cuba on November 7. Over the next five days, the system moved erratically, moving through the Florida Keys and accelerated across the Southeastern US before dissipating off the Eastern United States.

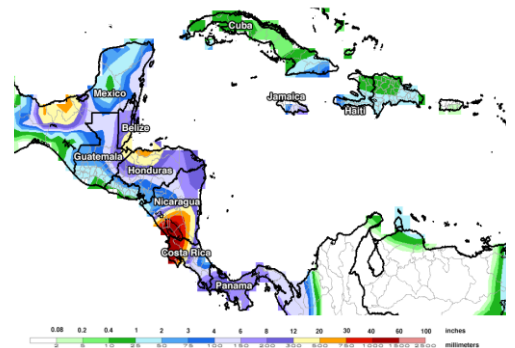
Impact

- The following rainfall levels were observed: in Nicaragua and Honduras 15-25 inches fell, 10-20 inches on eastern Guatemala and Belize, 10-15 inches on portions of Panama and Costa Rica. Jamaica, southeast Mexico, El Salvador, Southern Haiti, and the Cayman Islands were also affected by heavy rainfall.
- Eta caused catastrophic, life-threatening flash flooding and river flooding, along with landslides in areas of higher terrain of Central America.
- Honduras - Eta triggered catastrophic flooding that destroyed many roads and bridges, isolating thousands of people. Over 400,000 people were made homeless in Honduras There have been 13 confirmed deaths (Yale Climate Connections).
- Guatemala - More than 150 people died due to flooding and mudslides (Yale Climate Connections). More than 3,561 homes were damaged across Guatemala (CONRED).



Hurricane Eta's path as of November 2nd (Source: NOAA)

7-Day Unified Gauge Precipitation, Oct 30 - Nov 5, 2020



7-day precipitation estimate for October 30 – November 5, using data from rain gauges, satellites, radar, and computer model forecasts. (Source: NOAA)

Florida U.S.A.



Insured losses
(in USD millions)

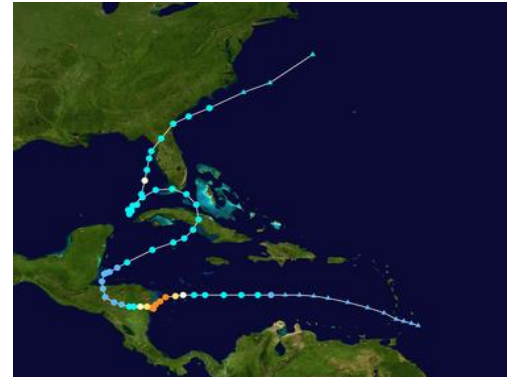
- <1000 (PCS)

Timeline and Meteorology

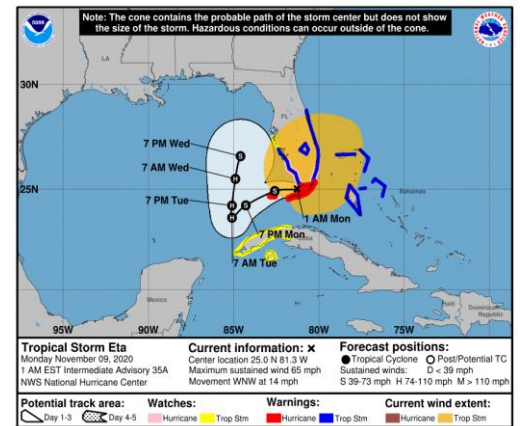
- On October 31st, Tropical Storm Eta formed in the central-southern and began tracking westward towards Central America.
- Eta strengthened rapidly to a hurricane of Category 4 as it approached the coastlines of Nicaragua and Honduras on November 2nd,
- Favorable environmental conditions allowed Eta to regain tropical storm status by the morning of November 7th.
- Tropical Storm Eta made landfall in Lower Matecumbe Key, FL on 8th November. Tropical storm force winds, heavy rainfall, and dangerous storm surge impacted southern FL and the Keys overnight.
- Storm surge measuring 1-2 ft above normal levels impacted parts of Bonita Beach to Golden Beach, including the Florida Keys.
- Heavy rainfall continued across Florida; areas across central and southern Florida, including the Keys received an additional 2 to 4 inches of rain, resulting in dangerous flash and urban flooding.

Impact

- Tropical Storm Eta swept through northern Florida causing severe damage through the state.
- Along with causing damage to property and vehicles, Tropical Storm Eta also washed ashore a shipwreck dating back to the 1800s.
- Authorities were working with local university students to further examine the shipwreck.



Wind speed and path of Hurricane ETA (source: NASA, NHC)



Hurricane Eta's path as of November 9 (source: NOAA)

Nicaragua, Honduras and El Salvador

**Max. Category 5
Category 4 at landfall in Nicaragua**



Insured losses
(in USD billions)

- **Minimal** (AM Best)

Economic losses
(in USD billions)

- **1.25 Billion** (Insurance Journal)

Fatalities

- **~59** (Relief Web)

Hurricane Iota was the thirty-first and last tropical cyclone, thirtieth named storm, thirteenth hurricane, and sixth major hurricane of the record-breaking 2020 Atlantic hurricane season. Iota the strongest hurricane in recorded history to make landfall in Nicaragua within November.

Timeline and Meteorology

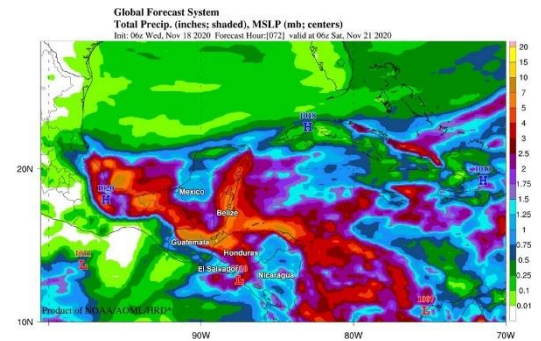
- Iota originated as a tropical wave that moved into the eastern Caribbean on November 10. By November 13, it developed into a tropical depression north of Colombia.
- On the November 15, the system underwent explosive intensification, reaching its peak strength at Category 5 intensity on November 16, with maximum sustained wind speeds of 155 mph (NHC).
- The system made landfall near Haulover, Nicaragua, on November 17 as a Category 4.
- Iota's landfall location was approximately 15 miles south of where Hurricane Eta made landfall on November 3.
- Iota then rapidly weakened as it moved over the mountainous terrain of Central America. The inner core of the weakening system was disrupted as it moved through Honduras. Iota weakened to a tropical depression on November 18 as it entered El Salvador and six hours later Iota's low-level circulation center dissipated.

Impact

- Iota caused severe damage to areas of Central America already devastated by Hurricane Eta just less than two weeks prior.
- Flood affected Nicaragua, Honduras, El Salvador, Belize, Mexico, Guatemala, Panama, and Costa Rica.
- Hurricane Iota was at category 5 strength, the storm's southern eyewall passed over the Colombian island of Providencia. Iota caused catastrophic damage on Providencia, destroying 80% of the homes, the other 20% of the island's homes were damaged, and 98% of the island's infrastructure was damaged or destroyed (Yale Climate Connections).
- NHC recorded that the hurricane's remnants brought an additional 4-8 inches of rain to portions of Honduras, Guatemala, and southern Belize, with Nicaragua and El Salvador receiving an additional 2-4 inches.
- 5.2M people have been affected directly or indirectly by Eta and Iota across nine Latin American and Caribbean countries (COPECO).



Hurricane Iota's path as of November 16th (Source: NOAA)



3-day rainfall from November 18-21, predicted rainfall amounts for Honduras, Guatemala, Belize, and Mexico. (Source: NOAA)

Belgium, Denmark, France, Germany, Ireland, Luxembourg, Netherlands, Spain, Switzerland, UK



Insured losses
(in USD millions)

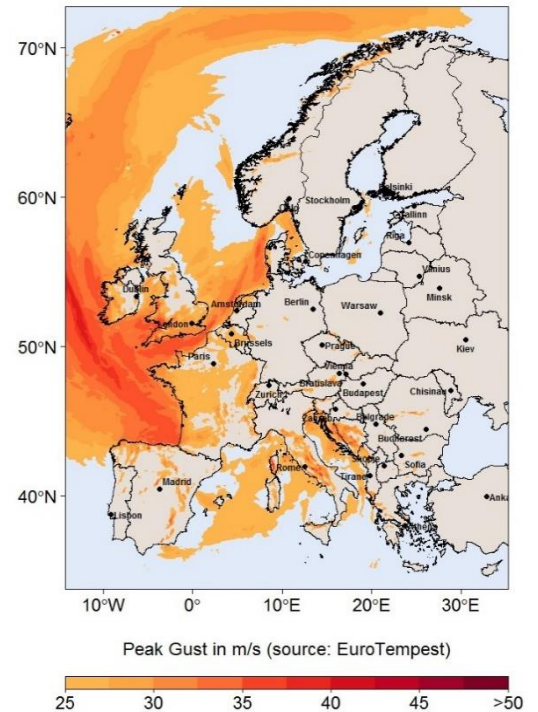
- Losses not yet available/ongoing

Timeline and Meteorology

- On December 24th, 2020, an extratropical cyclone formed in the Atlantic and developed into a powerful European windstorm impacting UK and Ireland on Saturday December 26.
- From December 26th to December 29th strong winds and heavy rainfall were reported in Northwest Europe.
- Unusually high wind speeds inland of up to 170 km/h affected Ireland, UK, France, Belgium, Luxembourg, the Netherlands, and northern Germany causing power outages, travel disruption and tree damages.

Impact

- A wide area across the British Isles and Continental Europe was impacted by strong wind gusts. Additionally, the conditions persisted unusually long as the cyclone moved comparatively slowly towards the east (KIT).
- Parts of the UK were also hit by heavy rain on December 26th with a wind gust of 171 km/h being recorded on the Isle of Wight, and the highest gust recorded in 2020 (Met Office).
- More than 36,000 power outages were recorded in Ireland, UK and France.
- No major damage has been reported across Northwest Europe.



Storm Bella, Peak Wind Gust Footprint 26th to 28th Dec (source: Euro Tempest)

Croatia

Magnitude: 6.4
Depth: ~10 km



Insured losses
(in USD millions)

- **Unknown**

Economic losses
(in USD millions)

- **35% probability of losses between 100 and 1,000 (USGS)**

Fatalities

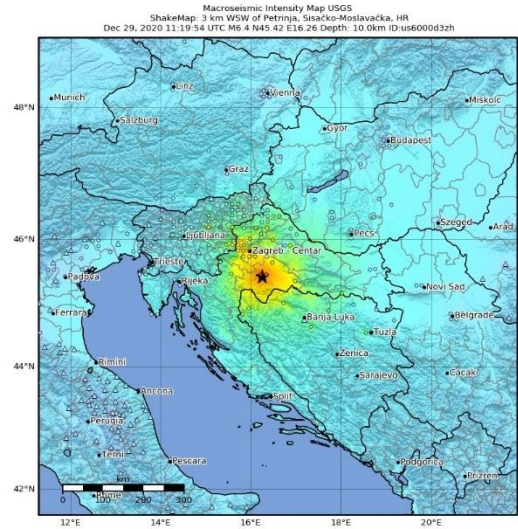
- **7 (BBC)**

Timeline and Seismology

- On 29th December 2020 at 12:19 pm local time (11:19 UTC), a Mw 6.4 earthquake struck Sisak-Moslavina County, Croatia, with the epicentre located 3km SWS of Petrinja (USGS).
- The earthquake was preceded by three foreshocks, the largest being Mw 5.2. Several aftershocks have occurred with the largest being a Mw 4.8 earthquake (USGS).
- 'Very Strong' to 'Severe' shaking intensities were felt in towns surrounding the epicentre, such as Petrinja and Sisak. The capital of Zagreb, experienced 'Moderate' to 'Strong' shaking intensities (USGS).

Impact

- Significant structural damages occurred in the villages of Sisak-Moslavina county. As of 3rd January 2021, surveys had established 8,928 buildings within the county were damaged with 20% of these destroyed (Total Croatia News).
- The town of Petrinja is the closest urban centre to the epicentre and was affected most severely, with all structures reported damaged to some degree (vecernji.hr).
- Impacts were felt widely across northern Croatia. Zagreb, ~50km north of the epicentre, was affected by power outages and some structural damage (jutarnji.hr).
- According to the USGS, this is the largest earthquake to occur in Croatia since the advent of modern seismic instrumentation.



SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	None	None	None	Very light	Light	Moderate	Moderate/heavy	Heavy	Very heavy
PGA(g)	<0.0468	0.297	2.76	6.2	13.5	21.5	40.1	74.7	>139
PGV(cm/s)	<0.0213	0.135	1.41	4.65	9.64	20	41.4	85.8	>178
INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X

Scale based on Worden et al. (2012) Version 4: Processed 2020-12-30T11:21:46Z
 △ Seismic Instrument ○ Reported Intensity ★ Epicenter

USGS shaking intensity (MMI) footprint for the 29/12/20 Mw 6.4 event

3. Other natural catastrophe events by peril and location

Events highlighted in the following tables represent those with detailed information presented in the first part of the report.

Windstorm

Name	Date	Location	Losses (USD millions)	Fatalities
Brendan	Jan 13	Ireland, UK	Losses not yet available	Unknown
Gloria	Jan 19 to Jan 22	France, Gibraltar, Morocco, Portugal, Spain	Economic: 78 (Government Spokesperson)	14 (Civil Protection & euroforecaster)
January Hailstorms	Jan 20	Australia	Insured: 1,250 (ICA)	Unknown
Herve	Feb 2 to Feb 8	France, Austria, Switzerland, Czech Republic, Germany	Losses not yet available	Unknown
Petra	Feb 3 to Feb 4	Austria, Switzerland, Germany, Czech Republic	Insured: 12 (Wiener Städtische, Uniqa, Axa Winterthur)	Unknown
Sabine/Ciara	Feb 8 to Feb 11	Austria, Belgium, Switzerland, Germany, Denmark, France, UK, Ireland, Luxembourg, Netherlands, Norway, Sweden	Insured: 2,200-2,400 (Willis Re) Insured: 1,900 (PERILS) Insured: 1,100 (Munich Re) Economic: 1,800 (Munich Re)	14 (Insurance Journal)
Ines	Feb 13	Belgium, France, Germany, Ireland, Netherlands, Spain, United Kingdom	Losses not yet available	Unknown
Victoria-Dennis	Feb 15 to Feb 17	Belgium, Denmark, France, Germany, Ireland, Luxembourg, Netherlands, Norway, Sweden, United Kingdom	Insured: 372 (Perils)	13 (Perils)
Xanthippe-Yulia	Feb 22 to Feb 24	Austria, Belgium, Germany, Denmark, UK, Netherlands, Norway, Ireland	Losses not yet available	Unknown
Bianca	Feb 27	Austria, Switzerland, Germany, France	Losses not yet available	Unknown
Charlotte/Jorg e	Feb 29	France, Belgium, Luxembourg, Netherlands, Germany, UK, Ireland, Iceland	Losses not yet available	Unknown
Hanna/Laura	Mar 12	Germany, Denmark, UK, Ireland, Sweden, Poland	Losses not yet available	Unknown
Tasmanian East Coast Storm	Apr 02	Australia	Losses not yet available	Unknown
Francis	Aug 25 to Aug 26	Western and Central Europe	Losses not yet available	Unknown
Medicane Ianos	Sep 17 to Sep 18	Italy, Greece	Economic: >180 (Greek Ministry of Infrastructure and Transport)	4 (BBC)

Alpha	Sep 18 to Sep 19	Portugal	Losses not yet available	Unknown
Odette	Sep 26 to Sep 27	Belgium	Insured: > 28 (Assuralia)	Unknown
Alex-Brigitte	Sep 30 to Oct 3	United Kingdom, Spain, Portugal, France, Italy, Austria, Poland, Czech Republic	Insured: 340 (FFA & CCR)	At least 5 deaths reported (CCR)
Barbara	Oct 20 to Oct 22	Portugal, Spain, United Kingdom	Losses not yet available	Unknown
Aiden	Oct 30 to Nov 2	Ireland, UK	Losses not yet available	Unknown
South East Queensland Hailstorm	Oct 31	Australia	Insured: 905 (PERILS)	0
Clement	Nov 27 to Dec 2	Azores Islands, Canary Islands, Iberian Peninsula, Madeira Islands	Losses not yet available	Unknown
Liisa	Nov 11	Finland	Losses not yet available	Unknown
Dora	Dec 2 to Dec 4	France, Portugal, UK	Losses not yet available	Unknown
Ernest	Dec 7 to Dec 12	Spain, France, Italy, Belarus, Russia, Baltics	Losses not yet available	Unknown
Bella	Dec 26 to Dec 29	Belgium, Denmark, France, Germany, Ireland, Luxembourg, Netherlands, Spain, Switzerland, UK	Losses not yet available	Unknown

Blizzard/Cold Front

Name	Date	Location	Losses (USD millions)	Fatalities
Winter weather	Mar 23 to Apr 2	Italy, Central Europe	Losses not yet available	Unknown
Winter weather	Apr 14	Austria	Losses not yet available	Unknown

Severe Thunderstorm (Tornado/Hail/Straight Wind)

Name	Date	Location	Losses (USD millions)	Fatalities
U.S.A Severe Weather	Jan 10 to Jan 12	Midwest & Southern U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Feb 5 to Feb 8	South and Northeast U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Feb 8 to Feb 11	Arizona & California U.S.A.	Insured: <100 (PCS)	Unknown
U.S.A. Severe Weather	Mar 2 to Mar 4	Midwest & Southern U.S.A.	Insured: >1,000 (PCS)	Unknown
U.S.A. Severe Weather	Mar 17 to Mar 20	Midwest & Southern U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Storm	Mar 27 to Mar 30	Midwest & Southern U.S.A.	Insured: >1,000 (PCS)	Unknown
U.S.A. Severe Weather	Apr 7 to Apr 9	Northeast & Midwest U.S.A.	Insured: >1,000 (PCS)	Unknown

U.S.A. Severe Weather	Apr 10 to Apr 14	Northeast & Southern U.S.A.	Insured: >1,000 (PCS)	16
U.S.A. Severe Weather	Apr 18 to Apr 20	Southern U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Apr 21 to Apr 24	Southern U.S.A.	Insured: >1,000 (PCS)	1
U.S.A. Severe Weather	Apr 24 to Apr 26	Southern U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Apr 27 to Apr 30	South and Northeast U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	May 2 to May 3	Southern U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	May 4 to May 5	Southern U.S.A.	Insured: >1,000 (PCS)	Unknown
U.S.A. Severe Weather	May 7 to May 8	Southern U.S.A.	Insured: <1,000 (PCS)	Unknown
Severe Weather	May 9 to May 12	Poland, Germany, Czech Republic, France	Losses not yet available	Unknown
U.S.A. Severe Weather	May 13 to May 15	Midwest & Northeast U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	May 16 to May 21	South and Northeast U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	May 20 to May 24	Southern U.S.A.	Insured: >1,000 (PCS)	Unknown
U.S.A. Severe Weather	May 25 to May 26	Texas U.S.A.	Insured: <100 (PCS)	Unknown
U.S.A. Severe Weather	May 27 to May 28	Texas U.S.A.	Insured: >1,000 (PCS)	Unknown
U.S.A. Severe Weather	Jun 2 to Jun 3	Northeast U.S.A.	Insured: <1,000 (PCS)	Unknown
Italy Severe Weather	Jun 2 to Jun 6	Northern Italy	Insured: Unknown	Unknown
U.S.A. Severe Weather	Jun 4	South Dakota U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Jun 5 to Jun 11	Midwest U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Jun 6 to Jun 9	Southern U.S.A.	Insured: <1,000 (PCS)	Unknown
Severe Weather	Jun 13 to Jun 15	Germany, Hungary, Czech Republic	Losses not yet available	> 1 (FloodList)
U.S.A. Severe Weather	Jun 19 to Jun 21	Texas U.S.A.	Insured: <1,000 (PCS)	Unknown
Upper North Island Storm and Tornado	Jun 26	New Zealand	Insured: 12 (ICNZ)	Unknown
Severe Weather	Jun 26 to Jun 29	Switzerland, Slovakia, Germany, Poland	Losses not yet available	Unknown
Italy Severe Weather	Jul 1 to Jul 4	Northern Italy	Insured: Unknown	Unknown

U.S.A. Severe Weather	Jul 5 to Jul 7	Northeast U.S.A.	Insured: <1,000 (PCS)	Unknown
Severe Weather	Jul 7	Bulgaria	Insignificant	Unknown
Italy Severe Weather	Jul 10 to Jul 11	Northern Italy	Insured: Unknown	Unknown
U.S.A. Severe Weather	Jul 10 to Jul 12	Midwest U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Jul 17 to Jul 19	Midwest U.S.A.	Insured: <1,000 (PCS)	Unknown
Italy Severe Weather	Jul 21 to Jul 24	Northern Italy	Insured: Unknown	Unknown
U.S.A. Severe Weather	Jul 25 to Jul 27	Texas U.S.A.	Insured: <1,000 (PCS)	Unknown
Severe Weather	Jul 27 to Jul 29	Czech Republic, Austria Germany, Slovenia, Switzerland,	Losses not yet available	Unknown
U.S.A. Severe Weather	Aug 4 to Aug 5	Colorado U.S.A.	Insured: <1,000 (PCS)	Unknown
Severe Weather	Aug 4 to Aug 5	Germany, Hungary, Austria, Italy, Croatia,	Losses not yet available	Unknown
U.S.A. Severe Weather	Aug 8 to Aug 11	Midwest U.S.A.	Insured: >1,000 (PCS)	Unknown
Severe Weather	Aug 8 to Aug 12	Austria, Germany, Poland	Losses not yet available	Unknown
U.S.A. Severe Weather	Aug 13 to Aug 17	Midwest & Southern U.S.A.	Insured: <1,000 (PCS)	Unknown
Italy Severe Weather	Aug 23	Verona, Italy	Insured: Unknown	Unknown
U.S.A. Severe Weather	Aug 26 to Aug 28	Northeast U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Aug 29 to Aug 30	Texas U.S.A.	Insured: <100 (PCS)	Unknown
Severe Weather	Aug 29 to Aug 30	Italy, Austria, Switzerland, Poland	Losses not yet available	18 (The Local)
U.S.A. Severe Weather	Sep 5 to Sep 6	Iowa & Minnesota U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Sep 7 to Sep 9	Idaho & Utah U.S.A.	Insured: <1,000 (PCS)	1
Severe Weather	Oct 3 to Oct 5	Austria, Poland, Czech Republic	Losses not yet available	Unknown
U.S.A. Severe Weather	Oct 7 to Oct 8	Northeast U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Oct 25 to Oct 28	California & Oklahoma U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Nov 10 to Nov 12	Midwest & Southern U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Nov 15 to Nov 16	Northeast U.S.A.	Insured: <1,000 (PCS)	Unknown
U.S.A. Severe Weather	Nov 30 to Dec 1	Northeast U.S.A.	Insured: <100 (PCS)	Unknown

Tropical Cyclone - Atlantic Ocean

Name	Date	Location	Landfall Category*	Losses (USD millions)	Fatalities
Tropical Storm Cristobal	Jun 1 to Jun 9	México, Honduras, Guatemala, El Salvador, U.S.	Tropical Storm	Insured: 150 (KCC)	35 (RMS Owl)
Cristobal	Jun 6 to Jun 9	Southern U.S.A.	Tropical Storm	Insured: <1,000 (PCS)	Unknown
Fay	Jul 10 to Jun 12	Northeast U.S.A.	Tropical Storm	Insured: <1,000 (PCS)	Unknown
Hurricane Hanna	Jul 23 to Jul 27	México	1	Economic: Not Significant	7 (Relief Web)
HU Hanna	Jul 25 to Jul 27	Texas	1	Insured: <1,000 (PCS)	Unknown
Hurricane Isaias	July 28 to Aug 05	Dominican Republic, Puerto Rico, the Bahamas and Canada	1	Insured: 200 (KCC)	5 (CNN)
Isaias	Jul 30 to Aug 5	South & Northeast U.S.A.	Tropical Storm	Insured: >1,000 (PCS)	Unknown
Hurricane Laura	Aug 20 to Aug 29	Haiti, Caribbean	4	Insured: ~10,000-15,000 (RMS)	~31 (UNOCHA)
Hurricane Marco	Aug 20 to Aug 25	México and Costa Rica	1	Economic: Not Significant	Unknown
Hurricane Laura	Aug 26 to Aug 28	Southern U.S.A.	4	Insured: >1,000 (PCS)	Unknown
Hurricane Nana	Sep 1 to Sep 04	Belize, Honduras, Guatemala, and Southern México	1	Economic: 20.5 (UN OCHA)	0
Hurricane Paulette	Sep 13 to Sep 14	Bermuda	1	Economic: Not Significant	0
Hurricane Sally	Sep 14 to Sep 18	Southern U.S.A.	2	Insured: >1,000 (PCS)	Unknown
Beta	Sep 20 to Sep 23	Southern U.S.A.	Tropical Storm	Insured: <1,000 (PCS)	Unknown
Tropical Storm Gamma	Oct 2 to Oct 6	México	Tropical Storm	Economic: Not Significant	Unknown
Hurricane Delta	Oct 5 to Oct 11	México	4	Economic: 2,000-3,500 (RMS)	0 (Relief Web)
Hurricane Delta	Oct 9 to Oct 12	Southern U.S.A.	2	Insured: >1,000 (PCS)	Unknown
Hurricane Zeta	Oct 24 to Oct 30	Jamaica, México, U.S.A.	1	Economic: 4,400 (KCC)	8 (Reuters)
Hurricane Zeta	Oct 28 to Oct 29	Southern U.S.A.	2	Insured: >1,000 (PCS)	Unknown
Hurricane Eta	Oct 31 to Nov 13	Central America	5	Economic: 5,000 (UNOCHA)	185 (Relief Web)
Eta	Nov 8 to Nov 12	Florida U.S.A.	Tropical Storm	Insured: <1,000 (PCS)	Unknown
Hurricane Iota	Nov 13 to Nov 19	Central America (Guatemala, Nicaragua, Honduras Colombia)	5	Economic: 1,250 (Insurance Journal)	59 (Relief Web)

*Saffir-Simpson Hurricane scale

Tropical Cyclone - Northwestern Pacific

Name	Date	Location	Landfall Category*	Losses (USD millions)	Fatalities
Severe Tropical Cyclone Harold	Apr 02	Vanuatu	4	Losses not yet available	Unknown
Typhoon Vongfong (Ambo)	May 12	Philippines	2	Losses not yet available	Unknown
Tropical Storm Nuri (Butchoy)	Jun 12	Philippines, China	Tropical Storm	Losses not yet available	Unknown
Tropical Storm Sinlaku	Aug 01	Vietnam	Tropical Storm	Losses not yet available	Unknown
Typhoon Hagupit (Dindo)	Aug 01	China	1	Economic: 1,581 (MEM)	Unknown
Tropical Storm Jangmi (Enteng)	Aug 10	South Korea	Tropical Storm	Losses not yet available	42 (Yonhap News)
Typhoon Mekkhala (Ferdie)	Aug 10	China, Philippines	1	Losses not yet available	Unknown
Tropical Storm Higos (Helen)	Aug 18	China	Tropical Storm	Losses not yet available	Unknown
Typhoon Bavi (Igme)	Aug 22	Northwestern Pacific	Tropical Storm	Losses not yet available	Unknown
Typhoon Maysak (Julian)	Aug 25	South Korea	2	Losses not yet available	Unknown
Typhoon Haishen (Kristine)	Sep 07	Japan, South Korea	2	Insured: 800 (GIAJ)	Unknown
Tropical Storm Noul (Leon)	Sep 18	Vietnam	Tropical Storm	Losses not yet available	Unknown
Tropical Storm Dolphin (Marce)	Sep 24	Northwestern Pacific	No landfall	Losses not yet available	Unknown
Tropical Storm Chan-Hom	Oct 10	Northwestern Pacific	No landfall	Losses not yet available	Unknown
Tropical Storm Linfa	Oct 11	Vietnam	Tropical Storm	Losses not yet available	61 (Lao Dong)
Tropical Storm Nangka (Nika)	Oct 11	China	Tropical Storm	Losses not yet available	64 (Vietnam Disaster Management Authority)
Typhoon Saudel (Pepito)	Oct 20	Philippines, China, Vietnam	Tropical Storm	Losses not yet available	VN 114 (Garda)
Typhoon Molave (Quinta)	Oct 24	Philippines, Vietnam	1	Losses not yet available	27 (NDRRMC)
Typhoon Goni (Rolly)	Oct 28	Philippines, Vietnam, Cambodia	5	Losses not yet available	PH: 25 (NDRRMC)
Tropical Storm Atsani (Siony)	Nov 02	Northwestern Pacific	No landfall	Losses not yet available	Unknown
Typhoon Vamco (Ulysses)	Nov 08	Philippines	1	Losses not yet available	101 (NDRRMC)

Tropical Storm Etau (Tonyo)	Nov 10	Vietnam	Tropical Storm	Losses not yet available	2 (ReliefWeb)
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*Saffir-Simpson Hurricane scale

Tropical Cyclone - Southern Pacific and Oceania

Name	Date	Location	Landfall Category*	Losses (USD millions)	Fatalities
Tropical Cyclone Blake	Jan 08	Australia	Tropical Storm	Losses not yet available	Unknown
Tropical Cyclone Damien	Feb 04	Australia	2	Insured: 458 (ICA)	Unknown
Tropical Cyclone Esther	Feb 23	Australia	1	Losses not yet available	Unknown

*Saffir-Simpson Hurricane scale

Tropical Cyclone - Indian Ocean

Name	Date	Location	Landfall Category*	Losses (USD millions)	Fatalities
Cyclonic Storm Amphan	May 18	India	2	Insured: 150 (Willis Re Estimate) Economic: 14,000 (WMO)	129 (WMO)
Cyclonic Storm Nisarga	Jun 03	India	1	Economic: 823 (Indian Express)	1
Cyclonic Storm Nivar	Nov 25	India	1	Losses not yet available	Unknown

*Saffir-Simpson Hurricane scale

Tropical Cyclone - Pacific

Name	Date	Location	Landfall Category*	Losses (USD millions)	Fatalities
Tropical Storm Amanda	May 30 to Jun 1	El Salvador, Guatemala, Honduras, México	Tropical Storm	Economic: Low	23 (Relief Web)
Hurricane Genevieve	Aug 16 to Aug 21	México	4	Economic: Not Significant	2 (Reuters)

*Saffir-Simpson Hurricane scale

Flood

Name	Date	Location	Losses (USD millions)	Fatalities
Jakarta and Bekasi Flooding	Jan 01	Indonesia	Insured: 79 (AAUI)	66
Mersin, Turkey Floods	Jan 6 to Jan 8	Mersin, Turkey	Losses not yet available	~ 2 (Floodlist)
South East Iran Floods	Jan 9 to Jan 11	South East Iran, UAE	Losses not yet available	~ 3 (Copernicus)
Brazil Floods	Jan 17 to Jan 29	Minas Gerais, Brazil	Economic: Low	49 (Floodlist)

Mediterranean Coastal Floods	Jan 20 to Jan 23	Girona, Spain and Occitanie, France	Losses not yet available	~ 13 (Floodlist)
Madagascar Floods	Jan 22 to Jan 28	Madagascar	Losses not yet available	~ 31 (OCHA)
Queensland Monsoonal Flooding	Jan 23	Australia	Losses not yet available	Unknown
Honduras Floods	Jan 28 to Jan 29	Gracias a Dios, Colón, Atlántida, Cortés, Yoro and Islas de la Bahía	Economic: Low	3 (COPECO)
Southland Flooding	Feb 03	New Zealand	Insured: 21 (ICNZ)	Unknown
Southern Queensland Rainfall and Flooding	Feb 08	Australia	Insured: 33 (ICA)	Unknown
Bolivia Floods	Feb 8 to Feb 29	La Paz, Santa Cruz, Potosi, Beni, Cochabamba, and Tarija	Economic: Low	17 (Relief Web)
Brazil Floods	Feb 9 to Feb 10	Sao Paulo	Economic: Low	3 (Floodlist)
Argentina Floods	Feb 11 to Feb 19	Chaco, Salta, Tucumán and La Rioja Provinces	Economic: Low	1 (Relief Web)
East Coast Storms and Flooding	Feb 10	Australia	Insured: 659 (ICA)	Unknown
Peru Floods	Feb 17 to Feb 25	Peru and Bolivia	Economic: Not Significant	3 (Relief Web)
South West Queensland Flooding	Feb 20	Australia	Losses not yet available	Unknown
West Java Flooding	Feb 23	Indonesia	Losses not yet available	60
Iran Floods	Feb 24 to Feb 25	Western Iran	Losses not yet available	Unknown
Western New South Wales Floods	Feb 26	Australia	Losses not yet available	Unknown
UK Floods	February	UK	Industry: GBP 375	At least 2 deaths were reported as a result of flooding (Copernicus)
East Africa Floods	March - May	Rwanda, Uganda, Kenya, Somalia, Sudan, South Sudan, Democratic Republic of the Congo, Ethiopia, Tanzania, Burundi and Yemen.	Insured: Overall losses in Rwanda, Uganda and Kenya: > 70 (Munich Re)	>281 Fatalities in Rwanda, Uganda and Kenya (Munich Re)
Castellon, Spain	April 1	Castellon, Spain	Losses not yet available	Unknown
Greece Flash Flooding	Apr 4 to Apr 6	Greece	Losses not yet available	Unknown
South China Floods	Apr 02	China (Hunan, Jiangxi, Fujian, Guangdong, Guangxi)	Economic: 20 (NDRCC)	Unknown

South China Floods	Apr 17	China (The east of Southwest region to Jiangnan area)	Economic: 64 (NDRCC)	Unknown
Afghanistan Floods	April to August	Afghanistan	Losses not yet available	>90 (OCHA)
México Floods	May 9	Nuevo Leon, Apodaca	Economic: Not Significant	Unknown
South West of France Floods	May 10 to May 11	South West of France	Losses not yet available	Unknown
China Flooding	May 25	China	Losses not yet available	Unknown
UAE Flash Floods	May 26 to May 27	Sharjah, UAE	Losses not yet available	~ 4 (Floodlist)
Oman Flash Floods	May 27 to May 31	Dhofar Province, Oman	Losses not yet available	~ 2 (Floodlist)
Uganda Floods	May to Oct	Uganda	Losses not yet available	>21 (OCHA)
Brazil Floods	Jun 1 to Jun 15	Brazil	Economic: Not Significant	0
Colombia Floods	Jun 1 to Jun 15	Colombia	Economic: Low	Unknown
Corsica, France	Jun 11	Corsica, France	Losses not yet available	Unknown
Ankara Flash Flooding	Jun 11	Turkey	Insured: Insignificant	1 (FloodList)
South China Floods	Jun 20	China (Guangxi Zhuang Autonomous Region, Guangdong, Hunan, Guizhou, Yunnan, Jiangxi, Hubei, Zhejiang, Fujian provinces)	Economic: 5,100 (EMDAT)	108 (EMDAT)
Bursa Flash Flooding	Jun 21	Turkey	Insured: Insignificant	> 2 (FloodList)
Istanbul Flash Flooding	Jun 23	Turkey	Losses not yet available	1 (FloodList)
Central/Eastern European Flooding	Jun 22 to Jun 27	Ukraine, Romania, Serbia, Bosnia-Herzegovina	Economic: > 140 for Ukraine (Relief Web)	> 5 (FloodList)
Mianning County Flooding	Jun 30	China (Sichuan Province)	Losses not yet available	22 (EMDAT)
Turkey Floods	Jun to Jul	Ankara, Bursa Province, Istanbul and Rize Province Turkey	Losses not yet available	~4 (Floodlist)
Niger Floods	June to September	Niger	Losses not yet available	> 19 (DisastersCharter)
Kyushu Flooding	Jul 04	Japan	Insured: 500-1,000 (RMS), 800 (GIAJ)	84 (FDMA)
Artvin Flash Flooding	Jul 13	Turkey	Losses not yet available	> 1 (FloodList)
Iran Floods	Jul 13 to Jul 16	Gibil and Ardabil Province	Losses not yet available	~ 2 (Floodlist)
Rize Flash Flooding	Jul 14	Turkey	Losses not yet available	> 2 (FloodList)
Sicily, Italy	Jul 15	Sicily, Italy	Losses not yet available	Unknown
Upper North Island Flooding	Jul 17	New Zealand	Insured: 31 (ICNZ)	Unknown

Saudi Arabia Floods	Jul 26 to Aug 4	Saudi Arabia	Losses not yet available	~ 3 (Floodlist)
Western Georgia Floods	29 Jul	Western Georgia	Losses not yet available	Unknown
Yemen Floods	July to August	Yemen	Losses not yet available	~ 130 (Floodlist)
Kerala Floods	Aug 07	India	Losses not yet available	43 (CNN)
Evia Flash Flooding	Aug 8 to Aug 9	Greece	Losses not yet available	8 (Anadolu Agency)
West Africa Floods	August – September	Niger, Mali, Nigeria, Chad, Cameroon, Senegal, Burkina Faso, Guinea, Guinea Bissau, Mauritania, Cote d'Ivoire, Ghana, Gambia, Benin, Cabo Verde and Central African Republic	Losses not yet available	~ 412 (OCHA)
Andalucía, Spain Flash Floods	Aug 11	Andalusia, Spain	Losses not yet available	Unknown
UK, France and Italy Floods	Aug 11 to Aug 13	UK, France and Italy Floods	Losses not yet available	~ 6 (Floodlist)
Giresun Flash Flood	Aug 22	Turkey	Losses not yet available	> 7 (Daily Sabah)
Giresun Province, Turkey Floods	Aug 22 to Aug 23	Giresun Province, Turkey	Losses not yet available	~ 4 (Floodlist)
UK and Ireland Floods	Aug 24 to Aug 25	UK and Ireland	Losses not yet available	Unknown
Pakistan Floods	Aug 28 to Sept 3	Khyber Pakhtunkhwa Province, Pakistan	Losses not yet available	~ 30 (Floodlist)
Galway Floods	Sept 2	Galway, Ireland	Losses not yet available	Unknown
South of France Floods	Sept 19 to Sept 20	Gard, Lozere and Herault, South of France	Losses not yet available	Unknown
Adjara Region, Georgia Floods	Oct 1 to Oct 3	Adjara Region, Georgia	Losses not yet available	~ 5 (Floodlist)
France and Italy Flash Floods	Oct 2 to Oct 4	Southeastern France and Northern Italy	Insured: 252m (CCR)	At least 5 (CCR)
Togo Floods	Oct 5 to Oct 13	Togo, West Africa	Losses not yet available	~ 11 (Floodlist)
Slovakia Flooding	Oct 12 to Oct 14	Slovakia	Losses not yet available	1 (FloodList)
Hyderabad Floods	Oct 13	India	Losses not yet available	Unknown
County Cork Floods	Oct 20 to Oct 21	County Cork, Ireland	Losses not yet available	Unknown
Extremadura, Spain Floods	Oct 21 to Oct 22	Extremadura, Spain	Losses not yet available	Unknown
El Salvador Floods	Oct 29	El Salvador	Losses not yet available	40 (Floodlist)
Colombia Floods	Oct 31 to Nov 2	Magdalena Department	Economic: Low	0
Northern England, UK Floods	Nov 1 to Nov 2	Northern England, UK	Losses not yet available	0

Andalucía, Spain Floods	Nov 5	Andalucia, Spain	Losses not yet available	Unknown
Napier Flooding	Nov 09	New Zealand	Insured: 52 (ICNZ)	Unknown
Shaanxi, Shanxi Provinces	Nov 11	China	Losses not yet available	13 (EMDAT)
Colombia Floods	Nov 14 to Nov 19	Mainland Colombia and islands of San Andrés and Providencia	Economic: Low	7 (Floodlist)
Italy Floods	November – Ongoing	Sardinia, Italy	Losses not yet available	>5 (Floodlist)
South Africa Floods	Nov 20 to Nov 21	Kwazulu-Natal and Gauteng, South Africa	Losses not yet available	~ 4 (Floodlist)
Brazil Floods	Nov 26	São Carlos	Economic: Low	0
South Iran	Nov to Dec	South Iran	Losses not yet available	~ 7 (Floodlist)
Turkey Floods	Dec 13 to Dec 14	Izmir Province, Turkey	Losses not yet available	Unknown
Izmir Flash Flood	Dec 14	Turkey	Losses not yet available	2 (FloodList)

Earthquake

Date	Local Time	Location	Magnitude (Mw)	Depth (km)	Losses (USD millions)	Fatalities
Jan 7	04:24	Indios, Puerto Rico	6.4	9	Economic: 35% probability of losses between 100 to 1,000 (USGS)	1 (RMS Owl)
Jan 19	13:27	86km ENE of Arzak, China	6	5.6	Losses not yet available	Unknown
Jan 24	20:55	Elazig, Turkey	6.7	11.9	Losses not yet available	41 (AFAD)
Jan 28	14:10	Lucea, Jamaica, Cayman Islands, Cuba	7.7	14.9	Economic: 33% probability of losses between 1 to 10 (USGS)	0
Feb 23	09:23	Turkey, Iran Border	6.0	10	Losses not yet available	> 9 (NY Times)
Feb 24	16:03	San Vincenzo la Costa, Italy	4.8	10	Losses not yet available	0
Mar 21	02:49	Kanallaki, Greece	5.7	10	Insured: Insignificant	0
Mar 22	06:24	Zagreb, Croatia	5.3	10	Insured: 64 – 80 (Croatian Insurance Bureau) Economic: 1,100 (Munich Re)	1 (Reuters)
Mar 26	15:38	27km SE of Burias, Philippines	6.1	59	Losses not yet available	Unknown
Apr 16	18:15	38km ESE of Falam, Myanmar	5.9	10	Losses not yet available	Unknown
May 2	07:19	Tallaboa, Puerto Rico	5.4	11	Economic: 37% probability of losses between 100 to 1,000 (USGS)	0
May 6	11:38	Aleshtar, Iran	4.8	10	Losses not yet available	0
May 7	23:48	Damāvand, Iran	4.6	10	Losses not yet available	2 (USGS)

May 18	13:48	42km W of Zhaotong, China	5.1	10	Losses not yet available	Unknown
Jun 5	06:59	Stilfontein, South Africa	4.8	10	Losses not yet available	0
Jun 9	20:48	Mohr, Iran	5.7	10	Economic: 75% probability of losses between 0-1 (USGS)	0
Jun 14	09:51	Eastern Turkey	5.9	5	Insured: Insignificant	1 (AFAD)
Jun 23	10:29	Santa María Xadani, México	7.4	20	Economic: 37% probability of losses between 100 to 1,000 (USGS)	10 (USGS)
Jun 25	21:05	278km SE of Hotan, China	6.3	10	Economic: 3 (EM-DAT)	4 (EM-DAT)
Jul 17	00:40	Iquique, Chile	5.9	122.7	Economic: 53% probability of losses between 10 to 100 (USGS)	Unknown
Jul 17	02:50	114km N of Kokoda, Papua New Guinea	7	79.8	Losses not yet available	Unknown
Jul 22	20:07	Western Xizang, China	6.3	10	Losses not yet available	Unknown
Aug 18	00:03	13km E of San Pedro, Philippines	6.6	10	Losses not yet available	Unknown
Sep 1	00:09	Vallenar, Chile	6.8	10	Economic: 95% probability of losses between 0 to 1 (USGS)	Unknown
Sep 11	04:35	Tocopilla, Chile	6.3	110.7	Economic: 68% probability of losses between 0 to 1 (USGS)	0
Sep 18	19:28	Crete, Greece	5.9	44.49	Insured: Insignificant	0
Oct 30	13:51	Aegean Sea, Turkey	7.0	21	Insured: 68m (PERILS)	119 (AFAD)
Nov 15	22:37	5km S of Marihatag, Philippines	6	45	Losses not yet available	Unknown
Dec 29	11:19	Petrinja	6.4	10	Economic: 35% probability of losses between 100 and 1,000 (USGS)	7 (BBC)

Wildfire

Name	Date	Location	Acres Burnt	Losses (USD millions)	Fatalities
Corsica Forest Fire	Feb 8	Corsica, France	5,000 (CEMS)	Economic: Insignificant	0
Chernobyl Fires	Apr 11	Chernobyl, Ukraine	420,000 (CEMS)	Losses not yet available	0
Podlaskie Voivodeship Fires	Apr 19	Podlaskie Voivodeship, Poland	13,163 (CEMS)	Losses not yet available	0
Ukraine Wildfire	Jul 6 to Jul 7	Luhansk, Ukraine	12,000 (ECHO)	Losses not yet available	> 6 (BBC)
Corinth Wildfires	Jul 23	Corinthia, Greece	8,100 (CEMS)	Economic: Insignificant	0
Branco Fires	Jul 25	Castelo Branco, Portugal	13,700 (CEMS)	Economic: Insignificant	0
Northern Territory Bushfires	Aug 01	Australia	Unknown	Losses not yet available	Unknown
Gran Chaco and Amazon Wildfire	Aug 1 to Oct 31	Argentina, Bolivia, Brazil, and Paraguay	~6.5 million (National Geographic)	Losses not yet available	0

Gran Canaria Forest Fire	Aug 13 to Aug 20	Gran Canaria, Spain	21,000 (ERCC)	Economic: Insignificant	0
Cameron Peak Fire	Aug 13 to Nov 6	Colorado	>200,000	Insured: <1,000 (PCS)	Unknown
Beachie Creek Fire	Aug 16 to Oct 10	Oregon	>190,000	Insured: >1,000 (PCS)	Unknown
SCU Lightning Complex Fire	Aug 16 to Sep 16	California	>390,000	Insured: <1,000 (PCS)	Unknown
LNU Lightning Complex Fire	Aug 17 to Sep 16	California	> 300,000	Insured: >1,000 (PCS)	5
CZU Lightning Complex Fire	Aug 17 to Sep 22	California	> 86,000	Insured: >1,000 (PCS)	1
Carmel Fire	Aug 18 to Sep 4	California	>6,000	Insured: <1,000 (PCS)	Unknown
North Complex Fire	Aug 18 to Oct 12	California	>300,000	Insured: <1,000 (PCS)	Unknown
Spain Fires	Aug 27	Almonaster La Real & Cabezuela Del Valle, Spain	44,000 (CEMS)	Losses not yet available	0
Viseu Fires	Sep 7	Viseu, Portugal	5,200 (CEMS)	Losses not yet available	1 (ANPC PRT)
Greece Wildfire	Sep 9	Athens, Greece	Unknown	Losses not yet available	Unknown
Creek Fire	Sep 4 to Oct 12	California	>350,000	Insured: <1,000 (PCS)	Unknown
Almeda Fire	Sep 7 to Sep 16	Oregon	>3,200	Insured: <1,000 (PCS)	Unknown
Babb Fire	Sep 6 to Sep 18	Washington	>18,000	Insured: <1,000 (PCS)	Unknown
Holiday Farm Fire	Sep 7 to Oct 3	Washington	>170,000	Insured: <1,000 (PCS)	Unknown
Riverside Fire	Sep 8 to Oct 3	Oregon	>130,000	Insured: <100 (PCS)	Unknown
Echo Mountain Complex Fire	Sep 7 to Sep 23	Oregon	>2,000	Insured: <100 (PCS)	Unknown
Slater Fire	Sep 8 to Oct 9	California	>150,000	Insured: <100 (PCS)	Unknown
Bobcat Fire	Sep 6 to Oct 23	California	>115,000	Insured: <1,000 (PCS)	Unknown
Ukraine Wildfire	Sep 30 to Oct 8	Luhansk, Ukraine	32,000 (ECHO)	Losses not yet available	11 (DSNS)
Glass Fire	Sep 27 to Oct 19	California	>60,000	Insured: >1,000 (PCS)	Unknown
Lake Ohau Fire	Oct 04	New Zealand	12,454	Insured: 25 (ICNZ)	Unknown
East Troublesome Fire	Oct 14 to Nov 9	Colorado	>190,000	Insured: <1,000 (PCS)	Unknown

Landslide

Name	Date	Cause	Location	Losses (USD millions)	Fatalities
Brazil Landslide	Mar 3	Very heavy rain	Guarujá, Santos and São Vicente	Economic: Not Significant	43 (Relief Web)

México Landslide	Mar 9	Very heavy rain	Monterrey-Salttillo highway	Economic: Not Significant	0
Norway Landslide	Dec 30	Rainfall	Village Ask, Gerdum	Economic: Not Significant	7 (Life in Norway)



















Civil Disorder

Name	Date	Location	Losses (USD)	Fatalities
Riots	May 26 to Jun 8	All regions U.S.A.	Insured: >1,000 (PCS)	1

Explosion

Name	Date	Location	Losses (USD)	Fatalities
Beirut port	Aug 4	Beirut, Lebanon	Insured: 1,500 (ACAL)	>200

Abbreviations

Symbols								
	BL	Blizzard		HU	Hurricane		ST	Severe Thunderstorm
	DR	Drought		LS	Landslide		TS	Tsunami
	EQ	Earthquake		ME	Meteoroid		VE	Volcanic Eruption
	EX	Explosion		StS	Storm Surge		WF	Wildfire
	FL	Flood		TC	Tropical Cyclone		WS	Windstorm
	HL	Hail		TO	Tornado		STS	Severe Tropical Storm

Sources

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Coordination System: org), **Geosciences** (mdpi.com), **Geotechnical Extreme Events Reconnaissance (GEER)** (geerassociation.org/), **German Insurance Association** (en.gdv.de), **GIAJ** (https://www.sonpo.or.jp/en/), **Greece Association Of Insurance Companies** (eae.gr), **Greek Ministry of Infrastructure and Transport** (ymc.gr), **Greek Reporter** (greece.greekreporter.com), **IBTrACS** (http://ibtracs.unca.edu/), **ICA** (Insurance Council of Australia), **ICNZ** (Insurance Council of New Zealand), **IFRC** (International Federation of Red Cross and Red Crescent Societies: ifrc.org), **Iltalehti** (iltalehti.fi), **Indian Express** (https://indianexpress.com/), **Insurance Insider** (insuranceinsider.com), **Insurance Journal** (insurancejournal.com), **JBA** (jbarisk.com), **JMA** (Japan Meteorology Agency), **Jutarnji** (jutarnji.hr), **Karen Clark & Company (KCC)** karenclarkandco.com/news/year/2020/, **KIT** – Karlsruhe Institute for Technology, **livemint** (livemint.com), 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