

# Weekly Cat Report

May 14, 2021

#### 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	1+	Thousands	100s of millions	3
Flooding	Somalia	25+	Thousands	Millions	6
Flooding	Ethiopia	9+	Hundreds	Millions	6
Flooding	Uganda	2+	Hundreds	Unknown	6
Flooding	Afghanistan	78+	2,600+	Millions	7
Flooding	Tajikistan	9+	Hundreds	Unknown	7
Flooding	India	0	Hundreds	Millions	7
Flooding	Indonesia	8+	Dozens	Negligible	7
Severe Weather	Myanmar	3+	1,000+	Unknown	8

\*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: <u>http://catastropheinsight.aon.com</u>

# Large hail continues to drive U.S. severe weather loss

A progressive weather pattern generated multiple days of severe storms across the United States between May 6-11, primarily focused in the Plains, Middle and Lower Mississippi Valley, and Southeast. Throughout the period, a series of frontal systems resulted in very large hail, damaging straight-line winds, localized tornadoes, and flash-flooding. On May 10, flooding rainfall affected the already saturated central Gulf Coast, while softball size and larger hailstones pummeled potions of Texas - including localities north of the Fort Worth Metro. Total economic and insured losses were anticipated to each individually reach into the hundreds of millions (USD); primarily driven by hail events.

### Meteorological Recap

### May 6-7

Severe storms, associated with an advancing cold front, impacted regions across southern Illinois and the Tennessee Valley on May 6, where a Slight Risk (level 2 out 5) for severe weather was indicated by the Storm Prediction Center (SPC). Thunderstorms produced brief tornadoes and severe hail in central and southern Illinois, while convective clusters generated strong and damaging straight-line winds, topping 60 mph (96 kph), across the Mid-South. As the pattern shifted eastward on May 7, isolated severe storms in southeastern North Carolina produced hailstones approaching 2.0 inches (5.1 centimeters).

### May 8-11



Several days of severe weather across the United States were driven by a strengthening surface area of low pressure associated with an upper-level shortwave trough, which ejected into the Central Plains and progressed eastward between May 8-9. On May 8, the Storm Prediction Center (SPC) highlighted a region in the Central Plains for an Enhanced Risk (level 3 out of 5) for severe storms centered on northeast Kansas and northwestern Missouri. By the evening, robust storm development initiated across western and central Kansas, near the intersection of an eastward extending warm front and southward extending dryline (a boundary which separates moist air from dry air). Subsequentially, a pair of storm clusters tracked across central and eastern Kansas and southern Nebraska while large hail and strong straight-line winds. Storms eventually organized into a linear Mesoscale Convective System (MCS) and dug southeastward through eastern Kansas and western/southern Missouri with damaging winds.

As the main region of low pressure progressed into the Ohio Valley on May 9, showers and thunderstorms developed across the Southern Plains and Southeast, primarily along and ahead of an associated cold frontal boundary. The SPC issued an Enhanced Risk (level 3 out 5) for severe weather across the region extending from northeast Texas into the Mid-South. By the late afternoon and evening, semi-discrete storms and linear storm segments generated large hail, strong winds, and isolated tornadoes across portions of the Mid-South and Southeast, while supercells in central and eastern Texas produced very large hail.

As the primary low exited through the Northeast, a lingering frontal boundary remained draped across the Southeast and Southern Plains through May 11. This boundary became a focal point for additional development of heavy rainfall and



U.S. Surface Analysis for May 9, 2021 Data; Weather Prediction Center

severe weather. An unstable and moist airmass across southeast Louisiana on May 10, in the vicinity of the quasi-stationary boundary, prompted the National Weather Service (NWS) to issue multiple Flood Warnings throughout the region - including a Flash Flood Warning for the City of New Orleans. In the late afternoon and evening, storm clusters and supercells evolved across a corridor of central Texas extending from the Edwards Plateau toward the Red River Valley. Regions near the Edwards Plateau and northeastern Texas were encompassed by an Enhanced Risk (level 3 out 5) and Slight Risk (level 2 out of 5) respectively for severe weather by the SPC on May 10. Storms in these regions were sustained by strong surface heating and low-level ascent in the vicinity of the stalled frontal boundary. Very steep lapse rates (changes in temperature with height) aided in generating large hail – which was particularly impactful west and north of the Dallas Fort-Worth Metro. Further east, a Slight Risk (level 2 out of 5) for severe weather across eastern North Carolina, where storms ahead of the approaching front were enhanced by ample daytime heating.

### **Event Details**

### May 6-7

On May 6, four brief tornadoes were confirmed in Illinois. These included an EF0 tornado in Christian County, which impacted several structures near the town of Assumption. Additionally, instances of downed trees and utility poles resulted from strong straight-line winds in portions of southern **Kentucky**, **Middle Tennessee**, and **northern Mississippi** and **Alabama**. Impacts included exterior property and structural damage. One fatality from a fallen tree was reported in Tennessee. In **North Carolina**, impactful hail reaching 2.0 inches (5.1 centimeters) were measured near Elizabethtown in Bladen County on May 7. Nearby, several inches of hail accumulated on local roadways.

### May 8-11

On May 8, hailstones reaching 2.0 inches (5.1 centimeters) in diameter were reported in Smith and Saline Counties in **Kansas**. Strong straight-line winds with gusts approaching and topping 65 to 70 mph (105 to 112 kph) resulted in localized reports of downed trees, structural and property damage, and power outages throughout regions in southern **Nebraska**, eastern **Kansas**, and southern **Missouri**. In **Kansas**, several instances of straight-line wind gusts reaching 70 mph (112 kph) were measured between Wabaunsee and Jefferson Counties.

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On May 9, hail approaching 2.5 inches (6.4 centimeters) were observed in Mason, Gillespie, and San Saba Counties in **Texas**. In **Arkansas**, baseball size hailstones were reported in Faulkner County, near Mount Vernon. In **Tennessee**, an EF1 tornado with maximum estimated wind speeds reaching 95 mph (153 kph) touched down near the City of Munford in Tipton County. The tornado damaged multiple residences and several outbuildings, while toppling numerous trees – a few of which fell onto structures.



As of this writing, there were at least 58 reports of severe hail on May 10, of which eight in either Texas and Oklahoma were for large hail, greater than or equal to 2.0 inches (5.1 centimeters). In **Texas**, hail reaching 4.0 inches (10.2 centimeters), larger than a softball, were measured north of Cleo in Kimble County, and near Ponder in Denton County – north of the Fort Worth Metro. In **Louisiana**, storms resulted in notable damage in Red River Parish, particularly near Hall Summit, where at least one home was destroyed and several others sustained roofing damage. Additional impacts to trees, utility lines, and vehicles were observed. In **North Carolina**, a supercell generated a swath of straight-line and tornadic wind damage across southern portions of Alamance County, particularly near Sutphin, where numerous trees and several structures were damaged. Severe straight-line winds in **Texas** (Polk County) downed multiple trees on May 11, where approximately 10 to 15 homes were impacted near Wilson Lake Estates, and several roadways blocked.

### **Financial Loss**

Total combined economic losses from the period between May 6-11 for the United States were expected to reach into the hundreds of millions (USD). 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 six to eight weeks for severe convective storms across the Southern Plains and Southeast. The U.S. is currently on track to once again surpass USD10 billion in annual insured losses from the SCS peril. This will continue the streak of the peril topping USD10 billion in every year since 2008.

# Flooding continues to affect countries in Asia and Africa

Multiple countries in Africa and Asia continued to deal with enhanced rainfall and subsequent flooding. Globally, tens of thousands of people were displaced, with some of the worst impacts noted in Afghanistan, and Eastern Africa. Initial reports from regional and national governments noted at least 130 confirmed fatalities and thousands of damaged structures. In addition, severe losses were inflicted on the local infrastructure and in the agriculture sector.

### **Event Details**

### East Africa

Since the beginning of May, flooding was observed in parts of **Somalia**, with at least 25 fatalities and vast swaths of agricultural land inundated. In the Middle Shabelle region, approximately 25,000 residents across 15 villages in Jowhar City were critically affected or displaced and several farms were left inundated. In addition, thousands of residents were affected in the villages across Afgooye Town in southwestern Somalia. On May 9, Juba River overflowed near Doolow Town, causing inundation of several villages along its banks.

Additional significant flooding triggered by continued heavy rains was reported along the Shabelle River in **Ethiopia**. Later, the flood wave would rapidly shift to the Somalian side of the border with extensive flooding being reported in parts of the Hiraan region in Ethiopia. According to local media, at least nine people died in Ethiopia while hundreds of structures were damaged and wide swaths of cropland were left inundated.

Heavy rainfall caused multiple rivers to overflow in the Eastern and Northern regions of **Uganda** on May 6-10. Notably, Manafwa and Nakwasi rivers burst their banks, which resulted in damage to hundreds of homes and displacement of thousands of residents. Uganda Red Cross noted a particularly difficult situation in Butalejja district, where more than 100 homes were destroyed alone. At least two people were killed in wake of the event. Crop damage was reported from seven sub-counties of Uganda, while several roads were blocked, causing difficulties in transportation. More than 15,000 families were affected in total.



Source: Nyamasheke district, Rwanda

A landslide, triggered by heavy rain, hit a community in Nyamasheke district of Western Province in **Rwanda** on May 9. Approximately 100 structures were damaged or destroyed. District officials noted more than 630 people displaced from their homes.

Additional flooding was also reported from parts of **Kenya.** Kisumu, Homa Bay, Busia, Baringo, Migori and Turkana counties were among the affected. In total, more than 1,000 households were displaced from their homes. No fatalities were reported.

### Afghanistan & Tajikistan

The death toll from the ongoing floods in Afghanistan increased to 78. Multiple provinces in central and northwestern parts of **Afghanistan** have been affected by the event since May 2. On May 10, flooding affected Takhar province where at least six people were killed; the provincial capital of Taluqan was noted as the worst-hit. Preliminary assessment reports from the Afghanistan National Disaster Management Authority (ANDMA) suggested more than 2,600 combined homes and several other structures were either damaged or destroyed and approximately 2,000 hectares (5,000 acres) of agricultural land was left inundated. At least 32 people were still missing as the search and rescue operations continued as of this writing.

At least nine people were killed due to severe flooding in the Khatlon region and Central Governmental Jurisdiction districts (RSS) in neighboring **Tajikistan** on May 11. Flash flooding affected multiple districts and parts of the capital Dushanbe, where dozens of cars were swept away, and traffic was severely disrupted. According to the local media, flooding destroyed a bridge in Danghara District and damaged 26 houses in Shamsiddin Shohin district. With more rains forecast for coming days, the flooding situation was anticipated to worsen further.



Source: Tajikistan Committee of Emergency Situations

### India

Heavy rainfall associated with a cloud burst event affected the Devprayag Town located along the upper reaches of the Tehri Garhwal district of Uttarakhand on May 10. According to media reports, hundreds of houses, shops, community buildings and road sections were damaged to varying degrees. Both the India Meteorological Department (IMD) and the Joint Typhoon Warning Center (JTWC) have assessed a Fair possibility of tropical cyclogenesis in the southeastern parts of Arabian Sea in the coming days. The system is expected to affect western regions of India in the coming week.

### Indonesia

At least seven people were killed, nine others were injured, and one person was noted missing due to a landslide triggered by heavy rainfall in the Indonesian province of West Sumatra on May 11. According to the Indonesia's National Disaster Management Agency (BNPB), the event occurred in a gold mine located in the South Solok Regency of the West Sumatra province.

# Natural Catastrophes: In Brief

#### Severe Weather (Myanmar)

The Ayeyarwady region of southern Myanmar was hit by strong thunderstorms on May 6-9, with Maubin and Hinthada districts among the worst affected. Lightning, strong winds, and heavy rain caused structural damage, with 1,000 homes reportedly destroyed. According to the local Department of Disaster Management, three people were killed.

# **Global Temperature Anomaly Forecast**

GFS/CFSR 5-day Avg 2m T Anomaly (°C) [1979-2000 base] Thursday, May 13, 2021

ClimateReanalyzer.org Climate Change Institute | University of Maine



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

# **Global Precipitation Forecast**

GFS 5-day Total Accumulated Precipitation (cm) Thursday, May 13, 2021

ClimateReanalyzer.org Climate Change Institute | University of Maine



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



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

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# El Niño-Southern Oscillation (ENSO)

ENSO-neutral conditions are currently present. NOAA notes a 67 percent chance that these neutral conditions will persist through the Northern Hemisphere summer (June-August).



#### Probabilistic ENSO Model Projections: May 2021

**ENSO Model Projections: April 2021** 



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**
TD Three	7.5°N, 126.7°E	35 mph	435 miles (695 kilometers) N from Manado, Indonesia	W at 11 mph

# \*Note: Impact Forecasting is watching the progress of a developing tropical system in the Arabian Sea. Several forecast models suggest potential impacts to coastal sections of Western India and Pakistan.

\* TD = Tropical Depression, TS = Tropical Storm, HU = Hurricane, TY = Typhoon, STY = Super Typhoon, CY = Cyclone \*\* 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): May 7 – 13

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

Date (UTC)	Location	Magnitude	Depth	Epicenter
05/07/2021	54.41°S, 144.19°E	6.0	10 km	west of Macquarie Island
05/07/2021	18.81°S, 177.49°W	6.1	384 km	Fiji region
05/12/2021	17.25°S, 66.37°E	6.7	10 km	Mauritius - Reunion region
05/13/2021	6.75°N, 82.37°W	6.0	10 km	15 kilometers (9 miles) SSE of Punta de Burica, Panama

Source: United States Geological Survey

# U.S. Weather Threat Outlook



Made: 05/13/2021 3PM EDT

www.wpc.ncep.noaa.gov

# **Potential Threats**

- A slowly meandering warm front will be the focus for multiple rounds of showers and storms in the Central Plains and Ohio Valley throughout the medium range, this pattern will result in heavy rain across these regions between May 16-17.
- Rainfall in eastern Texas and the Lower Mississippi Valley is anticipated to be enhanced by a shortwave trough traversing the Gulf of Mexico on May 16.
- An upper level low ejecting out of the Southwest is expected to produce strong storms and heavy rain across the Southern Plains and Lower Mississippi Valley by May 17. Concurrently, moisture flow from the Gulf of Mexico will aid in several days of widespread showers and storms through May 20.

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

The National Interagency Fire Center has highlighted a more expansive portion of the country facing potential fire risk during the next week. The combination of hotter temperatures, high winds, and lower humidity will result in continued enhanced fire risks across the Southwest and also the Northern Tier. Much of the western U.S. remains mired in a significant drought which is aiding in the potential for conflagration and rapid spread.



### Annual YTD Wildfire Comparison: May 13\*

	Year Number of Fires	Acres Burned	Acres Burned Per Fire
2017	22,025	2,096,277	95.18
2018	20,782	1,472,459	70.85
2019	12,177	232,046	19.06
2020	14,887	324,510	21.80
2021	20,781	547,047	26.32
10-Year Average (2011-2020)	18,616	951,354	51.10

Source: National Interagency Fire Center

### Top 5 Most Acres Burned by State: May 13

	State	Number of Fires	Acres Burned	Acres Burned Per Fire
Oklahoma		1,000	83,746	83.75
Texas		1,970	62,013	31.48
Florida		1,095	45,117	41.20
South Dakota		55	39,707	721.95
North Dakota		463	34,027	73.49

Source: National Interagency Fire Center

### Current U.S. Streamflow Status



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

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

Location	Current Stage (ft)	Flood Percentile
Sandusky River near Fremont, Ohio	6.35	98.94
Yahara River at McFarland, Wisconsin	3.86	98.89
Middle Oconee River near Athens, Georgia	3.41	98.86
Scioto River near Prospect, Ohio	10.66	98.86
Amite River near Darlington, Louisiana	10.84	98.57

Source: United States Geological Survey

# Source Information

Large hail continues to drive U.S. severe weather loss U.S. National Weather Service U.S. Storm Prediction Center Storm damage reported in the ArkLaTex, KSLA 12

Flooding continues to affect countries in Asia and Africa Landslide Leaves 100 Families Homeless In Western Rwanda. KT Press India Meteorological Department Afghanistan Meteorological Department National Disaster Management Agency, Indonesia Somali Civil Aviation and Meteorology Authority (SCAMA) Somalia Water and Land Information Management Project (SWALIM) Committee of Emergency Situations, Tajikistan Dozens of dead in Afghanistan flooding, The Weather Channel Cloudburst In Uttarakhand's Devprayag, Shops, Houses Damaged: Report, NDTV 3 killed, over 1,000 houses destroyed by natural disasters in 4 days in Myanmar's Ayeyarwady region. Xinhua Floodlist Reliefweb

Natural Catastrophes: In Brief 3 killed, over 1,000 houses destroyed by natural disasters in 4 days in Myanmar's Ayeyarwady region, Xinhua News

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