Weekly Cat Report

July 24, 2020

This Week's Natural Disaster Events

Event	Impacted Areas	Fatalities	Damaged Structures and/or Filed Claims	Preliminary Economic Loss (USD)*	Page
Severe Weather	United States	0	Thousands	100+ million	3
Severe Weather	Canada	0	Hundreds	Millions	3
Flooding	New Zealand	0	Thousands	Millions	8
Flooding	India	956+	25,500+	100s of Millions	9
Flooding	China	142+	300,000+	17+ billion	9
Flooding	Vietnam	5+	3,000+	22+ million	10
Flooding	Indonesia	42+	5,000+	Millions	10
Flooding	Somalia	0	Thousands	Unknown	11
Severe Weather	Canada	0	Hundreds	Millions	11

**Please note that these estimates are preliminary and subject to change. In some instances, initial estimates may be significantly adjusted as losses develop over time. This data is provided as an initial view of the potential financial impact from a recently completed or ongoing event based on early available assessments.*

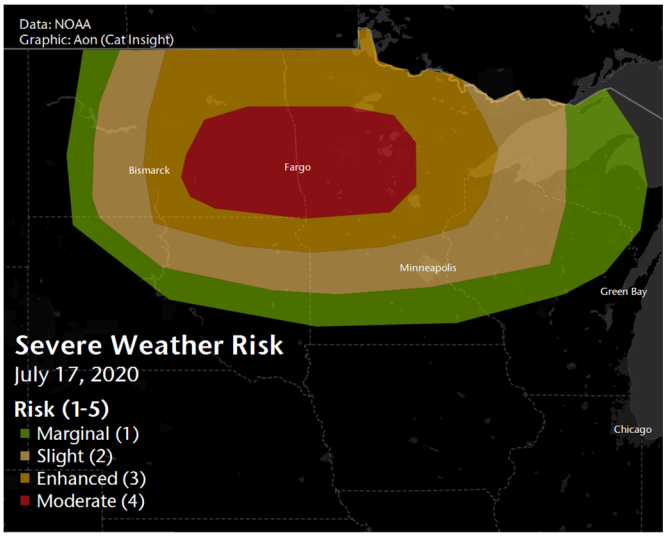
Along with this report, we continue to welcome users to access current and historical natural catastrophe data and event analysis on Impact Forecasting's Catastrophe Insight website: http://catastropheinsight.aon.com

Heat fuels severe weather for U.S. and Canada

The period between July 17-22 brought considerable heat and severe weather from the Plains to the Eastern United States. Multiple rounds of impactful storms were initiated ahead of an upper-level trough progressing eastward from the Rockies, through the Great Lakes, and toward the Northeast between July 17-19. A notable Mesoscale Convective System (MCS) traversed portions of North Dakota, South Dakota, Minnesota, and Wisconsin between July 17-18, bringing brief tornadoes, large hail, and damaging straight-line winds - with maximum gusts exceeding 90 mph (145 kph). The primary focus for severe weather shifted eastward toward the Midwest, Great Lakes, southern Ontario (Canada), and into the Ohio River Valley between July 18-19. A lingering frontal boundary stretching from the Mid-Atlantic toward the Central Plains aided in the development of severe weather between July 20-22.

Meteorological Recap

July 17

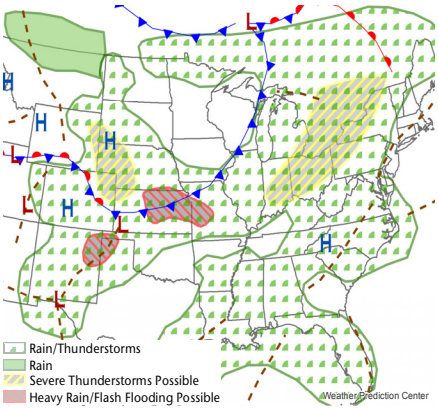


The risk for severe weather on July 17 was focused across the northcentral United States. The Storm Prediction Center (SPC) indicated an area across eastern North Dakota and western Minnesota for a Moderate Risk (level 4 out of 5) for severe weather, with an Enhanced Risk (level 3 out of 5) or Slight Risk (level 2 out of 5) extending westward through central North Dakota and eastward through northern Wisconsin. The predominant hazard of concern was strong straight-line winds, with an initial threat of large hail, and tornadoes. Ample sunshine through the afternoon hours accompanied by climbing temperatures and high dewpoints, which were associated with a building ridge anchored across the southern United States, set the stage for the development of severe storms. Heat indices in localities across southeastern North Dakota, northern South Dakota, and west-central Minnesota approached and exceeded the 100-degree (°F) mark, with temperatures in the low 90's and dewpoints in the low 70's (°F). Severe storms initialized ahead of an approaching surface low-pressure system and frontal boundary, where the atmosphere was characterized by a plume of low level moisture, significant values of Convective Available Potential Energy or CAPE (which is directly related to the updraft strength in thunderstorms), and steep mid-level lapse rates (changes in temperature with height).

In the afternoon hours discrete storms across northwestern North Dakota rapidly expanded and grew into an extensive MCS with severe storm clusters and embedded linear and bowing segments which progressed east-southeastward. These environmental conditions prompted the SPC to issue a Particularly Dangerous Situation (PDS) Severe Thunderstorm Watch for northern and central Minnesota, southeast North Dakota, and northern South Dakota – this was only the 52nd PDS Severe Thunderstorm Watch issued since 1988. Hazards with this system were severe straight-lines winds in excess of 90 mph (145 kph) and large hail approaching and exceeding 2.0 inches (5.1 centimeters). The MCS persisted as it approached northern Wisconsin by the morning hours of July 18.

July 18-19

A second round of storms developed in the evening on July 18 across eastern Minnesota and northwestern Wisconsin, where the SPC indicated an Enhanced Risk (level 3 out of 5) for severe weather. Storm initiation occurred in a corridor of abundant low-level moisture and above average temperatures. The greatest impacts initially reported over Minnesota transitioned toward northern Wisconsin and Michigan, including the Upper Peninsula, as the storms progressed eastward. The greatest hazard with this event was severe straight-line winds.



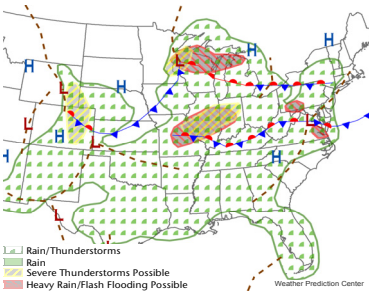
U.S. surface weather chart for July 19

In the morning hours of July 19, the complex of storms continued to progress eastward, ahead of the surface cold front (as depicted on the surface map). Throughout the day multiple complexes containing bands of showers and storms, some with embedded severe clusters and organized linear segments propagated toward the Ohio River Valley and Northeast. The greatest impacts occurred across regions in Illinois, Indiana, Michigan, Ohio, Pennsylvania, and New York, as well as southern Ontario (Canada). Straight line winds were the primary threat with this event. During the evening and overnight hours, severe storms also developed further west in eastern Colorado and southeastern Wyoming. The storms progressed south-southeast and were most impactful across Wyoming, Colorado, and Nebraska.

July 20-22

On July 20 severe storm development occurred in relation to an eastward propagating shortwave trough initially over Montana, which interacted with the stalled frontal boundary draped across the Central Plains extending toward the Mid-Atlantic. The greatest impacts occurred adjacent to a north-south axis in the Plains -throughout western South Dakota, Nebraska, and extreme northwestern Kansas. Severe winds and large hail were the predominant hazards.

Two Mesoscale Convective Vortices (MCVs) remnant from the previous day's activity were a focal point for severe weather on July 21, as they tracked across the Central Plains and Great Lakes ahead of the upper level wave. The northern MCV brought an isolated tornado threat to western Wisconsin, while the southern MCV produced severe weather across central Illinois and Indiana. Throughout this period a tropical like airmass interacting with the lingering frontal boundary across the central-eastern United States brought localized severe weather to portions of the Southeast and Mid-Atlantic (as evident on the surface map), where straight-line winds were the predominant hazard.



U.S. surface weather chart for July 21

Flow around a Bermuda High continued to usher uncomfortably hot and humid air toward the Mid-Atlantic and Northeast on July 22 – with temperatures soaring into the 90's and dewpoint in the upper 70's (°F) in many locations. Again, interactions between this unstable air mass, a weak stalled frontal boundary lingering across the region, and an approaching upper level disturbance primed the atmosphere for another round of severe weather and locally heavy rainfall. During the afternoon and evening hours clusters and lines of strong to severe storms affected the region as they propagated eastward, with the greatest impacts occurring in portions of New York, New Jersey, Pennsylvanian, Maryland, Delaware, and Virginia. The primary hazards with these storms were locally heavy rainfall leading to flash flooding, and straight-line winds with gusts approaching 70 mph (112 kph).

Event Details

July 17

There were 189 instances of severe weather reported on July 17, of which 153 were for wind. A maximum straight-line wind gust of 101 mph (163 kph) was measured in North Dakota (Benson County), while a 90 mph (145 kph) gust was recorded in Minnesota (Marshall County). In Minnesota, a downburst north of Minneapolis (Chisago County), between Harris and Rush City, resulted in hundreds of downed trees, some of which impacted vehicles and outbuildings. Nearby, an EF0 tornado with estimate maximum wind speeds of 80 mph (128 kph) impacted boats and docks on the west side or Rush Lake. In Wisconsin, several brief spin-up tornadoes resulted in localized damage, including an EF1 tornado in Ashland County, with maximum winds approaching 110 mph (177 kph), which impacted several structures including roofing damage to a garage, and substantial impacts to a metal outbuilding. Significant hailstones of 2.0 inches (5.1 centimeters) or larger were observed in South Dakota (Bon Homme County) and North Dakota (Ward, Benson, Eddy, McHenry, and Burleigh Counties).

July 18-19

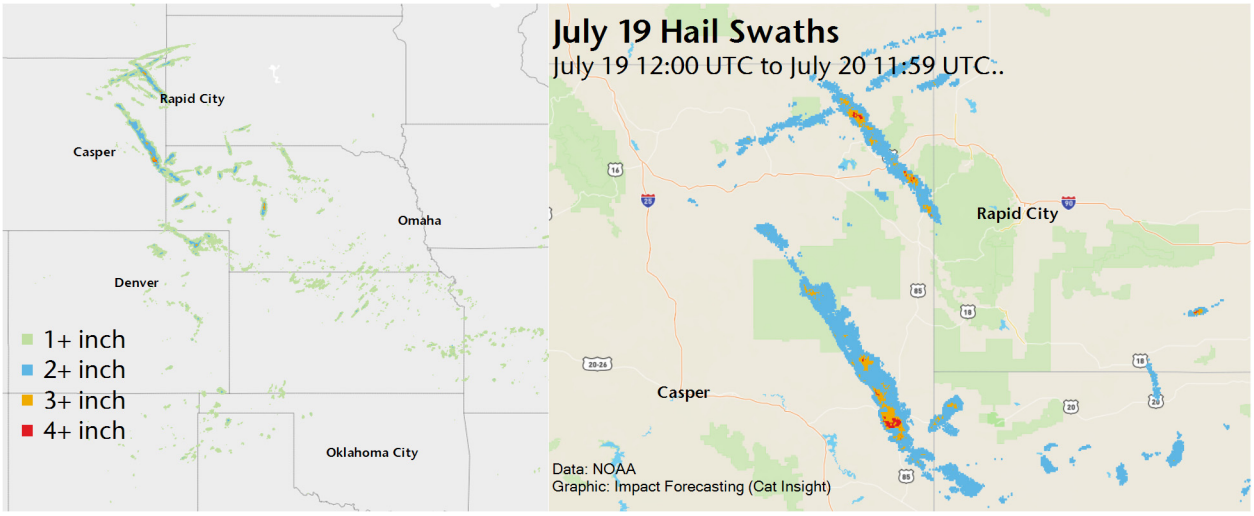
United States

On July 18, baseball sized hail, approaching 3.0 inches (7.6 centimeters) were reported in Minnesota (St. Louis County). Near Minneapolis, storms on the southern end of a severe cluster produced several brief tornadoes. One of the tornadoes in Washington County, with maximum estimated winds of 100 mph (161 kph), caused extensive tree damage and notable impairment to local farms and outbuildings. In Wisconsin (Trempealeau County) an EF1 tornado impacted multiple outbuildings and structures while snapping and uprooting trees, according to Trempealeau County Emergency Management. In Michigan (Houghton County), a 95 mph (153 kph) wind gust was measured. Nearby extensive tree damage, snapped power lines, and a collapsed barn which damaged vehicles were reported. A 95 mph (153 kph) gust in Baraga County tore the roof off a home. In Cheboygan County, the NWS surveyed an area of straight-line winds with maximum gusts between 70 and 80 mph (112 to 128 kph) which resulted in significant damage to the Bishop Baraga School. Damage surveys for straight-line wind were also conducted in Emmet and Crawford/Oscoda Counties. At least one injury occurred in Presque Isle County resulting from a fallen tree.

Trees snapped from the tornado in Wisconsin
Source: NWS Twin Cities

Wind damage at Bishop Baraga School in Michigan.
Source: NWS Gaylord/ Jim Chimner

On July 19, there were 237 reports of severe weather of which 198 were for wind. Straight-line wind gusts of 60 to 70 mph (96 to 112 kph) were common with severe storms in the eastern half of the country. A maximum measured gust of 86 mph (138 kph) occurred in Indiana (Jasper County). In Illinois, considerable wind damage and downed trees were observed near the town of Cambridge (Henry County). In Michigan, several buildings were impacted in Wayne County. Further west, hail approaching 4.25 inches (10.8 cm) were observed in eastern Wyoming (Niobrara County), where hail reportedly lasted for up to 15 minutes, damaging vehicles, windshields, homes, and vegetation. Straight-line wind gusts between 60 and 70 mph (96 to 112 kph) were responsible for extensive crop damage in Colorado.



Canada

At least 37,000 customers lost power as severe storms impacted portions of southern Ontario on July 19, causing numerous reports of damage to homes and outbuildings. A maximum wind gust of 107 kph (66 mph) was measured over the North Georgian Bay. Wind damage was observed near Woodstock, with significant impacts occurring at a nearby dairy farm. Elsewhere, strong winds and heavy rains led to flooding across the Greater Toronto Area. An EF1 tornado north of Lucan caused damage to grain bins and numerous trees, while an EF0 tornado near Belmont was responsible for minor structural exterior and roofing impacts.

July 20-22

Notable severe weather on July 20 was predominantly contained to the central and northern Plains. Early in the day, an 84 mph (135 kph) wind gust was measured in South Dakota (Meade County), with reported downed trees in the nearby town of Faith. Later in the period, severe and significant hailstones approaching and exceeding 2.0 inches (5.1 centimeters) were reported in South Dakota (Jackson County), Nebraska (Hooker and Lincoln Counties), and Kansas (Rawlings County). In Nebraska (Lincoln County) wind driven baseball sized hail (2.75 inches, 7.0 centimeters) were observed near the town of Wallace.

On July 21, several tornadoes were reported in Wisconsin (Chippewa County), where a high-end EF0 tornado with winds approaching 85 mph (137 kph) impacted multiple homes and structures, including a church, and downed numerous tree near the Village of Cadott. In Illinois (Sangamon County) a reported tornado near the town of Auburn, damaged grain bins and outbuildings. Several structures were also damaged in Champaign County.

Storms on July 22 produced at least 168 unique reports of severe winds with measured gusts typically between 60 and 70 mph (96 and 112 kph). The wind knocked down trees and power lines throughout the affected region, leaving at least 50,000 customers across the Mid-Atlantic without power. Portions of central Maryland and Washington D.C were under a flash flood warning as the storms quickly produced localized rainfall totals of 2 to 3 inches (5.1 to 7.6 centimeters) during a short period.

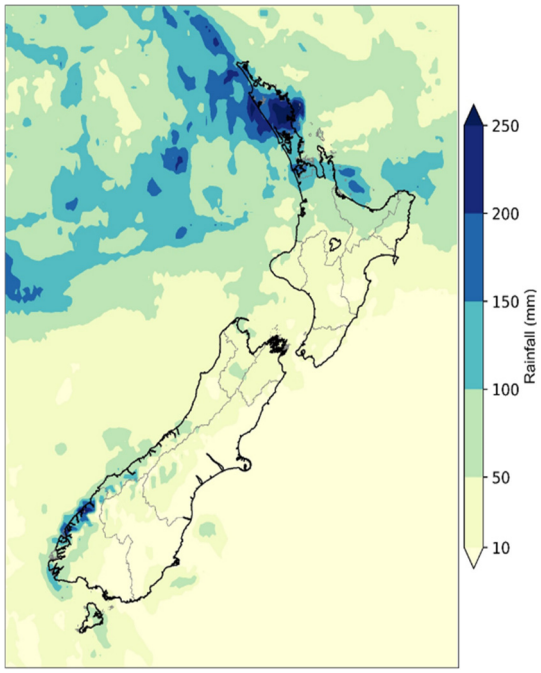
Financial Loss

Total combined economic losses from the period between July 17-22 for the United States were expected to exceed USD100 million. Most of the wind and hail-related damage will be covered by insurance. The additional losses will add to what has already been an active and costly year for severe convective storms in the United States. Total economic losses from the severe weather in Canada on July 19 were anticipated to reach in the millions (CAD).

Record breaking rains wreaks havoc in New Zealand

Record breaking rains, described as a 1-in-500-year event (0.2 percent chance of occurrence in any given year) by the Meteorological Service of New Zealand, triggered flash flooding and landslides in northern and western New Zealand on July 17-18. The Northland region in New Zealand's North Island was worst-hit during the event. Notable damage to road infrastructure and bridges occurred. Thousands of homes along with a vast area of agricultural land in Northland were inundated. Economic losses were anticipated to be well into the millions (USD).

Meteorological Recap



Accumulated rain on July 14-20.

Notable rainfall accumulations, which resulted from an interaction of two low-pressure systems located north of New Zealand in the southwestern Pacific Ocean, wreaked havoc in Northland on July 17. According to MetService, Whangārei recorded the following totals:

Period	Rainfall (mm)	Rainfall (inch)
1 hour	39.6	1.6
4 hours	150	5.9
12 hours	220	8.7
7 days	370	14.6

The event was described by MetService as a 1-in-500-year event (0.2 percent chance of occurrence in any given year). Several other stations across Northland recorded above 250 mm (9.8 inches) of rain during a 24-hour stretch ending on July 18. The meteorological observatory in Kaikohe town in Far North District of New Zealand recorded 56.8 millimeters (2.2 inches) in a 1-hour period on July 17.

Event Details

Heavy rains coupled with strong winds and thunderstorms prompted flooding and landslides in northern and western regions of New Zealand on July 15-21, particularly in Whangarei District. Multiple roads and highways were damaged to various degrees in the northern regions by washouts and landslides. Hundreds of people were forced to leave their homes in Whangārei and Kerikeri towns. According to the Civil Defence Northland, a large number of homes, businesses, and roads around the region were inundated during the event. Full scope of damage was being assessed at the time of this writing, but local authorities expected a multi-million-dollar repair bill.

Source: Civil Defense Northland

Update: Flooding continues across Asia

Event Details

India

Additional monsoon rains continued to affect Assam, Bihar, West Bengal, and Karnataka from July 18-23, exacerbating the flooding situation in these states. According to the Assam State Disaster Management Authority and local media reports, recent rounds of rains have directly affected 100,000 people and caused more than 20 fatalities. Additional damage and casualties were reported from Uttar Pradesh, Bihar, West Bengal, Uttarakhand, and Gujrat. On July 21, incessant rains triggered a landslide in Pithoragarh District of Uttarakhand which resulted in three deaths and six injuries. According to the local disaster officials, 11 people remained missing. Eighteen people died due to lightning strikes in nine districts across Bihar on July 21. The total economic losses were anticipated to aggregate into hundreds of millions (USD) for the current monsoon season; possibly higher. With more rainfall forecast for the coming days to weeks, the financial toll was expected to further increase.

The table below includes seasonal statistics from Disaster Management Division, Ministry of Home Affairs, India, as of July 22. An additional 333 fatalities were noted in lightning-related incidents across the states of Bihar and Uttar Pradesh since the onset of the monsoon season.

State	Fatalities	Population Affected	Damaged Structures	Crop Area (Acres)
West Bengal	151	173,000	9,043	N/A
Assam	115	5,627,500	6,682	628,079
Karnataka	67	550	3,678	98,842
Meghalaya	12	1,613,000	2,314	297
Gujarat	81	2,800	1,118	N/A
Nagaland	8	3,500	994	101
Kerala	25	30	395	N/A
Arunachal Pradesh	16	37,000	333	33,947
Madhya Pradesh	47	N/A	183	N/A
Uttar Pradesh	2	101,000	222	10,267
Chhattisgarh	15	N/A	214	N/A
Punjab	6	N/A	182	13,220
Uttarakhand	30	N/A	171	N/A
Bihar	N/A	460,000	0	N/A
Maharashtra	48	N/A	0	N/A
Total	**623**	**8,020,833**	**25,529**	**784,754**

China

Heavy monsoon rains continued to affect the eastern and central parts of China since July 19, particularly in Anhui and Hubei provinces. Heavy monsoon rains resulted in swelling of rivers in the Yangtze River Basin above the severe flood warning levels at several locations, causing widespread inundation damage along their banks. On July 22, nearly 25,000 people in Anhui and Hubei provinces were evacuated to safety by the local disaster management teams. Several villages in Anhui and Hubei provinces were cut off due to waterlogging on roads. Heavy monsoon rainfall in July has affected roughly 50 counties and cities in the Hubei province in central China. Provincial capital Wuhan and Enshi City were worst affected as the Yangtze river was noted to flow 1 meter (3 feet) above the warning level. More than 3 million people in Anhui province were directly affected due to monsoon rains since July 1. As many as 65 counties across Anhui province were affected. A large proportion of residents were left without electricity and drinking water in Anhui and Hubei provinces.

Since the arrival of Mei-yu rains in China on June 1, as many as 50 million residents across 27 provincial regions, autonomous regions, and municipalities in China were affected; though the greatest damage was within the Yangtze River Basin. Government estimates noted around 142 fatalities. Widespread inundation damage to 300,000 homes, businesses, roads, bridges, and a large area of cropland was noted. The Chinese government had cited total seasonal flood damage since June 1 at CNY116 billion (USD17 billion). Given the continued low insurance take-up rates in China, a significant proportion of these agriculture and infrastructure related losses were anticipated to be uninsured.

Indonesia

Torrential rains, which started on July 9 and continued into July 21, caused widespread inundation damage and triggered landslides in South Sulawesi and West Kalimantan provinces of Indonesia. Luwu Utara District in North Luwu Regency, South Sulawesi was worst-hit during the event. At least 42 people were killed, 58 injured, and 67 others were listed as missing by the Indonesian National Board for Disaster Management (BNPB). No fewer than 4,200 houses, 9 school buildings, 12 mosques, and a church were submerged under water. More than 42 villages in Konawe district in South East Sulawesi were inundated with floodwaters ranging between 1 to 2 meters (3 to 6 feet), causing damage to hundreds of homes, businesses, and public infrastructure. No fewer than 5,000 combined houses sustained damage to various degrees. The total combined losses were anticipated to reach into the millions (USD).

Vietnam

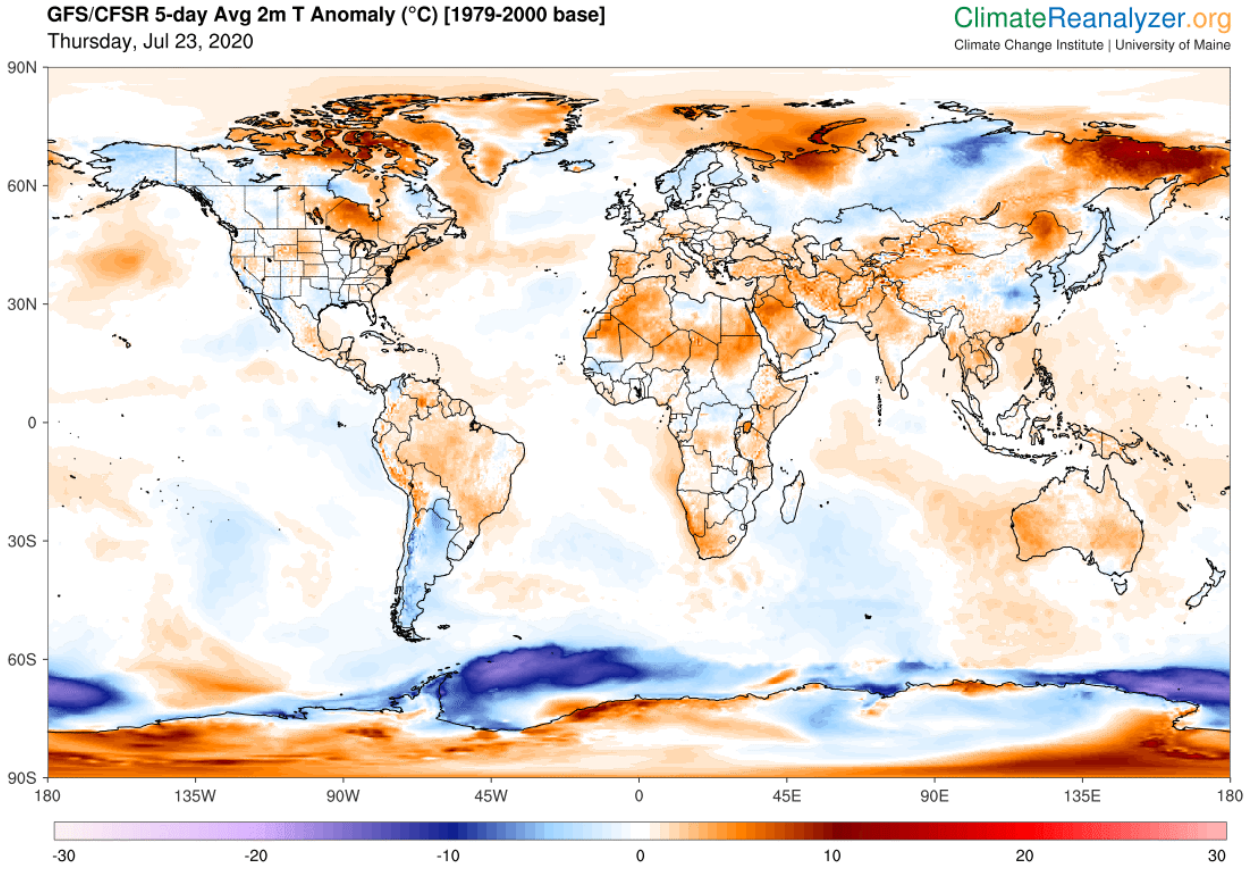
Incessant heavy rains resulted in notable flooding and triggered landslides in Ha Giang and Bac Giang Provinces in northern Vietnam on July 18-21. According to the information from Vietnam Disaster Management Authority (VDMA), five people were killed, and two people sustained injuries in rain-related incidents in Ha Giang Province. Landslides in Quan Ba and Vi Xuyen districts damaged two hydropower plants, resulting in stopping operations. Nearly 3,000 homes were damaged, and further losses were incurred on local infrastructure and agriculture. Total economic damage was listed by the government at VND495 billion (USD22 million).

Natural Catastrophes: In Brief

Flooding (*Somalia*)
Anomalous heavy rain in parts of Southern Somalia resulted in renewed flooding in several regions of the Shabelle River basin. Data from the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) suggest that more than 100,000 people were affected between late June and mid-July, with particularly strong impacts in Hirshabelle, South West, Jubaland, and Mogadishu. At least 33,000 hectares (81,500 acres) of farmland were flooded. Total economic impact was not yet known due to a lack of information from the region.

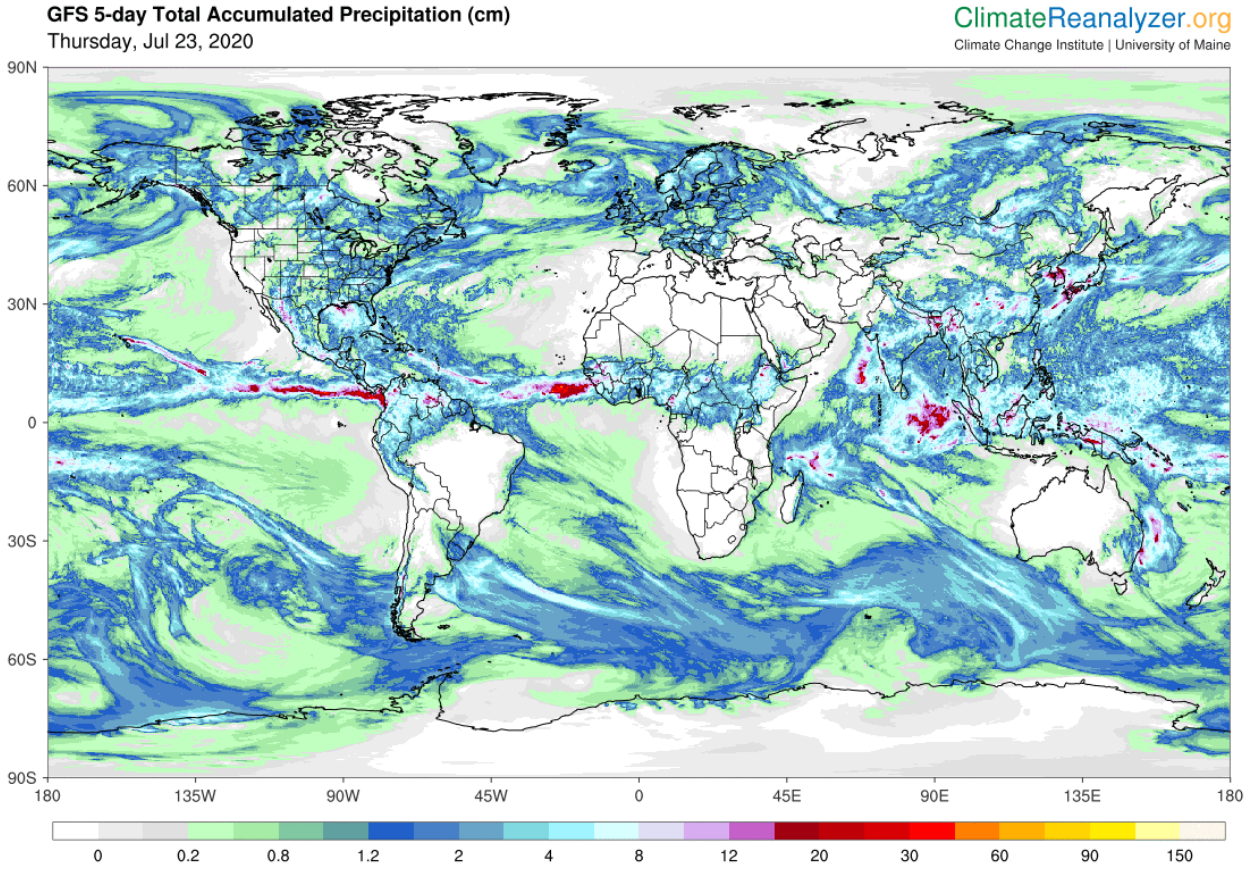
Severe Weather (*Canada*)
A low-pressure system progressing across the Canadian Prairies brought severe thunderstorms to portions of central and southern Alberta on July 16. Significant storms which impacted the City of Edmonton produced heavy rains, strong winds, and small hail resulting in notable flash flooding which inundated roadways and disrupted transportation in portions of the City. Extensive damage resulting from hail and flooding was reported at the Rogers Place Arena. To the south, in Millet, wind damage resulted in exterior damage to multiple structures including the roof of a water reservoir. In Innisfail, hailstones several inches deep covered local streets. Total economic impacts were anticipated to reach into the millions (CAD).

Global Temperature Anomaly Forecast



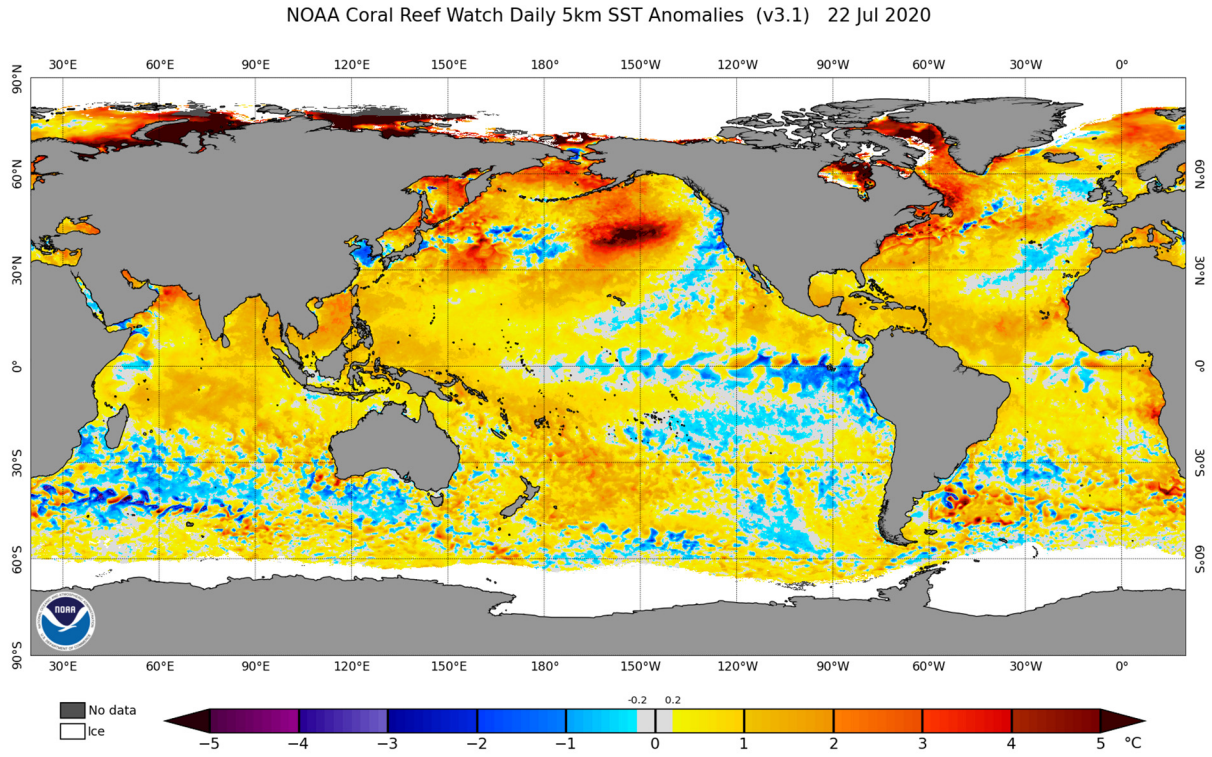
Source: Climate Reanalyzer, Climate Change Institute, University of Maine, USA

Global Precipitation Forecast



Source: Climate Reanalyzer, Climate Change Institute, University of Maine, USA

Weekly Sea Surface Temperature (SST) Anomalies (°C)



The SST anomalies are produced by subtracting the long-term mean SST (for that location in that time of year) from the current value. This product with a spatial resolution of 0.5 degree (50 kilometers) is based on NOAA/NESDIS operational daily global 5 kilometer Geo-polar Blended Night-only SST Analysis. The analysis uses satellite data produced by AVHRR radiometer.

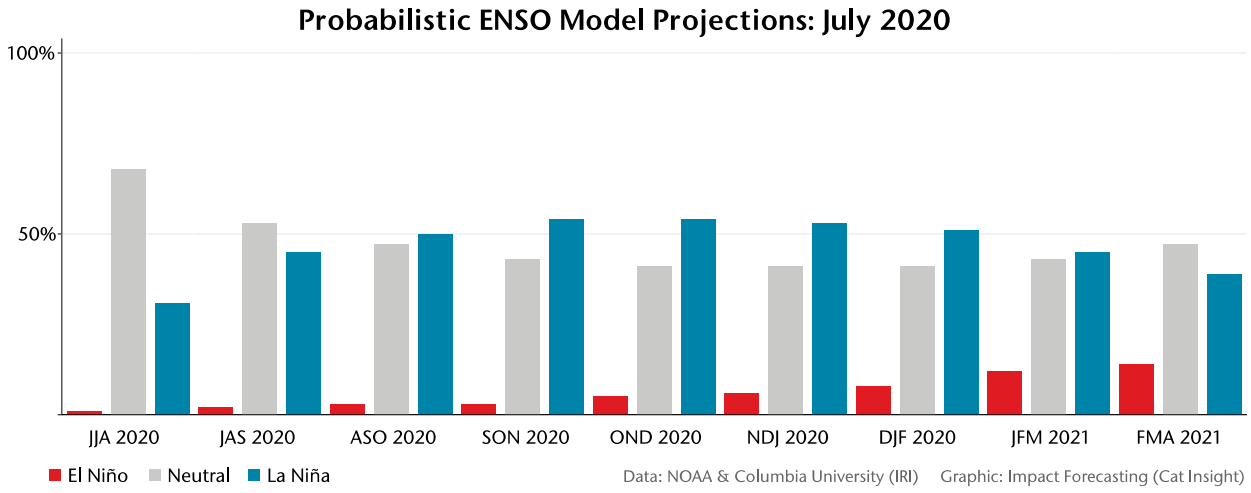
Select Current Global SSTs and Anomalies

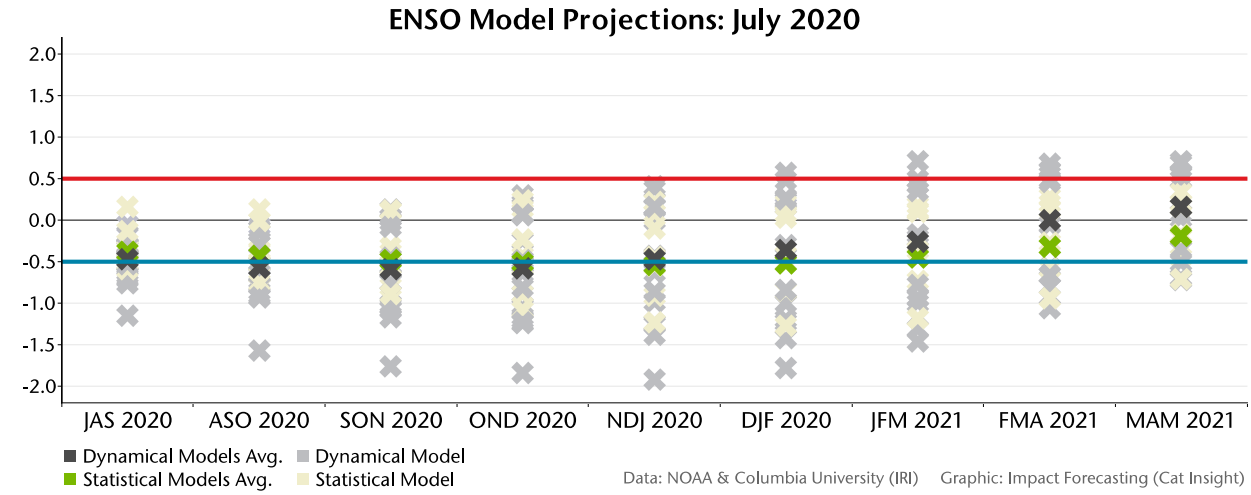
Location of Buoy	Temp (°C)	Departure from Last Year (°C)
Eastern Pacific Ocean (1,020 miles SW of San Salvador, El Salvador)	26.3	+0.4
Niño3.4 region (2°N latitude, 155°W longitude)	26.9	-0.3
Western Pacific Ocean (700 miles NNW of Honiara, Solomon Islands)	30.0	+0.3

Sources: ESRL, NOAA, NEIS, National Data Buoy Center

El Niño-Southern Oscillation (ENSO)

ENSO-neutral conditions are currently present. NOAA notes that these neutral conditions will likely linger through the Northern Hemisphere (boreal) summer months. The agency further states that there is a 50 to 55 percent chance that a weak La Niña will emerge in the boreal autumn and last through the winter (2020/21).





El Niño *refers to the above-average sea-surface temperatures (+0.5°C) that periodically develop across the east-central equatorial Pacific. It represents the warm phase of the ENSO cycle.*

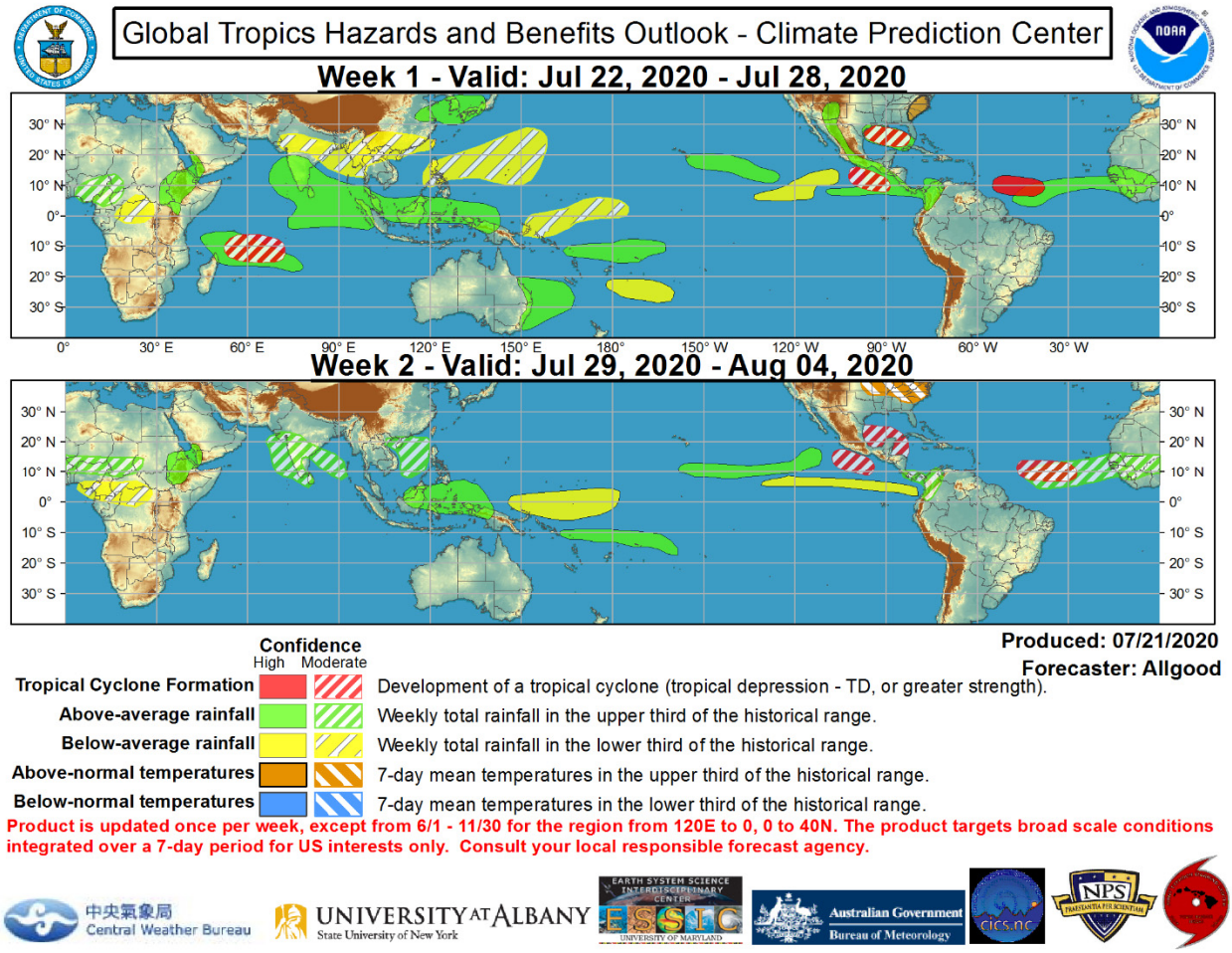
La Niña *refers to the periodic cooling of sea-surface temperatures (-0.5°C) across the east-central equatorial Pacific. It represents the cold phase of the ENSO cycle.*

El Niño and La Niña episodes typically last nine to 12 months, but some prolonged events may last for years. While their frequency can be quite irregular, El Niño and La Niña events occur on average every two to seven years. Typically, El Niño occurs more frequently than La Niña.

ENSO-neutral *refers to those periods when neither El Niño nor La Niña conditions are present. These periods often coincide with the transition between El Niño and La Niña events. During ENSO-neutral periods the ocean temperatures, tropical rainfall patterns, and atmospheric winds over the equatorial Pacific Ocean are near the long-term average.*

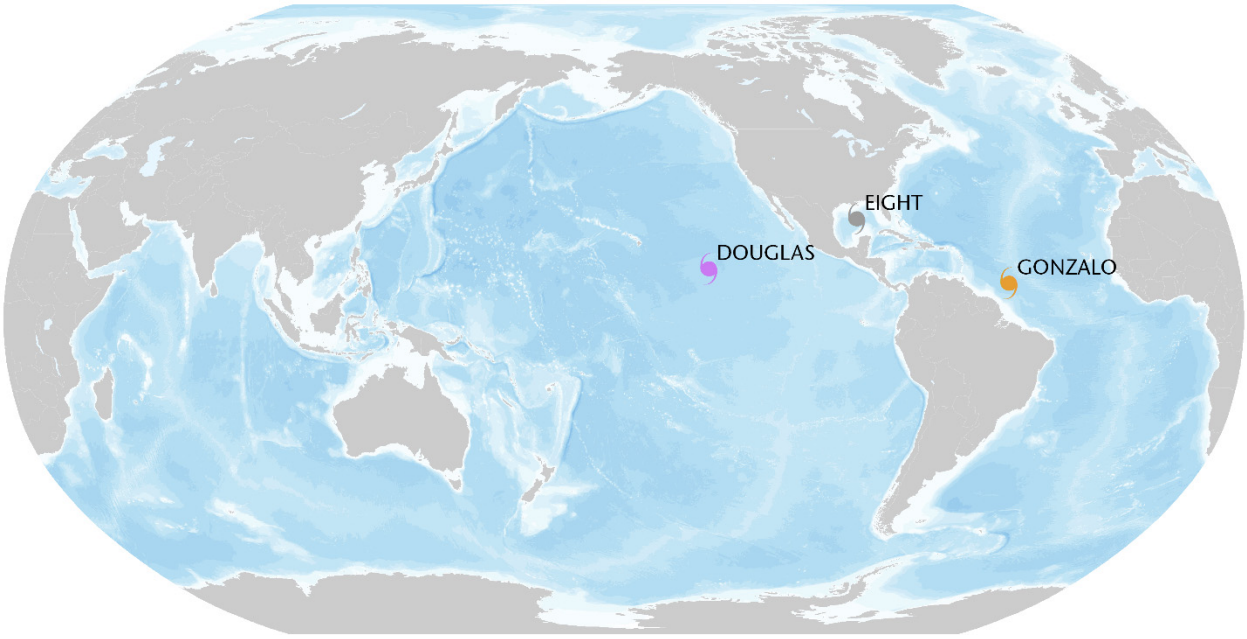
El Niño (La Niña) is a phenomenon in the equatorial Pacific Ocean characterized by a five consecutive 3-month running mean of sea surface temperature (SST) anomalies in the Niño 3.4 region that is above the threshold of +0.5°C (-0.5°C). This is known as the Oceanic Niño Index (ONI).

Global Tropics Outlook



Source: Climate Prediction Center

Current Tropical Systems



Tropical Depression Tropical Storm Category 1 Category 2 Category 3 Category 4 Category 5

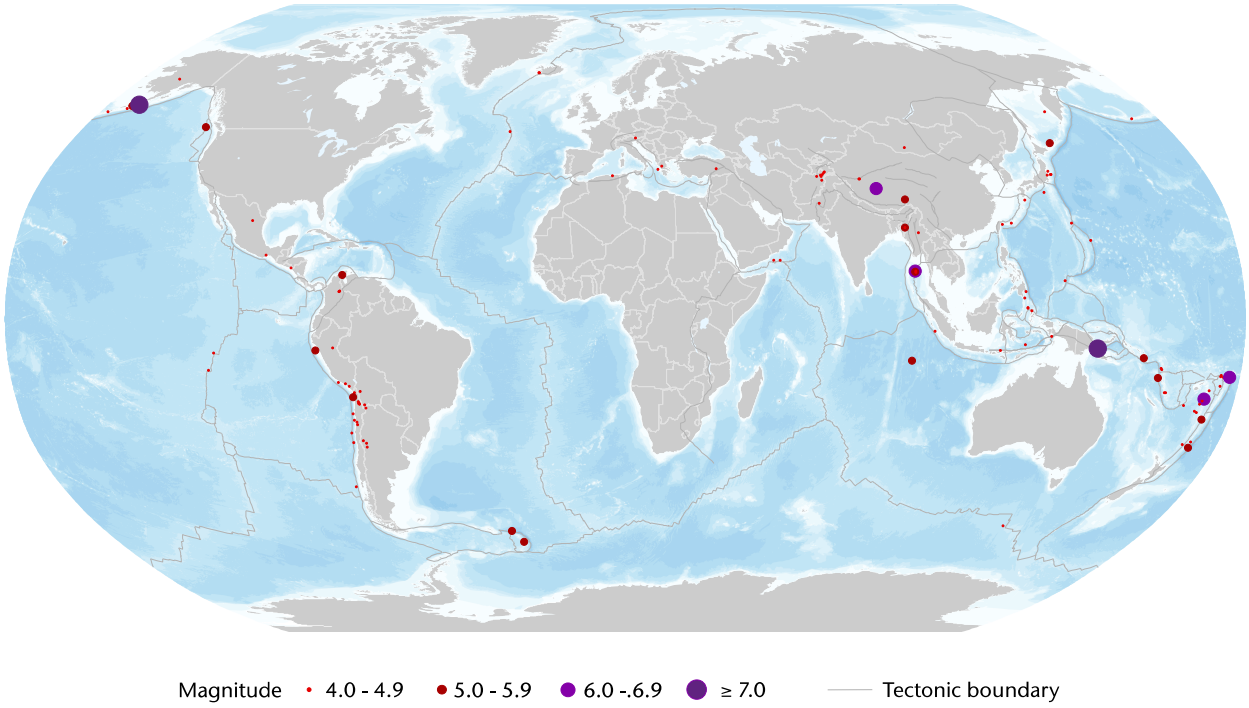
Location and Intensity Information

Name*	Location	Winds	Storm Reference from Land	Motion**
TS Gonzalo	9.8°N, 49.4°W	60 mph	810 miles (1,305 kilometers) E of the Windward Islands	W at 13 mph
TD Eight	26.1°N, 90.7°W	35 mph	430 miles (690 kilometers) ESE of Corpus Christi, Texas	WNW at 8 mph
HU Douglas	14.1°N, 137.3°W	125 mph	1,235 miles (1,990 kilometers) ESE of Hilo, Hawaii	WNW at 18 mph

* TD = Tropical Depression, TS = Tropical Storm, HU = Hurricane, TY = Typhoon, STY = Super Typhoon, CY = Cyclone
01 ** N = North, S = South, E = East, W = West, NW = Northwest, NE = Northeast, SE = Southeast, SW = Southwest

Sources: National Hurricane Center, Joint Typhoon Warning Center, Central Pacific Hurricane Center

Global Earthquake Activity (≥M4.0): July 17 – 23

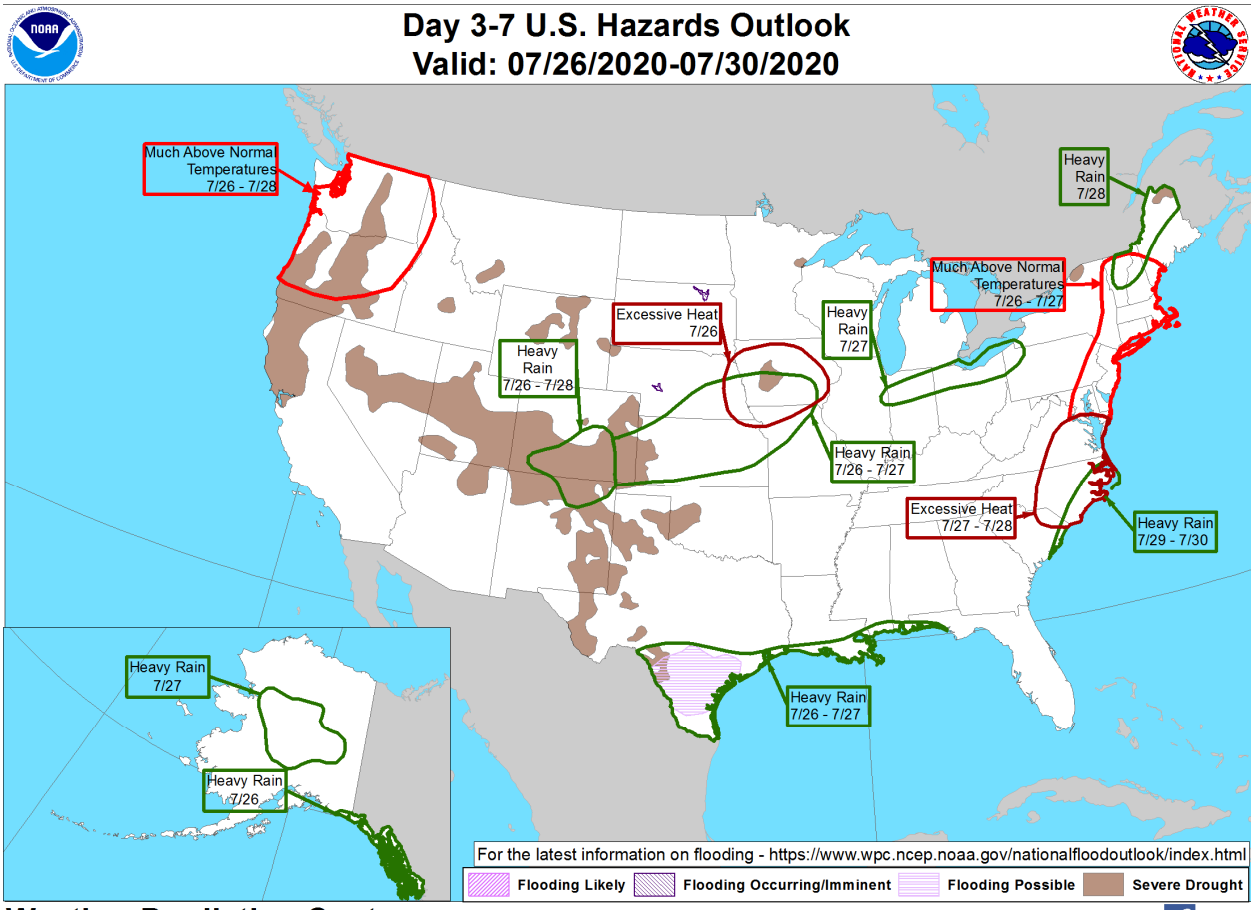


Significant EQ Location and Magnitude (≥M6.0) Information

Date (UTC)	Location	Magnitude	Depth	Epicenter
7/17/2020	7.84°S, 147.77°E	7.0	80 km	11 kilometers (7 miles) NNW of Popondetta, Papua New Guinea
7/17/2020	11.98°N, 94.89°E	6.1	10 km	23 kilometers (14 miles) E of Port Blair, India
7/18/2020	15.24°S, 172.67°W	6.1	14 km	14 kilometers (9 miles) ENE of Hihifo, Tonga
7/21/2020	20.81°S, 178.62°W	6.0	605 km	Fiji region
7/22/2020	55.03°N, 158.52°W	7.8	28 km	10 kilometers (6 miles) SSE of Perryville, Alaska
7/22/2020	54.93°N, 159.04°W	6.1	18 km	10 kilometers (6 miles) ESE of Sand Point, Alaska
7/22/2020	33.13°N, 86.84°E	6.3	10 km	western Xizang

Source: United States Geological Survey

U.S. Weather Threat Outlook



Potential Threats

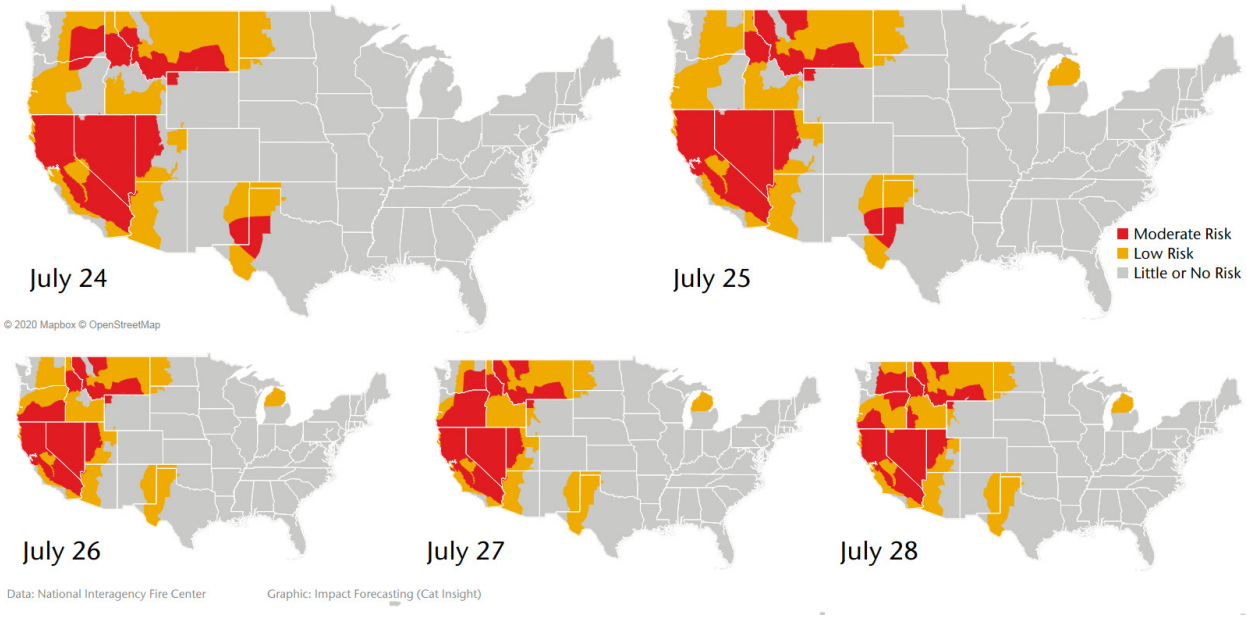
- Tropical Depression Eight, currently in the Gulf of Mexico is forecast to bring heavy rainfall and possible flooding to the central and western Gulf Coast between July 25-27 as it makes a projected landfall near southern Texas on July 25.

- A frontal system anticipated to slowly drift across the Northern United States will interact with ongoing monsoonal flow over the Southwest, bringing heavy rain to regions across the Central Plains and Rockies between July 26-28, before continuing toward the East Coast by July 28-29.

- A high-pressure system building over the Pacific Northwest will usher in much above normal temperatures between July 26-28. Additionally, much above normal temperatures over Iowa will expand eastward toward the Northeast between July 26-28, ahead of the approaching frontal system.

U.S. Wildfire: Significant Fire Risk Outlook & Activity

The National Interagency Fire Center has highlighted an extended risk of elevated wildfire conditions across parts of the West, Desert Southwest, southern Plains, and Midwest during the last week of July. Continued summer heat will maintain the heightened chance of wildfire ignition, including due to dry lightning, as drought conditions become more expansive.



Annual YTD Wildfire Comparison: July 23*

Year	Number of Fires	Acres Burned	Acres Burned Per Fire
2016	31,425	2,930,302	93.25
2017	36,013	4,920,684	136.64
2018	35,572	3,682,740	103.53
2019	24,011	2,476,778	103.15
2020	29,437	1,846,082	62.71
10-Year Average (2010-2019)	**32,742**	**3,428,851**	**104.72**

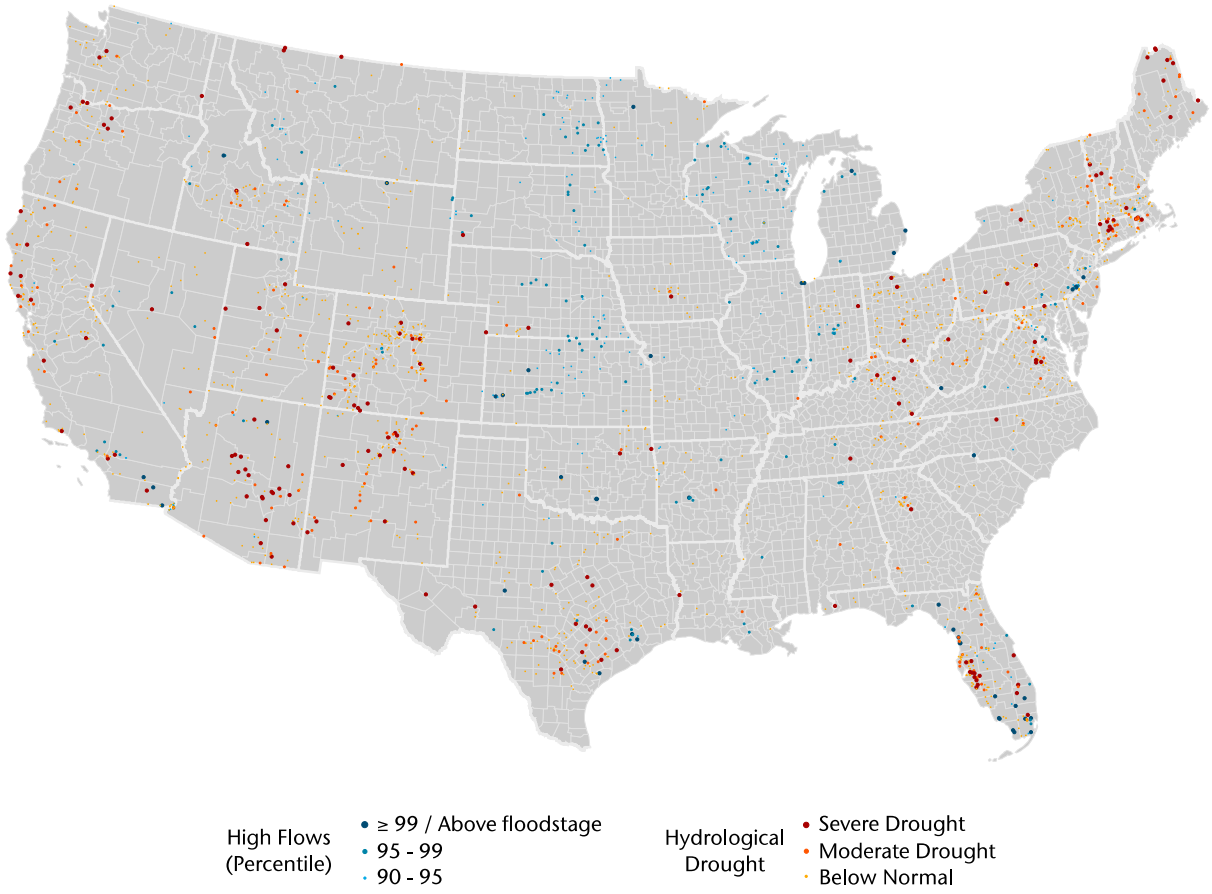
**Last available update from NIFC*
Source: National Interagency Fire Center

Top 5 Most Acres Burned by State: July 23

State	Number of Fires	Acres Burned	Acres Burned Per Fire
Arizona	1,362	586,647	430.72
Alaska	309	177,564	574.64
Utah	762	177,437	232.86
Nevada	403	171,261	424.97
Texas	2,582	140,679	54.48

Source: National Interagency Fire Center

Current U.S. Streamflow Status



A ≥99th percentile indicates that estimated streamflow is greater than the 99th percentile for all days of the year. This methodology also applies for the other two categories. A steam in a state of severe drought has 7-day average streamflow of less than or equal to the 5th percentile for this day of the year. Moderate drought indicates that estimated 7-day streamflow is between the 6th and 9th percentile for this day of the year and 'below normal' state is between 10th and 24th percentile.

Top 5 Rivers Currently Nearing or Exceeding Flood Stage

Location	Current Stage (ft)	Flood Percentile
Embarras River at Ste Marie, Illinois	17.25	99.08
Red Cedar River at Menomonie, Wisconsin	9.30	99.08
Ouachita River at Jones Mill, Arkansas	9.64	98.91
North Loup River at Taylor, Nebraska	3.33	98.81
Falling River near Naruna, Virginia	3.97	98.80

Source: United States Geological Survey

Source Information

Heat fuels severe weather for U.S. and Canada

U.S National Weather Service
U.S Storm Prediction Center
Environment and Climate Change Canada (ECCC)
CatIQ
Possible tornado under investigation after damaging Sunday storms, The Weather Network
Damaging storms shift east of the area, after hammering many spots. 50,000 without power, The Washington Post

Record breaking rains wreaks havoc in New Zealand

Full extent of Northland floods still not clear: Henare, RNZ
It will be extensive and expensive': Civil Defence surveys Northland's clean-up job after flooding and slips, Stuff
'Once-in-500-years' storm hits Northland, cutting off Far North from the rest of the country, New Zealand, The Watchers
MetService, New Zealand

Update: Flooding continues across Asia

Floods, landslides kill five in northern Vietnam, VNExpress International
Ten other victims of South Sulawesi's flash floods yet untraceable, Antara News
China Focus: Fighting floods at China's largest freshwater lake, Xinhua
Firefighters dispatched for flood relief in east China, Xinhua
Thousands evacuated in China after floods threaten villages, Aljazeera
United Nations Office for the Coordination of Humanitarian Affairs
Assam State Disaster Management Authority
India Meteorological Department
National Disaster Management Authority, India
Disaster Management Division, Ministry of Home Affairs, India
Vietnam Disaster Management Authority
Indonesian National Board for Disaster Management
Ministry of Emergency Management, China
Chinese National Climate Center Climate System Monitoring, Diagnosis, Forecast, Evaluation
China Meteorological Agency (CMA)

Natural Catastrophes: In Brief

Trees toppled, buildings damaged south of Edmonton as severe weather tears through Alberta, Global News
Edmonton hammered with hail as thunderstorm roars through city, severe weather warning issued, Edmonton Journal

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