

Weekly Cat Report

November 10, 2023



Executive Summary



Event	Affected Region(s)	Fatalities	Economic Loss (\$)	Page
Flooding & SCS	Italy, Southeastern Europe	7	100s of millions	3
Windstorm Domingos	France, Spain	1	100s of millions	6
Earthquake	Nepal	153	10s of millions	9
Flooding	Eastern Africa	69	Unknown	11
Wildfire	United States	1	Negligible	13
Severe Convective Storm	Brazil	7	Millions	13
Flooding	Malaysia	0	Unknown	13
SCS, Flooding, & Landslide	Sri Lanka	2	Unknown	13
SCS & Flooding	Honduras	4	Unknown	13
Winter Weather	Mongolia	8	Negligible	13

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>

On October 19, we released the Q3 Global Catastrophe Recap. The document can be accessed [here](#).

Italy, Southeastern Europe: Flooding & SCS

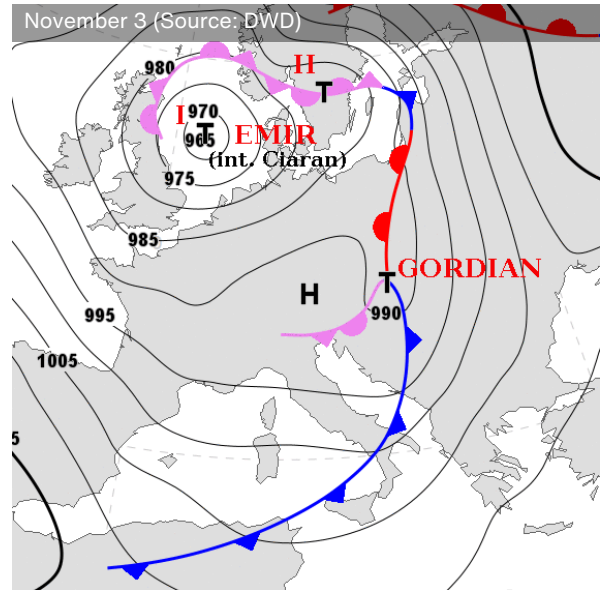
Overview

Low-pressure systems and associated cold fronts continued to bring heavy rainfall and storms that triggered localized flooding in several parts of Europe on November 2-4. Notably, flood-related damage was incurred in the Italian Tuscany Region, generating economic losses initially estimated at hundreds of millions EUR. Several people were killed.

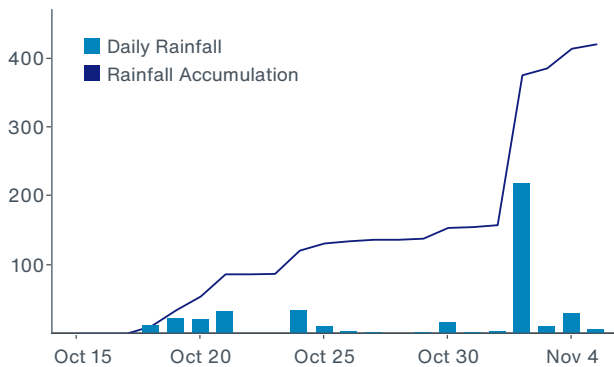
Meteorological Recap

A stagnant, wavy frontal boundary associated with low Ciarán and a secondary low-pressure area named Gordian extended over much of Europe. Along the boundary, strong winds, persistent rainfall, and subsequent severe flooding occurred over northern and central Italy.

According to regional authorities, multiple locations in the Tuscany region saw over **200 mm (7.9 inches)** of rain in a 24-hour period between November 2-3 (see the table below). This included the Pontedera station, where 198 mm (7.8 inches) fell within 4 hours. The extensive amount of rain resulted in widespread flooding and landslides as soils in the region had already been saturated from preceding rains (see the graph below). Multiple locations recorded more than 400 mm (15.7 inches) of rain in the last three weeks.



Rainfall Accumulation Since October 15 at Pontedera Station (mm)



Data: Centro Funzionale Regione Toscana (CFR)

Location	24-hour Rainfall (mm/in)
Vagli di Sotto	246.6 / 9.71
Campagrina	227.0 / 8.94
Pontedera	221.8 / 8.73
Gello	208.4 / 8.20
Parana	207.2 / 8.16

A cold front associated with low Gordian brought further heavy rains and thunderstorms to the Balkans on November 4. Primary hazards included strong wind gusts, large hail, and several tornadoes. Notably, wind and tornado-related damage occurred across south-eastern Bulgaria.

Event Details

Italy

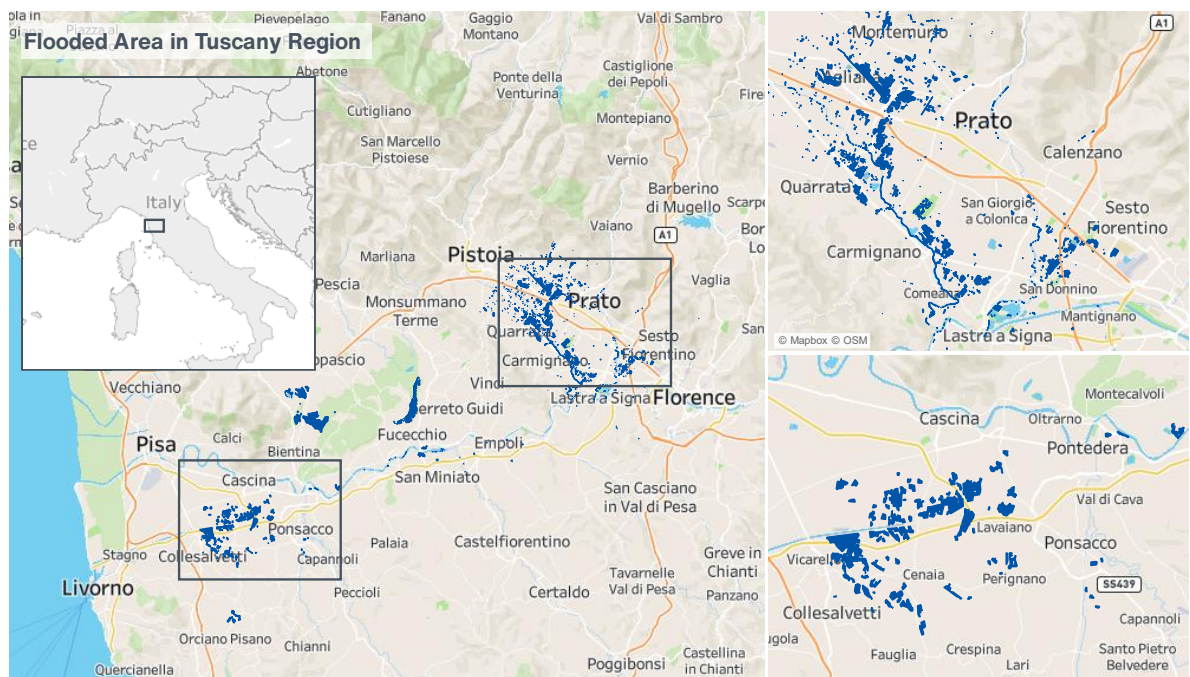
Regions in northern and central Italy were among the hardest hit. The worst situation was reported in **Tuscany**, where local officials declared a state of emergency after an episode of torrential rainfall. The flooding prompted evacuations of more than 1,200 people and left 20,500 customers without power within the affected area. According to Copernicus EMS, 5,000 people were affected in total in the municipalities of Prato, Fucecchio, Pontedera, Quarrata, Montemurlo, and Orentano. An area of more than 2,300 hectares (5,680 acres) was designated as flooded (see map below). Local authorities stated that 5,800 interventions were carried out since November 2.



Flooding in Campi Bisenzio and Prato
Source: Civile Protection Department

Flooding resulted in additional notable crop losses as hundreds of farms were inundated across Tuscany, according to the Italian Agricultural Association Coldiretti.

Seven people died in the provinces of Florence and Prato.



Data: Copernicus EMS

Other regions

Power outages, downed trees, and notable infrastructural and property damage occurred in **Bulgaria** as strong storms passed on November 4. This included the Lavovo municipality where about 150 homes were damaged by a large tornado. Additional damage due to the storm system was reported in the Stara Zagora and Kazanlak regions in central Bulgaria. Relatively minor losses were reported in **Greece**.

Financial Loss

Preliminary governmental estimates of economic losses from the affected regions were initially placed in the hundreds of millions EUR. However, total losses could potentially reach higher, although likely not as high as the losses incurred in the devastating flooding in Emilia-Romagna earlier this year. Similarly, while impact on insurance is expected to be notable, insurers will likely cover only a small portion of the total loss due to relatively low take-up rates.

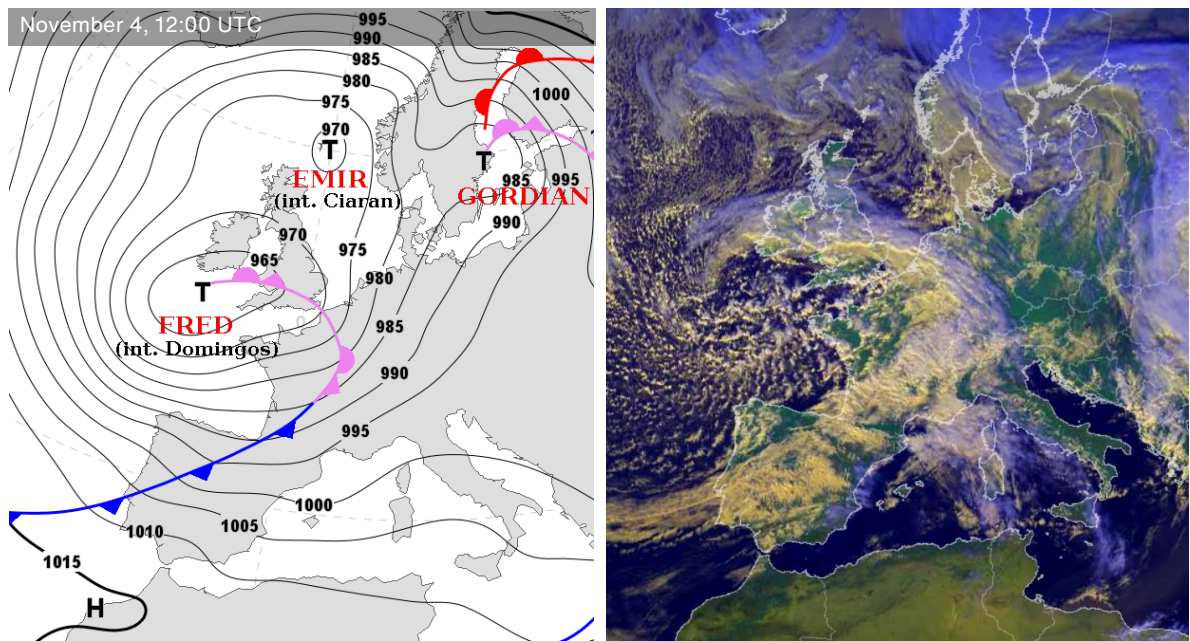
France, Spain: Windstorm Domingos

Overview

After storm Ciarán, a new low-pressure system named Domingos affected parts of Western Europe, generating strong winds and heavy rainfall particularly in western France and northern Spain on November 4-7. Although less intense compared to Ciarán, total economic losses can potentially reach into the lower hundreds of millions EUR.

Meteorological Recap

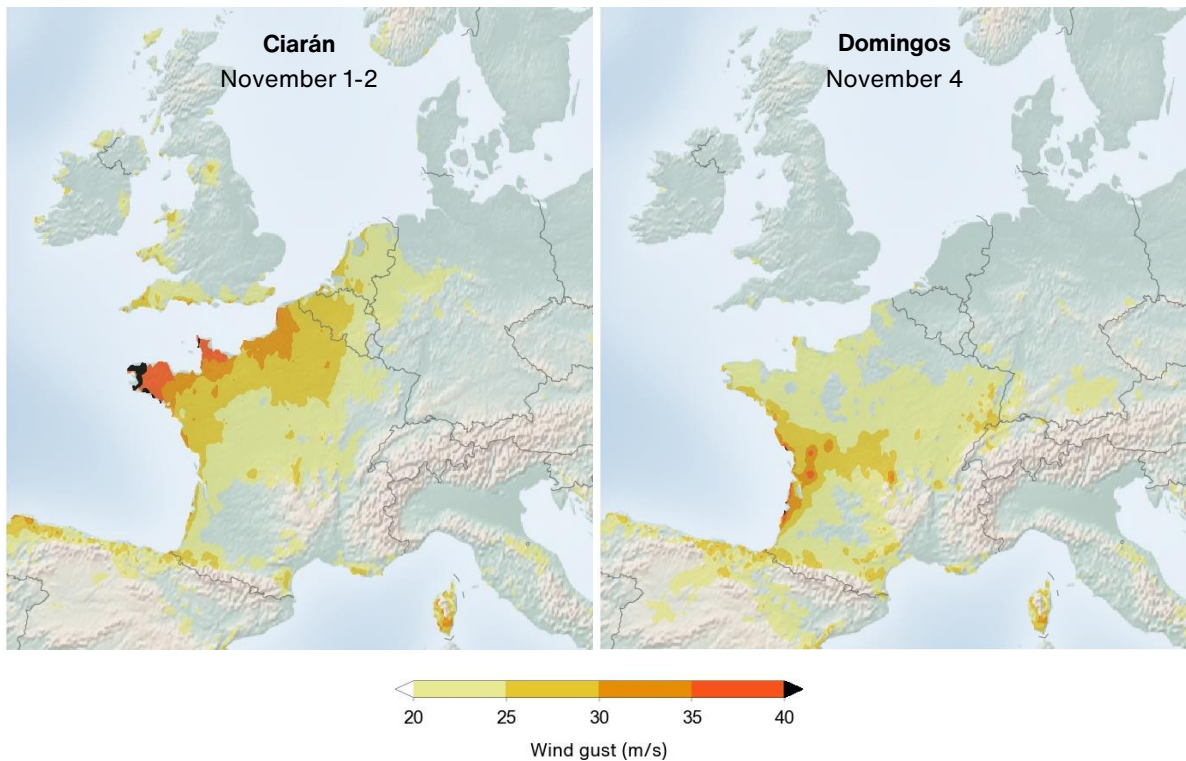
A few days after storm Ciarán hit the continent, another windstorm approached Western Europe. The system was named **Domingos** by the Spanish Met Service AEMET on November 3, alternatively Fred by FU Berlin. Domingos started to affect north-western France and northern Spain on November 4, initially generating strong winds (see the Table below). Intense rainfall soon followed and impacted various parts of France between November 5-7, particularly in regions of the southwest and north.



Météo-France was prompted to issue their highest flood warning (red) for all of the Pas-de-Calais department. This warning included the Liane and Aa Rivers, which burst their banks as the nearby Hem, Lys, and Canche River basins were also dealing with flooding. An additional orange warning for heavy rainfall was issued in seven departments in the southwestern parts of France during this rainy episode.

Country	Location (Region/Province)	Wind Gust (kph)	Wind Gust (mph)
France	Lège-Cap-Ferret (Nouvelle-Aquitaine)	151	93.8
	Cognac (Nouvelle-Aquitaine)	144	89.5
	Niort (Nouvelle-Aquitaine Region)	136	84.5
Spain	Valdezcaray (La Rioja)	203	126.1
	Estaca de Bares (A Coruña)	162	100.7
	Cabo Busto (Asturias)	155	96.3

Wind footprints of both storms modelled by Aon's **Impact Forecasting** through the Automated Event Response service (AER) are displayed below:



Event Details

In western France and northern Spain, strong wind gusts were the primary hazard related to storm Domingos. The system caused notable traffic disruption and power outages to about 160,000 people across the affected area. Approximately 145,000 of the customers who lost power were in the **New Aquitaine** Region alone. Fire brigades carried out more than 360 interventions. As of this writing, one death and several injured people were reported due to the storm.

Elsewhere, the **Pas-de-Calais** department in northern France was severely impacted by torrential rainfall and subsequent flooding. Fire brigades intervened more than 600 times across the department. At least seven people suffered injuries while hundreds more were forced to evacuate due to the flooding.

According to the National Civil Security, there have been more than 18,500 interventions across the country since November 1 as a result of the passage of both storms Ciarán and Domingos.

Financial Loss

Storm Domingos resulted in additional wind-related economic and insured losses in France, only a couple of days after the impact of storm Ciarán. Due to a lower intensity of its wind field, Domingos resulted in less significant impacts, largely limited to the western-central departments, while Ciarán's primary impact was further north in Bretagne and the northern regions. Additional losses related to the event also resulted from flooding.



Floods in the Pas-de-Calais Department

Source: National Civil Security

Nepal: Earthquake

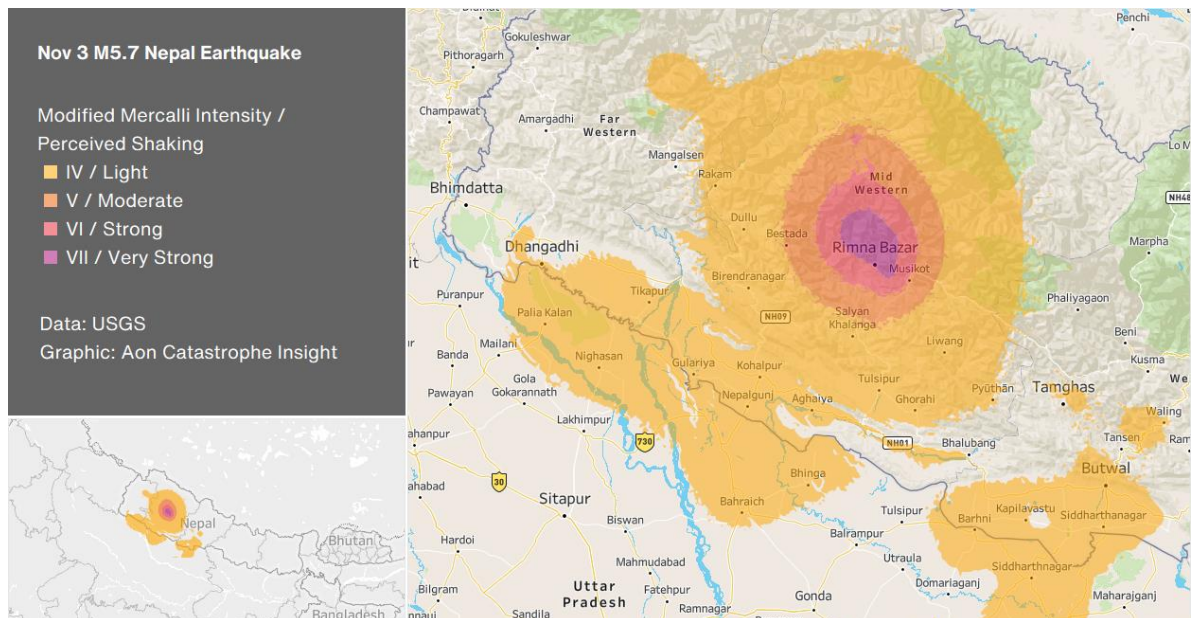
Overview

A magnitude-5.7 earthquake jolted Nepal's Karnali Province on November 3 and claimed at least 153 lives. More than 360 people were injured, and tens of thousands of buildings across the affected area suffered notable structural damage. Total economic losses can potentially reach into the tens of millions USD, potentially higher.

Seismological Recap

A shallow, magnitude-5.7 earthquake struck near Jajarkot in the Karnali Province of western Nepal around 11:47 pm (18:02 UTC) on November 3. The quake occurred at a depth of about 17 km (10.5 miles), according to the USGS. The National Earthquake Monitoring and Research Center in Nepal initially reported a higher magnitude of 6.4. The main shock was followed by several weaker aftershocks, some of which were felt as far away as northern India.

Seismicity in the Himalayas predominantly results from the continental collision of the Indian and Eurasian plates, which are converging at a relative rate of 40-50 mm/yr. This convergence generates numerous earthquakes and consequently makes this area one of the most seismically hazardous regions on Earth. The most recent magnitude-5.7 earthquake closest to the November 3 epicenter occurred a month ago on October 3.



Event Details

Based on USGS data, various intensities of ground shaking may have been felt by more than 43 million people in western Nepal and northern India. Almost 150,000 people were exposed to very strong shaking. The risk of high fatalities from this earthquake was classified at a yellow level. As of November 8, there have been at least 153 deaths (101 in Jajarkot, 52 in Rukum West) and 364 injuries, according to the local authorities (NDRRMA).

Widespread structural and infrastructural damage was initially incurred across the Karnali Province, particularly in the districts of Rukum West and Jajarkot. On November 8, NDRRMA stated that 26,520 houses were completely destroyed while almost 35,400 buildings were partially damaged by the earthquake. Rescue efforts and damage assessment are ongoing as communication services have been disrupted. Several main highways have been blocked by landslides that were triggered by the earthquake. Thus, the total number of casualties and damaged structures are subject to change.



Structural damage in Jajarkot District

Source: NDRRMA

Financial Loss

The earthquake has a high potential (63 percent) of economic losses via property and infrastructure damage reaching into the tens of millions of USD or higher, based on the USGS PAGER methodology.

Eastern Africa: Flooding

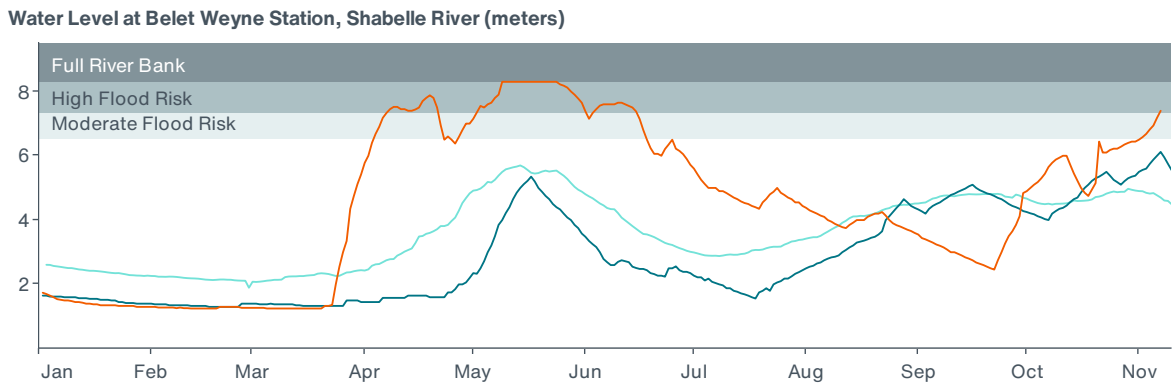
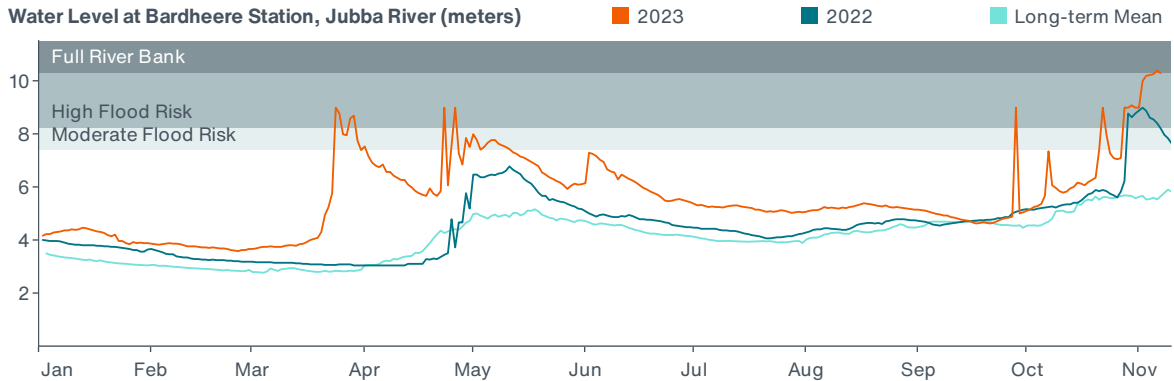
Overview

Heavy seasonal rainfall in recent weeks has resulted in severe flooding across multiple countries in eastern Africa, including Burundi, Ethiopia, Kenya, Malawi, and Somalia. More than 700,000 people have been affected, and dozens have lost their lives. Considerable infrastructural and agricultural losses have been incurred in the region.

Meteorological Recap

In recent weeks, the 2023 October-December seasonal rains have intensified across much of eastern Africa. The presence of El Niño conditions and a positive Indian Ocean Dipole are likely influencing the enhanced rainfall and flooding seen over this region. Additional rainfall totals exceeding 200-300 mm (up to 11.8 inches) are expected to hit the region in the following days and weeks, which may worsen the current situation.

Torrential rainfall caused many local rivers to overflow their banks. The graphic below displays the high water levels of Somalia’s Jubba and Shabelle Rivers. This year’s water levels peaked well above the long-term mean during both the May-June and October-November rainy seasons.



Data: SWALIM, UN FAO

Event Details

The ongoing October-December rainy season has already claimed dozens of lives, affected nearly a million people, and caused notable material damage across eastern Africa. Widespread flooding caused infrastructural damage to several roads and bridges, along with a significant impact on crops. In **Somalia**, about 4,500 shelters have been destroyed. In **Kenya**, recent heavy rainfall since November 2 triggered flash flooding in Mander County, which caused at least 15 deaths and affected more than 15,000 households. Earlier in mid-October, severe floods damaged dozens of houses in several communes of **Burundi's** Makamba Province, along with notable agricultural damage. At least four fatalities and 15 injured people were reported.

The Table below summarizes the flood-related impact in individual regions, according to the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA).

Country	Regions Affected	People Affected	Fatalities
Burundi	Makamba	5,000	4
Ethiopia	Somali	12,000	20
Kenya	North Eastern, Eastern	15,000	15
Malawi	Nsanje, Machinga	-	1
Somalia	South West, Hirshabelle, Jubaland, Galmudug	706,000	29

Financial Loss

It remains too early to determine economic impact of the current seasonal flooding and it will take weeks and months to realize the eventual impacts. Nevertheless, the current situation poses a humanitarian risk for millions of people in a vulnerable region.

Natural Catastrophes: In Brief

Wildfire (United States)

Preceding drought conditions, above-average temperatures, and low relative humidity helped dozens of wildfires grow across several states spanning from Texas to Virginia since the start of November. States of emergency have been declared for multiple counties within North Carolina, Virginia, and Kentucky to aid fire containment efforts. In North Carolina, the Poplar fire has burned around 430 acres (175 hectares), injured 2 people, damaged or destroyed 2 homes, and is 15% contained as of November 8. Elsewhere in southern Louisiana, wildfire smoke trapped under a temperature inversion layer once again reduced visibilities and triggered several vehicle crashes early on November 7. The crashes in eastern New Orleans resulted in one death and 8 injuries.

Severe Convective Storm (Brazil)

Severe weather on November 3 heavily impacted the State of São Paulo in southern Brazil. Heavy rainfall and strong winds of up to 151 kph (94 mph) caused widespread flooding, landslides, and downed trees. State and municipal emergency services registered over 2,000 calls for help, including 100 for significant building damages due to landslides. Around the capital city, São Paulo, 7 people were killed and 2.1 million people lost power, which led to water supply issues, according to Agencia Brasil.

Flooding (Malaysia)

Heavy rainfall triggered flooding in western Malaysia on November 5-8. The deputy prime minister of Malaysia stated that 881 people across 6 districts in Selangor, Perak, and Pahang states were impacted by flooding. According to ADINet, 156 homes were damaged due to flood waters, as of November 7. Images on social media also showed several inches of flood waters affecting a mall and train station in the city of Subang Jaya.

SCS, Flooding, & Landslide (Sri Lanka)

Severe weather has impacted much of Sri Lanka since the start of November. Flooding and landslides have damaged 410 homes and affected nearly 16,000 people. According to the National Disaster Relief Centre (NDRSC), 6 people have been killed and 8 have been injured across 4 separate districts.

SCS & Flooding (Honduras)

Since November 3, much of Honduras has been affected by severe storms and flooding. Four people were killed, 6 were injured, and 2,364 people were displaced, according to COPECO. Additionally, at least 23 bridges, 27 highways, and 13 roads have also been damaged.

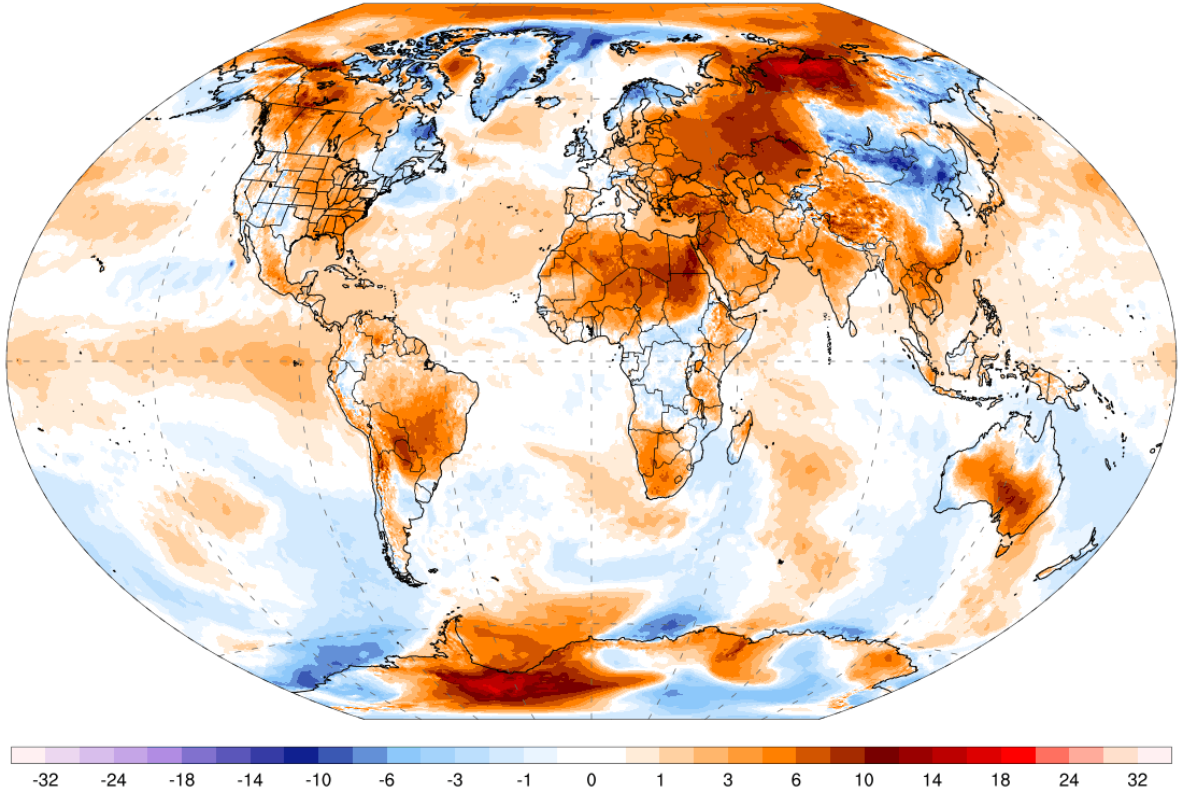
Winter Weather (Mongolia)

At least eight people died due to snowstorms in western and central Mongolia on November 4-5. Blizzard conditions affected the provinces of Zavkhan, Uvs, Arkhangai, Uvurkhangai, Tuv, and Bulgan, including the capital Ulaanbaatar.

Global Temperature Anomaly Forecast

GFS 2m T Anomaly (°C) [CFSR 1979-2000 baseline]
Days 1-3 Avg | Thu, Nov 09, 2023

ClimateReanalyzer.org
Climate Change Institute | University of Maine

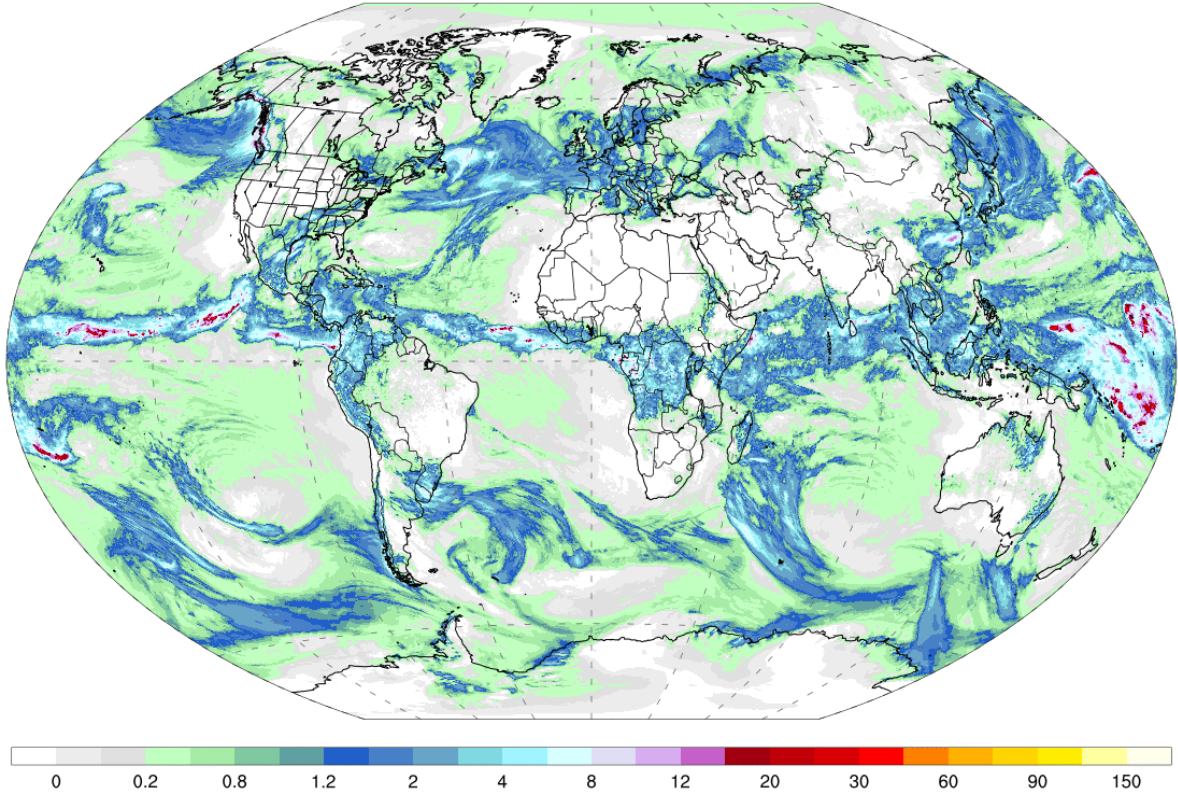


Source: Climate Reanalyzer, Climate Change Institute, University of Maine, USA

Global Precipitation Forecast

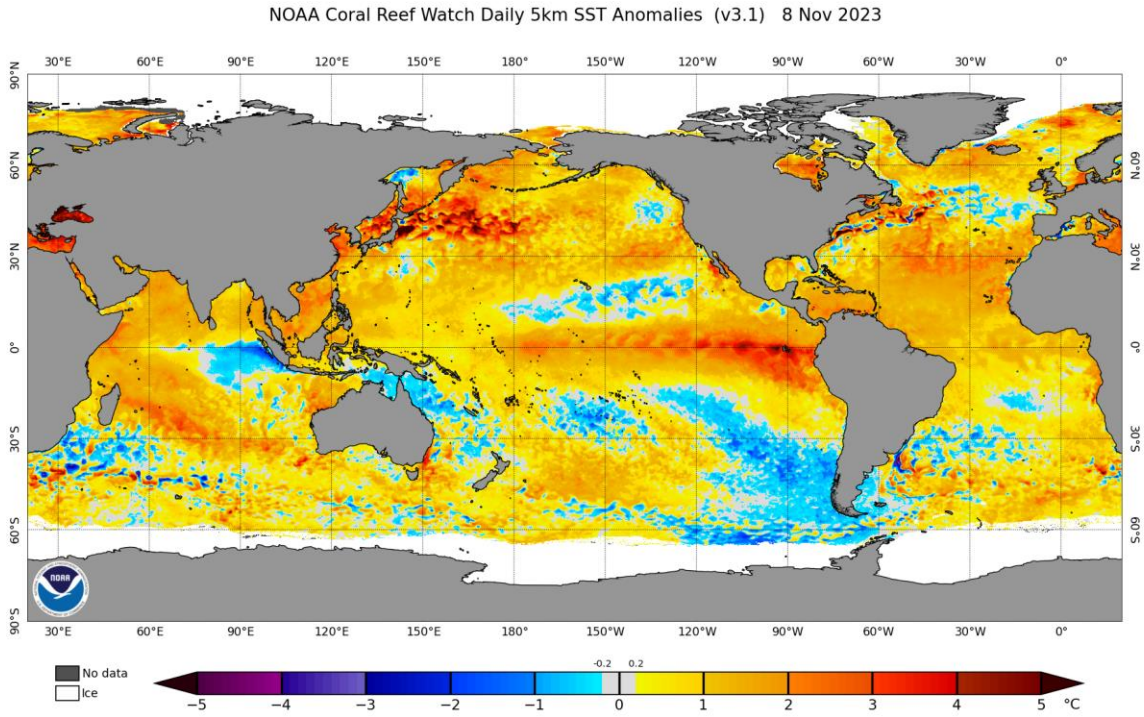
GFS Accumulated Precipitation (cm)
Days 1-3 Total | Thu, Nov 09, 2023

ClimateReanalyzer.org
Climate Change Institute | University of Maine



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

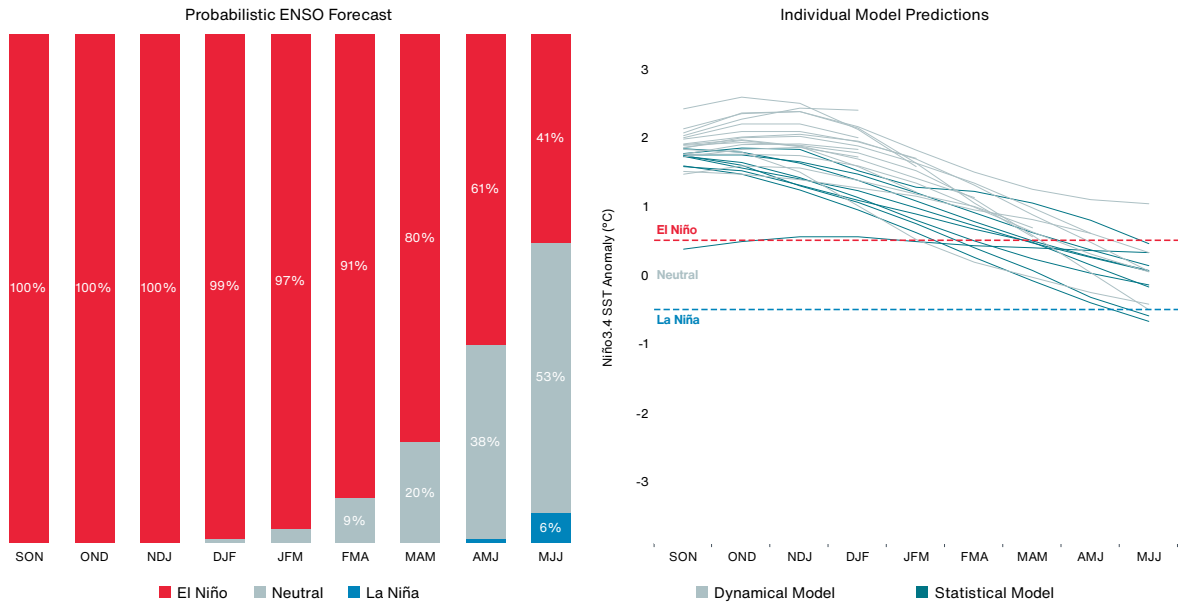
Weekly Sea Surface Temperature (SST) Maps (°C)



El Niño-Southern Oscillation (ENSO)

Probabilistic ENSO Model Projections: October 2023

Data: NOAA & Columbia University (IRI) | Graphic: Aon Cataprophe Insight



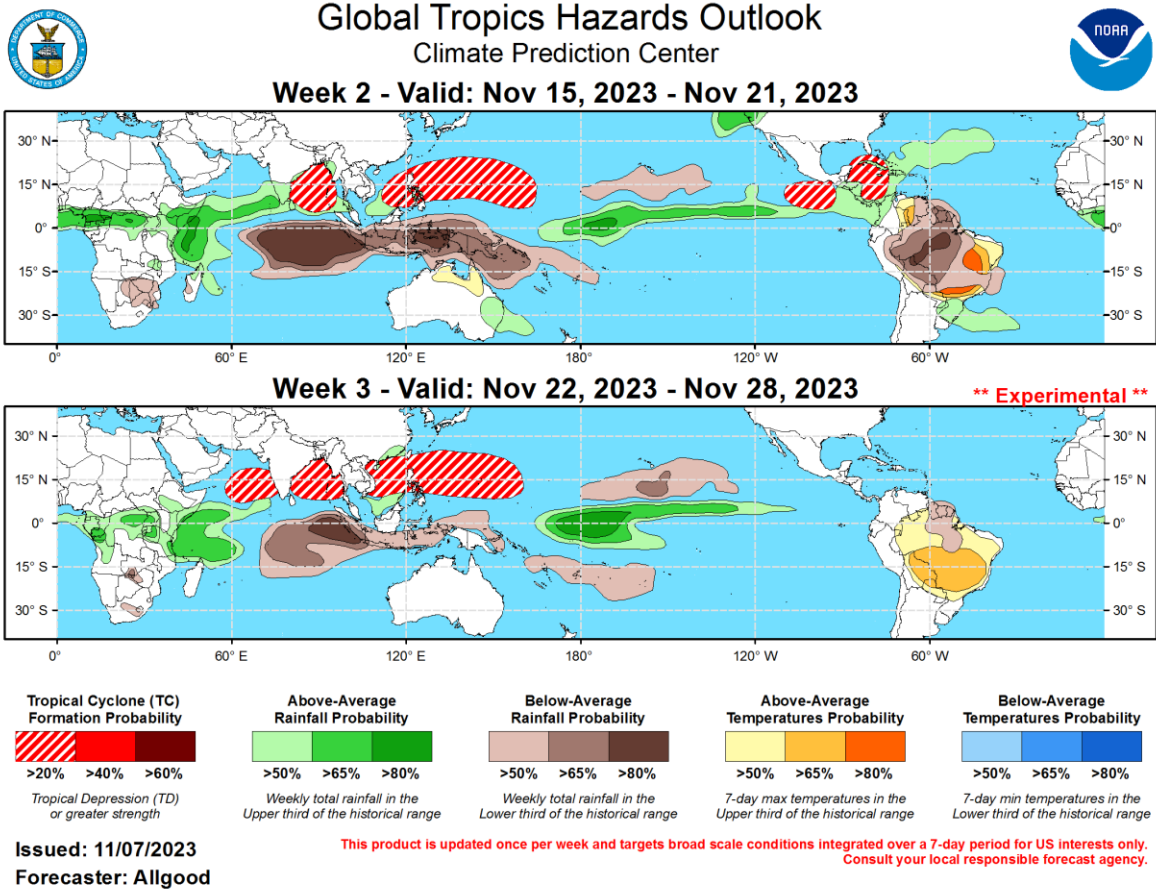
El Niño: Warm phase of an ENSO cycle. Sea surface temperatures of +0.5°C occur across the east-central equatorial Pacific.

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.

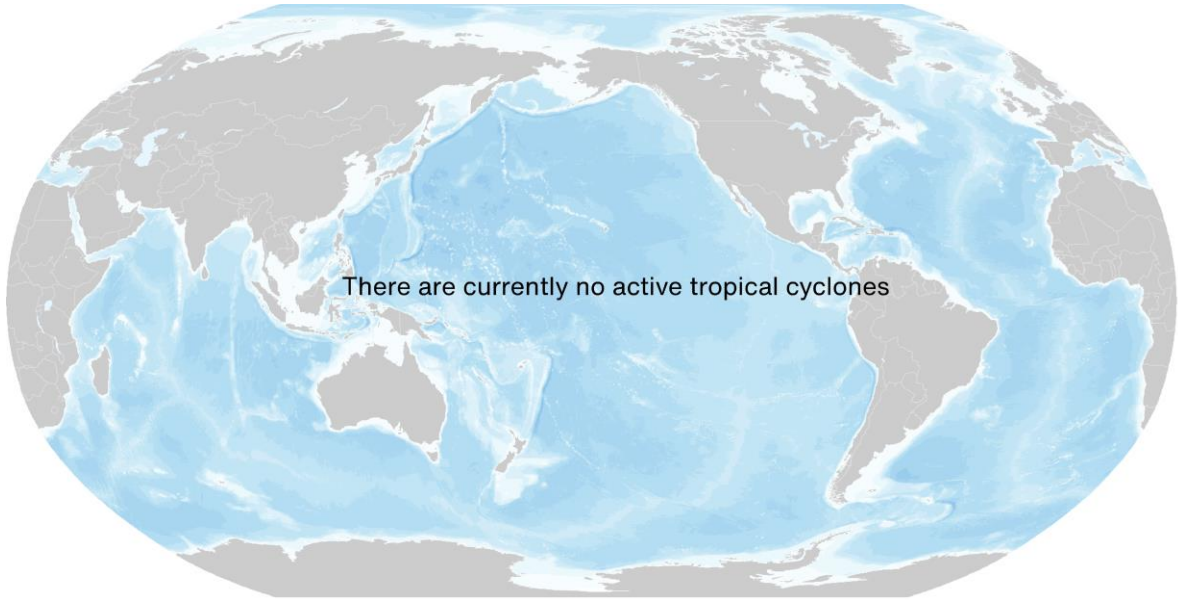
El Niño (La Niña) is a phenomenon in the equatorial Pacific Ocean characterized by a five consecutive 3-month running mean of sea surface temperature (SST) anomalies in the Niño 3.4 region that is above the threshold of +0.5°C (-0.5°C). This is known as the Oceanic Niño Index (ONI).

Global Tropics Outlook



Source: Climate Prediction Center (NOAA)

Current Tropical Cyclone Activity



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

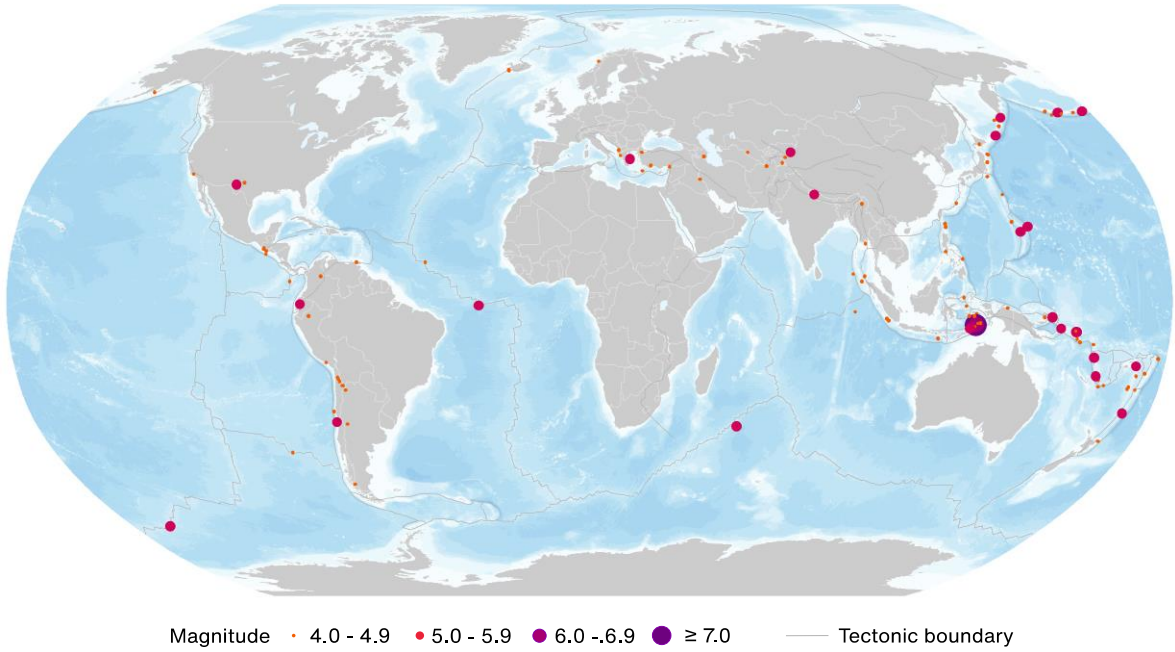
Name	Location	Winds	Center

* 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)

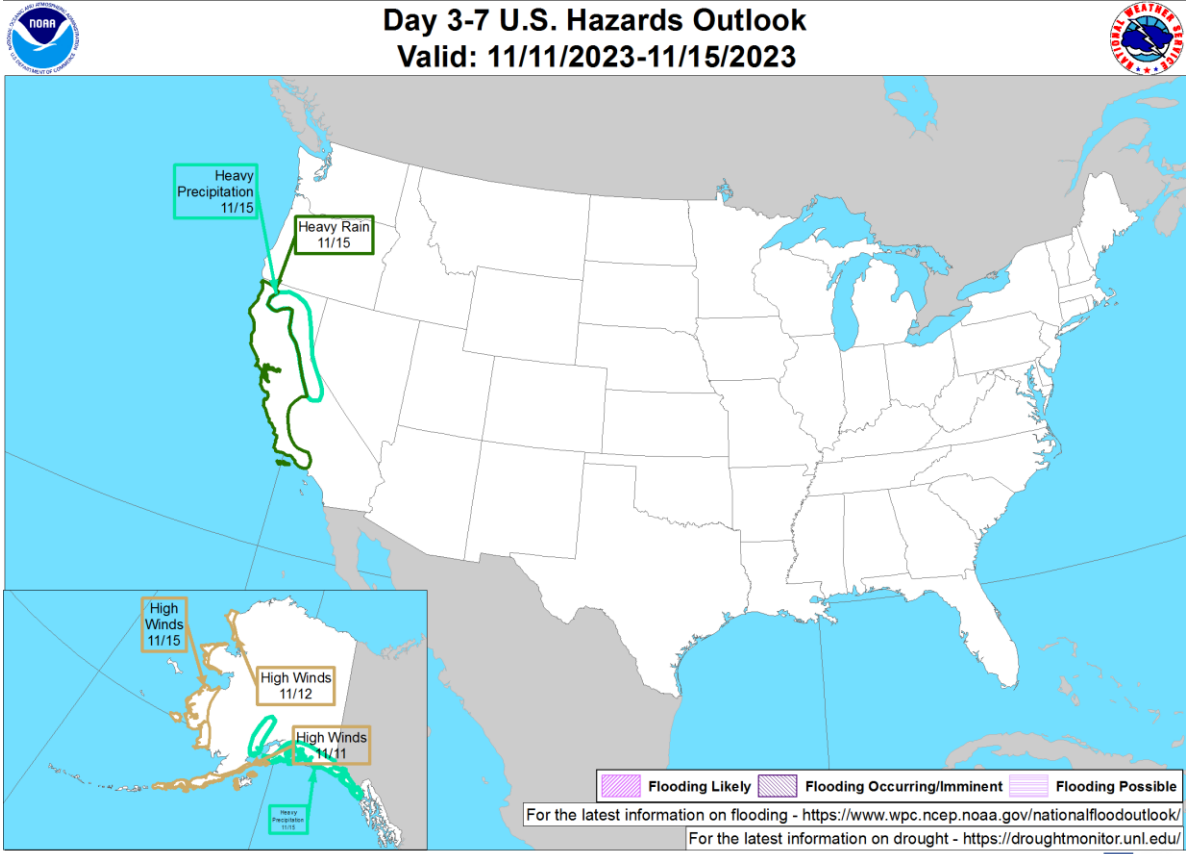
Global Earthquake Activity ($\geq M4.0$): Nov 3-9



Date (UTC)	Location	Mag	Epicenter
11/8/2023	6.43S, 129.72E	6.7	Banda Sea
11/8/2023	6.46S, 129.51E	7.1	Banda Sea
11/8/2023	6.15S, 129.91E	6.7	Banda Sea

Source: United States Geological Survey

U.S. Hazard Outlook

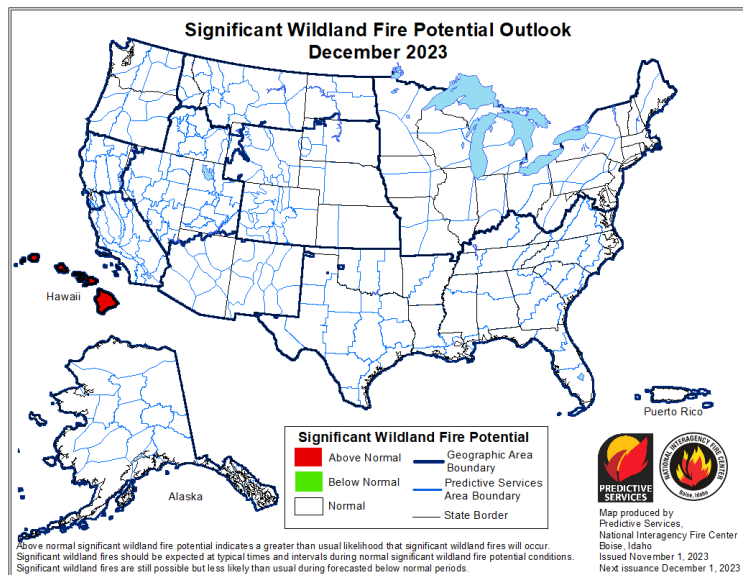
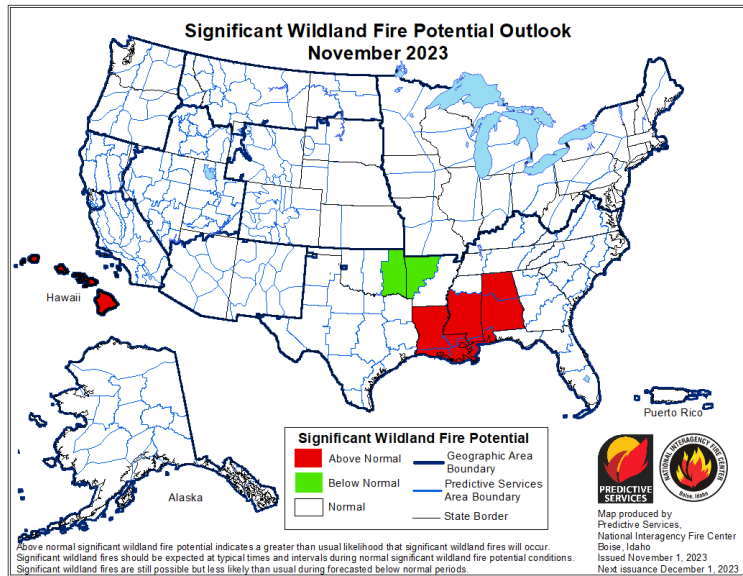


Weather Prediction Center
Made: 11/08/2023 02:29 PM EST

Follow us:  
www.wpc.ncep.noaa.gov

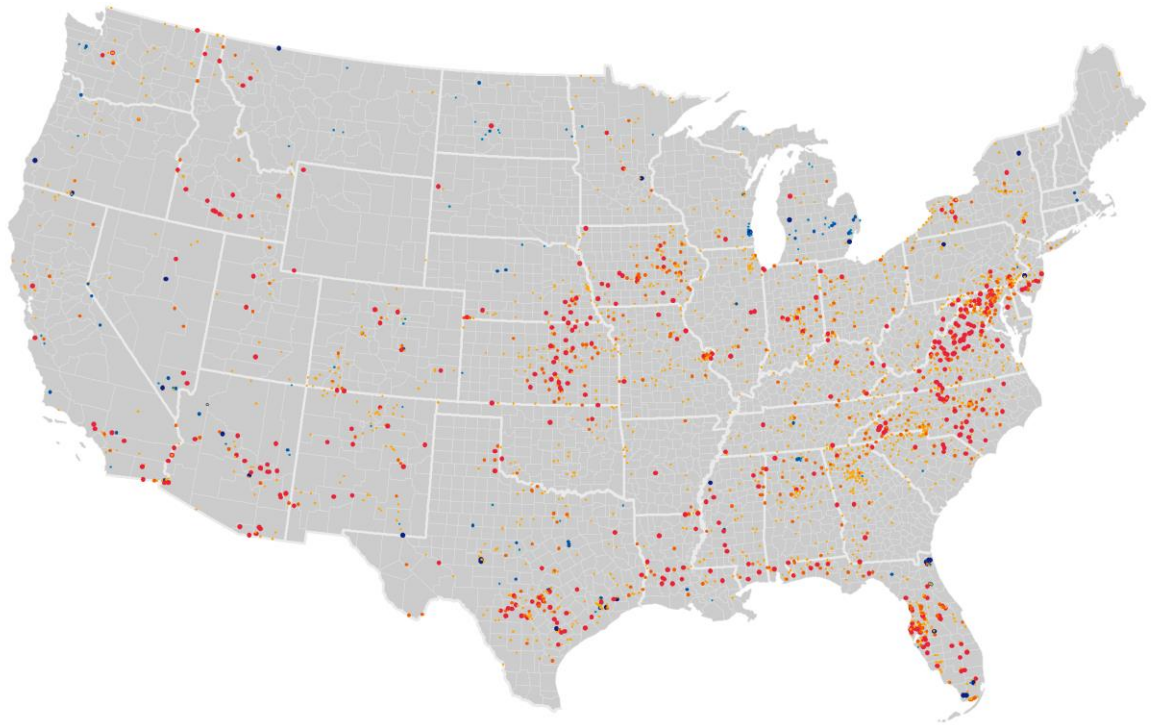
Source: Climate Prediction Center (NOAA)

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



Source: NIFC

U.S. Current Riverine Flood Risk



- | | | | |
|----------------------------|---------------------------|-------------------------|--------------------|
| High Flows
(Percentile) | • ≥ 99 / Above floodstage | Hydrological
Drought | • Severe Drought |
| | • 95 - 99 | | • Moderate Drought |
| | • 90 - 95 | | • Below Normal |

A ≥99th percentile indicates that estimated streamflow is greater than the 99th percentile for all days of the year. This methodology also applies for the other two categories. A 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.

Source: United States Geological Survey

Source Information

Italy, Southeastern Europe: Flooding & SCS

Italian Civil Protection Department
Copernicus EMS
Coldiretti
ESWD
Floodlist

France, Spain: Windstorm Domingos

Météo France
AEMET
Pas-de-Calais Prefecture

Nepal: Earthquake

USGS
National Earthquake Monitoring and Research Center in Nepal
Nepal National Emergency Operation Centre (MoHA, NDRRMA)
Nepal earthquake: More than 150 killed in remote western Nepal, *BBC*

Eastern Africa: Flooding

UN OCHA
Somali Water and Land Information Management (SWALIM)
Ethiopia Floods Kill Over 20, Displaces Thousands, *VOA Africa*
Floodlist

Natural Catastrophes: In Brief

N.C. Forest Service
State of Emergency issued as crews work to contain 431-acre fire in NC, *Fox Carolina*
The number of deaths caused by the storm in São Paulo rises to seven, *Agencia Brasil*
ASEAN Disaster Information Network (ADINet)
Heavy rain causes floods in some parts of Malaysia, *The Straits Times*
Blizzards kill 8, leave 1 missing in central Mongolia, *Reuters*
National Disaster Relief Centre (NDRSC)
Permanent Contingency Commission of Honduras (COPECO)

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