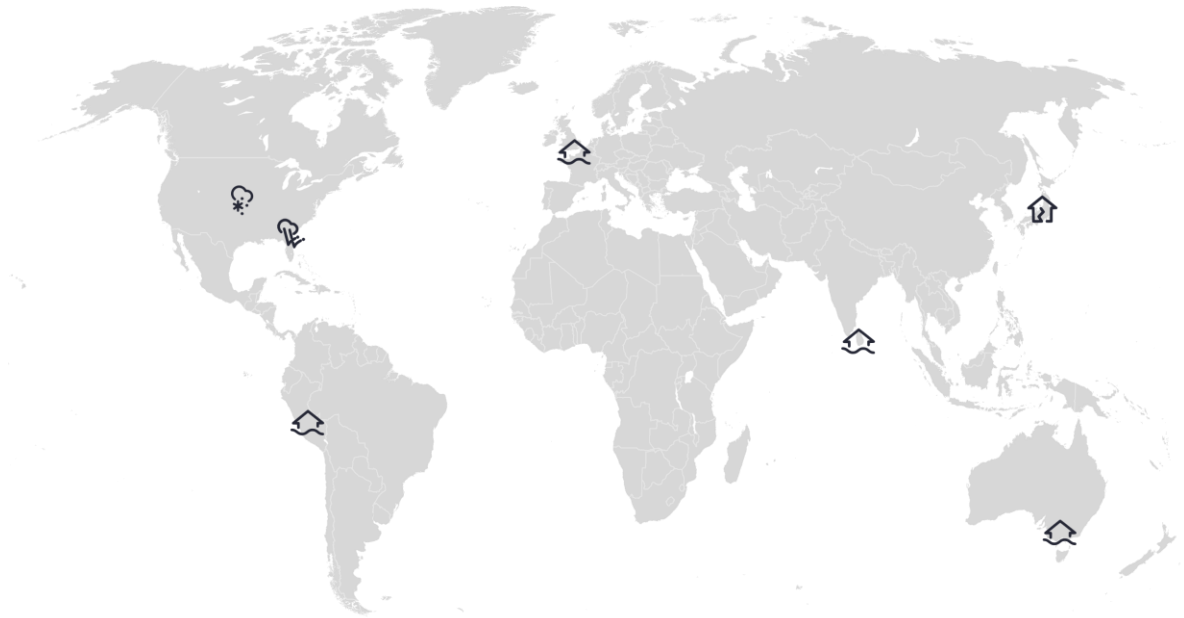


Weekly Cat Report

January 12, 2024



Executive Summary



Event	Affected Region(s)	Fatalities	Economic Loss (\$)	Page
Winter Weather, SCS, Flooding	United States	4	100s of millions	3
Flooding (Update)	France, United Kingdom	1	10s of millions	6
Earthquakes (Update)	Japan	203+	Billions	9
Winter Weather & SCS	United States	0	Millions	9
Flooding	Australia	0	Millions	9
Flooding	Peru	1	Unknown	9
Flooding	Sri Lanka	1	Unknown	9

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.

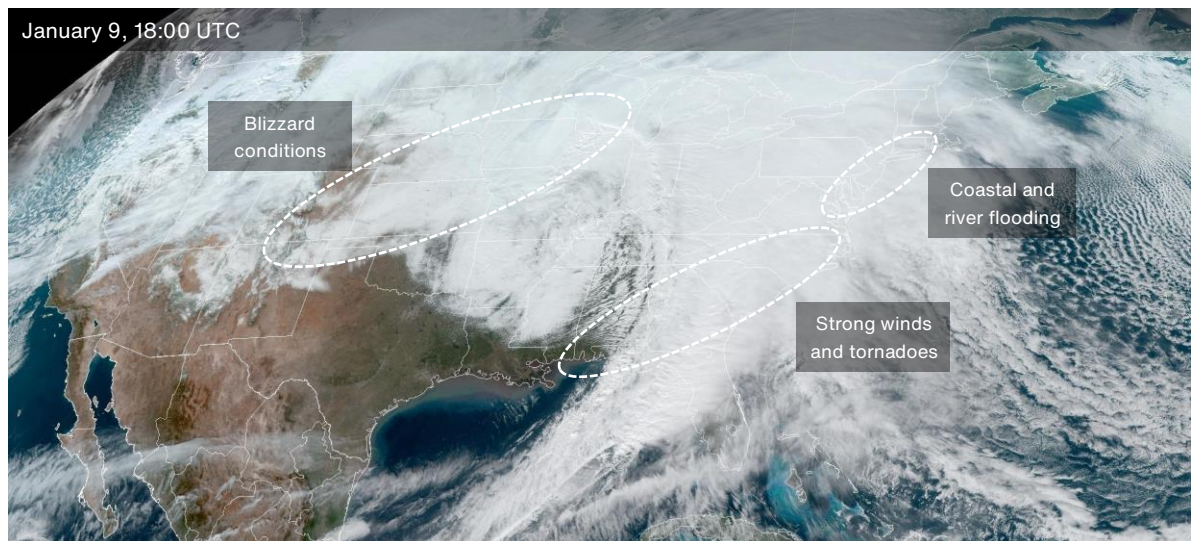
Along with this report, we continue to welcome users to access current and historical natural catastrophe data and event analysis on Impact Forecasting's Catastrophe Insight website: <http://catastropheinsight.aon.com>

United States: Winter Weather, SCS, Flooding

Overview

Two powerful storm systems brought widespread winter weather and severe storms to most of the continental United States on January 8-10. Blizzard conditions impacted the Central and Western U.S., significant coastal and river flooding occurred across many Atlantic Coastal states, and the Southeast U.S. experienced notable severe weather impacts. Aggregated impacts include 4 deaths, at least 11 injuries, widespread property and infrastructure damage, power outages, and travel disruptions. Total economic and insured losses could reach into the hundreds of millions USD, potentially higher.

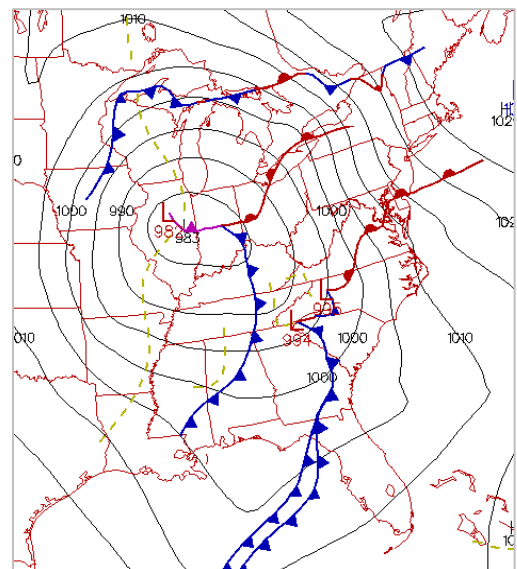
Meteorological Recap



Central, Southeast, and Eastern U.S.

A multi-hazard, major storm system impacted most of the central and eastern United States on January 8-10. Heavy snow and strong winds were seen across the Rocky Mountain front range, northern and central Great Plains, upper Midwest, and interior Northeast. Several states were especially impacted by blizzard conditions such as New Mexico, Colorado, Kansas, Nebraska, South Dakota, and Iowa. Many spots received at least 1 foot (30 cm) of snow, including Iowa City (IA) and Sioux Falls (SD).

Further south, ample moisture and wind shear ahead of a strong cold front triggered a line of severe storms across the Southeast. These storms produced heavy rain and localized flooding, particularly from Georgia to Virginia.



However, the primary threats were extreme wind speeds and several tornadoes. Nearly 400 filtered reports of strong wind gusts and damage from Texas to Virginia occurred on January 8-9, according to the Storm Prediction Center. Notably, several locations from the Florida Panhandle to the Carolinas were heavily impacted by multiple strong tornadoes.

As the storm system progressed further east, heavy rainfall on top of melting snow and pre-existing soil saturation led to widespread inland flash flooding and river flooding across the mid-Atlantic and New England.

Major river flooding occurred in northern New Jersey and Rhode Island, including near the Pompton and Millstone Rivers (NJ), as well as the Pawtuxet and Wood Rivers (RI). More notably, widespread wind gusts exceeding 50 mph (80 kph) also caused significant coastal flooding. Many towns along the Atlantic coast saw severe flooding, especially within Chesapeake Bay, New Jersey, Connecticut, New Hampshire, and Maine.

Western U.S.

Another strong winter storm system hit the Northwest U.S. and northern Rockies on January 8-10. With wind gusts up to 75 mph (120 kph) and heavy snow in Washington, the NWS office in Seattle issued their first blizzard warning in over a decade. Snowfall totals exceeded 1 foot (305 mm) for multiple higher-elevated locations and mountain passes. This storm system is also forecasted to bring additional heavy snow, severe storms, and extreme cold to the central and eastern U.S. in the coming days.

Event Details

The storm system that impacted the Central, Southeast, and Eastern U.S. led to thousands of canceled flights, hundreds of school closures, and power outages for nearly 1 million people. At least 4 people were killed by severe weather in Alabama (2), North Carolina (1), and Georgia (1). Moreover, strong tornadoes caused significant property damage across locations such as Panama City and Jackson County (FL), Cottonwood (AL), Bamberg (SC), and Catawba County (NC). The severe weather across the southeast was also responsible for at least 11 injuries.

Location	Peak Wind Gusts (mph/kph)
Wears Valley, TN	94 / 151
Raton Crews Airport, NM	90 / 145
Crystal Mountain, WA	83 / 134
Campo, CO	80 / 129
Bay Bridge, MD	80 / 129
Watertown Airport, NY	78 / 126
Jacksonville, NC	78 / 126



Tornado damage (left) and river flooding (right)
 Source: NOAA DAT (left), Town of Clinton Police (right)

Significant coastal and river flooding caused widespread damage across the Mid-Atlantic and Northeast. A state of emergency was declared for all of New Jersey as towns such as Lodi and Westwood sustained significant flooding damage. Parts of downtown Annapolis, MD and Hampton Beach, NH were inundated, while the possible failure of the Fitchville Pond Dam in Connecticut forced local evacuations.

Blizzard conditions caused widespread power outages and vehicle crashes across the Northwest U.S. and Great Plains. In Washington state, at least 150,000 customers lost power, while multiple highways and ski resorts were closed due to the winter weather.

Financial Loss

Economic and insured losses stemming from these two major storm systems may already reach into the hundreds of millions USD. However, the system currently moving out of the Western U.S. is posed to greatly strengthen and potentially bring even worse impacts to nearly all of the central and eastern U.S. on January 11-12. More impact details and loss updates will be provided in the next Weekly Cat Report.

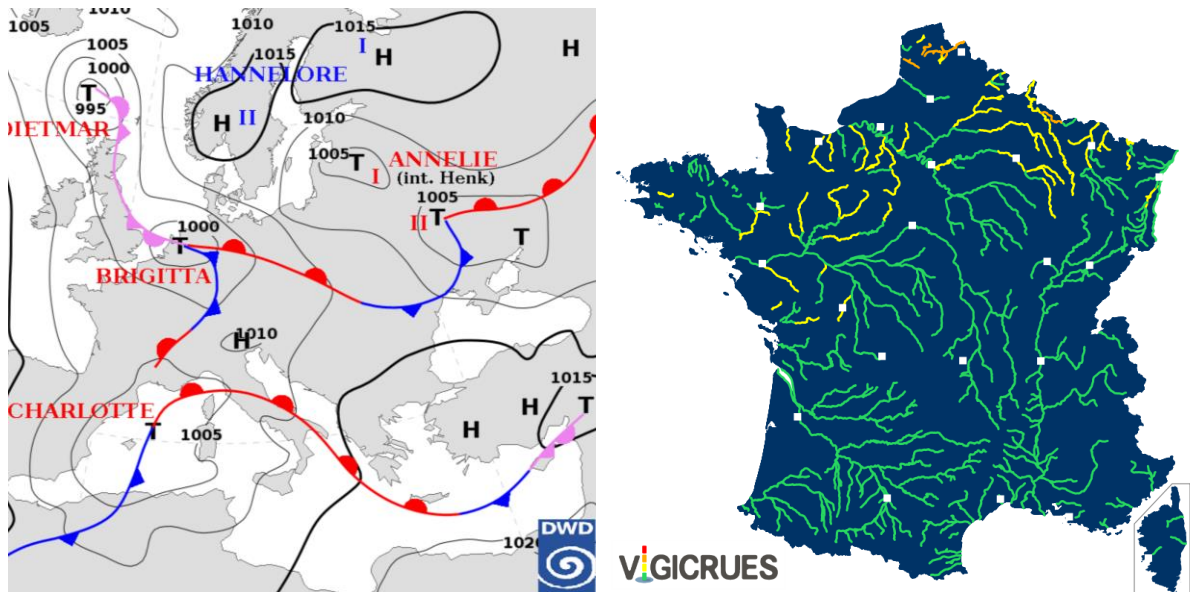
France, United Kingdom: Flooding (Update)

Overview

Heavy rainfall triggered widespread flooding in northern France and southern-central United Kingdom on January 3-5. The French Department of Pas-de-Calais was particularly affected, following the impact of the recent severe flooding in November. A new round of floods damaged hundreds of homes and can potentially result in additional, notable economic and insured losses across the region.

Meteorological Recap

Most of Europe has been affected by a prolonged cyclonic weather pattern that continues to bring heavy rainfall associated with multiple successive low-pressure systems. Over the last 2 weeks, lows Geraldine (Costa), Henk (Annelie), and Brigitta generated significant rainfall accumulation, particularly in northern France. Localized flooding is repeatedly occurring also across the United Kingdom, as multiple locations received more than 150% of 1991-2020 average rainfall between October and December, according to the UK's Met Office.

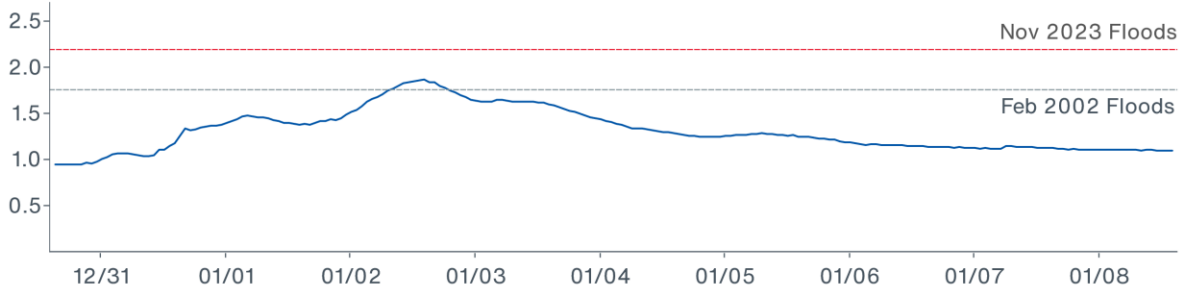


Synoptic chart (left) and hydrological situation (right) in France on January 5
Source: DWD, Vigicrues

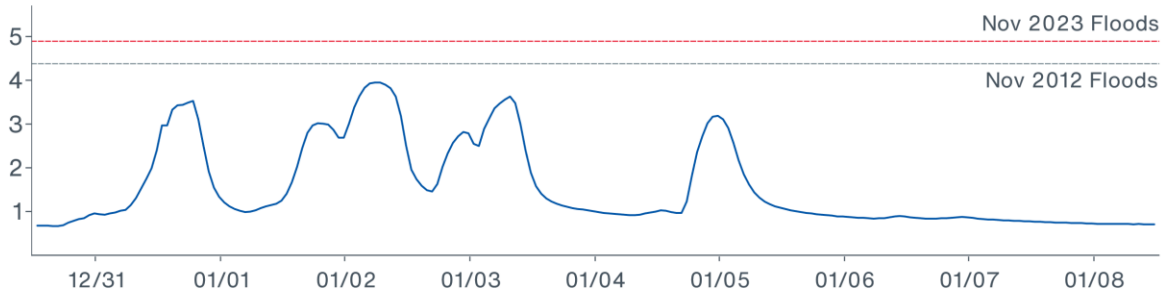
Hydrological Response

In response to persistent heavy rainfall, multiple rivers across northern France reached high water levels (see selected hydrographs below), although, water levels were generally lower compared with flood maximums from November. Local rivers responded again relatively fast and overflowed their banks as the basins had already been saturated after weeks of above-normal rainfall. Météo France issued the highest (red) flood warning for Aa Rivers, and several orange flood warnings, including rivers of Hem, Canche, Lys-Plaine, and Lys-Amont. The highest flood warnings were in effect between January 2-5.

Water Level at Fauquembergues Station, Aa River (meters)



Water Level at Wirwignes Station, Liane River (meters)



Data: Vigicrues

Event Details

Widespread flood impacts were reported across northern France, which was already impacted significantly in November 2023. In the **Pas-de-Calais** department, hundreds of people have been evacuated, and thousands of people have experienced power outages and disruptions to water supplies. In total, about 190 cities and towns have been affected across the region. Local fire brigades carried out hundreds of flood-related interventions. One fatality from the Loire-Atlantique Department remains the only confirmed. About 1,300 homes have been damaged, some of them severely. Some reports suggested more than 2,000 (to be verified).



Flooding in Pas-de-Calais Department, France (left) and in Northamptonshire, UK (right)

Source: Local Fire Departments

In the southern **United Kingdom**, a yellow rain warning was issued on January 3. Heavy rainfall on top of already saturated soil led to river flooding in parts of England and Wales. Notably, the River Trent burst its banks within Central England, leading to numerous evacuations and a major incident declaration from local officials. Around 1,000 homes across the United Kingdom have been reportedly affected by flooding. Widespread flooding was reported in Northamptonshire.

Financial Loss

Continued flooding in both France and the United Kingdom is likely to add a notable, additional cost to insurers as thousands of properties were affected.

Natural Catastrophes: In Brief

Earthquakes (Japan) - Update

An earthquake of magnitude of 5.9 (according to USGS) occurred in Niigata Prefecture, central Japan, on January 9. Millions of people were exposed to moderate or light shaking, but fortunately, no damage or casualties have been reported. The epicenter of the recent M5.9 quake was located only about 70 km (43.5 mi) from Suzu city, which was devastated by the recent magnitude-7.5 earthquake that hit the Ishikawa Prefecture on January 1. According to the latest reports by the Japanese Fire and Disaster Management Agency (FDMA), 203 people were killed, no fewer than 520 others were injured, and almost 3,200 buildings were damaged after the January 1 earthquake.

Winter Weather & SCS (United States)

A powerful low-pressure system brought winter weather and severe storm impacts to parts of the central and eastern U.S. on January 5-7. Strong storms and heavy rainfall occurred over parts of the southeast U.S., especially for locations near the Gulf Coast. Notably, a tornado caused minor damage and power outages in Fort Lauderdale, Florida late on January 6. Additionally, heavy snow and rain were seen in states across the Great Plains and Northeast. Some locations within Pennsylvania, Massachusetts, and New York received well over 1 foot (30 cm) of snow. Impacts were limited to minor traffic disruptions, power outages, and localized flooding, particularly in the Northeast.

Flooding (Australia)

Parts of Victoria state in southeast Australia experienced torrential rainfall on January 7-8, which led to numerous, significant flooding incidents. The towns of Yea, Seymour, and Rochester were forced to evacuate after major flood warnings were issued by the Australian Bureau of Meteorology (BoM). Several locations saw historic rainfall, including Rochester which received over 125 mm (5 inches) of rain in one day. More than 10,000 people also lost power due to severe winds.

Flooding (Peru)

Pasco Province in central-western Peru has been affected by heavy rainfall, floods, and landslides since January 4, resulting in structural damage to nearly 100 houses across the districts of Huachon, Tíclacayan, San Francisco de Asís de Yarusyacan, Huariaca, and Yanacancha. According to the National Institute of Civil Defense (INDECI), one person died, and hundreds have been affected by flooding.

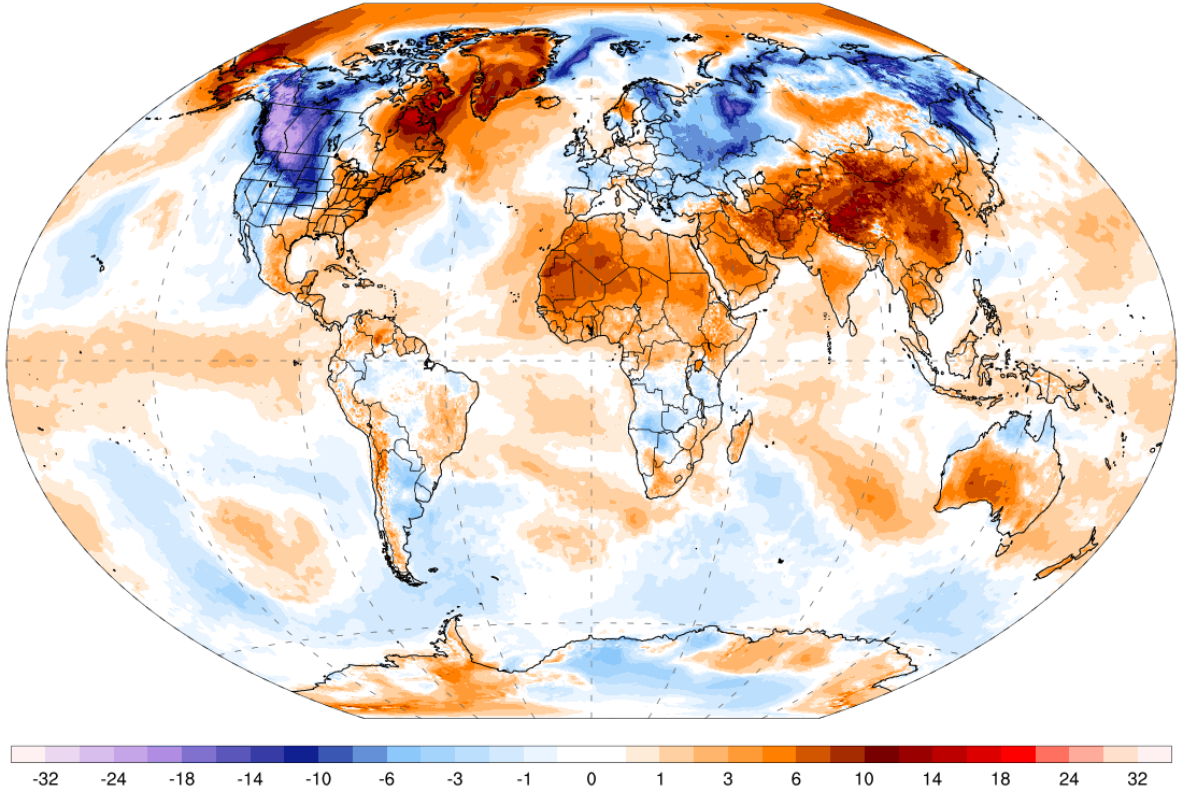
Flooding (Sri Lanka)

Sri Lanka has been affected by strong winds and heavy rainfall that triggered flooding and landslides since January 1. According to the National Disaster Relief Services Centre (NDRSC), more than 14,000 people have been affected, one person died, and almost 250 houses have been destroyed or damaged, particularly across Ampara and Badulla districts.

Global Temperature Anomaly Forecast

GFS 2m T Anomaly (°C) [CFSR 1979-2000 baseline]
Days 1-3 Avg | Thu, Jan 11, 2024

ClimateReanalyzer.org
Climate Change Institute | University of Maine

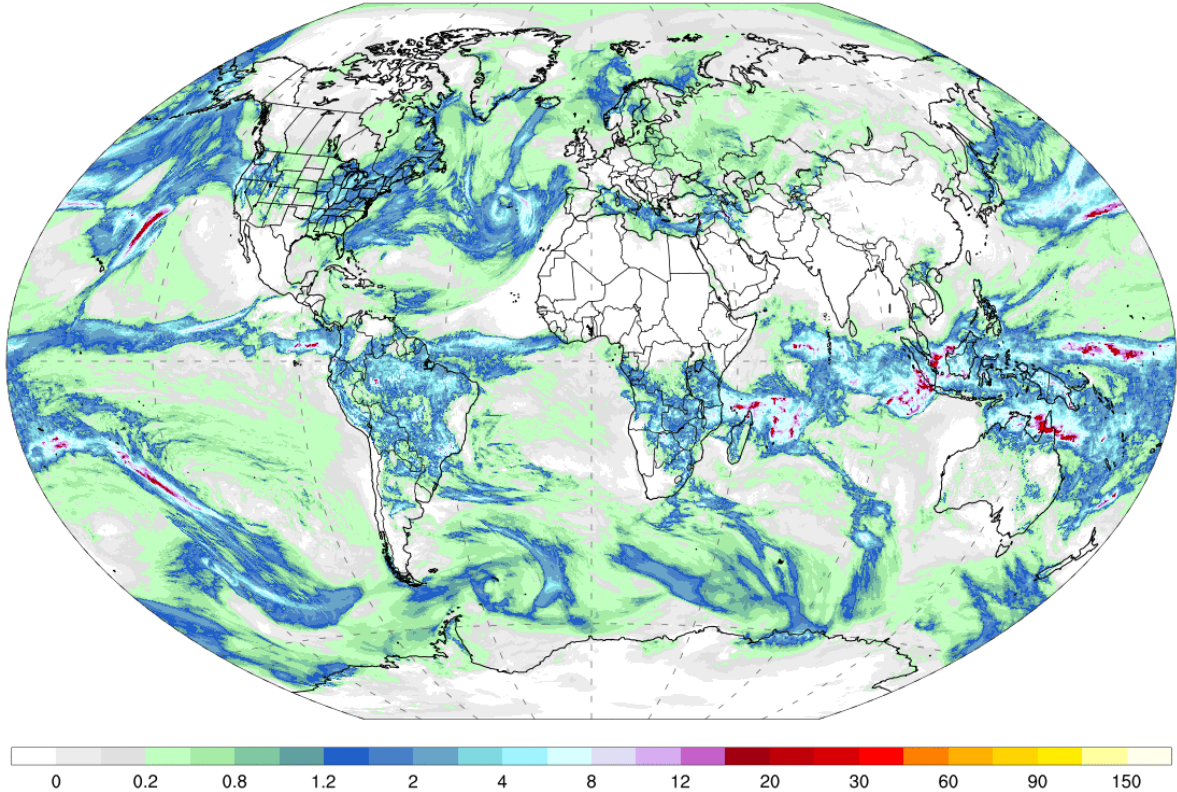


Source: Climate Reanalyzer, Climate Change Institute, University of Maine, USA

Global Precipitation Forecast

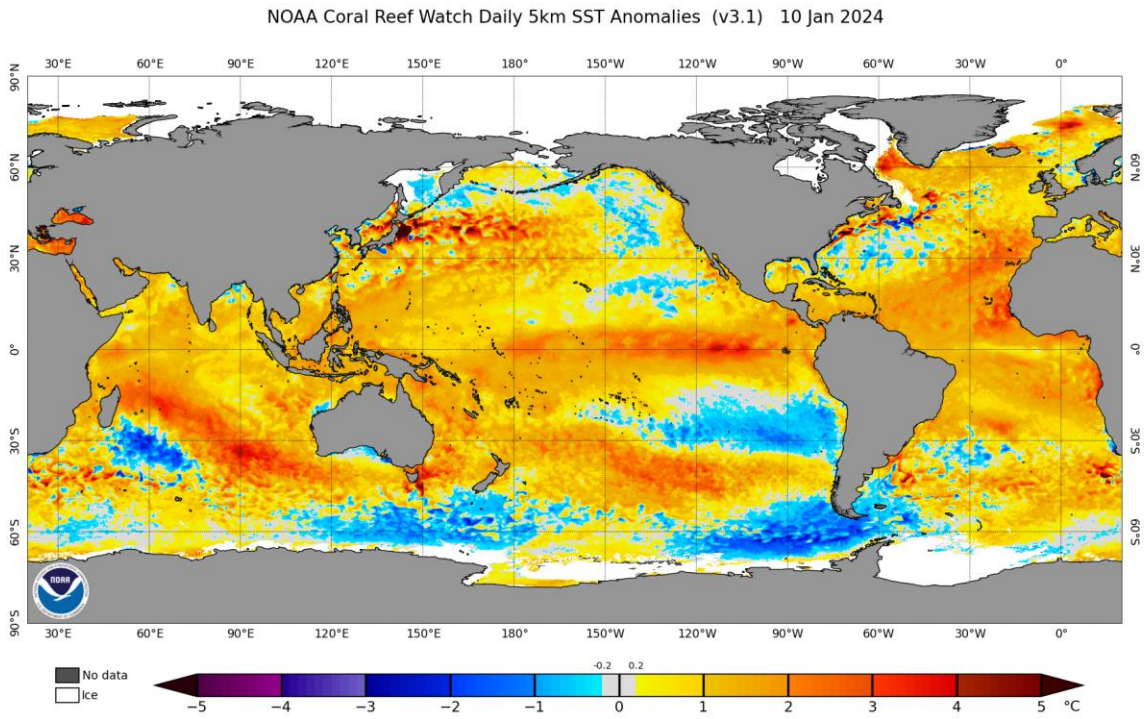
GFS Accumulated Precipitation (cm)
Days 1-3 Total | Thu, Jan 11, 2024

ClimateReanalyzer.org
Climate Change Institute | University of Maine

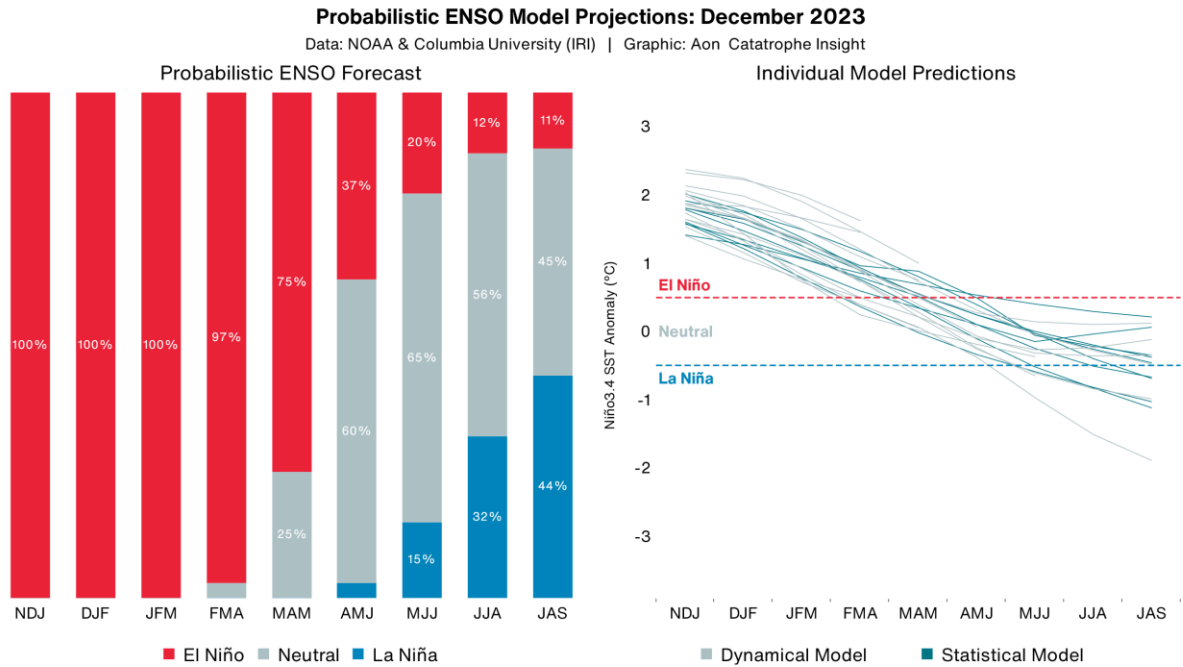


Source: Climate Reanalyzer, Climate Change Institute, University of Maine, USA

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



El Niño-Southern Oscillation (ENSO)



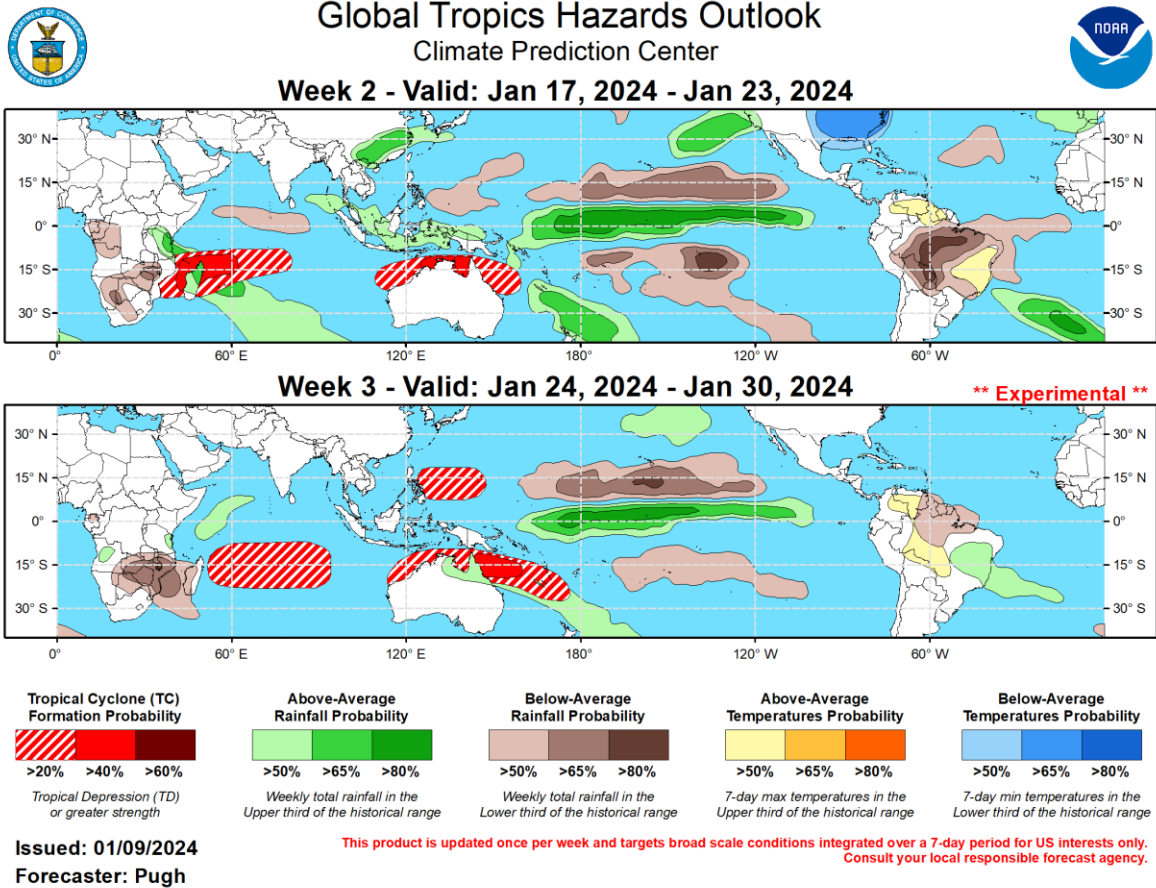
El Niño: Warm phase of an ENSO cycle. Sea surface temperatures of +0.5°C occur across the east-central equatorial Pacific.

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.

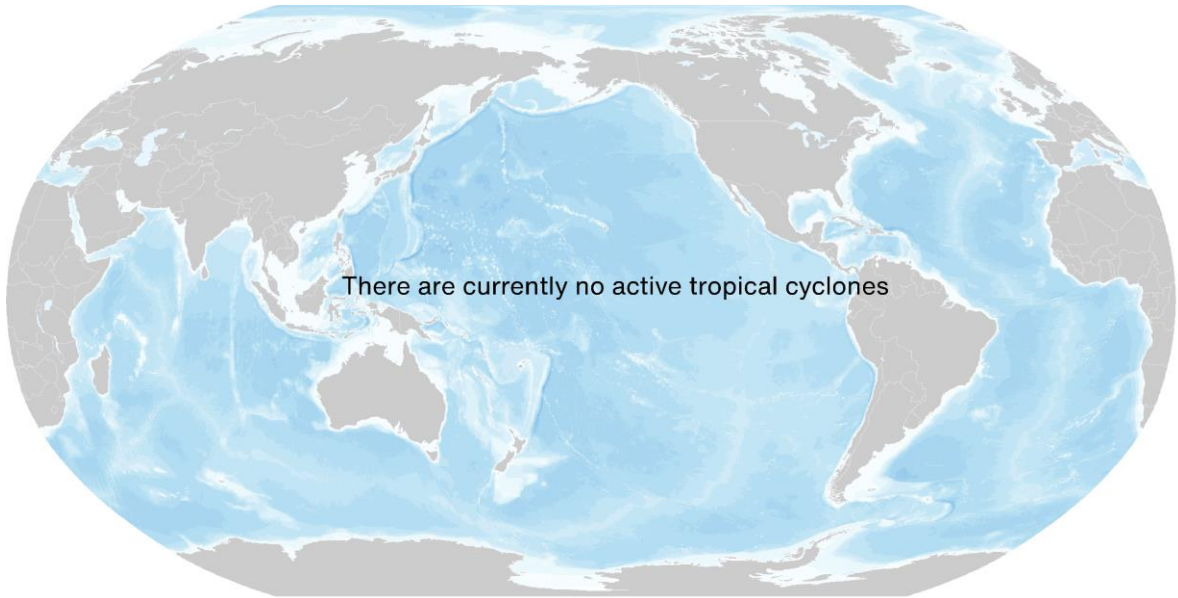
El Niño (La Niña) is a phenomenon in the equatorial Pacific Ocean characterized by a five consecutive 3-month running mean of sea surface temperature (SST) anomalies in the Niño 3.4 region that is above the threshold of +0.5°C (-0.5°C). This is known as the Oceanic Niño Index (ONI).

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

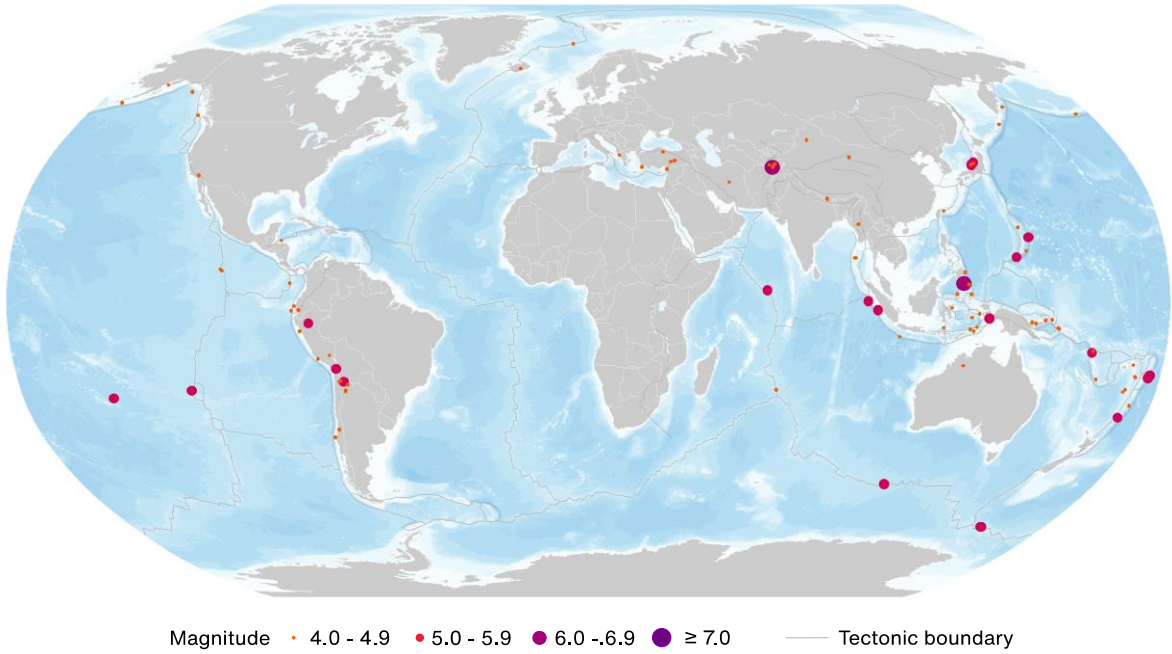
Name	Location	Winds	Center

* 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)

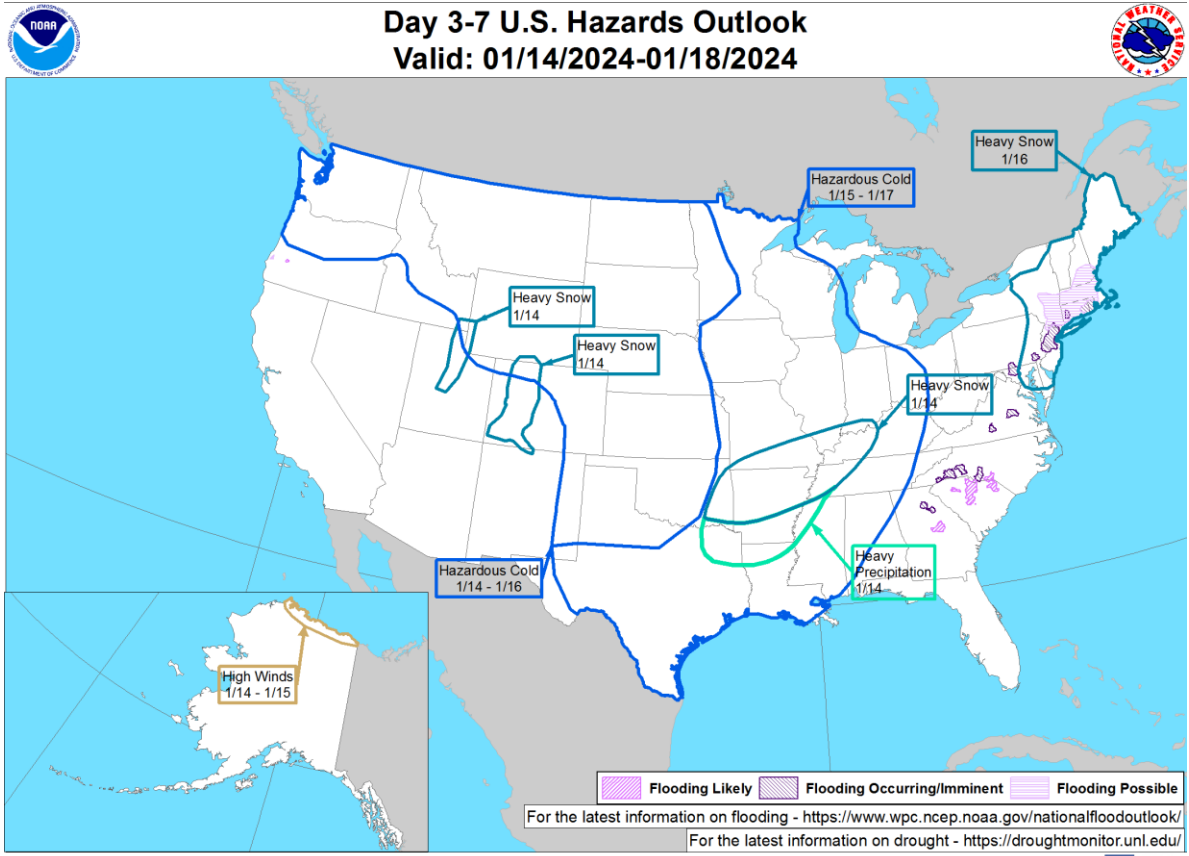
Global Earthquake Activity ($\geq M4.0$): January 5-11



Date (UTC)	Location	Mag	Epicenter
1/8/2024	4.86N, 126.19E	6.7	10 km (6 miles) SE of Sarangani, Philippines
1/11/2024	36.51N, 70.60E	6.4	44 km (27 miles) SSW of Jurm, Afghanistan

Source: United States Geological Survey

U.S. Hazard Outlook

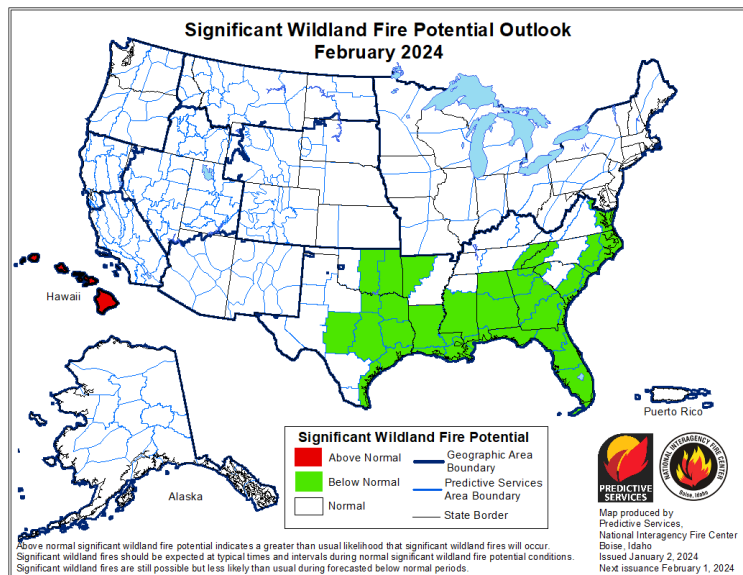
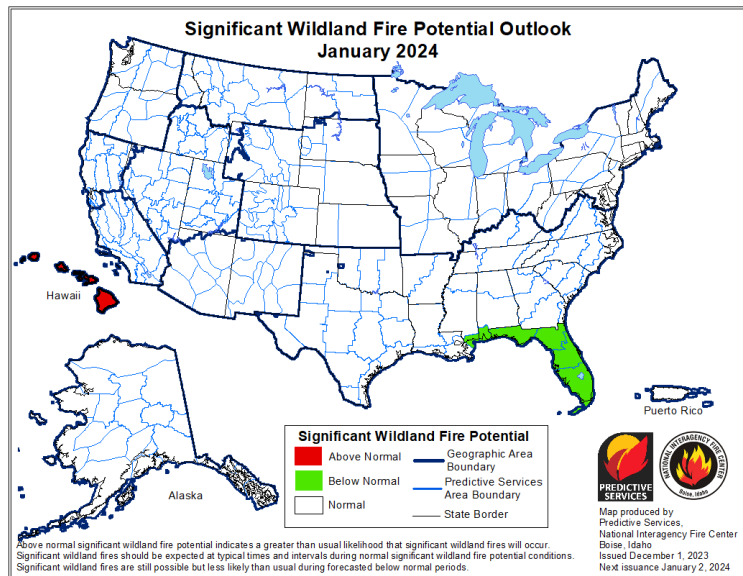


Weather Prediction Center
Made: 01/11/2024 02:28 PM EST

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

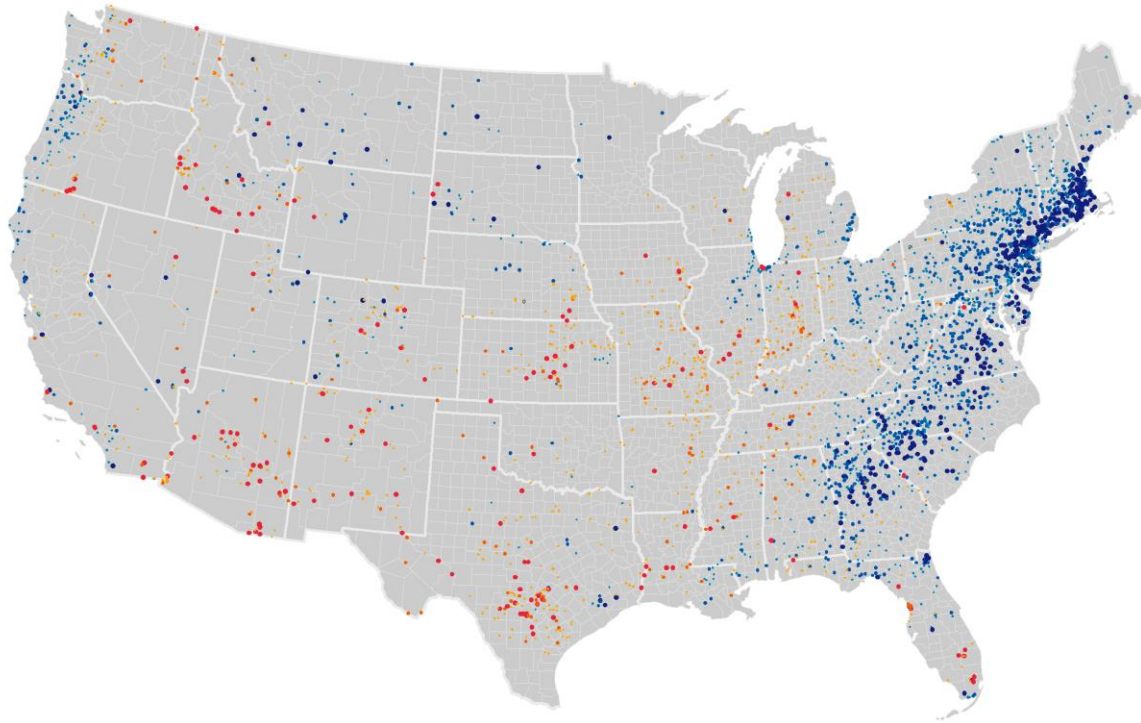
Source: Climate Prediction Center (NOAA)

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

United States: Winter Weather, SCS, Flooding

Plymouth State Weather Center

Storm Prediction Center (SPC)

National Weather Service (NWS)

Weather Prediction Center (WPC)

NWS: 'High-end' EF-1 tornado with 110 mph winds hit Catawba County, killing 1, *WSOC-TV9*

Blizzard knocks out power and closes highways and ski resorts in Oregon and Washington, *AP News*

4 Killed as Storms and Likely Tornadoes Tear Through Southeastern U.S., *The New York Times*

Downtown Annapolis sees record flooding, new barriers serve as temporary defense, *CBS News*

Thousands still without power in Northeast as river flooding tops Superstorm Sandy in Philadelphia, *Fox Weather*

Deadly storm sends water levels skyrocketing on Northeast rivers and at the coast, forcing evacuations, *CNN*

France: Flooding (Update)

Météo-France

Vigicrues

Pas-de-Calais Fire Department

Met Office

ESWD

Natural Catastrophes: In Brief

FDMA

USGS

INDECI

NDRSC

Winter Storm Hits the Northeast, Bringing a Foot of Snow to Some Areas, *The New York Times*

Storm ends snowfall drought for some; NYC gets barely more than a trace, *NBC New York*

Britain hit by flooding after heavy rain swells major rivers, *Reuters*

Heavy Rain in U.K. Causes Hundreds of Flood Warnings and Travel Disruptions, *The New York Times*

Woman rescued from floodwater as Rochester braces for major flood peak, *ABC News*

Major flood warning issued as residents of Victorian towns Yea and Seymour told to evacuate after heavy rainfall in the state, *Sky News*

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