

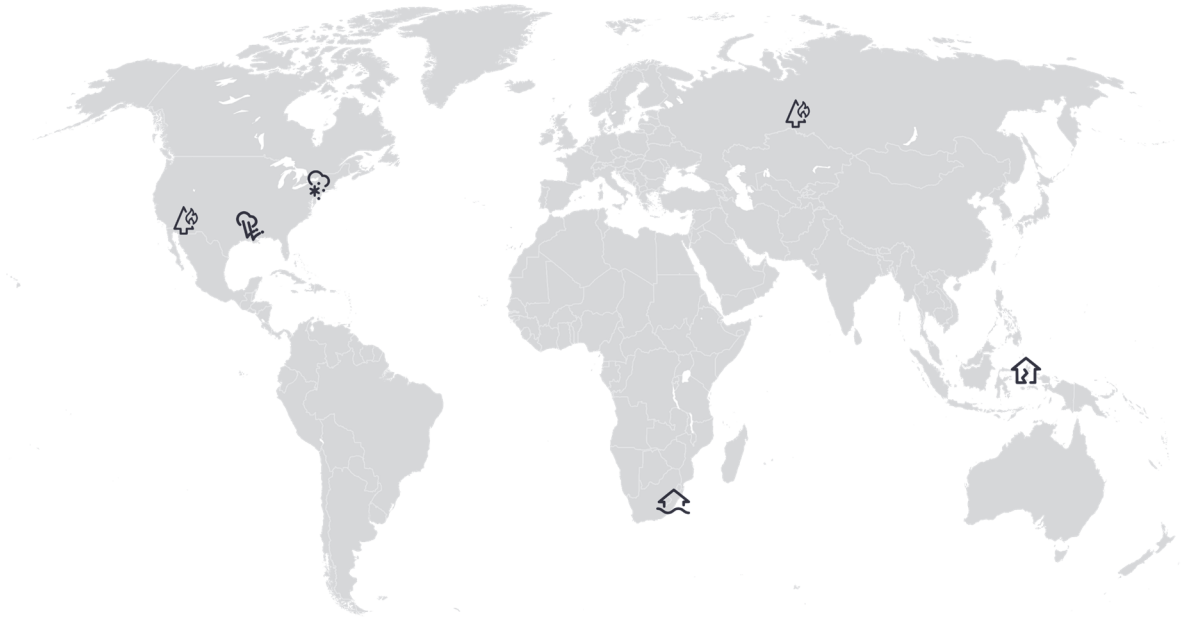
**AON**

# **Weekly Cat Report**

April 22, 2022



## Executive Summary



Event	Affected Region(s)	Fatalities	Economic Loss (\$)	Page
<b>Severe Convective Storm</b>	United States	0	Millions	3
<b>Flooding</b>	South Africa	455+	1+ billion	4
<b>Winter Weather</b>	United States	0	Millions	7
<b>Earthquake</b>	Indonesia	0	Negligible	7
<b>Wildfire</b>	Russia	0	Unknown	7
<b>Wildfire</b>	United States	0	Unknown	7

Please note that any financial loss estimate is preliminary and subject to change. These estimates are provided as an initial view of the potential financial impact from a recently completed or ongoing event based on early available assessments. Significant adjustments may inevitably occur. All losses in US dollars (\$) unless noted otherwise.

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>

## United States: Severe Convective Storm

### Overview

Severe storms in the Mid-South and South between April 15-18 generated instances of very large hail, damaging winds, and isolated tornadoes. Regions in Alabama, Arkansas, Florida, Mississippi, Oklahoma, and Texas were among the most impacted. Total economic and insured losses were each individually anticipated into the tens of millions (USD); if not higher.

### Meteorological Recap

Clashing air masses and a wave of low pressure resulted in unsettled weather across the Mid-South on April 15. The Storm Prediction Center (SPC) issued a Slight Risk (level 2 out of 5) for severe storms in eastern Oklahoma, western Arkansas, and southwestern Missouri. Discrete storms and supercells were ignited in Arkansas due to a destabilizing atmosphere, south of a well-defined warm front. Additional storms evolved in Oklahoma, in the vicinity of a dry line (a boundary which separates moist and dry air). Multiple instances of baseball to softball sized hail were reported across the region.

A lingering cold frontal boundary which pushed southward from the Tennessee Valley into the Deep South aided in back-to-back Slight Risk (level 2 out of 5) days for severe weather on April 16-17. By April 17, discrete cells and storm clusters organized into a Mesoscale Convective System (MCS), which traversed parts of Mississippi, southern Alabama, and the Florida Panhandle. Hazards included damaging straight-line winds, very large hail, and tornadoes.



### Event Details

On April 15, instances of 2.0 in (5.1 cm) and larger hail were reported in parts of **Alabama, Arkansas, Mississippi, Missouri, and Oklahoma**. Hail and non-tornadic winds resulted in notable damage to homes, property, trees, and vehicles across the region. In **Arkansas**, hail reaching and topping 4.0 in (10 cm), softball sized, pelted localities in Fulton and Craighead Counties.

On April 17, damaging hail reaching and topping 2.0 in (5.1 cm) were reported in **Alabama, Florida, Mississippi, and Texas**. Hail reaching 3.0 in (7.6 cm) fell in **Texas** near Hondo in Medina County. In **Mississippi**, a pair of EF2 tornadoes were surveyed in Perry County near Beaumont and in Green County near Avera. Extensive damage to trees and several structures were noted. Significant impacts were incurred at a lumber mill near Beaumont. Additionally, one injury was confirmed in Greene County. In **Florida**, a straight-line wind gust of 74 mph (120 kph) was measured at Pensacola International Airport.

## Update: South Africa Floods

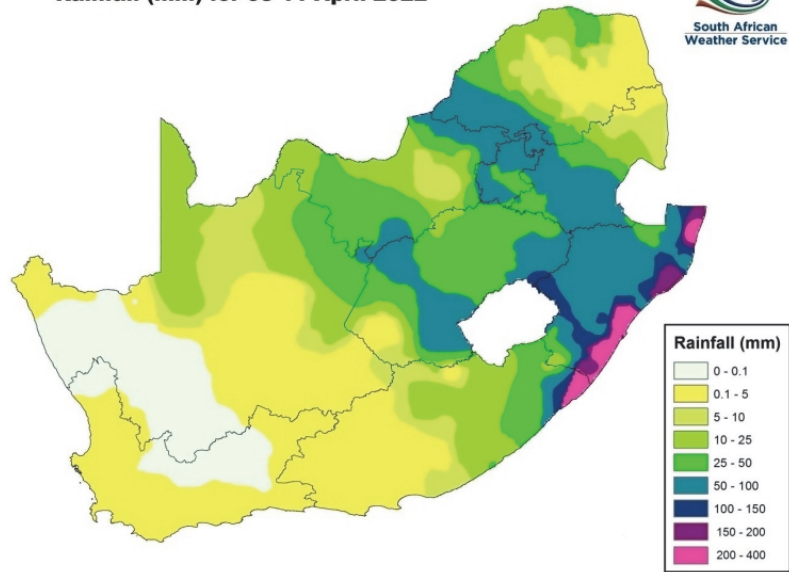
### Overview

Widespread flooding and landslides were triggered by intensive rain associated with a cut-off low in the eastern part of South Africa on April 8-12, particularly in KwaZulu-Natal Province. At least 455 people lost their lives, though dozens of people remain missing as rescue efforts were still ongoing and the number of fatalities was expected to rise. The flooding resulted in notable economic damage in the greater Durban area and other parts of KwaZulu-Natal. Preliminary estimates indicated that the potential economic impact will well approach or exceed \$2 billion. This will be the costliest South African flood event, if not overall natural hazard event, on record.

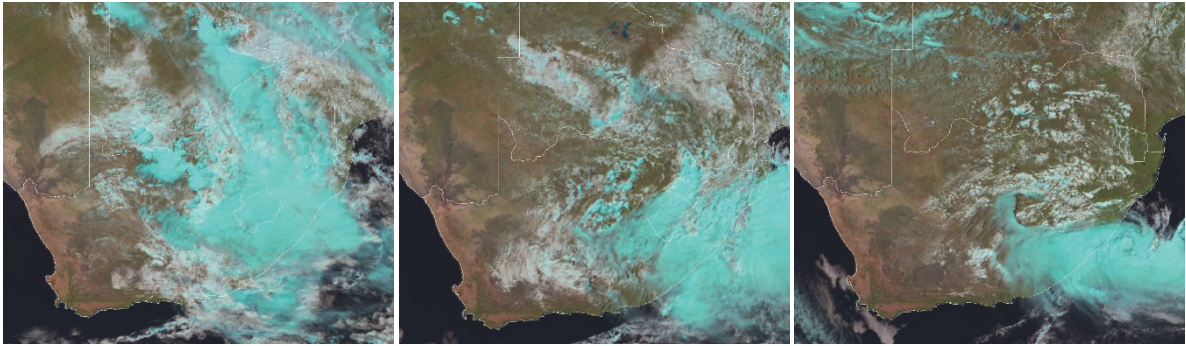
### Meteorological Recap

Flooding and landslides were triggered by extremely intense rain, associated with a cut-off low that affected eastern parts of South Africa between April 8-12, particularly in KwaZulu-Natal Province. The system later tracked eastward off the coast of the country on April 13. South African Weather Service (SAWS) noted the severity of the event in KwaZulu-Natal was exacerbated by the presence of sustained low-level maritime air, laden with moisture. Several stations recorded 24-hour rainfall totals that exceeded 300 mm (11.8 in), including Margate (311 mm / 12.2 in), or Virginia airport in Durban with 304 mm (11.9 in). Localities near Durban recorded 48-hour rainfall of more than 450 mm (17.7 in). This was nearly half of Durban's total annual average rainfall of 1,009 mm (39.7 in). The rains near Durban were the heaviest recorded in more than 60 years.

**Rainfall (mm) for 08-11 April 2022**



South Africa has received above average rainfall since the start of the year due to an ongoing La Niña. Multiple localities across South Africa have already recorded their wettest January on record since reliable data began in 1921. Enhanced precipitation due to an active Southwest Indian Cyclone Season additionally brought an influx of moisture to the southern half of Africa which oversaturated soils and caused river levels to rise.



**The cut-off low on visible satellite images on April 10, 11 & 12**

Source: EUMETSAT

The graphic above highlights a satellite view of the cut-off area of low pressure meandering near the South African east coast for multiple consecutive days.

## Event Details



**Toyota factory in Prospecton**

Source: Motor Industry Staff Association

As of this writing, at least 455 people lost their lives in KwaZulu-Natal Province. This marked one of the deadliest African natural hazard events of the 21<sup>st</sup> Century. Most of the fatalities occurred due to cars being swept away while crossing bridges, homes collapsing, landslides, and electrocution. Dozens of people remain missing as rescue efforts were ongoing and the number of fatalities may rise further.

According to local authorities, landslides and flooding caused notable damage to infrastructure and transportation, while hundreds of people were displaced, and thousands of houses were inundated. At least 13,500 homes were reportedly damaged or destroyed. Power lines were severed, and many electrical stations were either destroyed or submerged across the province. Additional power outages resulted as a local hydroelectric dam was overwhelmed by the incessant rainfall.

Telecommunication towers were also affected.

Furthermore, more than 500 schools were closed with education suspended for at least a week. At last count, no fewer than 630 schools were damaged. Telecommunication and mobile network services were concurrently affected; one of the major service providers alone noted disruption on 400 towers. Further damage was reported from the Port of Durban, where disruption of operations caused delays to imports and exports as businesses halted shipping to the port. This further caused additional supply chain disruption that was widely felt across South Africa and elsewhere on the continent. Further disruption was felt at the Port of Richards Bay, where terminal activity was limited.

Several roads suffered severe washout, with bridges connecting the coastal N2 highway destroyed. Further road closures notably disrupted the shipment and distribution of fuel and oil. In response to the widespread impacts, authorities declared a provincial State of Disaster.

There were multiple cases of damage to businesses. The flooding of the Toyota car manufacturing plant in Prospecton, south of Durban, was confirmed to be extensive with numerous cars scrapped. Production at the plant had stopped since April 11 and had yet to resume nearly two weeks later. Several automotive component suppliers were also affected. Pulp and paper giant Sappi closed three of its five mills in Africa.

### **Financial Loss**

Preliminary and tentative estimates made by local authorities suggested that total economic losses in the KwaZulu-Natal Province will run into the billions of ZAR. This includes damage to residential and commercial property, infrastructure, and the agribusiness sector. A preliminary government estimate cited infrastructure damage alone at ZAR10 billion (USD685 million). The overall economic loss is anticipated to approach and/or exceed \$2 billion. This event is anticipated to be one of the costliest South African (and African) flood events on record; if not the costliest. It may end as the costliest natural hazard event on record for South Africa.

The impact to the local insurance industry is likely to be considerable. The physical damage and direct disruption to the commercial sector around Durban was anticipated to bring a high volume of claim filings. Any prolonged shutdown to the Port of Durban would lead to additional business interruption losses. The port handles nearly 60 percent of South Africa's shipments and is the largest sub-Saharan Africa container hub that transports goods and other commodities to regional nations. The insurance cost alone will likely reach into the hundreds of millions (USD) and become one of the costliest events on record for the local industry.

## Natural Catastrophes: In Brief

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### **Winter Weather (United States)**

A late season Nor'easter brought a round of heavy snowfall to the interior Northeast and New England on April 18-19. Snowfall totals in this region approached and exceeded 6 to 12 in (15 to 30 cm) – the NWS office in Binghamton, New York measured a record April two-day snow total of 14.2 in (36 cm). Heavy snowfall and gusty winds, which damaged trees and electrical infrastructure, resulted in widespread power outages on April 19. No fewer than 300,000 customers lost electricity by the afternoon – primarily in New York and north-eastern Pennsylvania. Numerous roadways were closed or impassable. Concurrently, an abnormally chilly April airmass prompted Freeze Warnings and Frost Advisories that spanned parts of the Middle Mississippi and Tennessee Valleys and into the Mid-Atlantic.

### **Earthquake (Indonesia)**

A magnitude-5.0 earthquake rattled North Maluku, Indonesia, in the late morning of April 18. The quake struck at a depth of 15.6 km (9.7 mi) in the North Halmahera Regency, damaging at least 270 houses and injuring two people. Several residents felt shocks of intensity IV (light shaking) on the Modified Mercalli Intensity (MMI) scale. Economic losses were negligible.

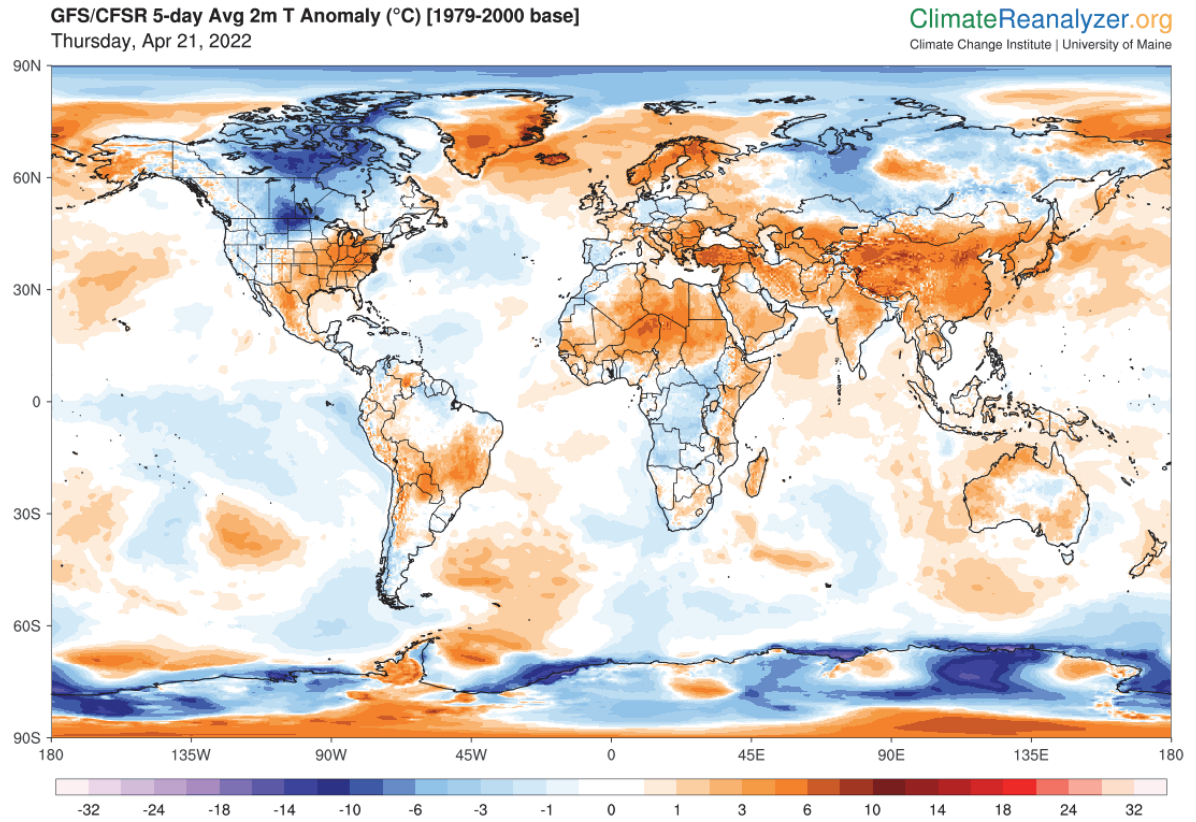
### **Wildfire (Russia)**

The fire season has begun for Russia. A massive steppe wildfire was affecting the Tyumen region, Western Siberia on April 19. Fires were also reported around Omsk, Novosibirsk, and Krasnoyarsk days earlier. At least 60 houses in Kansk were burned. With the state of fire hazard declared in 14 regions, additional damages are likely in the coming days.

### **Wildfire (United States)**

Dry grass and brush combined with low relative humidity and windy conditions aided in the rapid expansion of the Tunnel Fire burning in Coconino County in Arizona. Initially discovered on April 17, the fire forced the closure of a stretch of U.S. Highway 89 and prompted thousands of mandatory evacuations across communities' northeast of Flagstaff. The fire had affected 20,511 acres (8,300 ha) through April 21. Preliminary surveys indicated at least 25 structures and homes were damaged to varying degrees. County official declared a local State of Emergency in response to the fire. Nearby, the Crooks Fire burning in Yavapai County triggered additional evacuations. In Colorado, several homes were burned by the Monte Vista fire in Rio Grande County on April 20. Damage assessments remained ongoing.

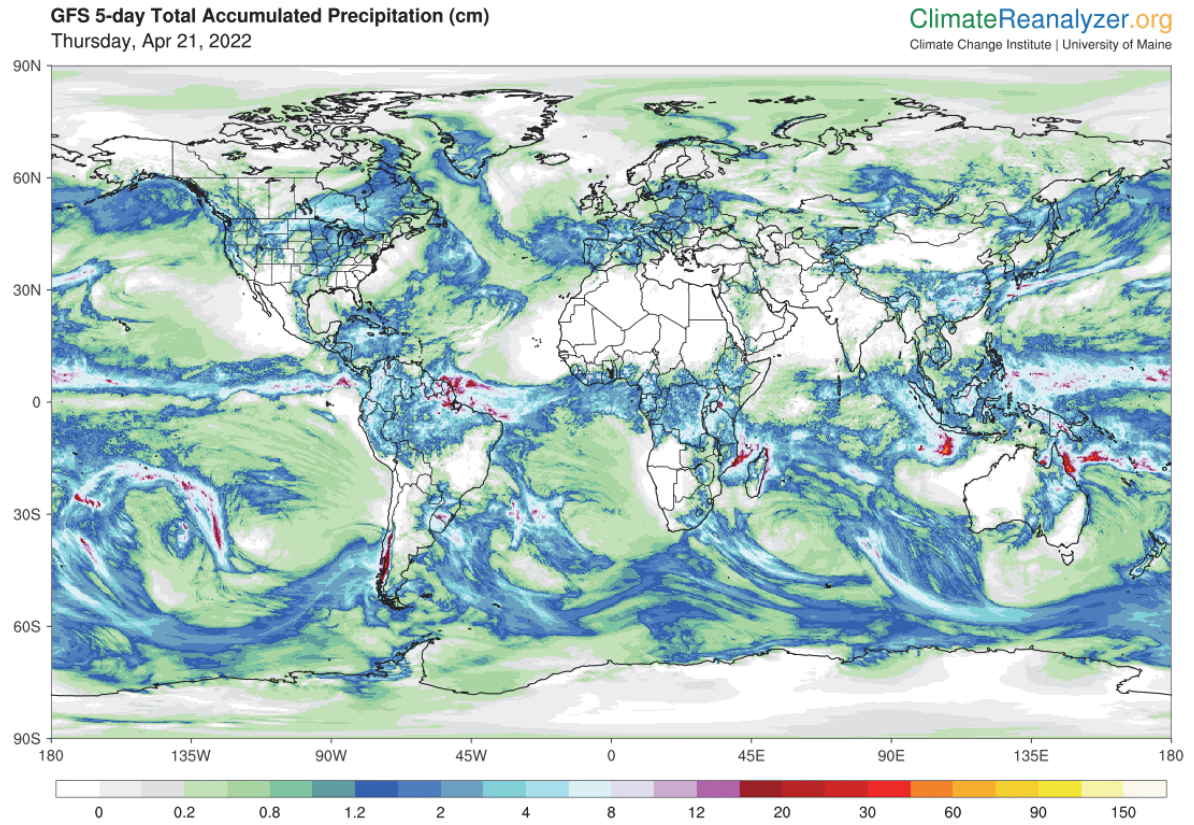
## Global Temperature Anomaly Forecast



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



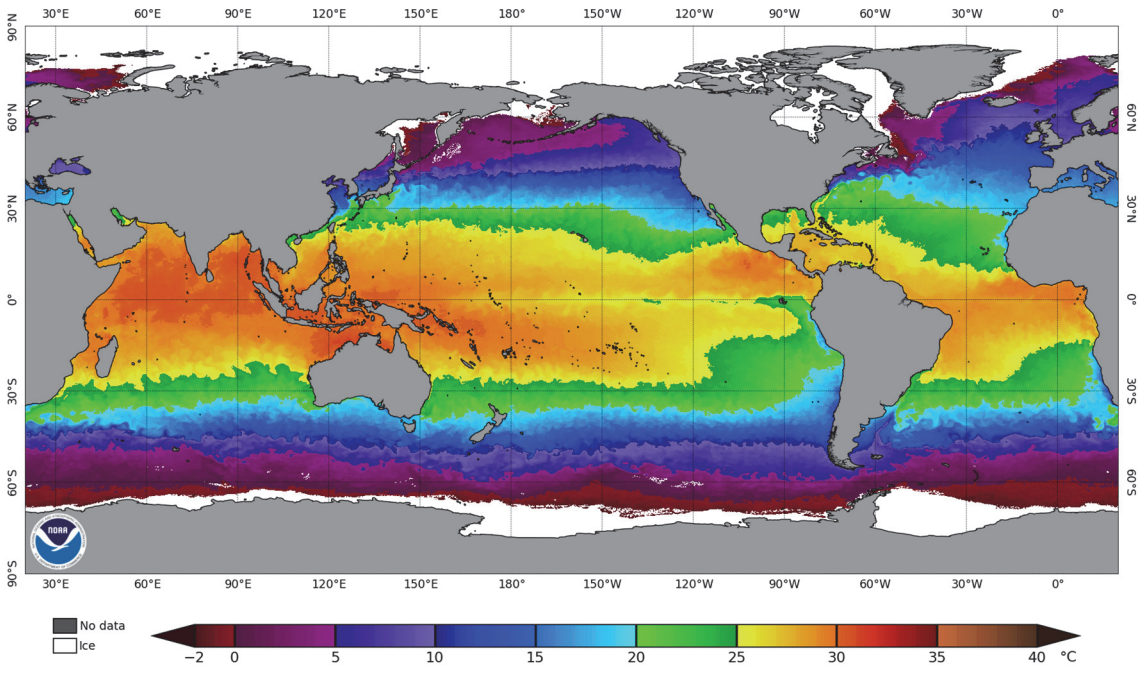
## Global Precipitation Anomaly Forecast



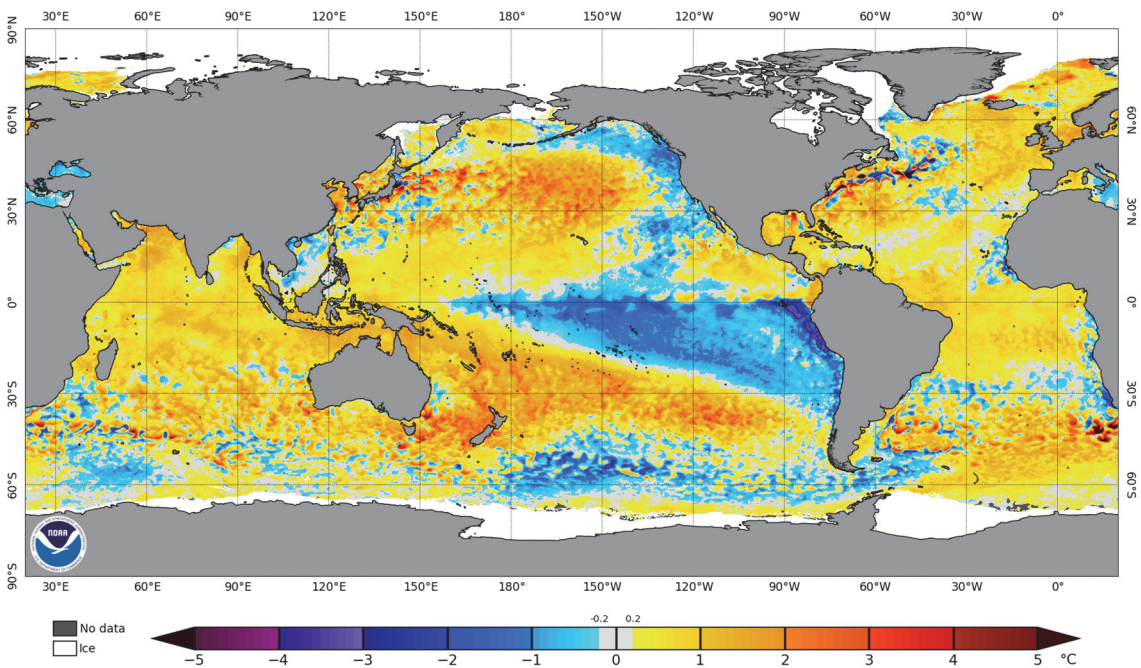
Source: Climate Reanalyzer, Climate Change Institute, University of Maine, USA

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

NOAA Coral Reef Watch Daily 5km Sea Surface Temperatures (v3.1) 20 Apr 2022



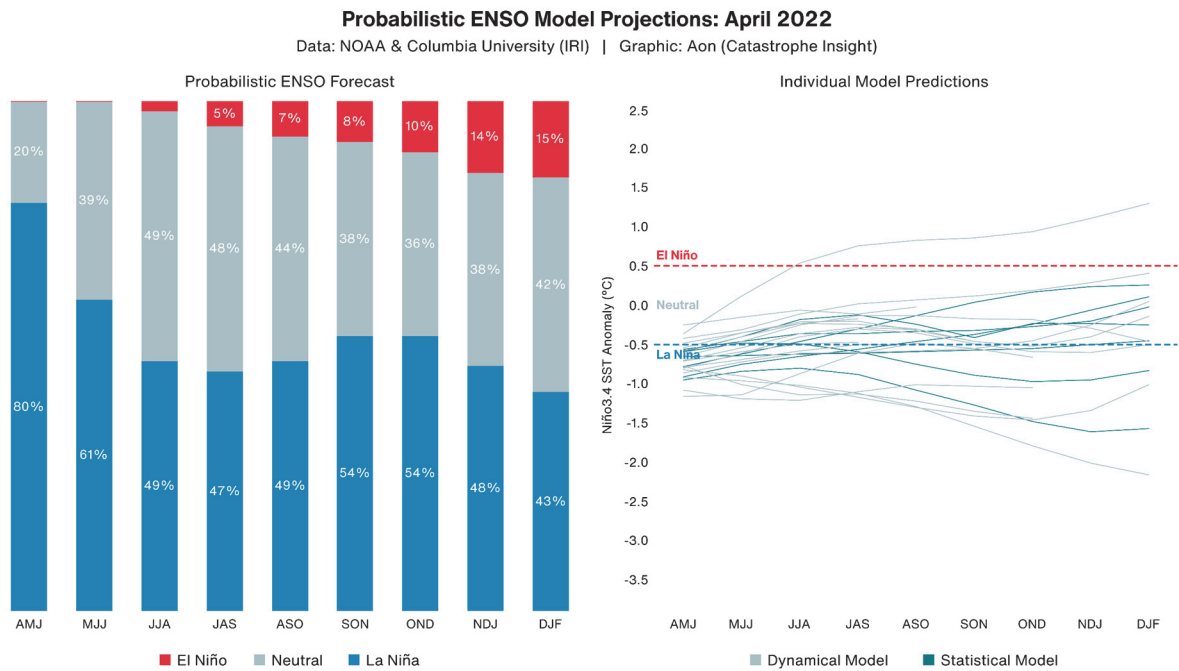
NOAA Coral Reef Watch Daily 5km SST Anomalies (v3.1) 20 Apr 2022



# El Niño-Southern Oscillation (ENSO)

## Overview

La Niña conditions are likely to continue into the Northern Hemisphere summer. NOAA cites a 59 percent chance of La Niña conditions persisting during the June-August timeframe, and a 50-55 percent chance of transitioning to ENSO neutral conditions into the early fall.



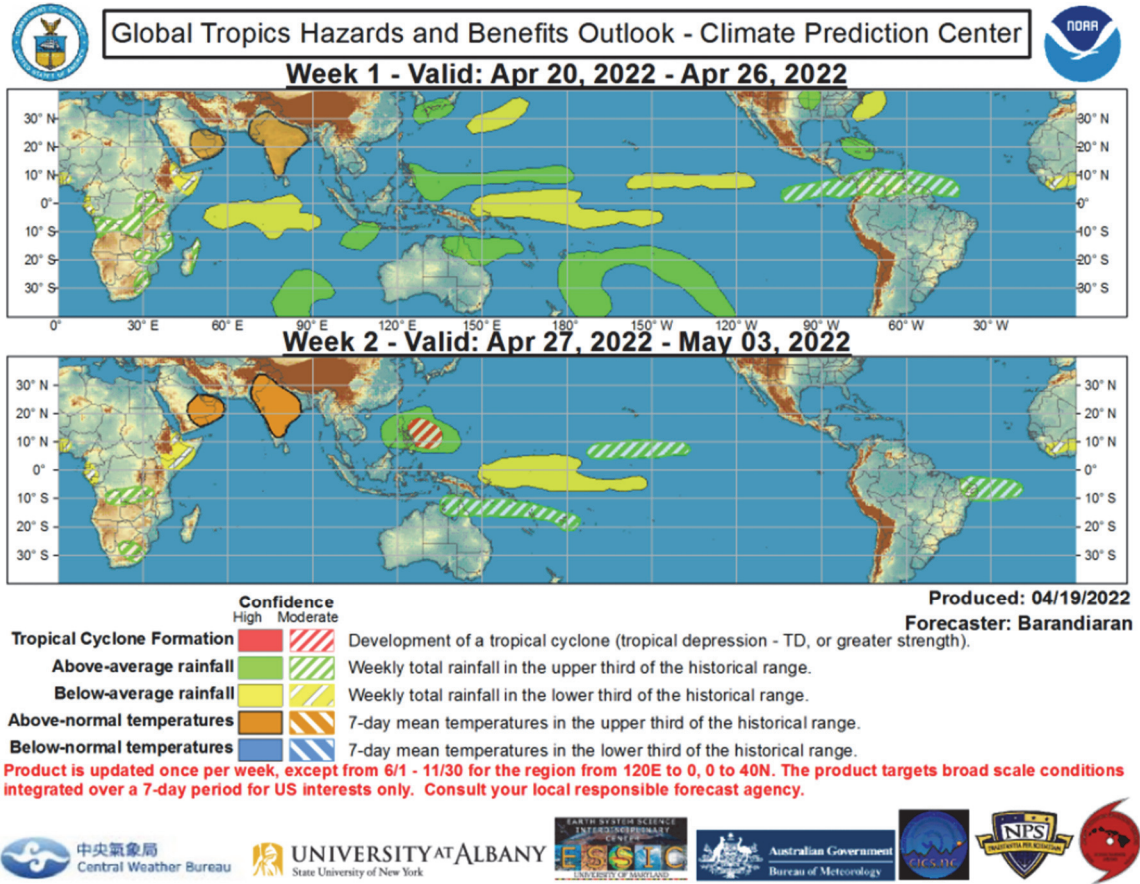
**El Niño:** Warm phase of an ENSO cycle. Sea surface temperatures of +0.5°C occur across the east-central equatorial Pacific.

**La Niña:** Cool phase of an ENSO cycle. Sea surface temperatures of -0.5°C occur across the east-central equatorial Pacific.

**Neutral:** A period when neither El Niño nor La Niña conditions are present.

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

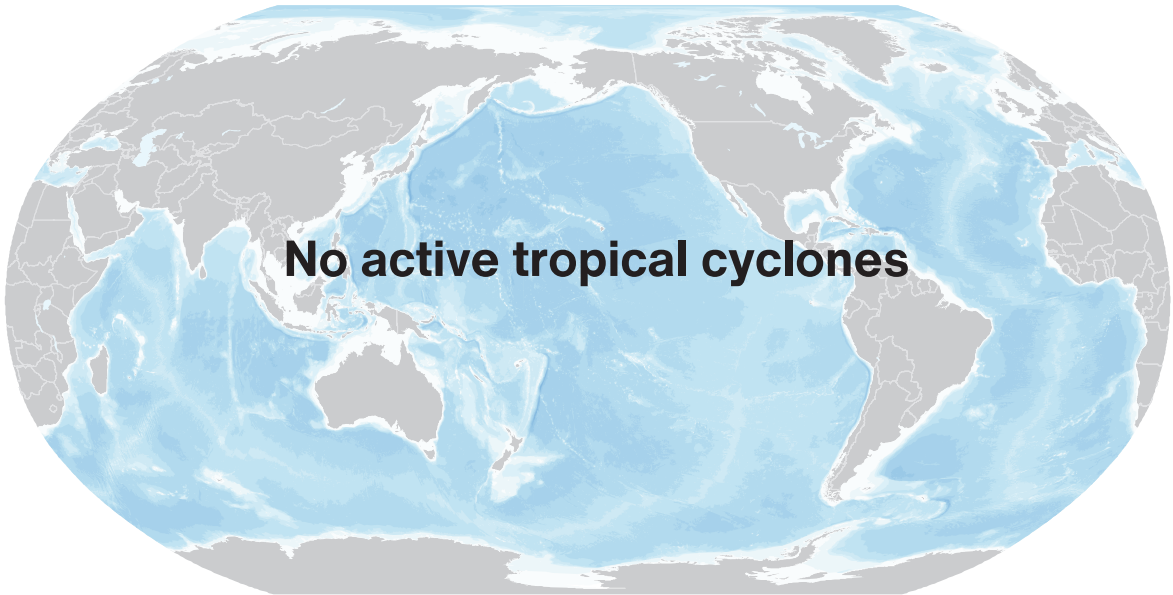


Source: Climate Prediction Center (NOAA)

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## Current Tropical Cyclone Activity

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🟢 Tropical Depression   🟡 Tropical Storm   🟠 Category 1   🔴 Category 2   🟡 Category 3   🟢 Category 4   🟣 Category 5

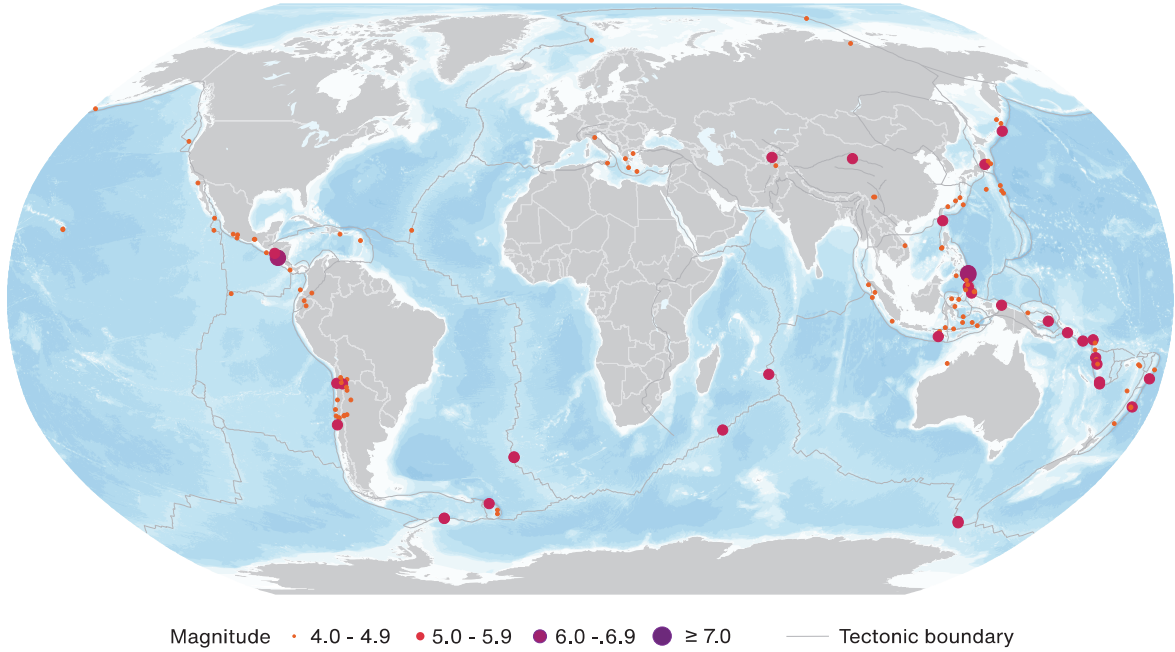
Storm Name	Location	Winds	Location from Nearest Land Area

\* TD: Tropical Depression, TS: Tropical Storm, HU: Hurricane, TY: Typhoon, CY: Cyclone

\*\* N: North, S: South, E: East, W: West, NW: Northwest, NE: Northeast, SE: Southeast, SW: Southwest

Source: National Hurricane Center, Joint Typhoon Warning Center, Central Pacific Hurricane Center (NOAA)

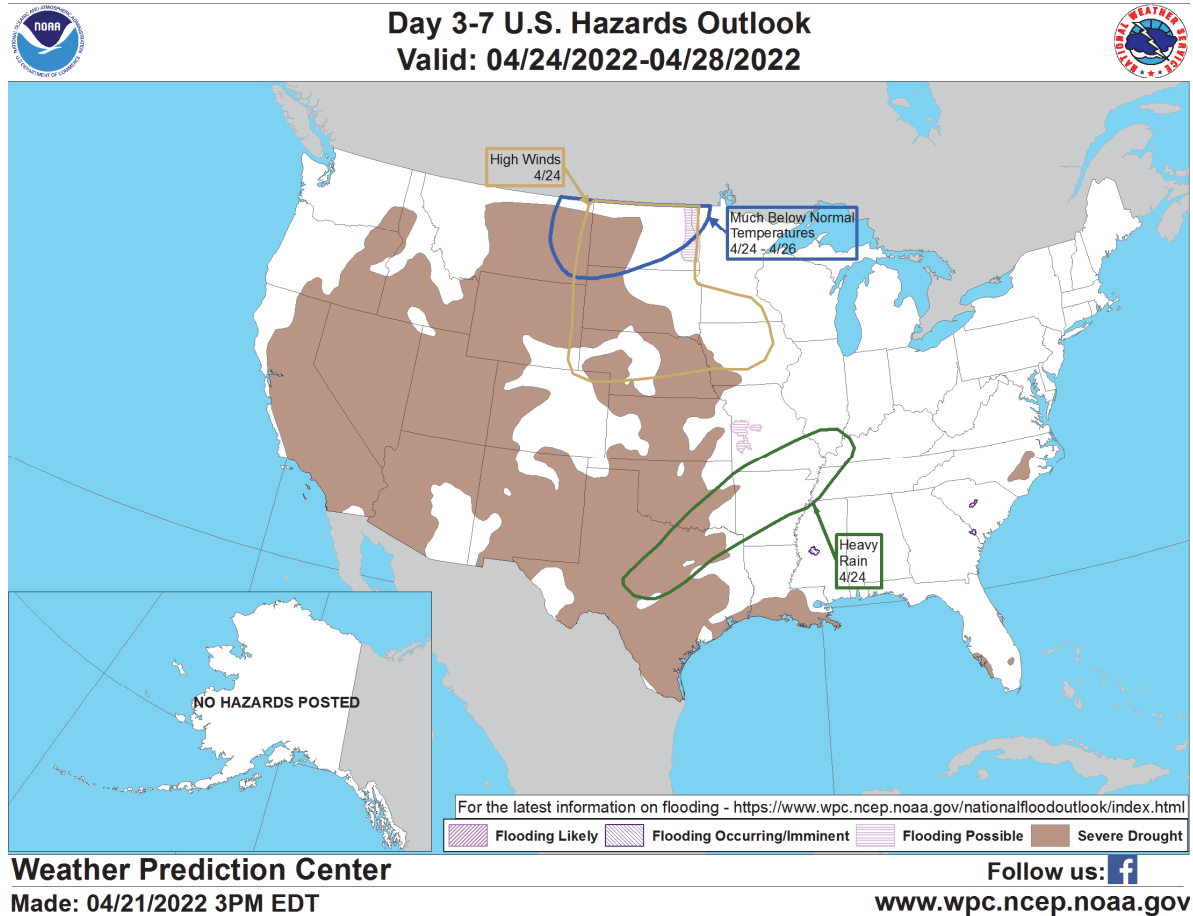
## Global Earthquake Activity ( $\geq M4.0$ ): April 15 - 21



Date (UTC)	Location	Magnitude	Epicenter
04/19/2022	7.23N, 126.95E	6.1	42 km (26 mi) E of Santiago, Philippines
04/20/2022	6.99N, 126.93E	6.0	50 km (31 mi) ESE of Manay, Philippines
04/21/2022	11.55N, 86.99W	6.7	58 km (36 mi) WSW of Masachapa, Nicaragua

Source: United States Geological Survey

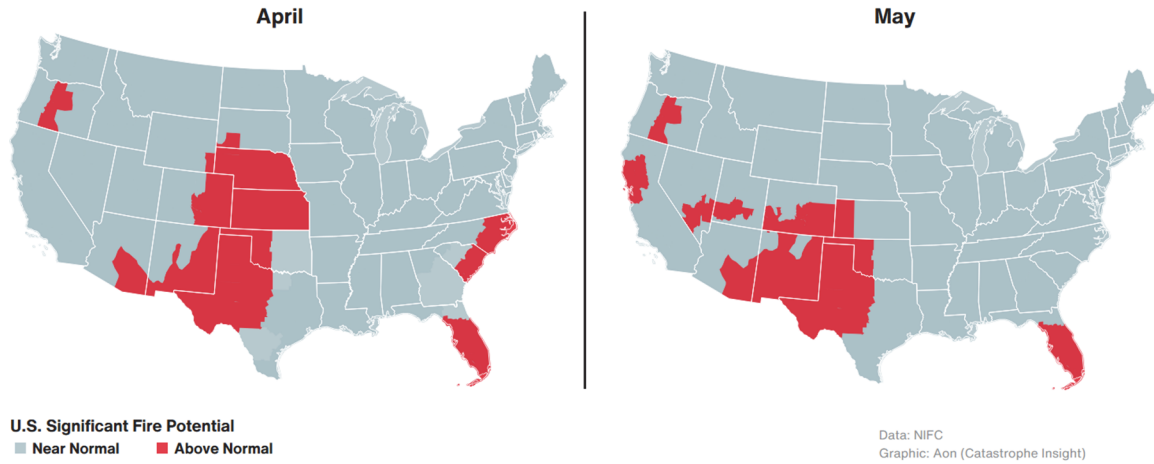
## U.S. Hazard Outlook



- An area of low pressure and associated frontal system will aid in heavy rainfall across the Southern Plains and Middle Mississippi Valley on April 24. A strong pressure gradient associated with the low will result in high winds in the Central and Northern Plains during the same period.
- Subsequently, cold air settling across the Northern Plains in the wake of the system will lead to much below normal temperatures between April 24-26.
- Though not seen on the map above, extremely critical wildfire conditions are forecast for much of New Mexico and eastern Colorado through April 23.
- Severe drought conditions will remain a concern in vast regions of the Southern Plains, West, and Northern Tier.

Source: Weather Prediction Center (NOAA)

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



### Annual YTD Wildfire Comparison: April 21

Year	Number of Fires	Acres Burned	Acres Burned Per Fire
2018	15,563	887,169	57.01
2019	8,643	213,364	24.68
2020	10,532	213,574	20.28
2021	15,971	438,525	27.46
2022	19,744	832,844	42.18
<b>10-Year Average (2012-2021)</b>	<b>13,720</b>	<b>640,489</b>	<b>46.68</b>

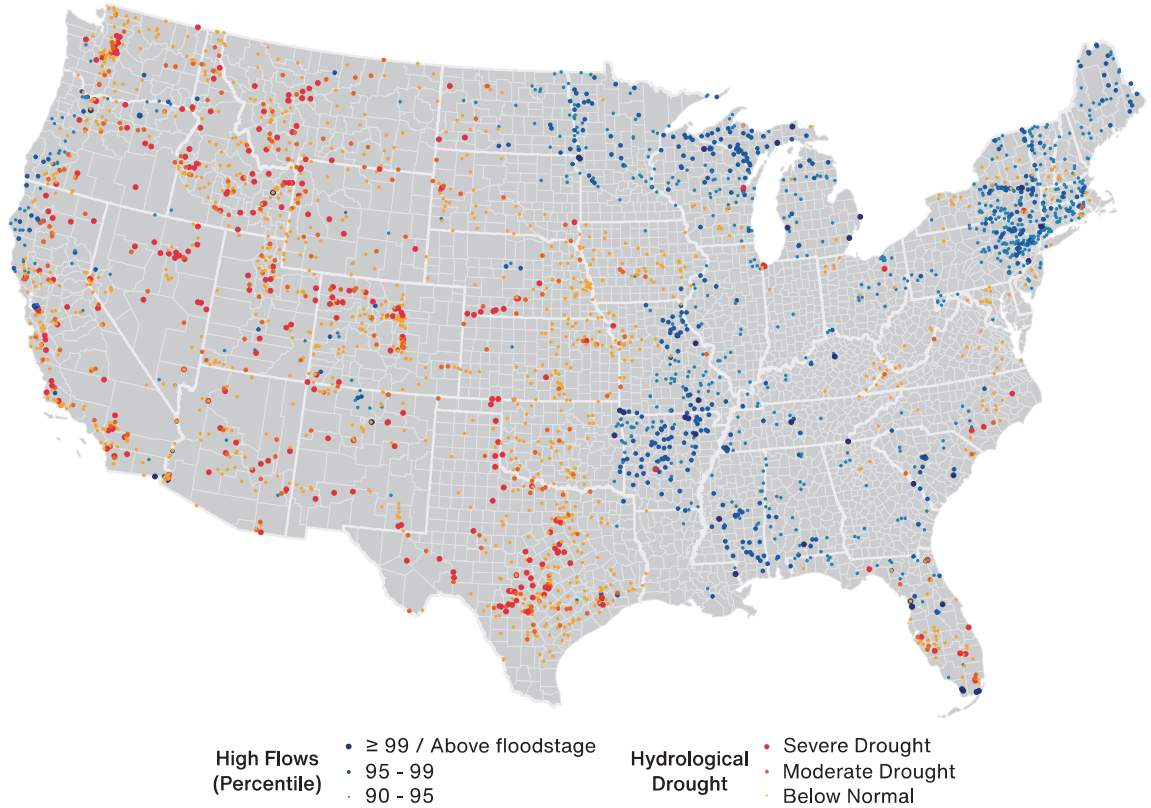
### Top 5 Most Acres Burned by State: April 20

State	Number of Fires	Acres Burned	Acres Burned Per Fire
Texas	3,625	399,043	110.08
Oklahoma	897	126,251	140.75
New Mexico	132	46,887	355.20
Kansas	41	44,234	1,078.88
Mississippi	1,215	42,020	34.58

Source: National Interagency Fire Center



## U.S. Current Riverine Flood Risk



A  $\geq 99^{\text{th}}$  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 stream 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 / Creeks: Highest Percentile for Water Height

Location	Current Stage (ft)	Percentile
South Fork Coquille River at Powers, Oregon	6.55	99.03
Saluda River near Columbia, South Carolina	7.56	98.96
Ouachita River at Jones Mill, Arkansas	9.96	98.90
Alsea River near Tidewater, Oregon	7.37	98.78
Big Spring near Van Buren, Missouri	3.34	98.75

Source: United States Geological Survey

## Source Information

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### **United States: Severe Convective Storm**

U.S. National Weather Service

U.S. Storm Prediction Center

### **Update: South Africa Floods**

Persistent, heavy rainfall recorded in parts of KZN overnight - Weather Service. News24

Toyota factory flooded, operations halted. News24

South Africa Weather Service (SAWS)

### **Natural Catastrophes: In Brief**

Northeast winter storm cuts power to more than 300,000, *The Washington Post*

U.S. National Weather Service

PowerOutage.us

Indonesia National Disaster Mitigation Agency (BNPB)

Greenpeace Russia

InciWeb

Nearly 800 homes, 1,000 animals evacuated from Tunnel Fire in Arizona, *ABC News*

## Contacts

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## About Aon

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