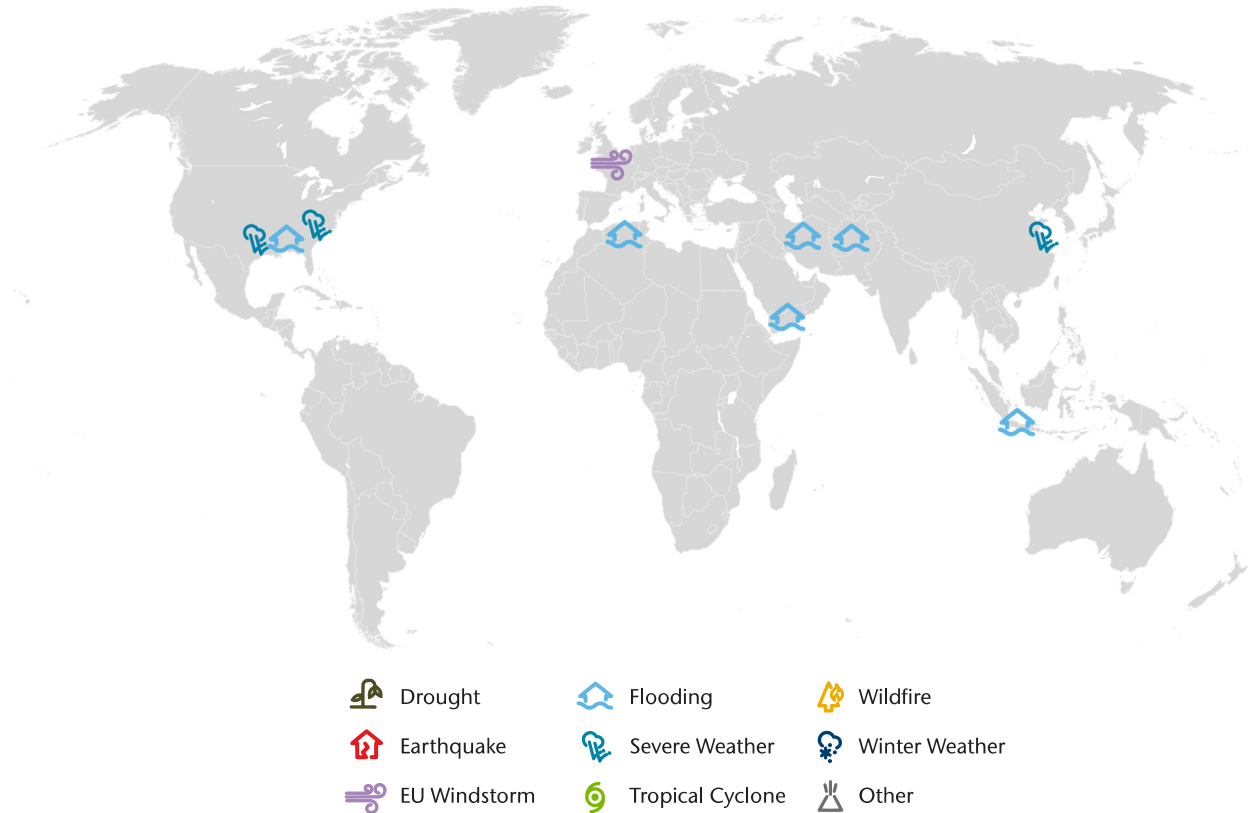




Weekly Cat Report

May 7, 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	4+	100,000+	1.0+ billion	3
Flooding	Afghanistan	37+	400+	Millions	11
Flooding	Yemen	13+	Hundreds	10+ million	11
Flooding	Iran	11+	Hundreds	Unknown	11
Flooding	Algeria	7+	Unknown	Unknown	11
Flooding	Indonesia	8+	300+	Unknown	12
Severe Weather	China	11+	6,000+	2.5+ million	12
EU Windstorm	Western & Central Europe	0	Thousands	10s of millions	12

**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.*

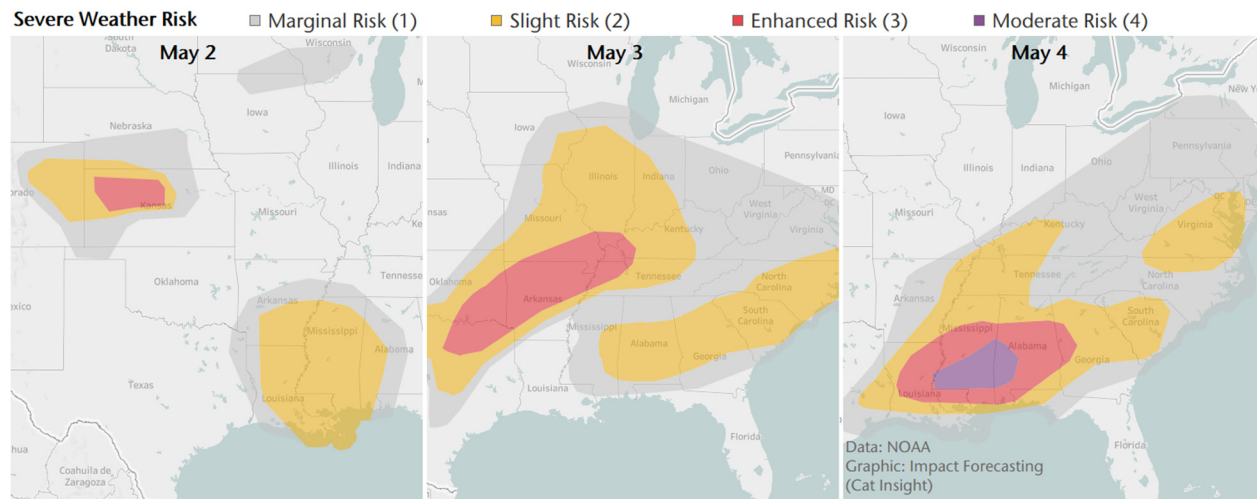
Along with this report, we continue to welcome users to access current and historical natural catastrophe data and event analysis on Impact Forecasting's Catastrophe Insight website: <http://catastropheinsight.aon.com>

Active stretch of U.S. severe weather brings more damage

A pair of impactful weather systems generated widespread severe weather across the Plains, Lower and Middle Mississippi Valley, Southeast, and Mid-Atlantic between May 2-5. Hazards associated with these systems included damaging tornadoes, extremely large hail, severe straight-line winds, and significant flash flooding. Supercells associated with an upper level low resulted in a tornado outbreak across Mississippi on May 2. Storms associated with a strong frontal system brought major impacts to the greater San Antonio (Texas) metro region on May 3, with extremely large hailstones reaching 5.5 inches (14.0 centimeters) in diameter. A robust quasi-linear convective system (QLCS) resulted in widespread damaging straight-line winds and flash flooding across the Deep South on May 4. Total combined economic losses from May 2-5 were again anticipated to exceed USD1 billion. Most of the hail and wind-related damage will be insured.

Meteorological Recap

A slow-moving upper level low, which brought heavy rainfall to regions across southeastern Texas and the central Gulf coast, continued to produce flooding and severe weather across the Lower Mississippi Valley and Southeast as it ejected northeastward between May 2-3. Concurrently, a deep upper level trough digging into the central United States enhanced the risk for severe weather ahead of a well-defined surface frontal boundary which swept across the middle, southern, and eastern United States between May 2-5. This progressive pattern generated several days of unsettled and severe weather across large regions of the country.



May 2

On May 2, the Storm Prediction Center (SPC) upgraded a region across Northern Kansas to an Enhanced Risk (level 3 out of 5) for severe storms, while a broader risk for severe weather continued across the central High Plains. A secondary area of concern was indicated by a Slight Risk (level 2 out of 5) for severe weather in the Lower Mississippi Valley, centered on the State of Mississippi.

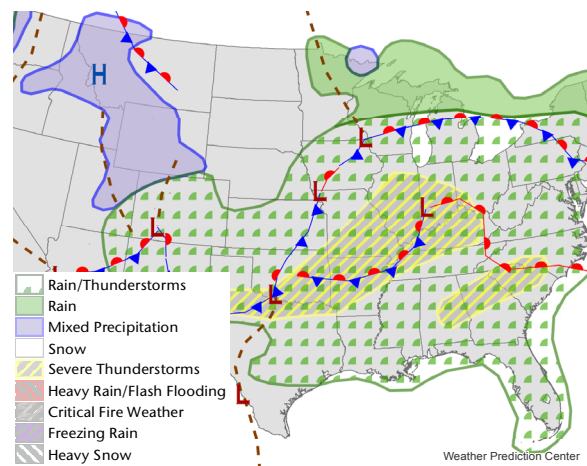
In the **Lower Mississippi Valley**, destabilization was enhanced due to an increasingly moist air mass in the vicinity of a northward pushing warm frontal boundary. Beginning in the late afternoon, a corridor of small supercells generated reports of damaging tornadoes across central and northern Mississippi.

A Particularly Dangerous Situation (PDS) Tornado Warning was issued for portions of Yazoo County – including Yazoo City by the late evening. Yazoo City was notably impacted by a deadly EF4 tornado in April 2010. After dark, a supercell spawned a destructive tornado in northeastern Mississippi, which resulted in a visible debris ball on weather radar imagery. This prompted the National Weather Service (NWS) to issue a rare Tornado Emergency, which affected the City of Tupelo (Lee County) and surrounding areas.

In the **High Plains**, severe weather was initiated by a southeastward progressing cold frontal boundary associated with an elongated region of low pressure. The environment was characterized by steep mid-level lapse rates (changes in temperature with height) and ample diurnal heating. The predominant hazards were very strong straight-line winds and severe hail. Initially, isolated convection and supercells produced localized severe weather reports while traversing central and eastern Colorado. In the late evening, storms congealed into a linear structure across northwestern Kansas and southern Nebraska while progressing eastward. Straight line wind gusts associated with this line of storms approached and exceeded 80 mph (128 kph).

May 3-4

On May 3, a severe weather threat was ongoing across the Southeastern United States, driven by an extremely moist air mass and an approaching short-wave trough. Further west, the environment across the Southern Plains, Ohio Valley, and Midwest was influenced by a series of shortwave perturbations traversing the periphery of a large and deepening upper level trough. At the surface, storms were triggered near a well-defined southeastward sweeping cold front. These conditions prompted The SPC to delineate a region of Enhanced Risk (level 3 out of 5) for severe weather extending from northeast Texas and southeastern Oklahoma into the Middle Mississippi Valley, surrounded by a broader region of Slight Risk (level 2 out of 5). Additionally, a region of Slight Risk (level 2 out of 5) was highlighted across the Southeastern United States, spanning from eastern Alabama into the Carolinas.



U.S. Surface Analysis from May 3
Data: Weather Prediction Center

In the **Southeast**, multiple rounds of storms and supercells were triggered along a series of east-west boundaries and sustained by a low-level jet, which aided in pushing warm and moist air into the region. Several of the more robust storms resulted in tornado warnings and flash flooding, particularly across central Georgia (including the Atlanta Metro region), and western South Carolina. A PDS tornado warning was issued for tornadic storm in South Carolina, spanning portions of Abbeville, Greenwood, and Laurens counties.

In the **Plains and Mississippi Valley**, a remnant Mesoscale Convection Vortex (MCV) associated with the previous day's convection helped to enhance severe weather ahead of the approaching frontal system in the early evening hours. This included severe storms and several tornados across western Illinois. In the Southern Plains, storm clusters and discrete cells developed in north central Texas and eastern Oklahoma during the late evening and progressed eastward.

The primary hazards with the initial storms were large hail and isolated tornados – particularly in northern Texas. A supercell in southern Texas produced baseball to grapefruit size and larger hail across the greater San Antonio region (Bexar County). San Antonio was recently impacted by a separate supercell on April 28, which pelted the city with large hail and flooding rainfall. Post-frontal convection in western Texas generated additional instances of large hail and strong winds. Overnight, storms organized into broken lines and bowing complexes while approaching the Middle Mississippi and Tennessee Valleys, where straight-line wind gusts and brief tornados became the primary hazards of concern. Heavy rainfall, falling on already saturated soils, resulted in several Flash Flood Warnings across southern Kentucky into the morning hours of May 4.

May 4-5

As the frontal system, primarily responsible for notable bouts of severe weather in recent days, continued southeastward, the Deep South became the main area of concern for severe storm development on May 4. By mid-afternoon, the SPC upgraded a region across central and southern Mississippi into eastern Alabama to a Moderate Risk (level 4 out of 5) for severe weather. A broader Enhanced Risk (level 3 out of 5) was centered across regions of eastern Louisiana, Mississippi, Alabama, and western Georgia. A general risk of severe weather concurrently extended northeastward into the Mid-Atlantic. The environment across the Deep South was characterized by an exceptionally moist air mass, with dewpoints reaching into the 70s (°F).

Multiple clusters of severe storms strengthened across the region throughout the afternoon. Severe storms sustained by outflow boundaries generated a straight line-wind threat across northern and central Alabama and Georgia. Further north, a broken line of storms aided by strong diurnal heating developed in the mid-Atlantic. Storms were particularly impactful across eastern Virginia.

In the late afternoon, convection in the Lower Mississippi Valley organized into a quasi-linear convective system (QLCS) over north and central Mississippi and eastern Louisiana. This system proceeded to evolve eastward in a favorable environment. Interactions between the north-south oriented QLCS and a stalling east-west oriented line of convection ongoing across the Southeast prompted Flash Flood Warnings for portions of northern and central Alabama and western Georgia. This included a rare Flash Flood Emergency in portions of Alabama; encompassing regions in Shelby and Jefferson Counties – including the Birmingham Metro Area.

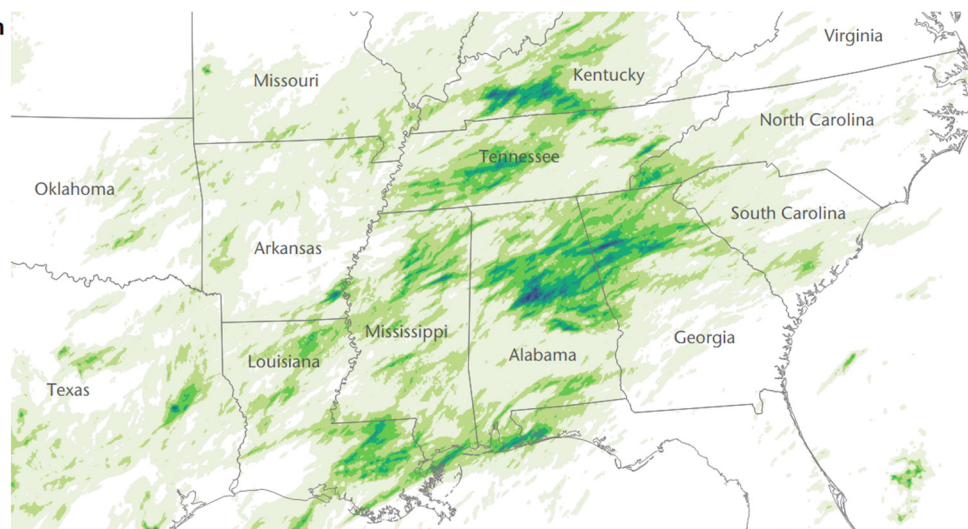
Total liquid precipitation (greater than 1 inch)

from 12:00 UTC May 1
to 12:00 UTC May 5

Precipitation (inches)

- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- 6 - 7
- 7 - 8
- 8+

Data: NOAA
Graphic: Impact Forecasting
(Cat Insight)



The National Weather Service (NWS) reported sub-hourly rainfall rates of 1.5 to 2.0 inches (38 to 50 millimeters) within more robust cells of the QLCS. The QLCS continued to slowly propagate eastward into the overnight hours, producing reports of strong and damaging straight-line winds in Alabama, Mississippi, and Georgia. At peak intensity, wind gusts resulting from the line approached and exceeded 80 mph (128 kph). In Alabama, a weather station near Vestavia Hills (Jefferson County) reported a storm total precipitation of 7.95 inches (202 millimeters) by the morning of May 5. In Shelby County, a station near Helena reported a precipitation total of 7.47 inches (190 millimeters) over the same period.

Event Details

May 2

There were no less than 106 instances of severe weather reported across the contiguous United States on May 2, of which 49 reports were for straight-line winds. Supercells spawned multiple reports of damaging tornados across central and northern Mississippi, resulted in at least 15 confirmed tornado touchdowns. Additional brief tornados were confirmed in Louisiana and Alabama, and four land spouts in Nebraska.



Tornado damage in Yazoo County, MS from May 2
Source: NWS Jackson (NWS-DAT)

In the **Central and High Plains**, numerous instances of damaging straight-line winds were reported on May 2 – particularly in Colorado, Nebraska, and Kansas. In **Colorado**, a wind gust of 93 mph (150 kph) was generated from a supercell near Lamar in Prowers County. To the east, at least 15 homes near Holly (Prowers County) incurred roofing and shingle damage, while multiple trees were toppled. In **Nebraska**, a maximum wind gust of 80 mph (128 kph) was measured near Parks (Dundy County). In **Kansas**, instances of straight-line wind gusts approaching and exceeding 80 mph (128 kph) were observed in Kearny, Norton, and Russell Counties.

In **Mississippi**, there were no less than 15 confirmed tornadoes across the state on May 2; EF2 (1), EF1 (10), EF0 (4). Preliminary reports from the Mississippi Emergency Management Agency (MEMA) across several counties indicated that at least 43 homes and 6 businesses were impacted to varying degrees in Calhoun County, 24 homes were impacted in Hinds County, 76 homes and 6 businesses in Lee County, 10 homes and 1 business in Pontotoc County, and 76 homes and 4 businesses in Yazoo County.

A long track EF1 tornado touched down in Issaquena County and propagated at least 30 miles (48 kilometers) before lifting east of Yazoo City (Yazoo County). The tornado demolished three farm buildings and two mobile homes near Tinsley, while additional structures were impacted by falling trees. Instances of roofing and shingle damage were observed as the tornado neared Highway-16, southeast of Yazoo City. In Hinds County, an EF1 tornado with a maximum width approaching 0.5 miles (0.8 kilometers) resulted in shingle and roofing damage to residences southwest of Jackson. In Lee County, an EF1 tornado with 100 mph (160 kph) winds resulted in damage in the City of Tupelo, where a Tornado Emergency was in effect. Multiple residences and commercial buildings sustained wind damage, while substantial residential impacts caused by toppled trees. In Calhoun County, a tornado left residential damage in Calhoun City.

May 3-4

As of this writing, 324 instances of severe weather were reported on May 3, of which 105 were for hail. Fourteen of the hail reports included large hail - greater than or equal to 2.0 inches (5.1 centimeters). Widespread swaths of straight-line wind damage occurred across the Southern Plains, Middle Mississippi Valley, and Southeast. As of this writing, at least 41 tornados were confirmed on May 3 into the early morning hours of May 4; EF2 (5), EF1 (13), EF0 (19), and four of which remain unrated due to lack of damage evidence. The tornados impacted at least twelve different states; Arkansas, Georgia, Illinois, Kentucky, Maryland, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

In **Georgia**, at least two storm related fatalities were confirmed from falling trees on May 3. In Metro Atlanta, a powerful storm caused widespread reports of downed trees and utility lines. An EF1 tornado was confirmed in Fulton County (west of Metro Atlanta) in the morning hours. The storm heavily damaged several warehouses in an industrial park near Sandtown, before entering a residential area where numerous trees were snapped and uprooted - several of which damaged homes and structures. Severe straight-line winds produced isolated instances of damage across central Georgia throughout the day. In Washington County, downed trees blocked roadways and impacted several buildings.

In **South Carolina**, an EF2 tornado with maximum estimated wind speeds of 125 mph (200 kph) touched down near Lowndesville (Abbeville County) during the afternoon of May 3. The tornado damaged several homes, outbuildings, and trees before lifting near Greenwood (Greenwood County). The tornado remained on the ground for approximately 30 miles (48 kilometers).

In **Virginia**, a tornado reaching EF2 intensity, with winds approaching 115 to 120 mph (185 to 193 kph), impacted regions in the Northern Neck (Northumberland County) on May 3. Multiple homes near Callao were damaged to varying degrees. One damaged home, built in the 1970s, was rated to withstand 100 mph (160 kph) winds.



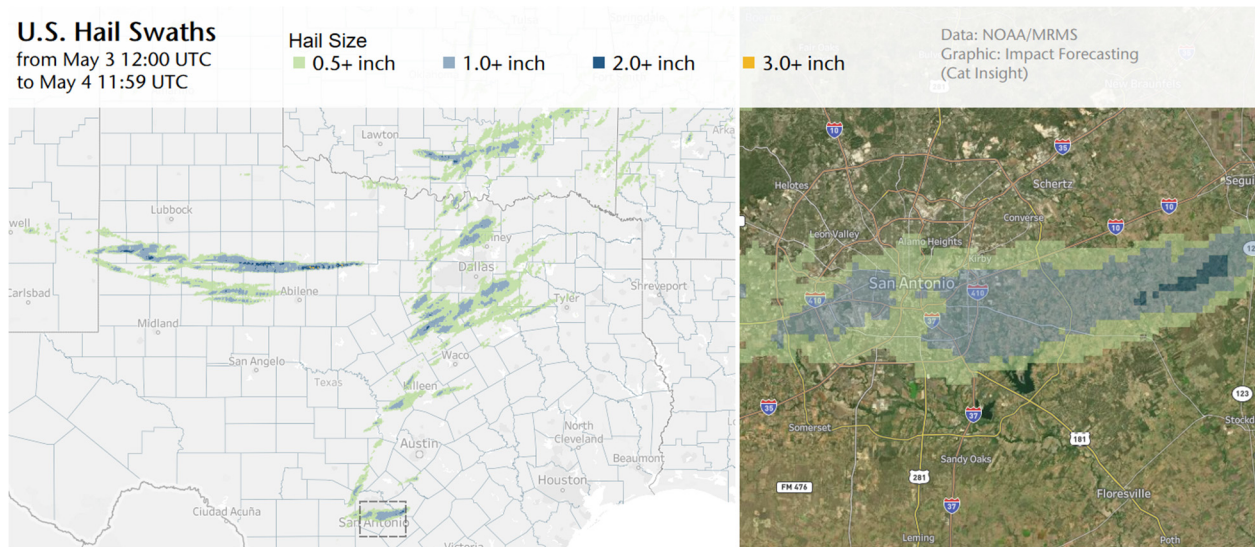
Tornado Damage in Abbeville County, SC on May 3
Source: NWS Greer (NWS-DAT)

In **Texas**, extremely large hail pummeled Bexar County, including greater San Antonio, on the evening of May 3. Confirmed reports of hailstones reaching an astonishing 5.5 inches (14 centimeters), considerably larger than a grapefruit, occurred near China Grove. Multiple instances of baseball size (2.75 inches, 7.0 centimeters) and larger hailstones were reported in downtown San Antonio. Hail resulted in substantial impacts to structures, vehicles, and vegetation – adding to what has already been a costly week for hail across the region. Large hail reaching or exceeding 2.0 inches (5.1 centimeters) fell in Bandera, Bexar, Guadalupe, Johnson, Kendall, Parker, and Scurry Counties. Substantial hail impacts were noted in regions surrounding Dallas-Fort Worth.

See May 4 hail swaths in Texas on the top of the next page.

U.S. Hail Swaths

from May 3 12:00 UTC
to May 4 11:59 UTC



As of this writing, at least five tornadoes were confirmed across the state on May 3, including two reaching EF2 intensity. The first EF2 was surveyed near Blum (Hill County) and destroyed a brick-clad home, while several other structures sustained minor damage. The second EF2, with maximum estimated wind speeds reaching 120 mph (193 kph), touched down in Ellis County; south of the Dallas Metro region. The tornado crossed I-35E where at least three semi-trucks and a cargo van were overturned, resulting in three injuries. Five additional injuries were reported as the storm impacted electrical towers and homes near Highway-77. In Hopkins County, a straight-line wind gust of 87 mph (140 kph) was measured at the Sulphur Springs Airport.

In **Arkansas**, a wind gust of 71 mph (114 kph) was measured at the Hot Springs Airport (Garland County), while a 74 mph (119 kph) gust was recorded at the Fort Smith Regional Airport (Sebastian County). Sebastian, Crawford, Lawrence, and Clay Counties were among the most affected in the state, with multiple reports of downed utility lines and trees, along with property and structural damages. In Lawrence County, a swath of straight-line wind damage, with estimated gusts reached 90 to 100 mph (145 to 160 kph), affected the city of Walnut Ridge. Impacts included damage to homes and commercial buildings, along with downed power lines.

In **Kentucky**, heavy rainfall triggered Flash Flood Warnings across southern portions of the state, where 24-hour rainfall totals ending the morning of May 4 approached and exceeded 5.0 inches (125 millimeters). Several water rescues were performed in Muhlenberg County. Localized instances of downed trees and flooded roadways were observed. A brief tornado in Monroe County snapped and uprooted trees and power lines near Tompkinsville. Several homes in the area incurred minor roofing and window losses. An EF2 tornado in Fulton County destroyed one home and collapsed multiple outbuildings.

In **Tennessee**, severe storms which traversed portions of the state in the overnight and into the morning hours of May 3-4 generated considerable straight-line wind damage and multiple reports of brief tornadoes. As of this writing, at least thirteen EF0 tornadoes were confirmed. One death in the state resulted from a fallen tree. In the wake of the storms, structural damage and downed trees were observed throughout Middle Tennessee. In Wilson County, notable damage to fences and the scoreboard at the Wilson Central High School was reported.

May 4-5

In the wake of the severe weather and QLCS, no less than 200,000 customers across the Deep South and Texas remained without power the morning of May 5. At the peak, on May 4, at least 152,000 power outages occurred in Mississippi, and 97,000 in Alabama. As of this writing, 413 instances of severe weather were reported to the Storm Prediction Center on May 4, of which 382 were pertaining to strong winds – a majority of which occurred in the Deep South. At least seven tornados associated with this event were confirmed across portions of Louisiana, Mississippi, and Alabama.

In **Virginia**, severe winds left a path of damage across central portions of the state, including regions near Blacksburg (Montgomery County) and Lynchburg (Campbell County). Impacts included property damage to fencing and outbuildings, sections of roofing blown off, and a flipped car. One death in the state resulted from a fallen tree.

In **Mississippi**, preliminary estimates by the Mississippi Emergency Management Agency (MEMA) indicated that 181 homes and businesses were damaged to varying degrees across the state due to severe weather on May 4; including 113 homes and 6 businesses in Hinds County, 21 homes and 9 businesses in Leake County, and dozens of structures in Rankin, Newton, Warren, and Yazoo Counties combined. In Leflore County, a straight-line wind gust of 85 mph (137 kph) toppled numerous trees and at least ten light poles. Several nearby structures were reportedly damaged by falling trees and limbs.

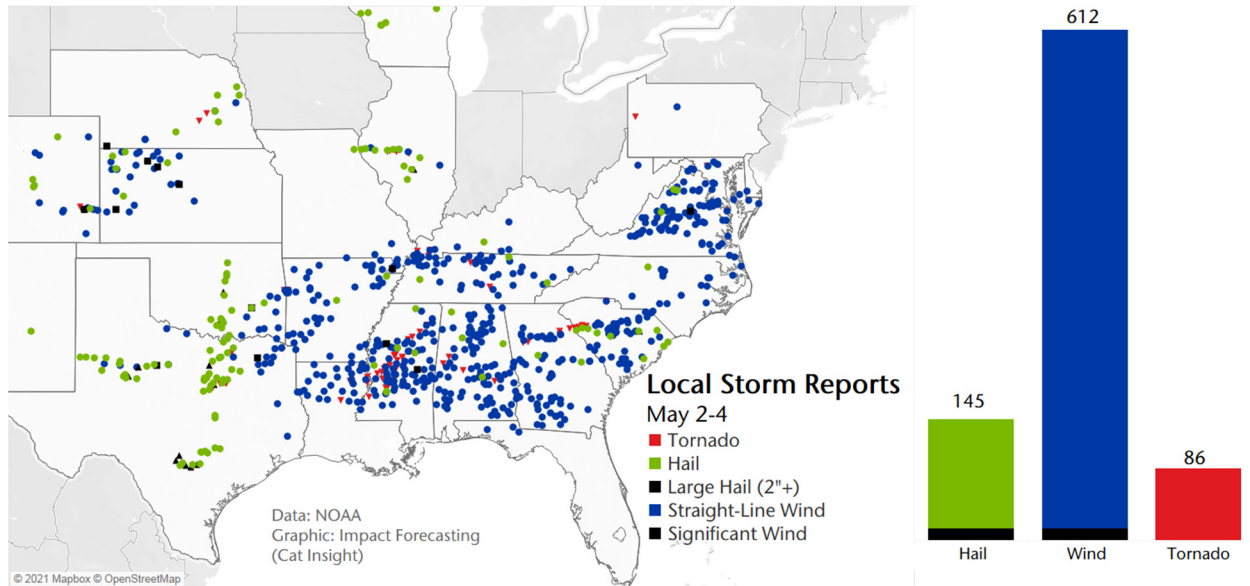
At least three tornados impacted the state on May 4. An EF1 tornado, which touched down near Bolton (Hinds County), resulted in considerable damage across densely populated regions north of Jackson. The tornado reached a maximum intensity of 110 mph (177 kph) and remained on the ground for at least 30 miles (48 kilometers) before lifting north of Brandon (Rankin County). Widespread impacts were incurred to a residential area near Callaway High School. In one instance metal siding was peeled from a business, and in another a toppled tree split a residence in half.

In **Alabama**, significant flash flooding impacted the Birmingham Metro Region during the evening of May 4, where storm total rainfall approached and exceeded 5 to 7 inches (125 to 175 millimeters). Jefferson County Emergency Management officials reported countywide flooding and multiple swift-water rescues. The Homewood Fire Department rescued at least 20 people as flooding impacted the Crescent of Lakeshore apartment complex in Homewood. An additional apartment complex near Homewood was evacuated along Rue Maison Road as flood water encroached on the building. To the east, water entered the ground floor of Mountain Brook Junior High School. Major flooding in downtown Birmingham resulted in multiple traffic incidents and numerous roadways became blocked or impassable by rising floodwaters. Sections of Highway-52 in Shelby County were closed by the Pelham Police Department.



Flash flooding near Homewood, AL on May 4
Source: Homewood Fire Department

The NWS surveyed, a swath of wind and embedded tornadic damage, reaching EF1 intensity, in portions of Autauga and Montgomery Counties - focused on a corridor between Prattville and Millbrook (north of Montgomery). Notable impacts to multiple business and hotels were observed. Several homes were heavily damaged by large fallen trees. Surveyed tornado damage was present in the residential area between Cobbs Ford Road and Alabama State Route-14. Additional enhanced corridors of tornadic and straight-line wind damaged were investigated in Chilton, Macon, and Perry Counties.



Financial Loss

Given the widespread footprint of hail, tornadic, straight-line wind, and flood-related damage in highly exposed areas across the Plains, Southeast, and Mid-Atlantic between May 2-5, it was expected that the economic toll will exceed USD1 billion. Most of the hail and wind-related damage was expected to be insured.

It is worth noting that despite 2021 recording a below-average number of tornadoes thus far – including likely the fewest April touchdowns since 1992 (53) – the year is already well on pace to surpass USD10 billion in severe convective storm (SCS) insured losses. The U.S. has topped this threshold in every year since 2008. Most of the SCS losses have been tied to large hail hitting heavily populated regions of the country.

Flooding affects several countries in Asia and Africa

Flooding events were observed in multiple countries of Asia, Africa, and the Middle East since early May; Afghanistan, Iran, Yemen, Indonesia, and Algeria were noted as the worst-hit. All the events combined resulted in at least 76 confirmed fatalities while many residential and commercial properties, vehicles, and swaths of agricultural land were damaged or destroyed.

Event Details

Afghanistan

Flash flooding, triggered by a period of heavy rainfall between May 2-5, hit central and northwestern parts of Afghanistan, particularly the provinces of Herat, Ghor, Maidan Wardak, Baghlan, Samangan, Khost, Bamyan, Daikundi, and Badakhsha. According to the Afghanistan National Disaster Management Authority (ANDMA), at least 37 people were killed. Preliminary damage assessments suggest that large extents of farmland and orchards were inundated, while approximately 400 homes were damaged or destroyed.

Yemen

Incessant rains caused fatalities, material damage, and destroyed dozens of homes and shelters in Yemen. Preliminary reports indicated that more than 22,000 people were affected, and 13 people were left dead. Among the worst affected were Aden, Abyan, Al Dhale'e, Lahj, Hadramaut, Ma'rib, and Ta'iz governorates. The historical town of Tarim, famous for its mud-brick buildings and hundreds of mosques, was declared a disaster area by the local authorities. In addition, flooding affected many houses in the UNESCO listed cities of Sanaa and Shibam in the Hadramout Governorate. The Yemen National Meteorological Centre has further issued severe weather forecasts as the rains were likely to persist through coming days. Government officials allocated approximately USD8 million towards the urgent repair of the public infrastructure damage caused by the recent rounds of flooding.

Iran

At least ten people were killed, one was reported missing, and several others were injured due to the flooding triggered by heavy rains in Iran on May 1-5. At least 47 cities across eight Iranian provinces were affected. Central and eastern Yazd, Kerman, and South Khorasan were among the hardest-hit provinces. No fewer than 2,000 people were affected, of which approximately 200 took shelter in evacuation camps. Massive power outages were reported. According to local disaster management officials, hundreds of homes and other structures were damaged to varying degrees and an extensive area of agricultural land was affected. Numerous livestock and animals were swept away by the flooding.

Algeria

Flash flooding occurred in parts of northern Algeria on May 2. In the municipality of Beni-Slimane a medical building and dozens of vehicles were damaged and at least 4 people were killed. More fatalities and damage were reported from Médéa, Batna, and M'sila Provinces where several buildings, infrastructure, and roads were flooded, causing traffic disruption.

Indonesia

Heavy rains prompted flash flooding and landslides in West Nusa Tenggara, North and South Sumatra, and West Java provinces of Indonesia on May 1-5, with damage and casualties reported. Indonesia's meteorological agency reported that central parts of the West Nusa Tenggara province received extremely heavy 24-hour rainfall accumulations of more than 150 millimeters (6 inches). According to the National Disaster Management Agency (BNPB), eight people were killed, and more than 300 homes and hundreds of other structures were damaged or destroyed. A vast area of rice and other crops was left inundated.

Natural Catastrophes: In Brief

Severe Weather (China)

A severe weather event impacted China's province of Jiangsu on April 30. The hazards associated with the event included hurricane-force winds, large hail, and heavy rainfall. According to China's Ministry of Emergency Management, no fewer than 11 people were killed, at least 100 were injured, and 9 others remain missing. Approximately 14,000 residents belonging to the Jiangsu Provinces were affected in incidents directly related to the event. No less than 6,000 homes and other structures along with 1,700 hectares (4,200 acres) of cropland sustained damage. The direct economic loss was estimated upwards of CNY16.5 million (USD2.5 million).

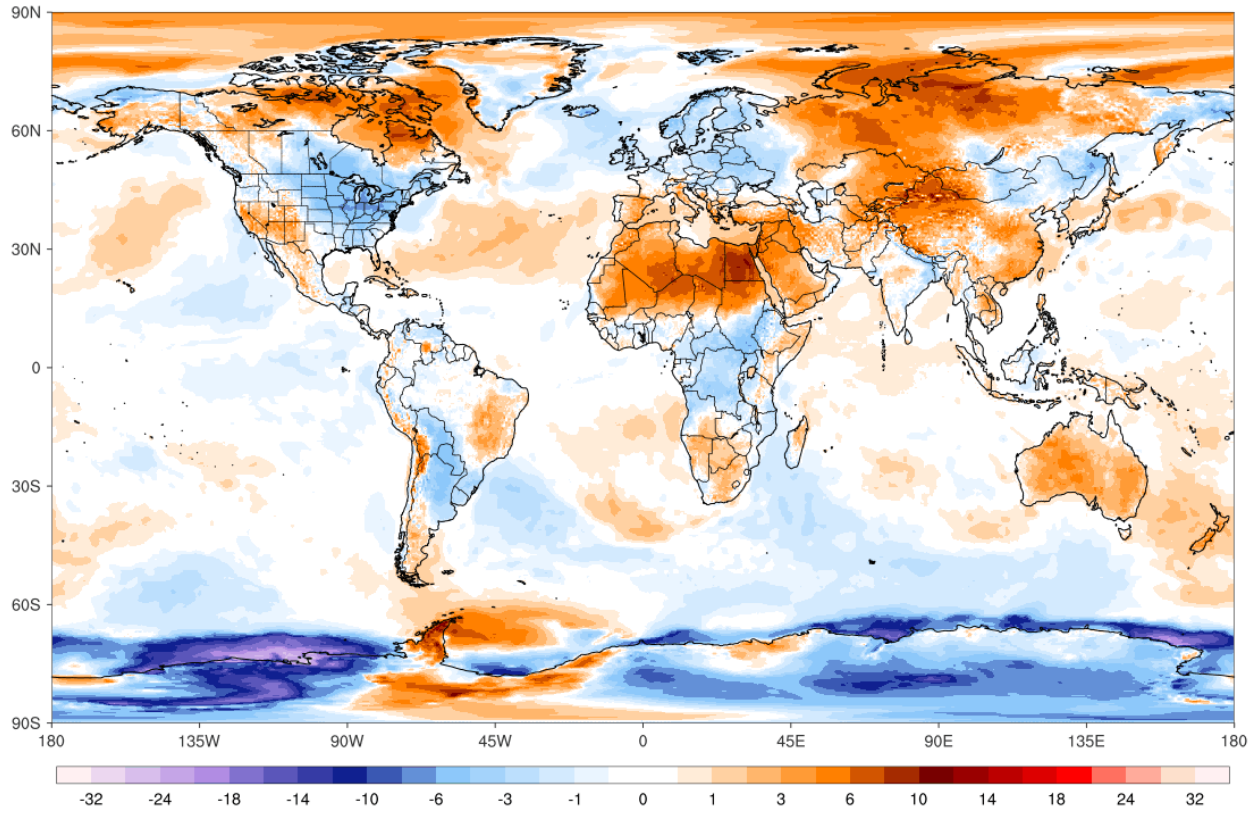
Windstorms Daniel & Eugen (Western & Central Europe)

Two notable low-pressure areas produced unseasonal strong winds in parts of Western and Central Europe. Storm Daniel developed as a relatively insignificant disturbance in the northern Mediterranean on a tail of another low pressure-area and later generated notable effects in Vienna and Lower Austria on May 1-2. Several stations, including central Vienna, registered their highest May gusts on record. Local insurers initially reported hundreds of claims. Further effects were felt in Slovakia and eastern Poland. Storm Eugen produced larger-scale impacts in Ireland, southern England, Belgium, Netherlands, and northwestern Germany on May 4-5. German Weather Service reported highest lowland gusts in Nordrhein-Westfalen, peaking at 108 kph (67 mph). Total impacts were expected to be in the region of tens of millions EUR.

Global Temperature Anomaly Forecast

GFS/CFSR 5-day Avg 2m T Anomaly (°C) [1979-2000 base]
Thursday, May 06, 2021

ClimateReanalyzer.org
Climate Change Institute | University of Maine

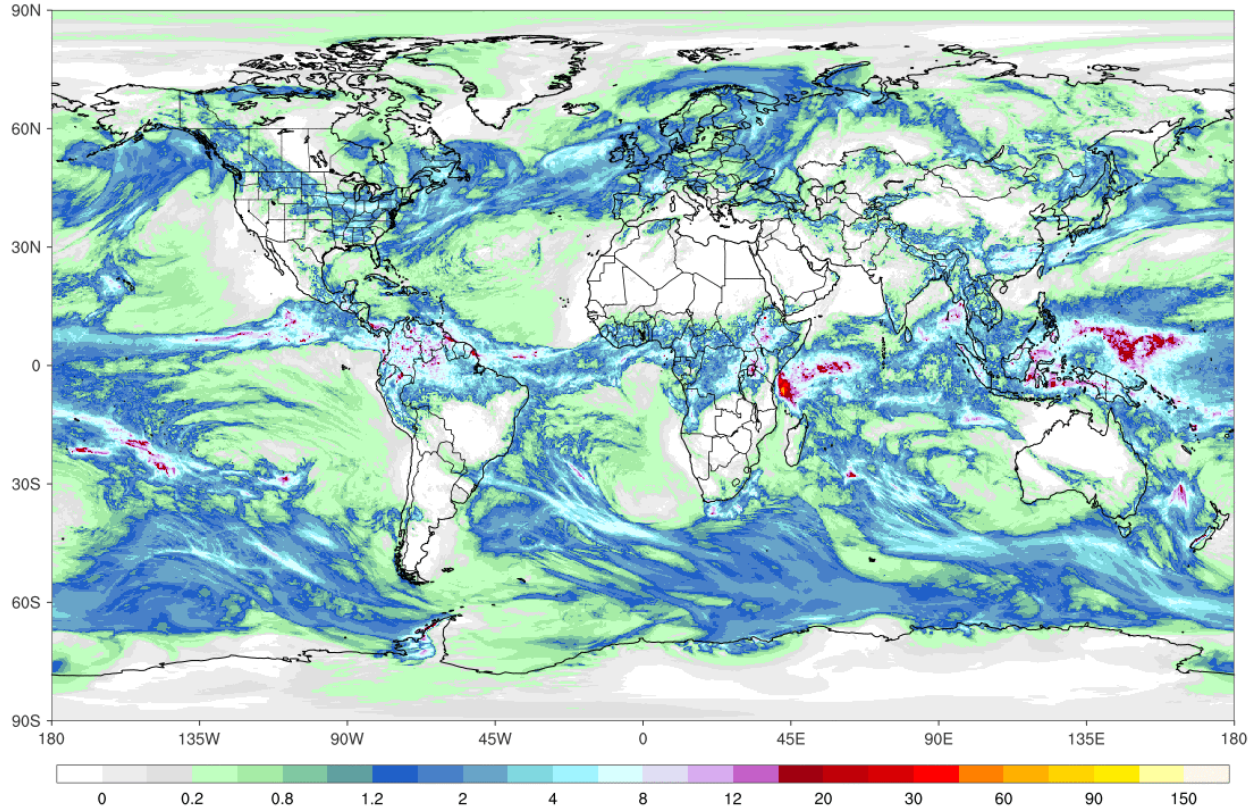


Source: Climate Reanalyzer, Climate Change Institute, University of Maine, USA

Global Precipitation Forecast

GFS 5-day Total Accumulated Precipitation (cm)
Thursday, May 06, 2021

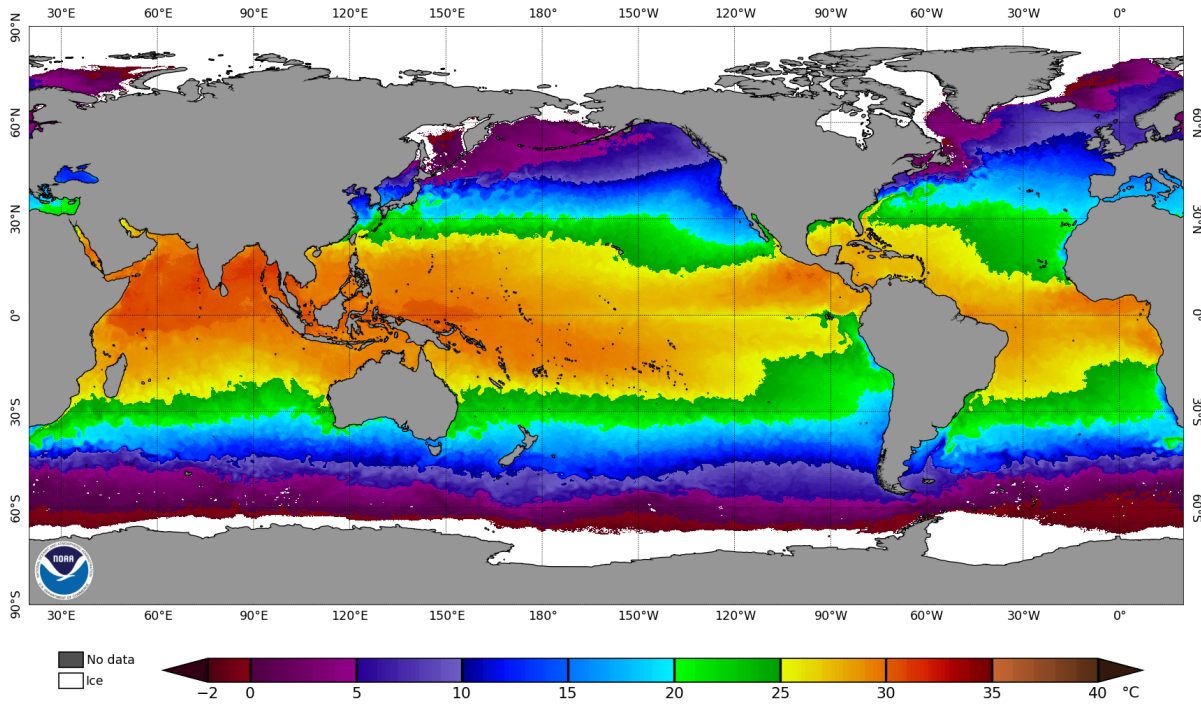
ClimateReanalyzer.org
Climate Change Institute | University of Maine



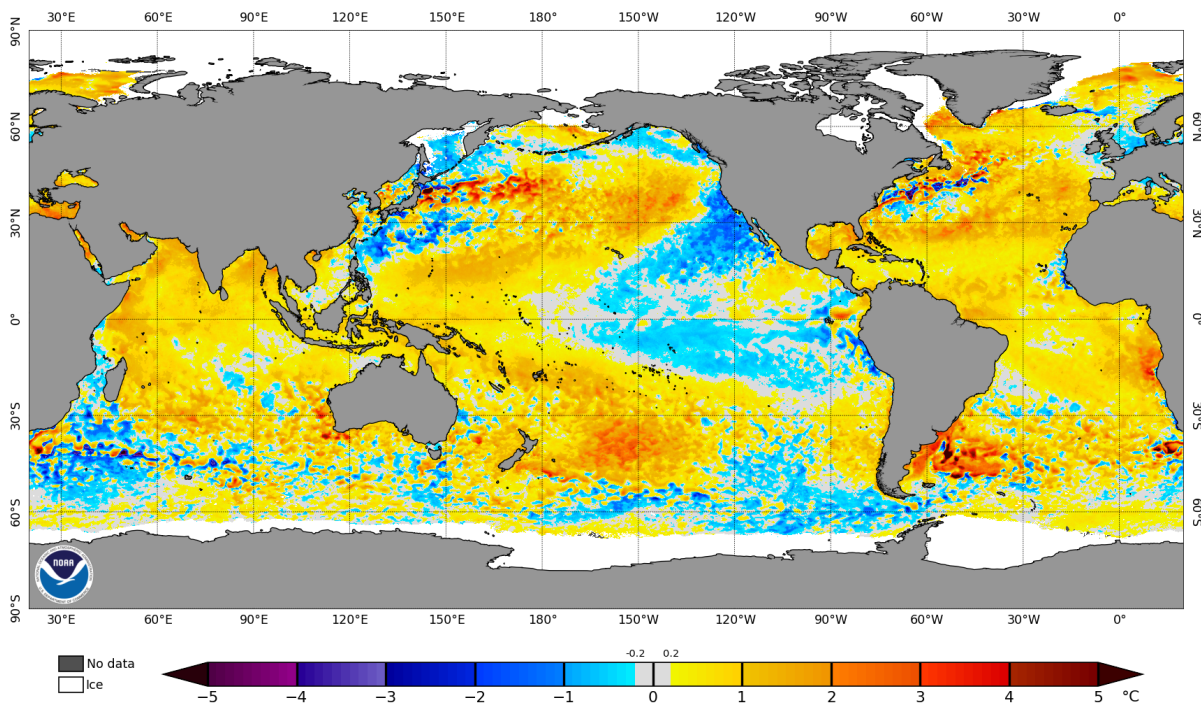
Source: Climate Reanalyzer, Climate Change Institute, University of Maine, USA

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

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

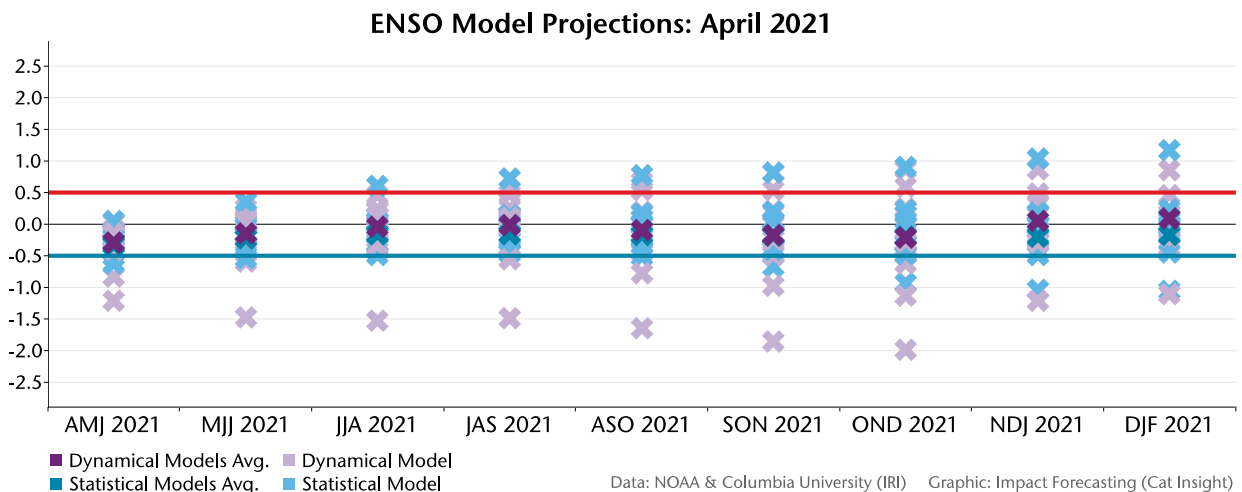
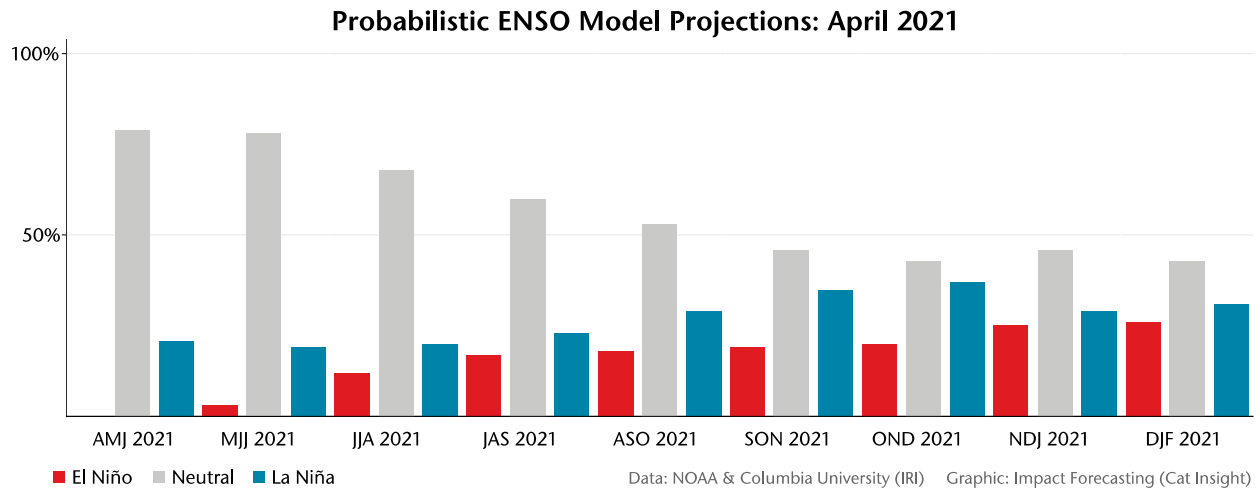


NOAA Coral Reef Watch Daily 5km SST Anomalies (v3.1) 5 May 2021



El Niño-Southern Oscillation (ENSO)

La Niña conditions are currently present, though NOAA has officially issued a **La Niña Advisory**. NOAA notes a 60 percent chance of a transition to ENSO-neutral conditions by the spring months.



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).

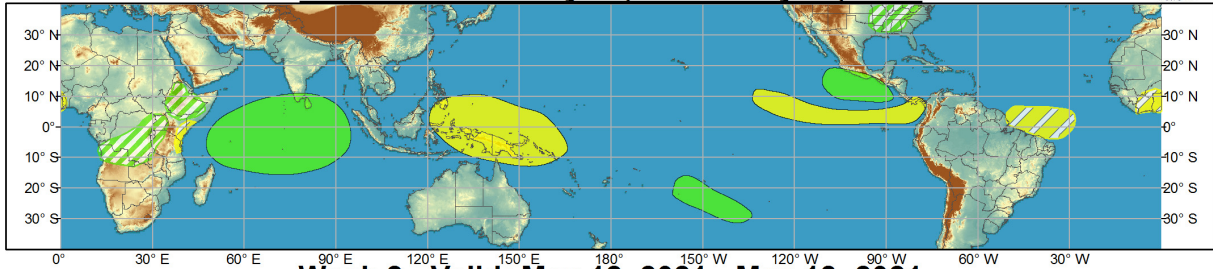
Global Tropics Outlook



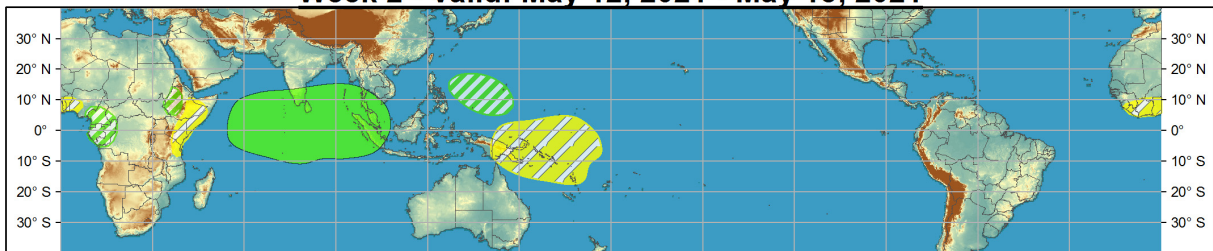
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: May 05, 2021 - May 11, 2021



Week 2 - Valid: May 12, 2021 - May 18, 2021



Confidence
High Moderate

- Tropical Cyclone Formation** Development of a tropical cyclone (tropical depression - TD, or greater strength).
- Above-average rainfall** Weekly total rainfall in the upper third of the historical range.
- Below-average rainfall** Weekly total rainfall in the lower third of the historical range.
- Above-normal temperatures** 7-day mean temperatures in the upper third of the historical range.
- Below-normal temperatures** 7-day mean temperatures in the lower third of the historical range.

Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

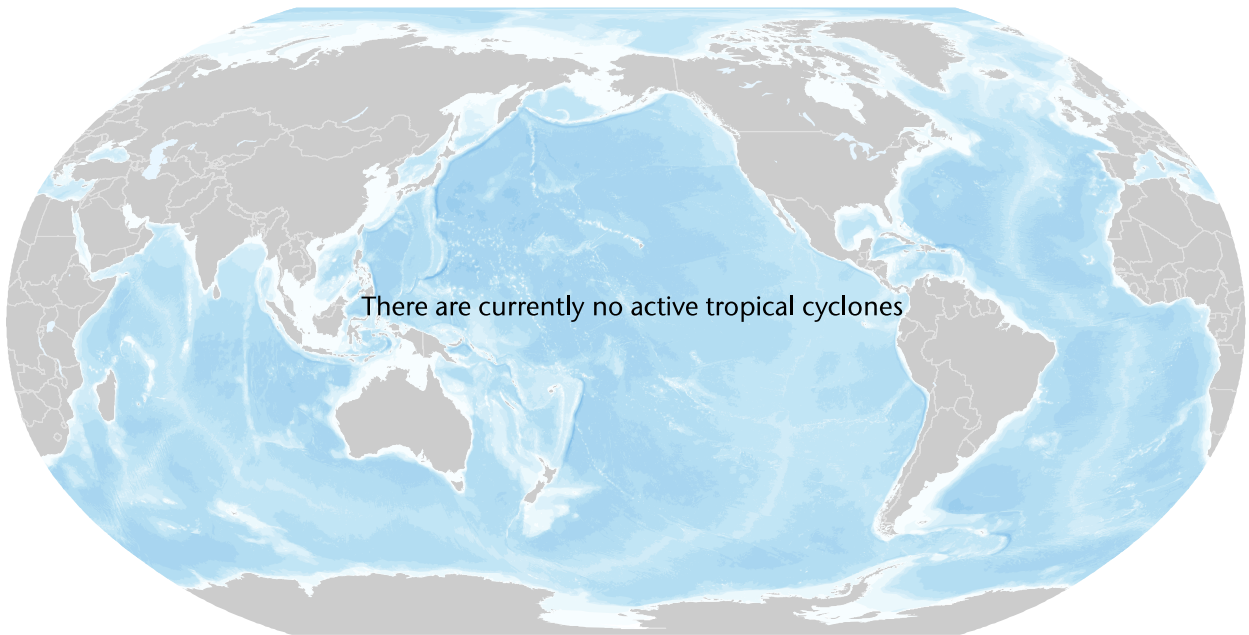
Produced: 05/04/2021

Forecaster: MacRitchie



Source: Climate Prediction Center

Current Tropical Systems



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

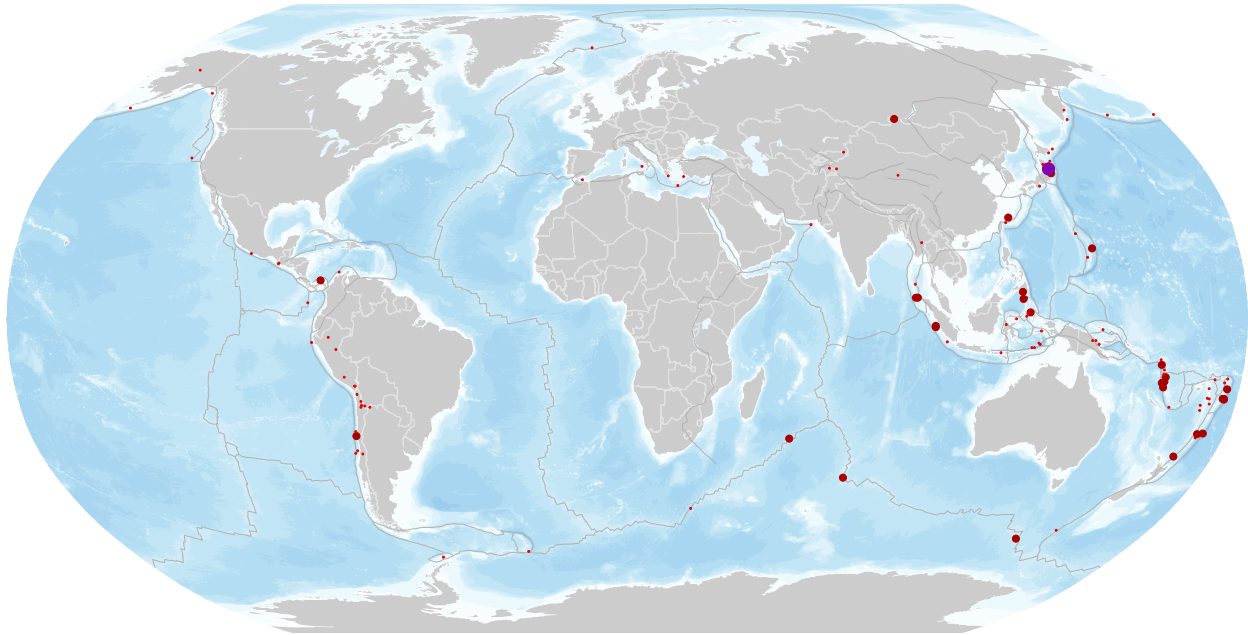
Location and Intensity Information

Name*	Location	Winds	Storm Reference from Land	Motion**
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* 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 ($\geq M4.0$): Apr 30 – May 6



Magnitude • 4.0 - 4.9 • 5.0 - 5.9 • 6.0 - 6.9 • ≥ 7.0 — Tectonic boundary

Significant EQ Location and Magnitude ($\geq M6.0$) Information

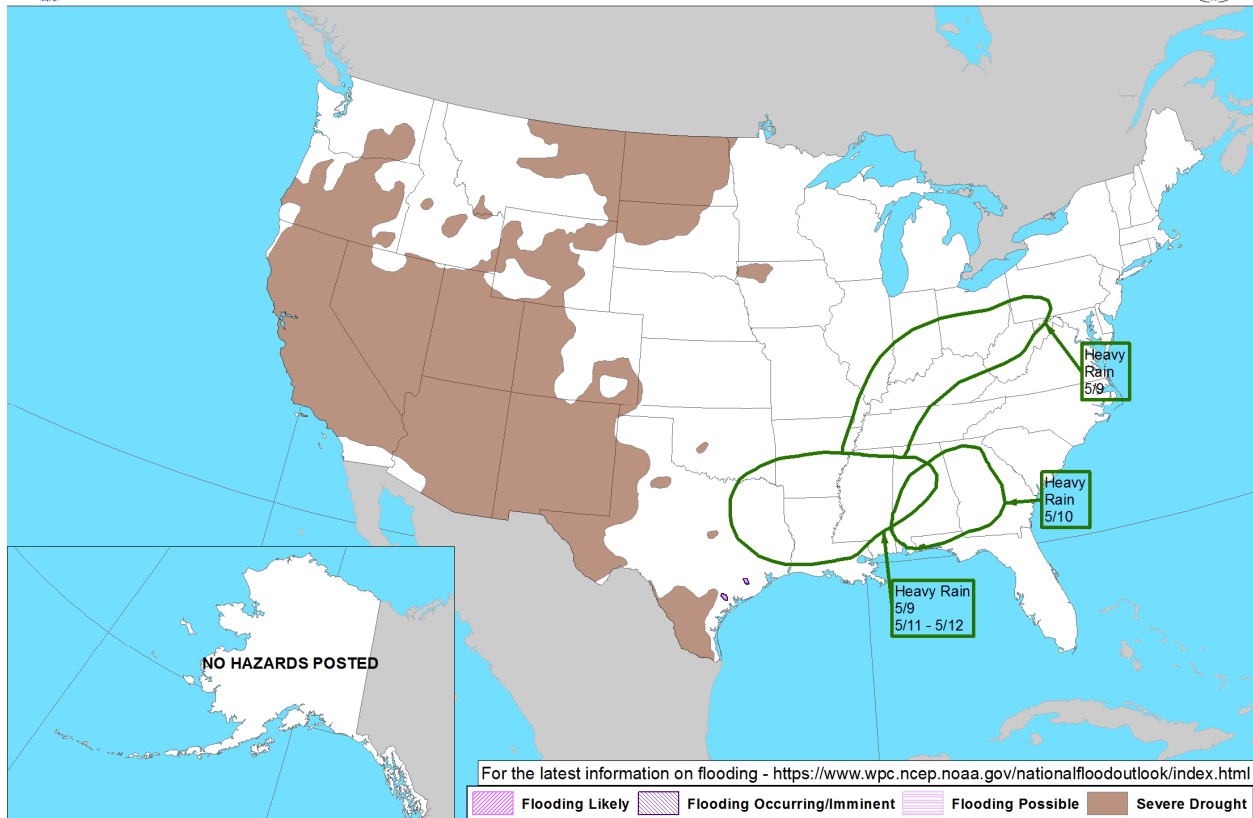
Date (UTC)	Location	Magnitude	Depth	Epicenter
05/01/21	38.23°N, 141.66°E	6.8	47 km	38 kilometers (24 miles) ESE of Ishinomaki, Japan

Source: United States Geological Survey

U.S. Weather Threat Outlook



Day 3-7 U.S. Hazards Outlook
Valid: 05/09/2021-05/13/2021



Weather Prediction Center

Made: 05/06/2021 3PM EDT

Follow us:

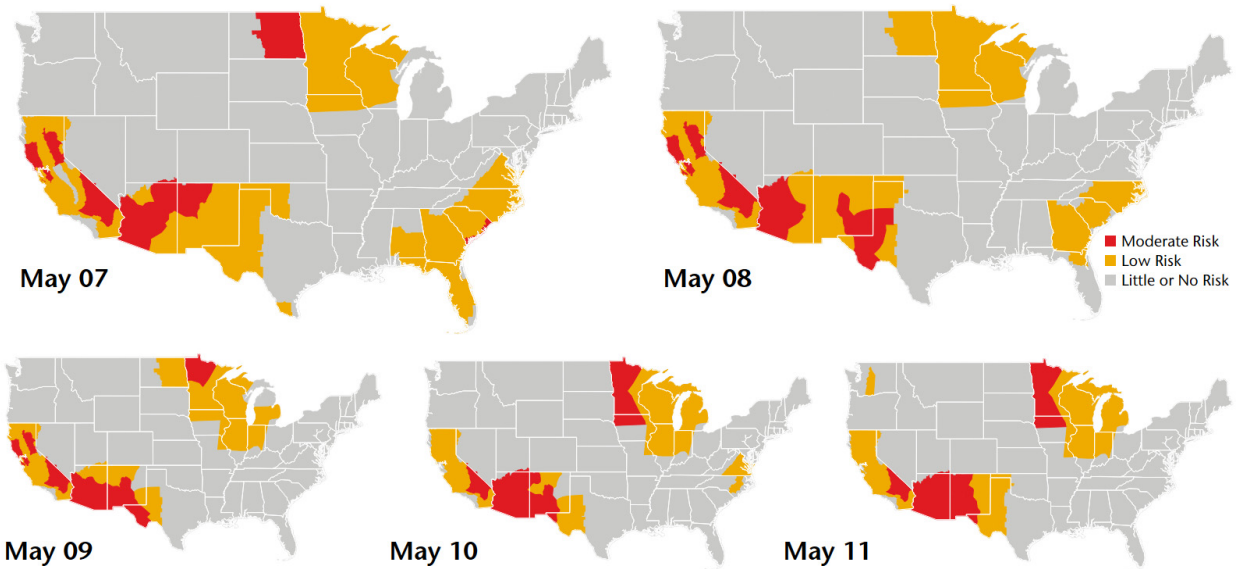
www.wpc.ncep.noaa.gov

Potential Threats

- Heavy rainfall, associated with an area of low pressure and series of frontal boundaries, is expected across the Ohio Valley, Southern Plains, and Lower Mississippi Valley on May 9.
- As the disturbance advances eastward on May 10, heavy rain will develop into the Southeast.
- A lingering frontal boundary is expected to generate additional heavy rainfall across the Southern Plains and Lower Mississippi Valley between May 11-12.
- Severe drought conditions persist across the Western United States and Northern Plains.

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

The National Interagency Fire Center has highlighted a limited volume of potential fire risk across much of the country during the next week. The combination of high winds and lower humidity will result in continued enhanced fire risks across the Southwest. Much of the western U.S. remains mired in a significant drought which is aiding in the potential for conflagration and rapid spread.



Data: National Interagency Fire Center Graphic: Impact Forecasting (Cat Insight)

Annual YTD Wildfire Comparison: May 6*

Year	Number of Fires	Acres Burned	Acres Burned Per Fire
2017	20,930	2,017,265	96.38
2018	19,149	1,417,043	74.00
2019	11,287	222,511	19.71
2020	13,054	266,321	20.40
2021	19,459	527,025	27.08
10-Year Average (2011-2020)	17,249	904,317	52.43

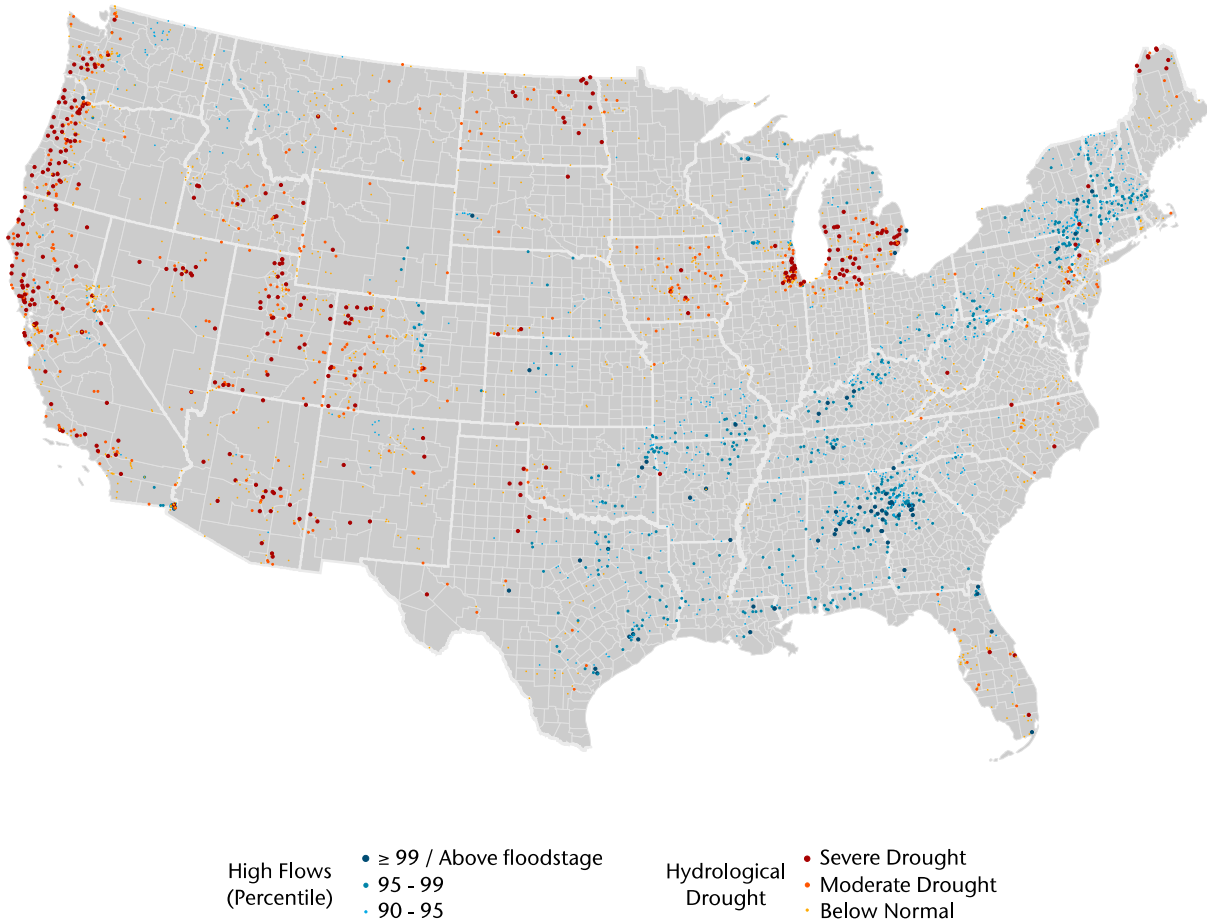
Source: National Interagency Fire Center

Top 5 Most Acres Burned by State: May 6

State	Number of Fires	Acres Burned	Acres Burned Per Fire
Oklahoma	999	83,742	83.83
Texas	1,834	60,339	32.90
Florida	1,002	42,200	42.12
South Dakota	54	39,704	735.26
North Dakota	390	33,438	85.74

Source: National Interagency Fire Center

Current U.S. Streamflow Status



A $\geq 99^{\text{th}}$ 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 stream 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
Cahaba River at Centreville, Alabama	24.51	98.94
Delaware River at Belvidere, New Jersey	9.55	98.91
Chattahoochee River at Columbus, Georgia	28.39	98.90
Poultney River at Fair Haven, Vermont	8.09	98.90
Ipswich River near Ipswich, Massachusetts	4.87	98.89

Source: United States Geological Survey

Source Information

Active stretch of U.S. severe weather brings more damage

U.S. National Weather Service

U.S. Storm Prediction Center

Homewood Fire Department

Mississippi Emergency Management Agency (MEMA)

Destructive tornadoes strike Mississippi while more severe weather threatens Plains, South, The Washington Post

Tornado Strikes Southwest of Atlanta; Mississippi Cities, Including Tupelo, Also Damaged By Storms, The Weather Channel

Storm damage and power outages in Arkansas after severe weather, KARK

At least two dead in Georgia after storms, tornadoes hit South, NBC News

NWS: Likely 10 tornadoes touched down in Middle Tennessee, News 4 Nashville

Severe storms cause flash flooding in Birmingham, WVTM 13

Mississippi severe weather live updates: Thousands without power as damage reports continue, Clarion Ledger

Flooding affects several countries in Asia and Africa

Afghanistan Meteorological Department

Afghanistan National Disaster Management Agency

Indonesia National Disaster Management Agency

Indonesia's Meteorological Agency (BMKG)

Flash floods claim 19 lives in western Afghanistan, Asia-Pacific News

Yemen flash flooding causes large-scale damage, BBC news

Intempéries : des dégâts humains et matériels signalés,

Algeria360 news Heavy Rainfall, Floods, and Drought in Iran, Product of the Mullahs' Regime, NCRI

6 electricity workers killed in flash floods in southeastern Iran, PressTV

Floods kill 5, displace hundreds in southeast Yemen, Arab News

Flash floods claim 19 lives in western Afghanistan, Anadolu Agency

Floodlist

Reliefweb

Natural Catastrophes: In Brief

Ministry of Emergency Management, China

Violent storm hits China's Jiangsu Province, claiming lives of 11 people and leaving 102 injured, The Watchers

Deutscher Wetterdienst

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