

# Weekly Cat Report

September 10, 2021

### This Week's Natural Disaster Events



Event	Impacted Areas	Fatalities	Damaged Structures and/or Filed Claims	Preliminary Economic Loss (USD)*	Page
Hurricane Ida	United States	77+	100s of Thousands+	10s of Billions	3
Severe Weather	United States	0	Thousands	Millions	5
Severe Weather	Canada	0	Thousands	Millions	6
Flooding	Nepal	46+	Hundreds	Negligible	7
Flooding	Indonesia	2+	2,700+	Unknown	7
Flooding	Mexico	23+	Thousands	Millions	7
Earthquake	Mexico	1+	Thousands	Millions	7
TY Conson	Philippines	14+	Thousands	Millions	7
TS Mindy	United States	0	Hundreds	Negligible	8
Flooding	Sudan	0	Unknown	Unknown	8

<sup>\*</sup>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.

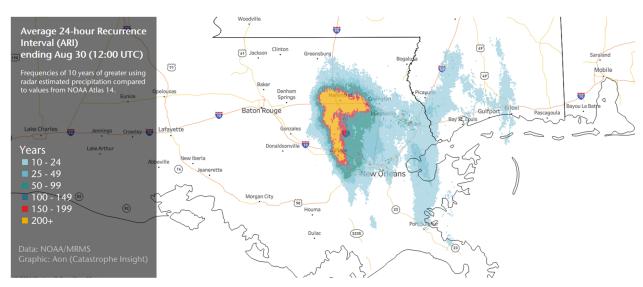
Along with this report, we continue to welcome users to access current and historical natural catastrophe data and event analysis on Impact Forecasting's Catastrophe Insight website: <a href="http://catastropheinsight.aon.com">http://catastropheinsight.aon.com</a>

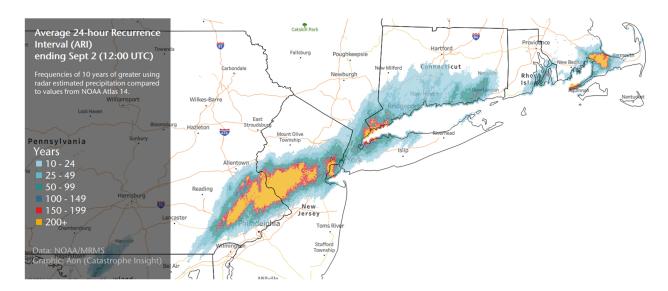
### **Update: Hurricane Ida**

Hurricane Ida's landfall in the United States as a 150 mph (240 kph) Category 4 storm near Port Fourchon, Louisiana on August 29 resulted in extensive wind, storm surge, and inland flood damage across the Southeast before its remnants enhanced exceptional flash flood damage and convective storm impacts across the Mid-Atlantic and Northeast on September 1. As of this writing, the storm has contributed to no fewer than 77 fatalities. Total direct economic losses were anticipated to reach well into the tens of billions (USD), and Ida will likely become one of the costliest U.S. mainland hurricanes on record on a nominal and inflation-adjusted basis. While a sizeable portion of the economic damage due to coastal and inland flooding was not expected to be insured, public and private insurance entities were still likely to have exposures into the double-digit billions (USD).

### **Event Details**

Amid catastrophic impacts related to hurricane force wind gusts and life-threatening storm surge, Ida and its remnants enhanced exceptional inland flooding across localities in Louisiana between August 29-30 and more notably across the Northeastern United States between September 1-2. The graphics below highlight the annual exceedance probability (AEP), or the annual likelihood of such a volume of rainfall occurring. In Louisiana, a large region north and east of New Orleans recorded 24-hour rainfall rates through 12:00 UTC (7:00 AM local time) on August 30 which exceeded a 1-in-200-year return period. This equals a 0.5 percent chance of such rainfall occurring in a specific area in any given year. In the Northeast, a significant swath of eastern Pennsylvania, central New Jersey, southern New York, southwest Connecticut, southeast Rhode Island, and southeast Massachusetts recorded 24-hour rainfall rates through 12:00 UTC (8:00 AM local time) on September 2 which exceeded a 1-in-200-year return period. This rapidly amplified the rate of flash flooding and fast river rises across the Northeast on September 1 which continued into the morning hours of September 2.





Along the Gulf Coast, Ida left catastrophic damage across portions of southeastern **Louisiana** and coastal **Mississippi** which included no less than 1.2 million power outages. In many instances, customers in the most affected parishes of Louisiana were expected to remain without power for days to weeks. In Lafourche Parish, officials announced on September 6 that at least 14,000 people were displaced and no less than 75 percent of structures in the parish were damaged to varying degrees. In neighboring Jefferson Parish, nearly 100 percent of structures in Grand Isle were damaged or destroyed.

Furthermore, Ida caused significant impacts to the oil industry in the Gulf of Mexico - which accounts for approximately 15 percent of the country's total production. At the peak, a majority of offshore oil production and refining operations in the Gulf were shuttered, including no fewer than 288 oil and gas platforms which were evacuated. A week after landfall, at least 99 platforms remained vacated, while 80 percent of oil production in the Gulf was offline. The situation was further compounded by additional mainland oil production shutdowns, particularly near Baton Rouge and New Orleans. By September 6, the United States Coast Guard (USCG) announced further investigation into at least 350 reported oil spills along the U.S. Gulf Coast. The hurricane additionally impacted the Port of South Louisiana, which serves as a critical hub for the country's grain and soybean exports.

As of this writing, Hurricane Ida spawned at least 21 confirmed tornadoes across Alabama, Pennsylvania, New Jersey, Maryland, Virginia, Mississippi, and Massachusetts. The strongest of which was an unusual EF-3 tornado that touched down in Gloucester County, New Jersey near Mullica Hill on September 1. The tornado had maximum estimated wind speeds of 150 mph (240 kph) and a path length of approximately 12.6 miles (20.3 kilometers). The tornado resulted extensive structural damage and downed and uprooted numerous trees. This was the first confirmed EF-3 tornado in the state since 1990.



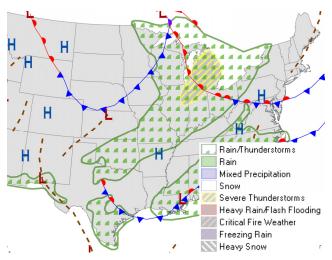
Tornado damage near Mullica Hill, New Jersey Source: NWS-Mount Holly

See last week's Weekly Cat Report for a full recap of Hurricane Ida and its impacts in the U.S.

### Severe weather tracks across the Eastern U.S. & Canada

Severe storms which evolved along a sweeping cold front produced widespread impacts in the Great Lakes region of the United States and Canada on September 7. In the United States, grapefruit size hailstones reaching 4.5 inches (11.4 centimeters) fell in portions of eastern Wisconsin, while damaging hail and severe non-tornadic winds affected regions of Illinois, Indiana, and Lower Michigan. In Canada, a line of severe storms traversing southwestern Ontario resulted in widespread wind damage and isolated tornadoes. Total economic losses were expected to reach well into the millions (USD).

### Meteorological Recap



An amplifying upper level trough over the Great Lakes and a deepening surface low pressure system across southern Canada prompted the U.S. Storm Prediction Center (SPC) to highlight a region spanning from northern Illinois and northern Indiana into Lower Michigan for a Slight Risk (level 2 out 5) for severe weather on September 7. Instability in the region was enhanced by a strengthening southerly low-level jet and steep mid-level lapse rates (changes in temperature with height).

Throughout the day, severe storms evolved near and ahead of a frontal system which included a well-defined cold frontal boundary that slowly

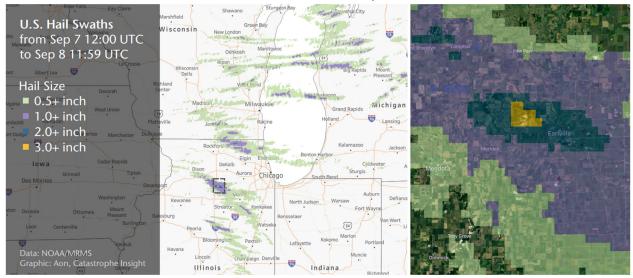
swept eastward toward the Ohio Valley. In the morning hours, several robust storms generated multiple reports of very large hail across portions of eastern Wisconsin and Lower Michigan – in several instances' softball sized (3.8 inches, 9.7 centimeters) and larger hailstones pelted localities in Wisconsin. Aided by diurnal heating, line segments and severe storm clusters persisted throughout the day while continuing to generate multiple reports of severe weather in northern Illinois and Indiana and into Lower Michigan. The primary hazards included large hail and damaging non-tornadic winds – with gusts topping 70 mph (112 kph). A particularly dangerous situation unfolded in Illinois as a strong storm impacted portions of LaSalle and Kendall Counties. In Canada, a quasi-linear convective system (QLCS) that traversed southwestern Ontario resulted in intense thunderstorms which produced damaging winds, hail, and prompted tornado warnings.

### **Event Details**

#### **United States**

**In Wisconsin**, thousands of customers were left without power following impacts from severe storms on September 7, particularly in eastern portions of the state. Large hailstones, greater than or equal to 2.0 inches (5.1 centimeters) were reported in portions of Brown, Found Du Lac, and Outagamie Counties. In Outagamie County, grapefruit size hail, approaching 4.5 inches (11.4 centimeters), bombarded communities north of Appleton. In Door County, the Department of Natural Resources indicated notable tree damage was incurred in Peninsula State Park, while several roadways throughout the region were blocked by downed trees and utility lines.

In **Illinois**, a Particularly Dangerous Situation (PDS) severe thunderstorm warning was issued for portions of LaSalle and Kendall Counties. The storm produced hailstones exceeding 2.0 inches (5.1 centimeters) near Earlville. Notable crop damage was indicated. In Kendall County, a 72 mph (115 kph) wind gust was measured in Lisbon. According to the National Weather Service (NWS), swaths of enhanced non-tornadic wind damage spanned from Grundy to Will Counties, particularly from Morris to Minooka and from Channahon to Manhattan. Damage included fallen utility poles and trees, several of which impacted structures. Additional impacts occurred in Ford County near Gibson City. By the evening of September 7, no fewer than 50,000 customers across the state lost electricity.



In **Michigan**, the NWS confirmed three distinct areas of notable wind damage across western portions of the state; including one in sections of Lake, Osceola, and Clare Counties, a region along a corridor from Bangor to Kalamazoo to Battle Creek, and a swath from Muskegon to north of Grand Rapids. In Lake and Mason Counties, hailstones reached 2.5 inches (6.4 centimeters) and resulted in damage to trees and limbs. In Kalamazoo County, the Kalamazoo Battle Creek International Airport recorded a maximum wind gust of 69 mph (111 kph). In Muskegon County, notable damage to trees and property was incurred and included damage to a local elementary school. No fewer than 150,000 customers across the state lost power.

### Canada

In **Ontario**, at least 65,000 customers across southern portions of the province lost power resulting from severe weather on September 7. Downed trees and power lines, flipped vehicles, and structural damage was incurred near the shores of Lake Huron. Notable damages were reported in the Kingsbridge to Lucknow regions, where a suspected tornado moved onshore. In the Grater Toronto Area, several streets were flooded from heavy rainfall.

### **Financial Loss**

The latest outbreak of severe weather on September 7 was anticipated to result in a financial loss in the United States alone reaching well into the millions (USD). Most of the wind and hail related damages were expected to be covered by insurance. Further notable losses were incurred in southwestern Ontario.

### Natural Catastrophes: In Brief

#### Flooding (Nepal)

At least 46 people were killed, 39 were injured and several others went missing after a recent stretch of heavy rainfall and subsequent flooding and landslides in multiple districts of central Nepal since August 23. Among the worst affected districts were Parbat, Kaski, Dang or Darchula. Hundreds of homes were also inundated in parts of the capital, Kathmandu. Total economic losses were relatively insignificant. During the entire flood season since June 1, at least 149 people were killed and 173 were injured.

#### Flooding (Indonesia)

Further flooding continued to affect parts of Central and East Kalimantan in Indonesia in early September, after nearly 20,000 homes were affected in late August on the island and in Sulawesi. Among the worst affected were regencies of Barito Utara, Murung Raya, Lamandau, Seruyan and Samarinda City. Two people were killed in additional incidents in the East Nussa Tenggara Province.

#### Mexico (Flooding)

Heavy rainfall and convective storms enhanced by moisture from the Pacific Ocean led to flooding and flash flooding across central Mexico between September 2-7. Localities in the States of Hidalgo, Mexico, Mexico City, Morelos, and Jalisco were most affected. In Morelos, four people were killed and no less than 300 homes damaged by flooding on September 2. In the State of Mexico, torrential rainfall on September 6 led to flooding in at least 19 neighborhoods in the municipality of Ecatepec de Morelos, resulting in two fatalities. In Hidalgo, a 72-hour rainfall total of 311 millimeters (12.1 inches) was measured In Huehuetia through September 5. At least 17 deaths were reported at a hospital in Tula as waters from the flooded Tula River impacted the building on September 7. In Jalisco, no fewer than 1,000 homes were damaged to varying degrees in the municipality of Tlaquepaque.

#### Mexico (Earthquake)

According to the United States Geological Survey (USGS), a strong magnitude-7.0 (M 7.0) earthquake struck in Mexico's southwestern Guerrero State near Acapulco on September 7 at 8:47 PM local time (1:47 UTC on September 8), at a depth of approximately 20 kilometers (12.4 miles). As of this writing, at least one death was confirmed. The quake damaged buildings, infrastructure, and vehicles across southern Guerrero, while several rockslides were triggered along the Pacific Coast. Shaking was felt widely throughout the capital of Mexico City approximately 370 kilometers (230 miles) from the epicenter. At least 92 aftershocks, reaching magnitude-5.2, were reported in the region. According to the Comisión Federal de Electricidad (CFE), no fewer than 1.6 million customers in the states of Guerrero, Morelos, Oaxaca, Mexico, and Mexico City were affected by power outages. Total economic losses were expected to reach well into the millions (USD).

#### Typhoon Conson (Philippines)

Typhoon Conson, known locally as 'Jolina', made an initial landfall in the Philippines Eastern Samar Province at approximately 13:00 UTC (10:00 PM local time) on September 6, after obtaining a peak 1-minute averaged intensity of 120 kph (74 mph) – equivalent to a Category 1 storm. Conson made at least eight successive landfalls as a tropical storm in the provinces of Samar, Masbate, Marinduque, Batangas, and Bataan through September 8. Strong winds and flooding rainfall across the central Philippines resulted in notable losses to agricultural, property, and infrastructure. Preliminary data from the National Disaster Risk Reduction and Management Council (NDRRMC) indicated no less than 3,843 homes were destroyed or damaged, while at least 52,871 hectares (130,647 acres) of cropland was impacted. As of this writing, 14 fatalities were reported while dozens more remained missing.

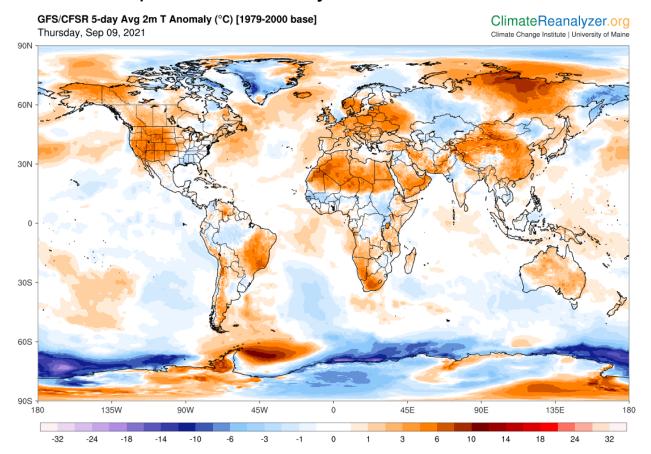
#### Tropical Storm Mindy (United States)

Hours after forming, Tropical Storm Mindy made landfall in the Florida Panhandle on St. Vincent Island at 8:15 CDT on September 8 (1:15 UTC September 9), with maximum sustained winds of 45 mph (75 kph) and a minimum central pressure of 1004 millibars. Gusty winds resulted in power outages and downed trees throughout northern Florida. The storm produced locally heavy rainfall across the Florida Panhandle and into portions of Georgia and South Carolina enhancing the risk for flooding and flash flooding. Damage was very minimal, with resultant financial losses to be highly negligible.

#### Flooding (Sudan)

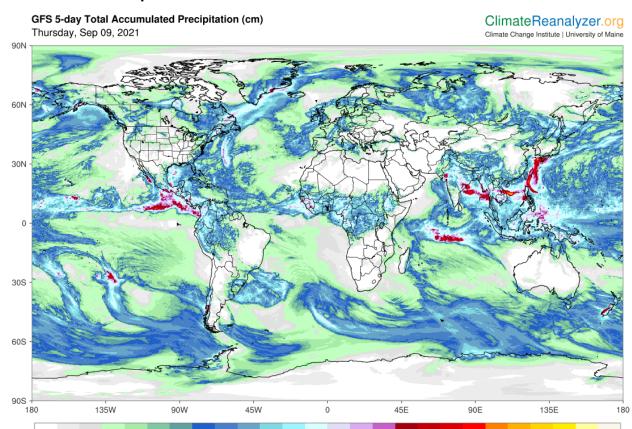
On September 4-6 heavy rainfall caused flooding in southeastern White Nile State, affected 53 villages and resulted in an increasing number of casualties and widespread damage. According to OCHA, more than 61,000 people were affected, including 35,000 people in South Sudanese refugees in Alganaa area. With more rains forecast for coming days, both the material damage and casualties were anticipated to increase. Heavy rainfall and flooding affected over 100,000 people in 13 out of Sudan's 18 states since the start of the rainy season in July.

# Global Temperature Anomaly Forecast



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

# **Global Precipitation Forecast**



20

30

90

150

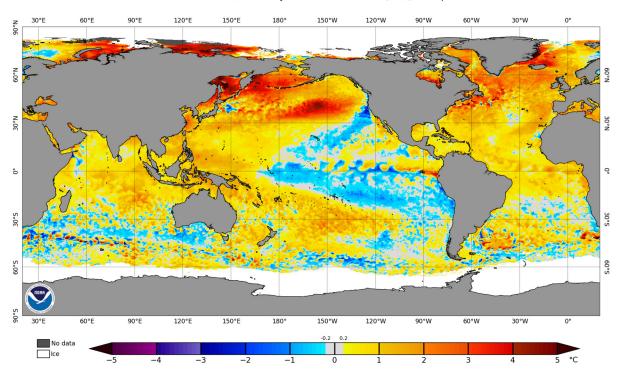
Source: Climate Reanalyzer, Climate Change Institute, University of Maine, USA

1.2

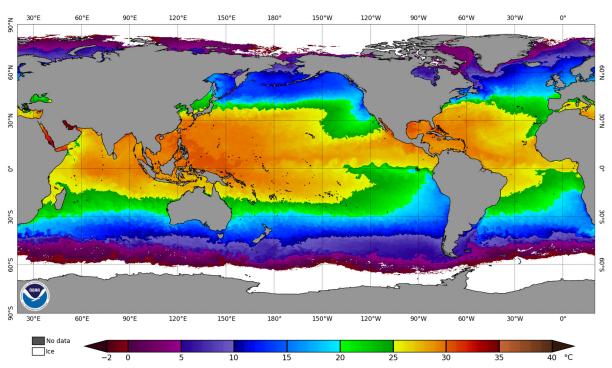
0.2

# Weekly Sea Surface Temperature (SST) Maps (°C)

NOAA Coral Reef Watch Daily 5km SST Anomalies (v3.1) 5 Sep 2021

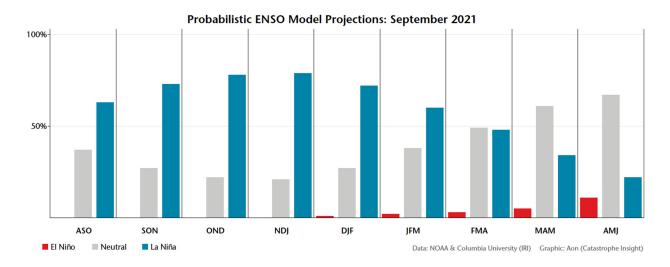


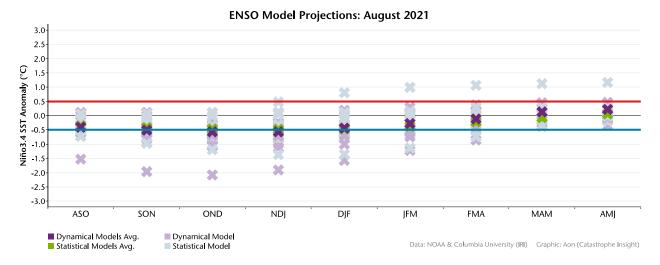
NOAA Coral Reef Watch Daily 5km Sea Surface Temperatures (v3.1) 7 Sep 2021



### El Niño-Southern Oscillation (ENSO)

ENSO-neutral conditions are currently present, though NOAA has issued a La Niña Watch. NOAA notes a ~60 percent chance that neutral conditions will persist through the Northern Hemisphere summer and into September, and a ~70 percent chance of La Niña emerging in September and lasting into early 2022.





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.

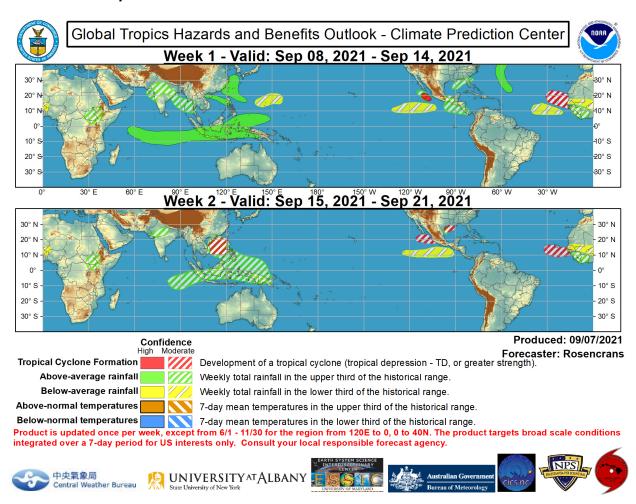
La Niña refers to the periodic cooling of sea-surface temperatures (-0.5°C) across the east-central equatorial Pacific. It represents the cold phase of the ENSO cycle.

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.

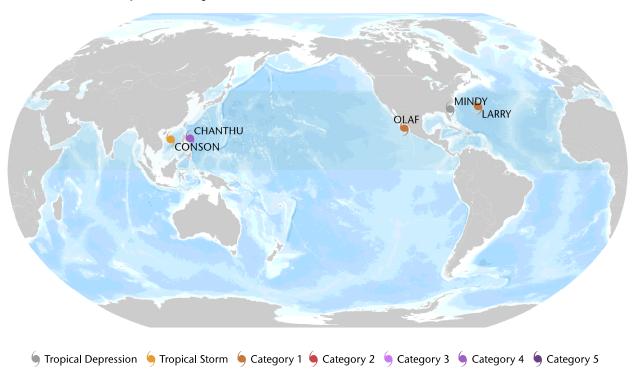
El Niño (La Niña) is a phenomenon in the equatorial Pacific Ocean characterized by a five consecutive 3-month running mean of sea surface temperature (SST) anomalies in the Niño 3.4 region that is above the threshold of +0.5°C (-0.5°C). This is known as the Oceanic Niño Index (ONI).

# **Global Tropics Outlook**



Source: Climate Prediction Center

# **Current Tropical Systems**



# Location and Intensity Information

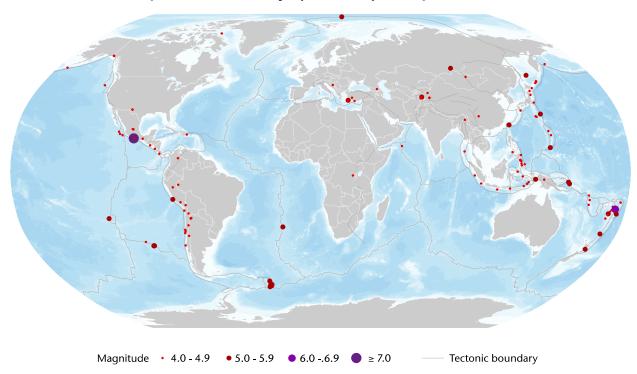
Name*	Location	Winds	Storm Reference from Land	Motion**
HU Olaf	21.8°N, 108.6°W	80 mph	195 miles (315 kilometers) SE from La Paz, Mexico	NW at 10 mph
TD Mindy	31.7°N, 79.4°W	35 mph	185 miles (295 kilometers) SE from Columbia, USA	E at 23 mph
HU Larry	33.0°N, 62.1°W	90 mph	165 miles (265 kilometers) E from Hamilton, UK	N at 19 mph
TY Chanthu	16.6°N, 125.0°E	135 mph	295 miles (475 kilometers) E from Baguio City, Philippines	W at 12 mph
TY Conson	16.1°N, 113.7°E	50 mph	330 miles (535 kilometers) E from Quang Ngai, Vietnam	W at 17 mph

<sup>\*</sup> TD = Tropical Depression, TS = Tropical Storm, HU = Hurricane, TY = Typhoon, STY = Super Typhoon, CY = Cyclone

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

<sup>\*\*</sup> N = North, S = South, E = East, W = West, NW = Northwest, NE = Northeast, SE = Southeast, SW = Southwest

# Global Earthquake Activity (≥M4.0): September 3-9

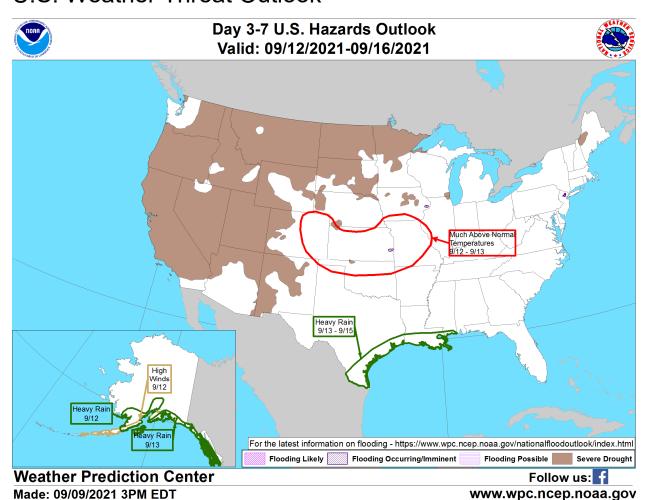


# Significant EQ Location and Magnitude (≥M6.0) Information

Date (UTC)	Location	Magnitude	Depth	Epicenter
09/07/2021	19.42°S, 176.07°W	6.0	10 km	18 kilometers (11 miles) WNW of Pangai, Tonga
09/08/2021	16.98°N, 99.77°W	7.0	20 km	Acapulco, Mexico

Source: United States Geological Survey

### U.S. Weather Threat Outlook



### **Potential Threats**

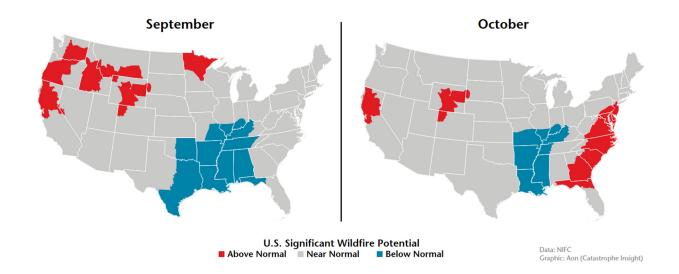
 Much above normal temperature are expected across portions of the Central Plains and Middle Mississippi Valley between September 12-13 as an upper level high-pressure system migrates from the Four Corners toward the central United States.

- Tropical moisture is expected to aid in producing heavy rainfall across the central and western Gulf Coast between September 13-15.
- Severe and record-breaking drought will persist across vast regions of the West, particularly in California and the Intermountain West where critical wildfire conditions remain a concern.

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

The National Interagency Fire Center has highlighted an expansive risk area for significant wildfire activity across much of the U.S. West and the Northern Tier. Continued summer-like conditions are maintaining wildfire conditions across much of the U.S. West. The ongoing historic drought and subsequent fire weather conditions in these areas has accelerated seasonal wildfire statistics for the Lower 48.

<sup>\*\*</sup>Please note that NIFC has stopped releasing daily U.S. Wildfire Outlook shapefiles



# Annual YTD Wildfire Comparison: September 9

	Year Number of Fires	Acres Burned	Acres Burned Per Fire
2017	47,981	8,132,724	169.50
2018	46,984	7,040,483	149.85
2019	35,956	4,237,043	117.84
2020	41,599	5,288,247	127.12
2021	43,869	5,165,103	117.74
10-Year Average (2011-2020)	43,697	6,025,016	137.88

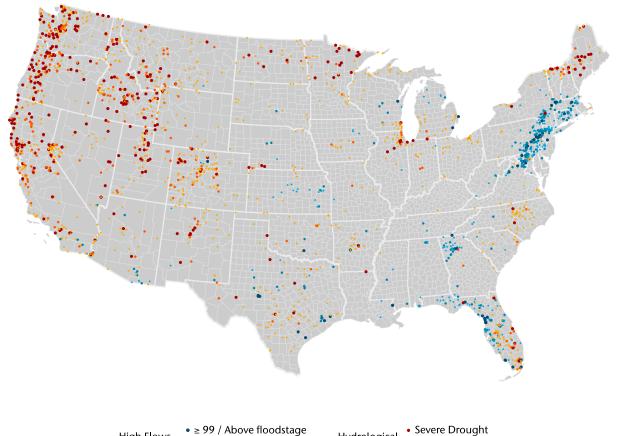
Source: National Interagency Fire Center

Top 5 Most Acres Burned by State: September 9

State	Number of Fires	Acres Burned	Acres Burned Per Fire
California	7,502	1,501,472	200.14
Oregon	1,621	539,990	333.12
Arizona	1,585	529,280	333.93
Montana	2,127	514,590	241.93
Washington	1,626	399,065	245.43

Source: National Interagency Fire Center

# Current U.S. Streamflow Status



High Flows (Percentile)

• ≥ 99 / Above floodstage
• 95 - 99
• 00 05

Hydrological
Drought

 $A \ge 99^{th}$  percentile indicates that estimated streamflow is greater than the  $99^{th}$  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  $5^{th}$  percentile for this day of the year. Moderate drought indicates that estimated 7-day streamflow is between the  $6^{th}$  and  $9^{th}$  percentile for this day of the year and 'below normal' state is between  $10^{th}$  and  $24^{th}$  percentile.

Moderate Drought

**Below Normal** 

### Top 5 Rivers Currently Nearing or Exceeding Flood Stage

Location	Current Stage (ft)	Flood Percentile
Ipswich River near Ipswich, Massachusetts	4.54	98.91
Hockanum River near East Hartford, Connecticut	5.59	98.90
Sacandaga River near Hadley, New York	5.45	98.90
Mother Brook at Dedham, Massachusetts	83.22	98.89
Hoosic River at Adams, Massachusetts	6.85	98.89

### Source Information

Update: Hurricane Ida U.S. National Weather Service U.S. Storm Prediction Center

Over 80% of oil output in Gulf of Mexico still offline a week after Ida, Reuters

Death toll from Ida climbs above 60 from Louisiana to New England, Yale Climate Connections

#### Severe weather tracks across the Eastern U.S. & Canada

U.S. National Weather Service U.S. Storm Prediction Center

CatIQ

Storms produce large hail, high winds and power outages, WBAY

Live Blog: Brief Tornado Reported in Minooka; Severe Storms Pound Area Tuesday, NBC 5 Chicago

Thousands without power, school damaged in West Michigan storms, WOOD TV 8

Michigan storms leave thousands without power, The Detroit News

#### Natural Catastrophes: In Brief

Mexico - 2 Killed in Ecatepec Flash Floods, Floodlist

Flooding in central Mexico kills at least 10 in hospital, Associated Press

United States Geological Survey (USGS)

7.1 magnitude earthquake shakes Acapulco and leaves at least one dead, Telemundo

Joint Typhoon Warning Center (JTWC)

8 reported dead, 26 still missing in 'Jolina' trail, Daily Tribune

National Disaster Risk Reduction and Management Council (NDRRMC)

Philippines - Tropical Cyclone Conson Leaves Thousands Displaced, Floodlist

'Jolina' death toll now at 14, 26 more reported missing, Manilla Bulletin

Sudan - Floods Cause Devastation in White Nile State, FloodList

### **Contact Information**

### **Steve Bowen**

Managing Director
Head of Catastrophe Insight
Impact Forecasting
Aon

steven.bowen@aon.com

### **Brian Kerschner**

Senior Catastrophe Analyst Impact Forecasting Aon brian.kerschner@aon.com

### **Michal Lörinc**

Senior Catastrophe Analyst Impact Forecasting Aon michal.lorinc@aon.com

### Karmen Hozjan

Catastrophe Analyst
Impact Forecasting
Aon
karmen.hozjan@aon.com

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