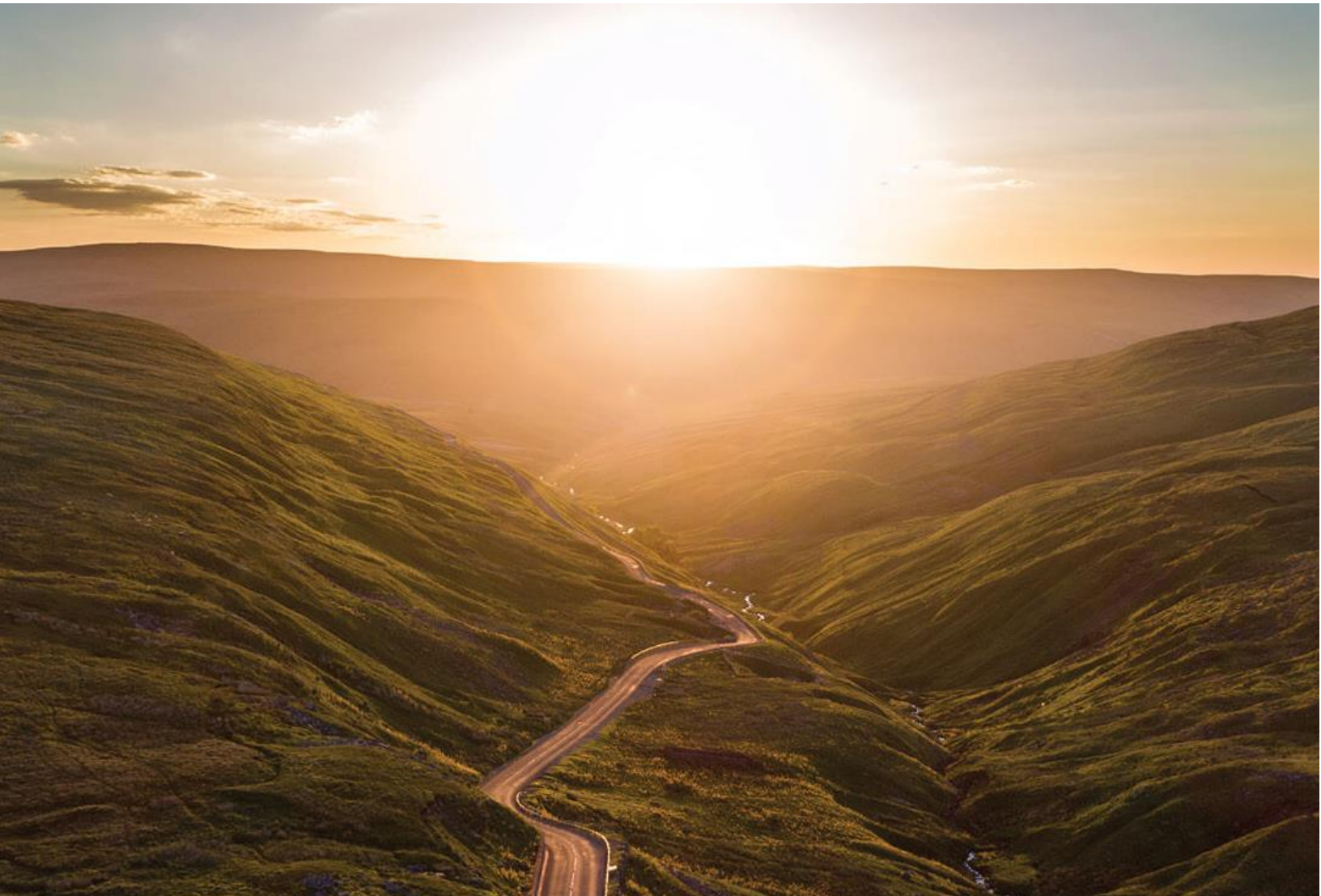
Weekly Cat Report

August 11, 2023



Executive Summary

Event	Affected Region(s)	Fatalities	Economic Loss ($)	Page
Flooding	Slovenia, Austria	6	Billions	3
Wildfire	United States	55+	Billions	9
SCS & Flooding	United States, Canada	3	100s of millions	11
Flooding & SCS	Northern Europe	0	100s of millions	15
Typhoon Khanun (Update)	Japan, South Korea	3+	10s of millions	17
Flooding	China	57	Millions	19
Earthquake	China	0	Millions	19
Landslide	Georgia	18	Negligible	19
Wildfire	Southern Europe	0	Unknown	19
Flooding	Southeast Asia	18+	Unknown	19
Flooding	Mongolia	4	Unknown	20

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

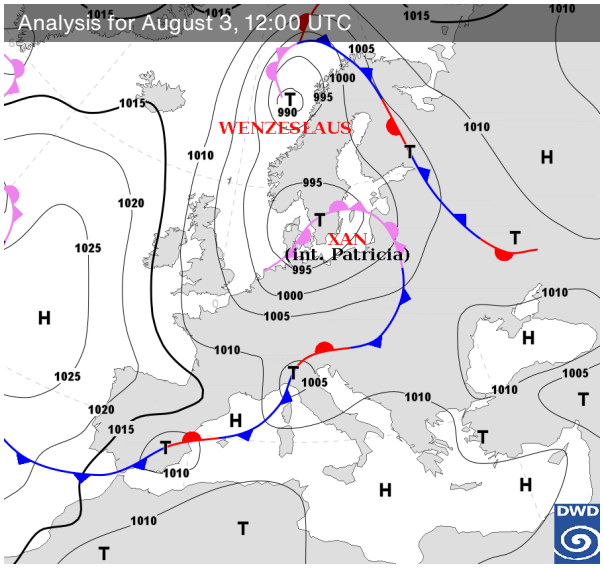
Slovenia, Austria: Flooding

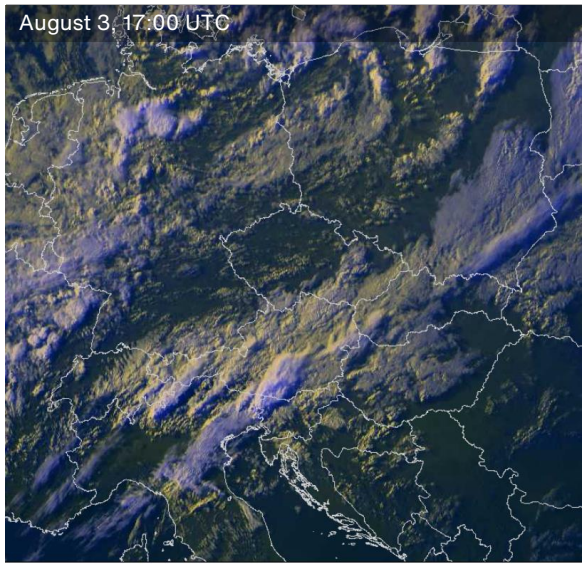
Overview

Catastrophic flash flooding and landslides impacted parts of Slovenia and southern Austria in early August as a result of an extremely heavy rainfall episode on August 3-4. At least six people were killed in Slovenia, while material losses on property, infrastructure, and agriculture are expected to be substantial and potentially reach into the billions of EUR, making the event the costliest natural disaster on record in modern-day Slovenia.

Meteorological Recap

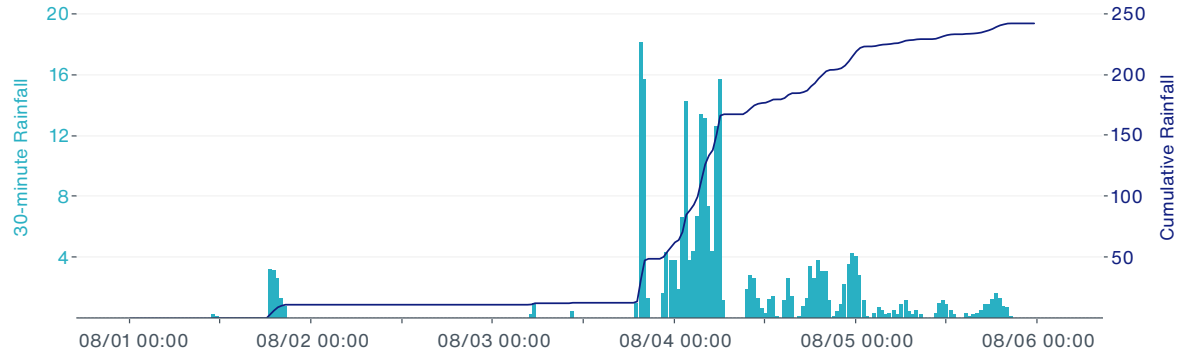
After a prolonged period of heatwave conditions in much of southern Europe during the month of July, the region experienced a change in the form of cyclonic weather in early August. During August 1-4, a deep trough and a surface low-pressure system named Xan (internationally Patricia) progressed through Western and Central Europe, and the frontal system associated with these features became wavy and stationary over the Western and Central Mediterranean. Additionally, a secondary low-pressure system developed in the area on August 4 and was named Zacharias (or Petar). Convective lifting ahead of the trough and abundant moisture resulted in notable rainfall accumulations, which reached particular significance in a relatively spatially limited region of Slovenia and Southern Austria.





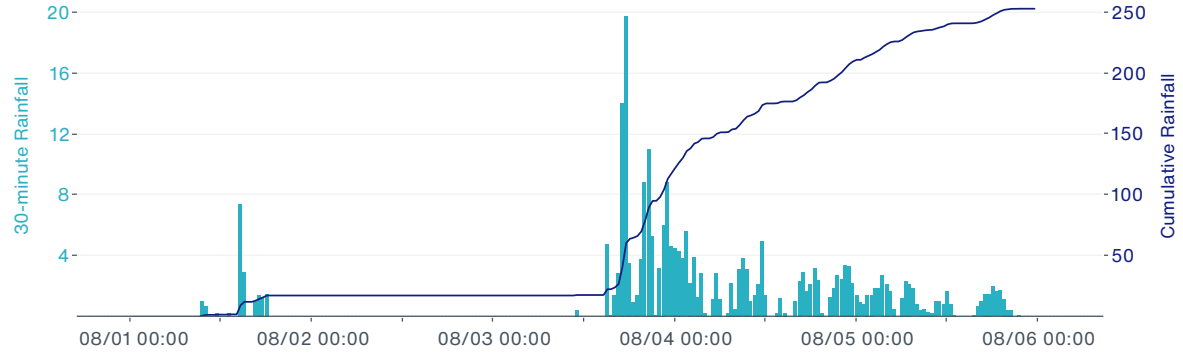
According to the Slovenia's environmental agency (ARSO), northern and central parts of the country saw more than 200 mm (7.9") of rain in 12-hour period on August 3-4 and some locations received more than the average August monthly precipitation in a span of about 10 hours. The first intense storm came in the evening hours of August 3 (17-20:00 UTC) and traversed through Northern Slovenia, spawning rainfall exceeding 30 mm (1.2") in 1 hour. The early morning hours of the following day saw more intense rain from another storm and prolonged rainfall of lower intensity continued through August 5.

Rainfall in Kranj, Slovenia (mm)

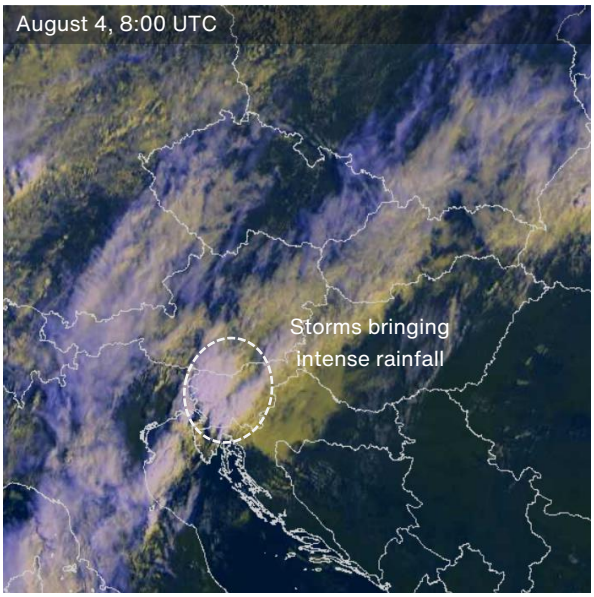


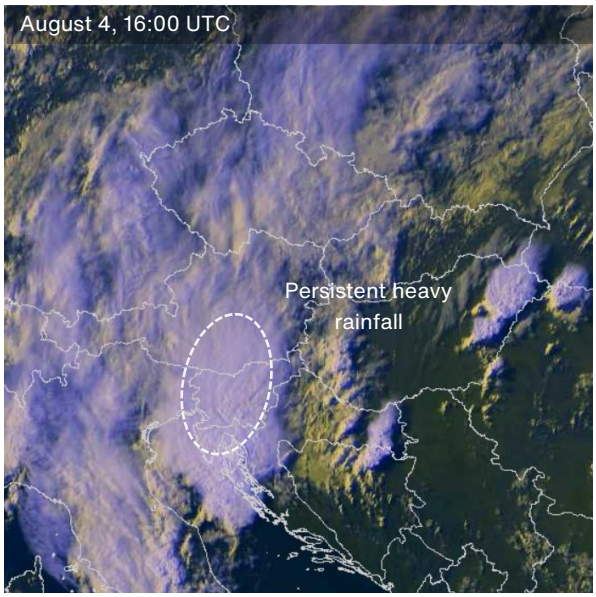
Data: ARSO

Rainfall in Ferlach, Austria (mm)



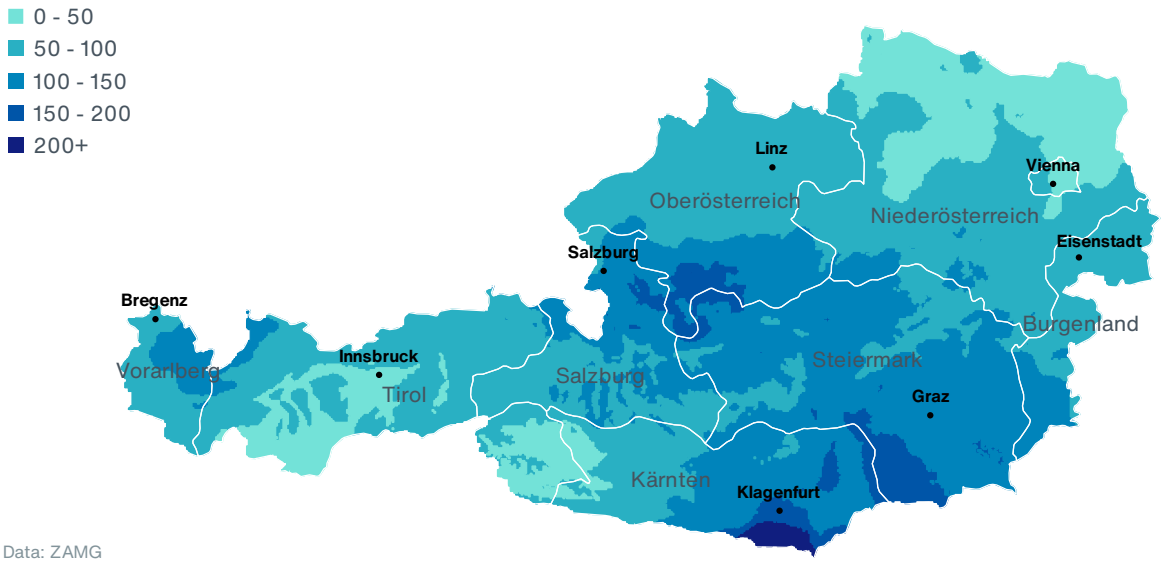
Data: ZAMG





In Austria, the highest rainfall was observed in southern Kärnten (Carinthia) on the Slovenian borders, but other regions saw notable accumulation and associated flooding and landslides.

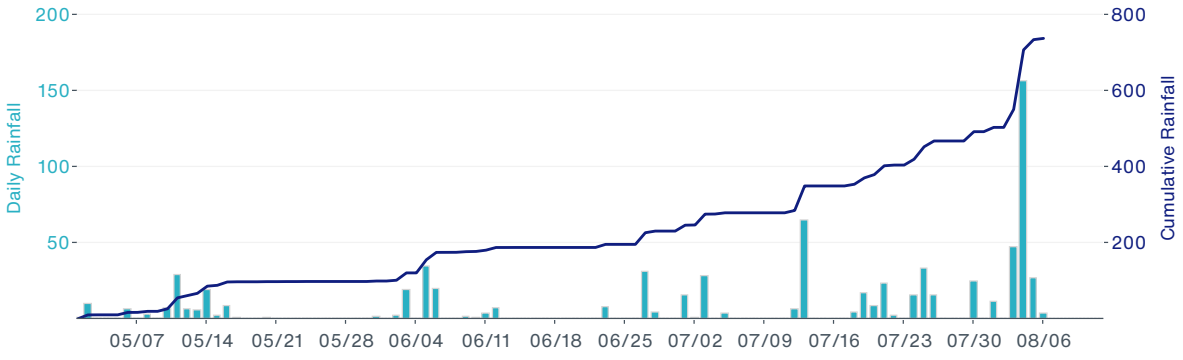
Rainfall in Austria on August 1-6 (mm)



Data: ZAMG
Aon Catastrophe Insight

Apart from the extreme intensity of the rainfall on August 3-4, previous saturation of soils across the region was one of the main exacerbating factors. For example, parts of Slovenia already saw some notable rainfall throughout the month of July. In Kranj, total rainfall in May through July approached 500 mm (19.7”), while the average amount for the period is around 358 mm (14”):

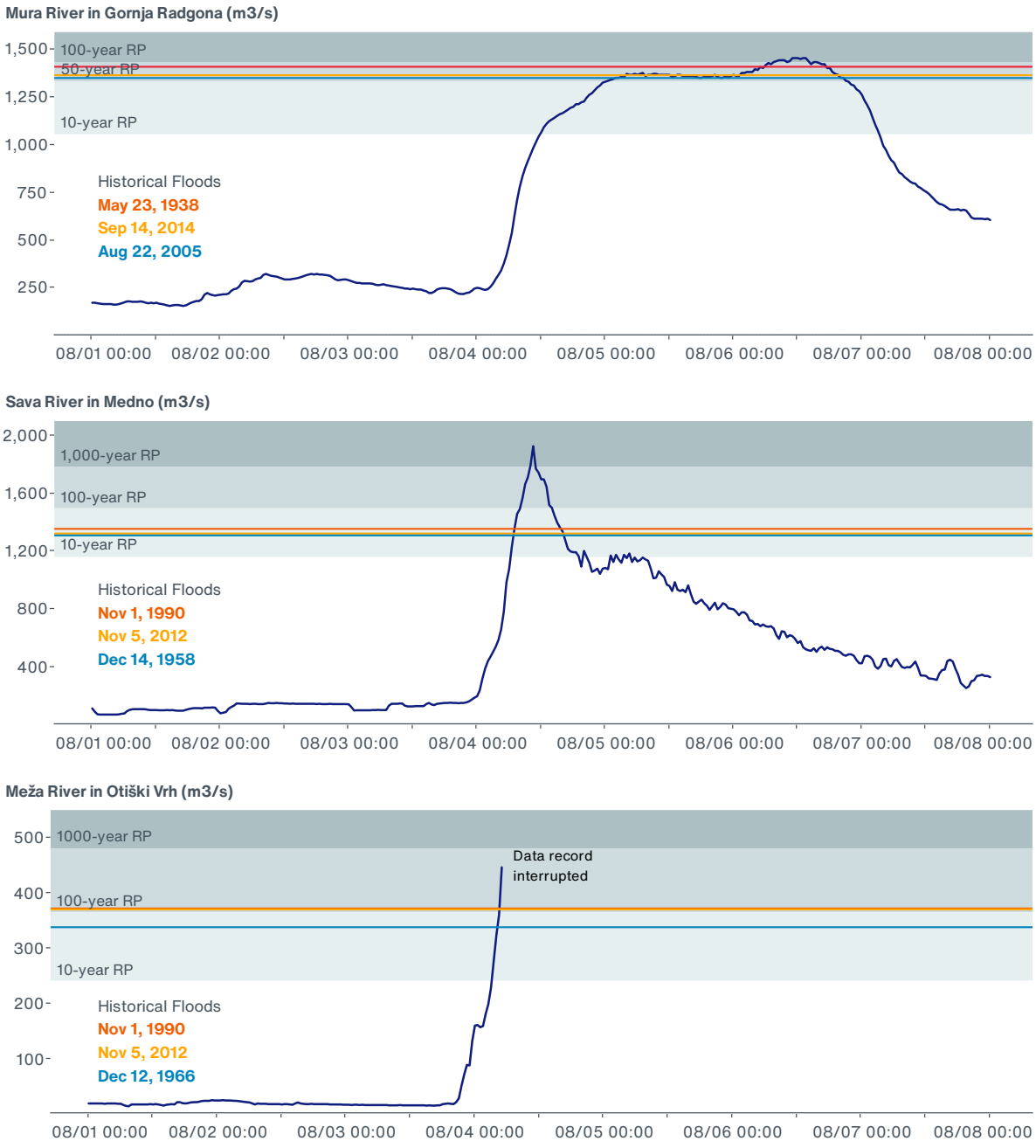
Daily Rainfall in Kranj, Slovenia (mm)



Data: ARSO

The amount of precipitation in such a short period of time in a rugged, montane terrain of Slovenia and southern Austria prompted extreme hydrological response, with some water courses in Slovenia exceeding the value of 1-in-1,000 occurrence interval (0.1% chance of occurring in any given year).

Discharges and Return Periods (RP)



Data: ARSO

Event Details

Widespread flooding and landslides resulted in catastrophic flooding damage across much of the Slovenian territory, with multiple water courses reaching 1 in 1000-year flood levels. Over the period of August 4-7, the Protection and Rescue Administration registered more than 7,500 incidents related to the situation, recorded in regional centres of Ljubljana (2,100), Kranj (1,870), Celje (1,350) Slovenj Gradec (880), Maribor (480) and others. Officials also noted that thousands of firefighters, armed forces, and other personnel responded to the emergency.

Six people were killed in the disaster. Thousands of people were evacuated, including more than 4,000 residents in Celje, Savinja Region. Widespread disruption occurred as floodwaters severed infrastructure and destroyed multiple bridges and stretches of regional roads. Additionally, at least 16,000 customers were left without power.

In some locations, the flooding was exacerbated by a collapse of protection measures; for example, a protective embankment was damaged on the Mura River in Dolnja Bistrica, which prompted evacuation of 500 resident. Hundreds of landslides were also observed across the country, which resulted in additional, notable damage to property and infrastructure.

Floods in the municipalities of Kamnik (left) and Črna na Koroškem (right)
Source: Mountain Rescue Association, Slovenia Army

In Austria, Kärnten (Carinthia) was the worst affected. Flooding and landslides resulted in infrastructural damage and disruption, notably in the districts of Wolfsberg and Völkermarkt. The highest heavy rainfall warnings were issued for the municipalities of Bad Eisenkappel, Gallizien, Sittersdorf, Globasnitz, Feistritz ob Bleiburg, Bleiburg and Neuhaus. Fire brigades in Carinthia and Styria intervened more than 1,300 times on August 3-4, mostly due to flooded cellars and fallen trees. Floods prompted evacuations of hundreds of people across the country.

Floods in Gallizien-Vellach, Kärnten
Source: Fire Rescue Völkermarkt

Historical Context

The current flooding will likely rank among the costliest natural disaster event on record in modern-day Slovenia (see in the table below).

Event	Date	Economic Loss (2023 $ million)
Flooding	November 1-5, 1990	1,590
Winter Weather – 2014 Ice Storm	January 31 – February 5, 2014	740
Flooding	October 28 – November 6, 2012	630

Financial Loss

As clean-up operations continued in the affected regions, it was difficult to determine the amount of economic or insured losses arising from the event. However, preliminary estimates of governmental officials tentatively suggested total impact in the billions of EUR and despite relatively low insurance take-up, total losses for the local industry were expected to be significant for the country; major insurers released preliminary statements of expected damage in the tens of millions EUR. This would make the event the costliest disaster on record in modern-day Slovenia from the economic loss standpoint.

Additional losses of lower magnitude were expected in Austria. Notable damage was incurred on regional infrastructure, with €15 million ($16 million) damage on roads.

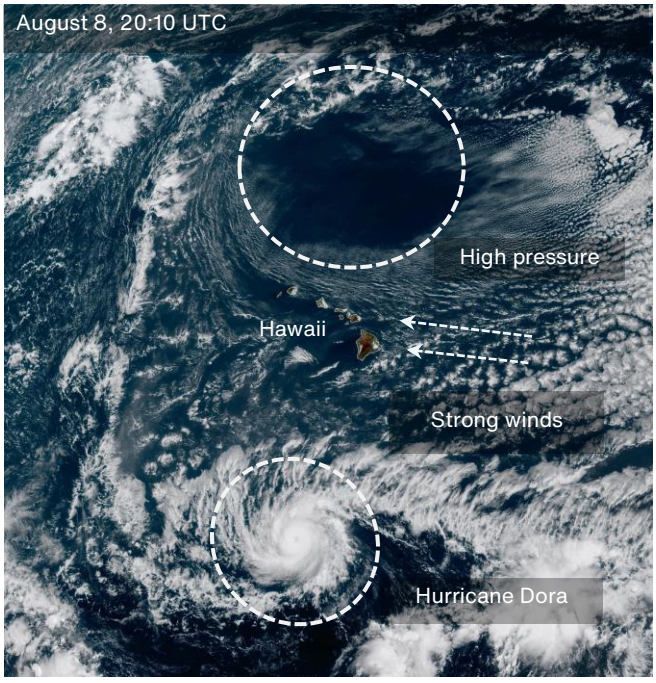
United States: Wildfire

Overview

Catastrophic and deadly wildfires impacted parts of Maui Island and Hawaii Island on August 8-10. Five main fires across these two islands quickly grew due to strong winds associated with the passing of Hurricane Dora, as well as dry conditions. Tragically, the historic town of Lahaina in western Maui saw unprecedented destruction as a large portion of the town was burned down. As of this writing, 55 people have died while thousands more have been evacuated. Based on the extent of damage, it is likely that total economic losses will reach into the billions USD.

Meteorological Recap

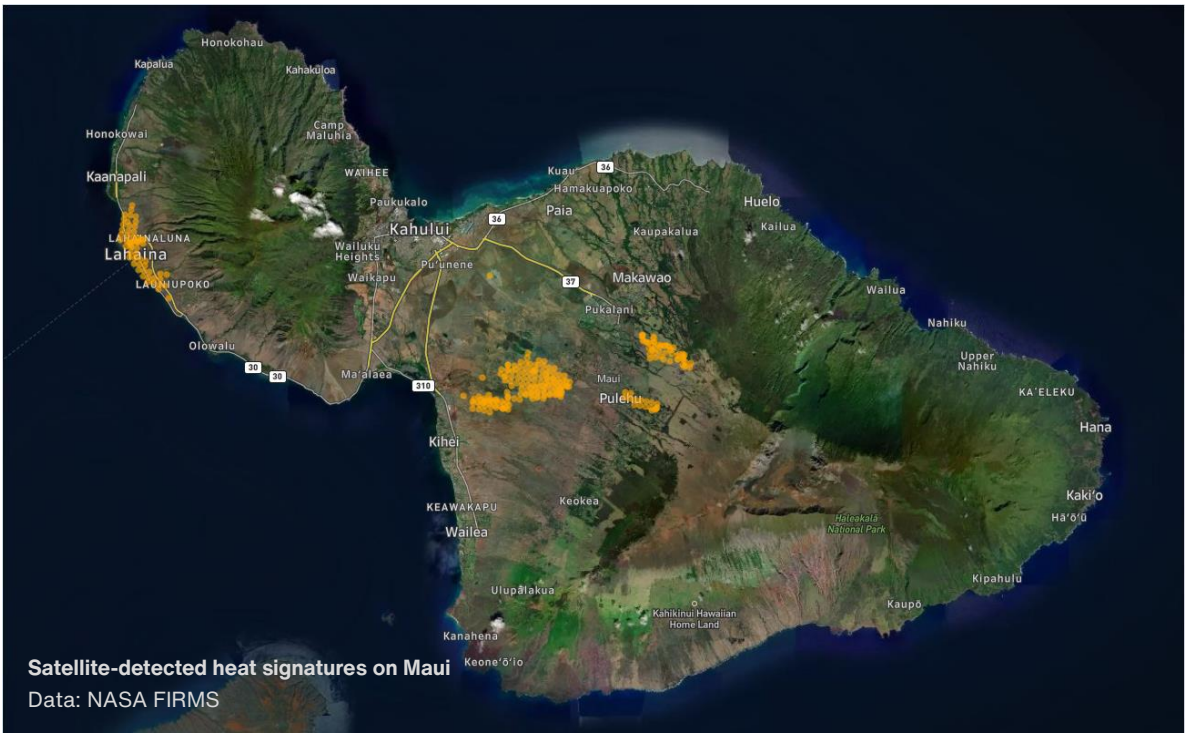
On August 7-9, Hawaii became wedged between powerful Hurricane Dora to its south and a ridge of high pressure to its north. Across the islands, an increasing pressure gradient between these two features generated strong easterly trade wind gusts up to 82 mph (132 kph). Preceding drought conditions, along with low humidity on the western side of the Hawaii mountain chain, prompted the National Weather Service to issue a red flag warning for favorable fire conditions on the western side of all islands of Hawaii.



Late on August 8, three large fires broke out across the western parts of Maui Island while an additional three fires started on the Big Island of Hawaii. While the exact causes of these fires are still unknown, strong winds allowed each of these fires to quickly spread and cause impacts to each of these islands.

Event Details

The most significant of these fires occurred over the historic town of Lahaina on Maui on the evening of August 8. The rapid growth of this fire provided very little time for people to escape. In fact, more than 50 people were rescued by the coast guard as they fled into the ocean to quickly escape the flames. As of August 11, 55 people have died – which ranks among the deadliest wildfires in modern U.S. history. Around 11,000 people had to be evacuated while at least 1,700 structures have been damaged or destroyed across a large portion of the town. Around 14,500 power lost power while nearly all cell and internet service were lost in Lahaina. The unprecedented scale of destruction prompted a disaster declaration for U.S. federal aid to support state and local recovery efforts.



Satellite-detected heat signatures on Maui
Data: NASA FIRMS

As of this writing, another two fires are currently burning in Maui, the Pulehu and Upcountry fires, with minor impacts. An additional two fires are also burning on the northwest portion of the Big Island of Hawaii. Both of these fires near Kohala forced some local evacuations amid minor damage. Altogether, around 2,000 acres (809 hectares) have been burned.

Destruction of Lahaina
Source: County of Maui

Financial Loss

Significant disruption to tourism in Maui, which is a major part of the local economy, will be realized for the foreseeable future. This, along with extreme devastation to homes, businesses, and other structures in Lahaina will likely drive economic and insured losses into the hundreds of millions USD. Given that this situation is still ongoing, losses may continue to increase.

United States, Canada: SCS & Flooding

Overview

An active period of severe weather impacted numerous locations in the central and eastern United States, as well as southeastern Canada, on August 3-9. Severe storms produced widespread strong winds, large hail, dozens of tornado reports, and numerous floods. These events resulted in extensive property damage, widespread power outages, and 3 fatalities. Total economic and insured losses could reach the hundreds of millions USD.

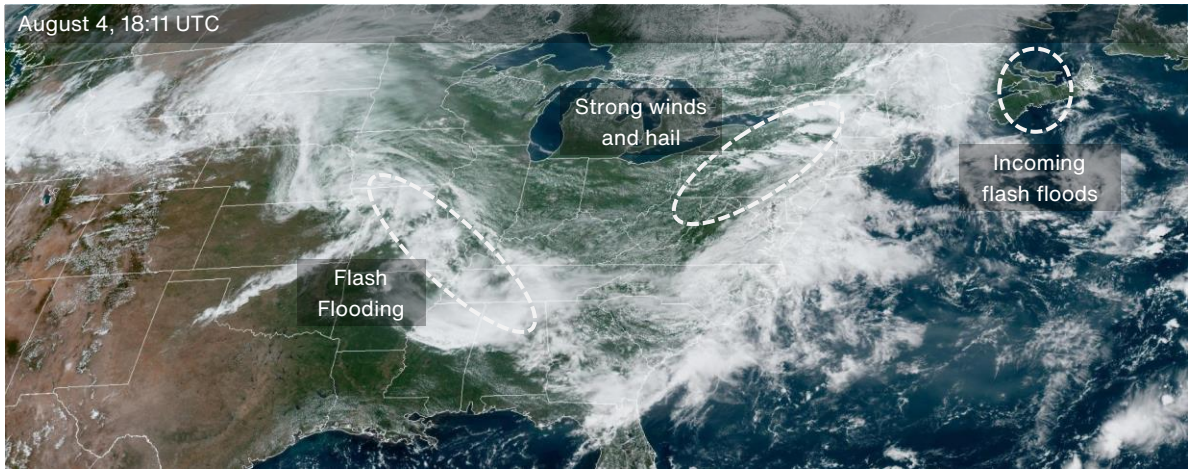
Meteorological Recap

August 3

Ongoing convection from the previous night along a surface boundary in southern Tennessee developed into severe thunderstorms on August 3. A bowing line of storms packed with strong 70 mph (112.7 kph) wind gusts impacted much of Tennessee, Alabama, and Georgia during the afternoon.

Additionally, an upper-level trough over the central Rocky Mountains brought severe storms into eastern Colorado, including the Denver metro area. Strong evening convection generated 70 mph (112.7 kph) wind gusts and small hail. A separate upper-level trough shifting from the northern Great Lakes to Quebec triggered more severe storms across southeastern Ontario and southwestern Quebec. In the afternoon, storms containing 80 mph (128.7 kph), hail, and heavy rain impacted areas near Peterborough, Ottawa, and Montreal. Notably, one tornado was confirmed just south of Ottawa while some localized flooding occurred over parts of Peterborough.

August 4



Heavy rainfall from intense thunderstorms led to flash floods in parts of Missouri, Tennessee, Kentucky, and Alabama early on August 4. Overnight convection generated widespread rainfall totals exceeding 4 inches (101.6 mm). Fulton County, Kentucky and Union City, Tennessee both recorded over 11 inches (279.4 mm) of rain locally.

A large upper-level trough feature remained anchored over Quebec on August 4. Ahead of this feature, daytime heating allowed severe convection to develop in the afternoon across much of the northeastern United States. A severe thunderstorm watch for over 16 million people was issued due to storms containing strong winds and hail up to 1.75 inches (4.4 cm) in diameter. In Canada, this same trough sparked fairly heavy rainfall across south-central Nova Scotia. Areas near Halifax, in particular, saw localized rainfall totals of 90-130 mm (3.54-5.12 inches) late on August 4 into early August 5.

Some additional severe thunderstorms moved over the central Great Plains during the afternoon into the overnight hours. Most notably, an EF-2 tornado tore directly through the rural town of Baring, Missouri with estimated peak winds of 122 mph (196.3 kph).

August 5

Scattered severe thunderstorms were seen from the central Great Plains to the mid-Mississippi Valley throughout much of August 5. Outside of reports of large hail exceeding 3 inches (7.6 cm) near Colorado Springs, many of these storm impacts were minor.

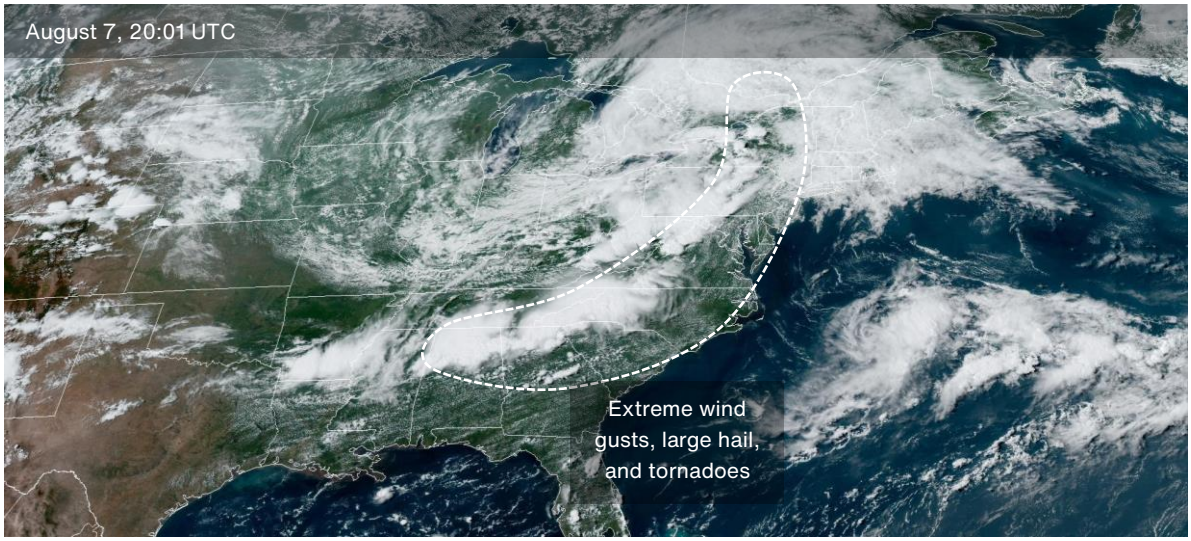
August 6

A cluster of severe thunderstorms moved through much of the southeastern U.S. during the afternoon and evening of August 6. Daytime heating amid an unstable air mass generated severe convection containing wind gusts up to 65 mph (104 kph) primarily over Alabama and Georgia.

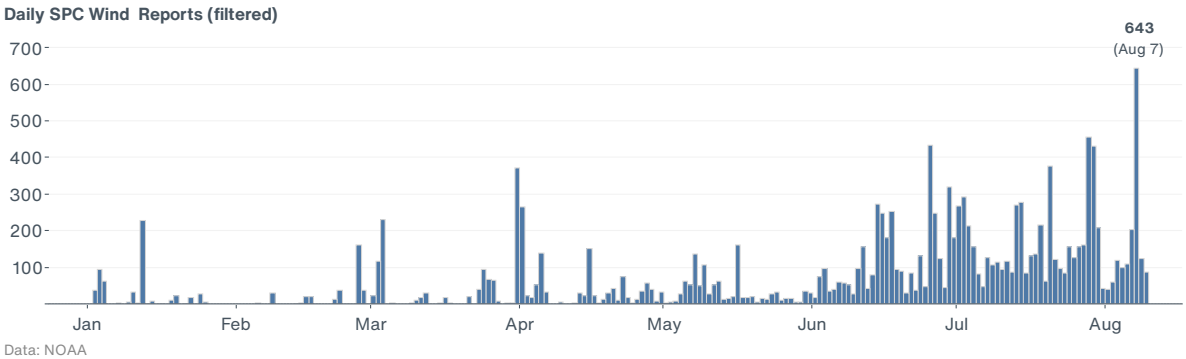
Meanwhile, a weak surface low progressing through the mid-Mississippi Valley triggered more severe convection during the afternoon and evening. These storms produced over 60 mph (96.6 kph) wind gusts and small hail. Notably, 6 tornadoes were reported across Illinois and Indiana, 3 of which were given an EF-1 and EF-2 preliminary rating.

August 7

Convection was ongoing the morning of August 7 along a cold front traversing the eastern U.S. and southeastern Canada. An unseasonably strong upper-level jet stream, along with daytime heating within an unstable air mass, supported widespread severe storms in the afternoon ahead of the cold front.



Supercells and several linear storm clusters produced large hail exceeding 3 inches (7.6 cm) in diameter and multiple tornadoes. However, the main impacts stemmed from widespread damaging winds of 70 mph (112.7 kph). A large area stretching from Alabama to New York was impacted by these hazards. This included many large population centers in the eastern U.S. such as Atlanta, Washington D.C., Baltimore, and Philadelphia. Well over 30 million people in the U.S. were under severe weather alerts. August 7 saw the highest number of severe wind reports year-to-date:



Additionally, an area stretching from Kingston to Quebec City experienced severe storms producing primarily heavy rainfall. The largest rainfall totals on August 7 in southeast Ontario ranged from 50-100 mm (1.97-3.94 inches).

August 8

The slow-moving low-pressure system from the previous day continued to impact portions of the eastern U.S. on August 8. In the morning, severe convection from the previous night produced a tornado and some strong winds across parts of eastern Massachusetts. Some localized flash flooding, particularly in northeastern Massachusetts, was also observed. Further north, parts of Maine, Quebec, and New Brunswick began experiencing heavy rainfall leading to some localized flooding. In the southeast U.S., parts of southern Alabama, Georgia, and South Carolina saw strong wind gusts exceeding 70 mph (112.7 kph) produced by a cluster of severe storms.

Elsewhere, a shortwave trough over the central Rocky Mountains triggered scattered severe thunderstorms across the central Great Plains in the afternoon. Most notably, an extremely large hailstone with a preliminary diameter of 5.25 inches (13.3 cm) near Yuma, Colorado may measure as the largest hailstone in Colorado history.

August 9

The same low-pressure system stagnant over the northeast U.S. brought additional heavy rainfall into Quebec, New Brunswick, and Nova Scotia. Local rainfall totals from August 8-9 over southeast Quebec exceeded 100 mm (3.94 inches).

Elsewhere, a complex weather setup brought multiple rounds of severe storms from the Ozarks to the Tennessee Valley. Storms during the afternoon and evening of August 9 generated winds exceeding 70 mph (112.7 kph) and hail over 1.5 inches (3.81 cm) across northern Arkansas, southern Tennessee, and northern Alabama. Parts of northern Arkansas also saw localized flash flooding.

Event Details

Consistent severe weather generated widespread impacts nearly every day over the past week. Strong winds, hail, and flash floods primarily on August 3 and 7 caused significant property damage in southeast Canada. This included many populated areas along the St. Lawrence River in Ontario and Quebec. Another noteworthy flood occurred near Halifax, Canada on August 4-5 – an area still reeling from the historic floods 2 weeks prior.

In the United States, flash flooding in the mid-Mississippi Valley and significant tornado damage in Baring, Missouri, highlighted the severe weather impacts from August 3-5. The flash floods inundated several homes and sparked multiple water rescues, while the overnight Baring tornado caused significant property damage and 2 injuries. Some additional minor tornado damage was observed on August 6 in Illinois and Indiana.

The largest impacts from the past week in the U.S. occurred on August 7. Powerful winds caused extensive property damage, knocked down hundreds of trees, and cut off power to more than 1 million people. 2 people were killed during this event. On August 8, another person was killed by strong winds toppling a tree in South Carolina. On the same day, significant flooding damaged numerous homes and businesses in North Andover, Massachusetts. Finally, on August 9, strong winds knocked out power for thousands across Arkansas, Tennessee, and Alabama. Additional localized flooding and even lightning-induced fires occurred with these storms.

Tornado damage in Baring, Missouri
Source: NWS St. Louis

Notable Storm Total Rainfall Estimates

Location	Date	Storm Total Rainfall (inches)	Storm Total Rainfall (mm)
Union City, Tennessee (US)	08/04	11.49	291.8
Hickman, Kentucky (US)	08/04	11.05	280.7
Shearwater, Nova Scotia (CAN)	08/04-08/05	4.75	120.6
Brockville, Ontario (CAN)	08/07	3.81	96.9
Lawrence, Massachusetts (US)	08/08	6.72	170.7

Financial Loss

The multiple, relentless waves of severe thunderstorms in the U.S. and Canada could generate insured and economic losses in the hundreds of millions USD.

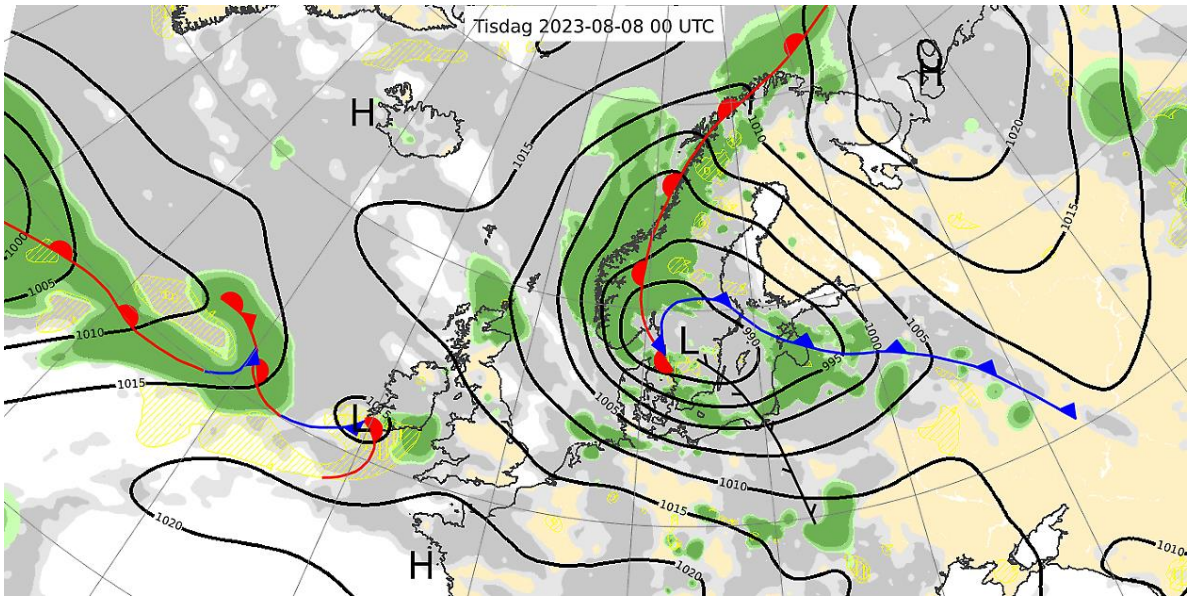
Northern Europe: Flooding & SCS

Overview

Low-pressure system Zacharias (alternatively named Petar and Hans), which contributed to the devastating floods in Slovenia, continued to affect Northern Europe on August 6-8, bringing large hail and strong winds, and particularly heavy rainfall to parts of Sweden and Norway. In Scandinavia, resulting flooding caused significant damage on property and infrastructure and total losses will run into the hundreds of millions EUR.

Meteorological Recap

The low-pressure system that contributed to the devastating floods in Slovenia and Austria continued tracking north, bringing additional impacts in a form of strong thunderstorms along its frontal system, as well as abundant moisture, which generated notable rainfall accumulation in the region. Particularly notable hail and wind effects were felt in the Baltics – Lithuania observed a maximum hail diameter of 9 cm (3.5”) and the damaging hail swath stretched roughly from Vilnius across central Lithuania and western Latvia all the way to the Estonian island of Saaremaa. Wind impacts were also felt across large parts of Sweden and Finland on August 8.



Surface analysis on August 8
Source: SMHI

However, perhaps the most significant impacts stemmed from torrential rai that impacted portions of southern and central Sweden and southern Norway. Some locations in southern Sweden even received highest daily accumulations regardless of the time of year.

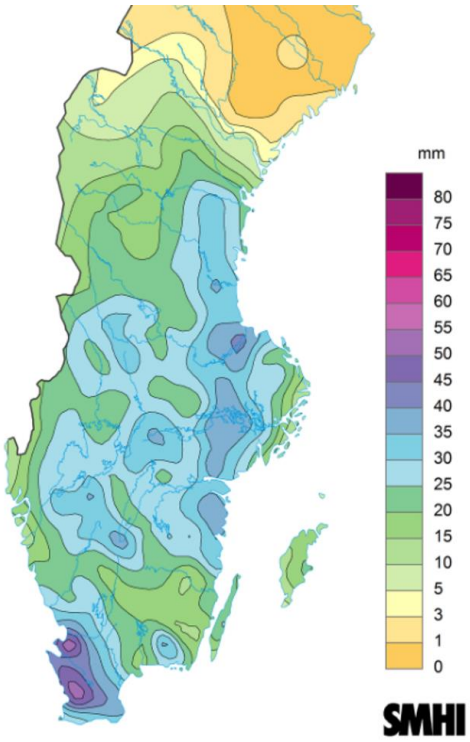
Event Details

Heavy rainfall in parts of Sweden and Norway resulted in notable flooding, with impacts on property and infrastructure.

The Norwegian Natural Perils Pool informed that as of August 10, approximately 5,000 flood-related claims were received with estimated total loss of about NOK900 million ($87 million).

Additional impacts were felt in other countries. In Finland, at least 28,000 customers were left without power due to wind-related damage on the power grid.

Lithuanian insurers reported losses notable for the local industry, which might exceed €1.0 million. Most of the damage was caused by unusually large hail that impacted central and western parts of the country.



Rainfall in Sweden on August 6
Source: SMHI

Financial Loss

The complex weather pattern that impacted parts of Northern Europe on August 6-8 will result in notable economic and insured losses. Some impacts were related to large hail and strong winds, yet the most significant impacts were registered due to widespread flooding.

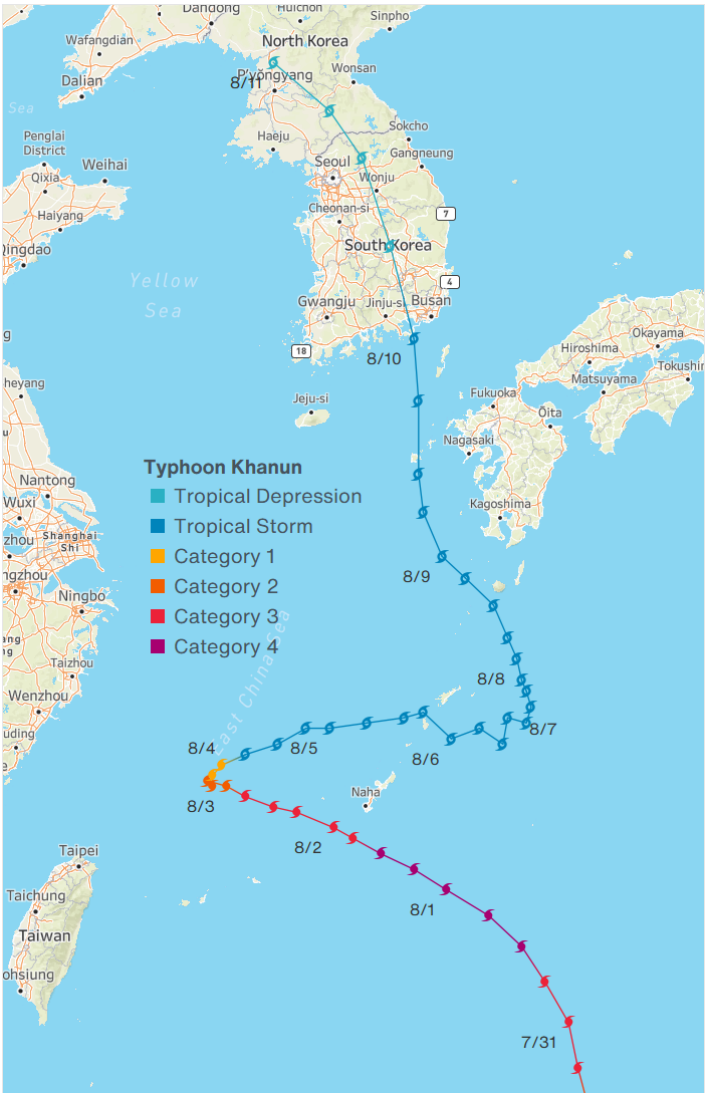
Despite relatively high insured losses, initially expected in the lower hundreds of millions EUR, large part of total damage will be uninsured as notable damage occurred on local infrastructure.

Japan, South Korea: Typhoon Khanun (Update)

Overview

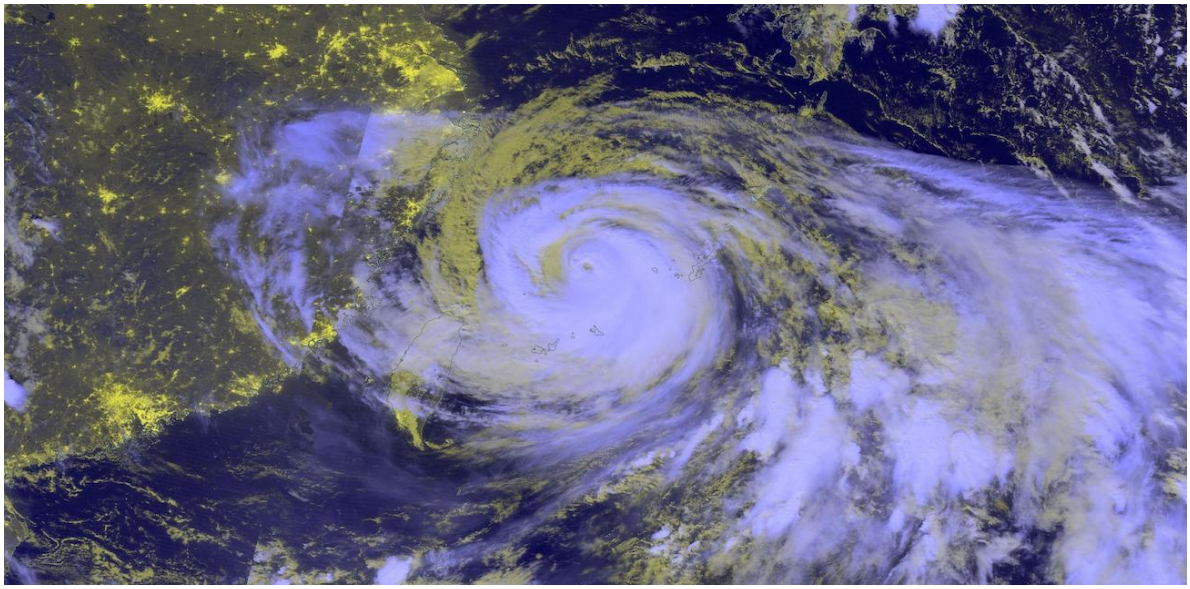
Despite weakening into a tropical storm, Khanun impacted additional parts of Southern Japan on August 4-9. As of August 10, Khanun made landfall in South Korea, bringing heavy rain and strong winds. Notable impacts along the Korean Peninsula are ongoing with more likely before the storm fully dissipates. Aggregated economic and insured losses thus far since the storm's formation could reach at least into the tens of millions USD, likely higher.

Meteorological Recap



After passing just south of Okinawa on August 1-2, Khanun steadily weakened to a tropical storm due to an eyewall replacement cycle, cooler sea-surface temperatures, and a quasi-stationary storm motion on August 3. The storm then changed direction moving east and passing the Tokunoshima and Amami Islands into the Philippine Sea on August 4-6. Despite downgrading to a tropical storm, Khanun continued to bring heavy rainfall and strong winds exceeding 100 kph (62.1 mph) across the Ryukyu Islands and Kagoshima prefecture.

On August 7-8, Khanun once again changed direction toward the north/northwest while maintaining tropical storm strength. The system passed near the island of Kyushu with sustained winds of 74 km/h (46 mph) on August 8-9 before making landfall on Geoje Island in South Korea just after 00 UTC on August 10. Khanun continued to bring wind speeds of 70 kph (43.5 mph) into South Korea, although gradual weakening will continue as the storm progresses up into North Korea.



Tropical Cyclone Khanun on August 2, 2023
Source: NASA/NOAA Suomi NPP satellite

Event Details

Around 16,000 households across several prefectures in southern Japan lost power due to impacts from Khanun. After passing near the island of Kyushu, localized rainfall totals exceeding 500 mm (19.7 inches) were reported along with 14 injuries.

As of August 10, 40,000 households have lost power in South Korea. 400 mm (15.8 inches) of rain has already fallen resulting in numerous reports of localized flooding and landslides mainly in the southern and eastern portions of the country. The slow pace of the storm could result in more significant rainfall totals up the Korean Peninsula. So far, 1 person has died, and another person is still missing. Earlier on August 9, risks of strong winds and heavy rainfall from Khanun forced over 35,000 people at the World Scout Jamboree to evacuate their campsite.

Financial Loss

While Khanun continues to impact the Korean Peninsula, the storm has already caused extensive wind and flooding damage in Taiwan, southern Japan, and South Korea. Given the reported damage in some populated regions such as Okinawa and the southeast region of South Korea, economic and insured losses could reach into the tens of millions USD, likely higher.

Natural Catastrophes: In Brief

Flooding (China)

Heavy rainfall over the past several days continues to plague parts of central and northeast China. The State Flood Control and Drought Relief Headquarters reported that over 19,000 people had been evacuated due to flooding near Shulan City since August 1. Recent rainfall and flooding in Shulan City has killed 14 people as of August 7. Other nearby regions of eastern China, including Beijing, similarly experienced significant rainfall and widespread flooding. According to media reports, 33 people have died, over 200,000 homes have been damaged, and more than 15,000 hectares (37,065 acres) of crops and farmland have been flooded. Similar flooding impacts were also seen in central China, where 10 people died across the Sichuan and Gansu provinces.

Earthquake (China)

A magnitude-5.4 earthquake jolted Pinqyuan County in the Shandong Province in eastern China on August 5. Local authorities reported 21 injured people and more than 120 buildings collapsed due to tremors.

Landslide (Georgia)

A deadly landslide occurred near Oni Municipality in northern Georgia on August 3. At least 18 people have died while search and rescue activities are still ongoing as another 19 people remain missing.

Wildfire (Southern Europe)

Since August 4, numerous wildfires have broken out across four countries in southern Europe. In central and southern Portugal, several wildfires have resulted in evacuations. The most severe fire in the Odemira Municipality injured 35 people, forced 1,400 people to be evacuated, and burned around 8,700 hectares (21,498 acres). In Spain, multiple fires broke out in areas including Girona and Puerto Real. International assistance helped contain a multi-day fire over parts of Cyprus. More significant wildfires were seen in the Cagliari and Nuoro provinces of Sardinia Island in southern Italy. More than 40 wildfires across the island have injured 4 people, caused 600 people to be evacuated, and cut off water supply to over 12,000 people in the Podasa and Siniscola Municipalities.

Flooding (Southeast Asia)

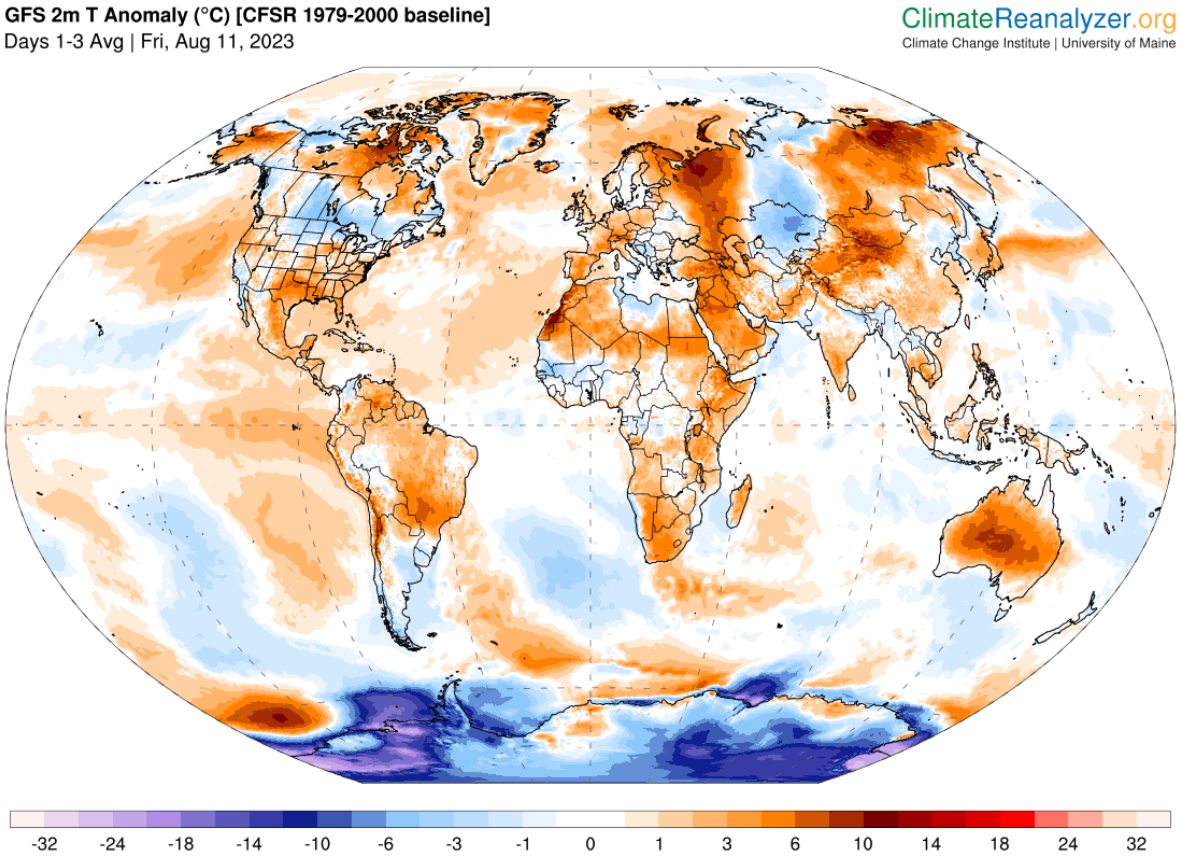
The current monsoon season has generated widespread floods across multiple countries around Southeast Asia. Significant flash flooding event has occurred in Bangladesh since August 7. Over 1 million people, including over 25,000 refugees have been impacted primarily in the Chattogram Division. Landslides in this region also killed at least 4 people and damaged hundreds of houses. Laos, which has seen nearly continuous rain since August 1, has been affected by widespread flooding and landslides. As of August 9, according to the ASEAN Disaster Information Network, 6 people have died while 1 person is still missing. Over 500 various structures and around 184,000 hectares (454,674 acres) of agriculture have been damaged or destroyed. In southern Myanmar (Burma) and western Thailand, flash flooding

killed 3 people on August 7 and August 10. Additional heavy rainfall and flooding over northern Vietnam claimed the lives of 5 people.

Flooding (Mongolia)

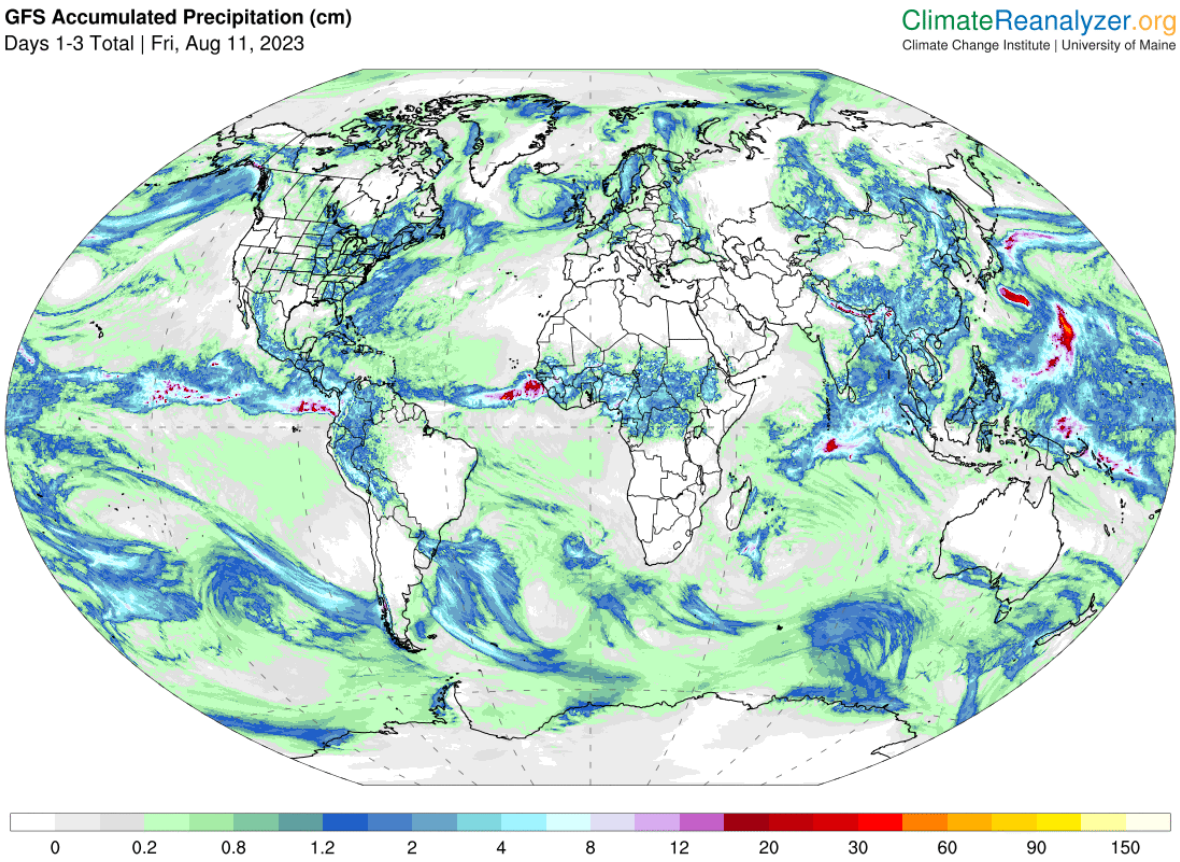
On August 5, torrential rainfall over the Mongolian capital city of Ulaanbaatar caused significant flash flooding. 4 people were killed while 59 more people were displaced from their homes. The flash floods also damaged 246 homes, disrupted local power supplies, and damaged several road networks.

Global Temperature Anomaly Forecast



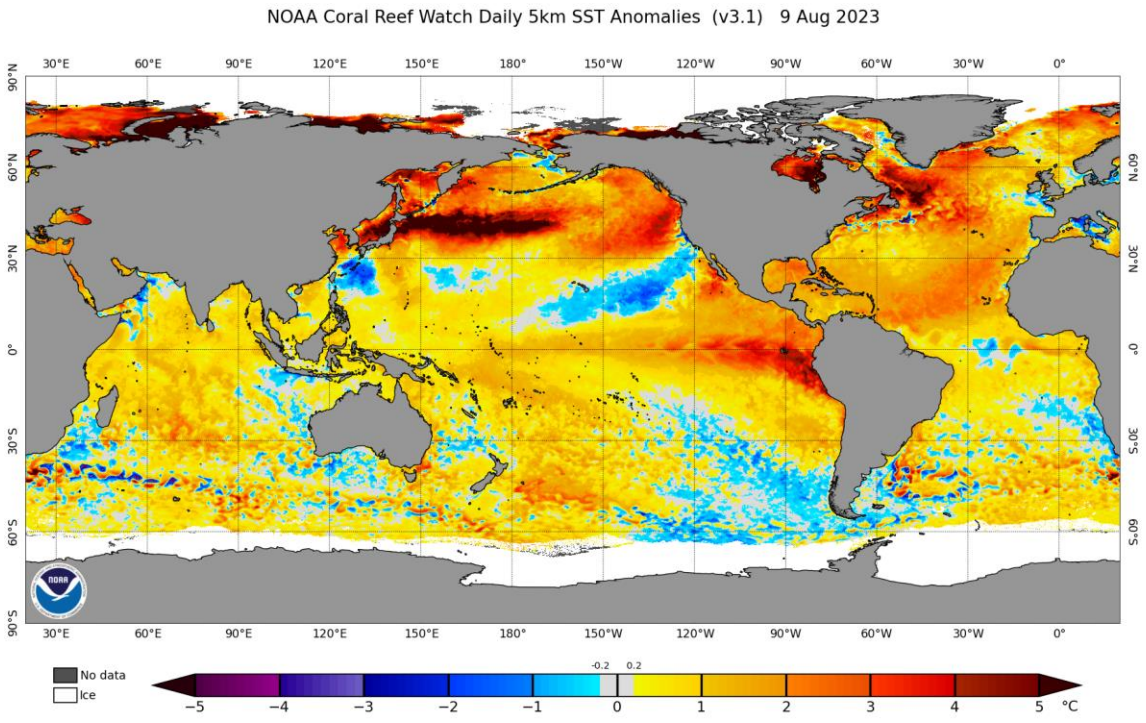
Source: Climate Reanalyzer, Climate Change Institute, University of Maine, USA

Global Precipitation Forecast

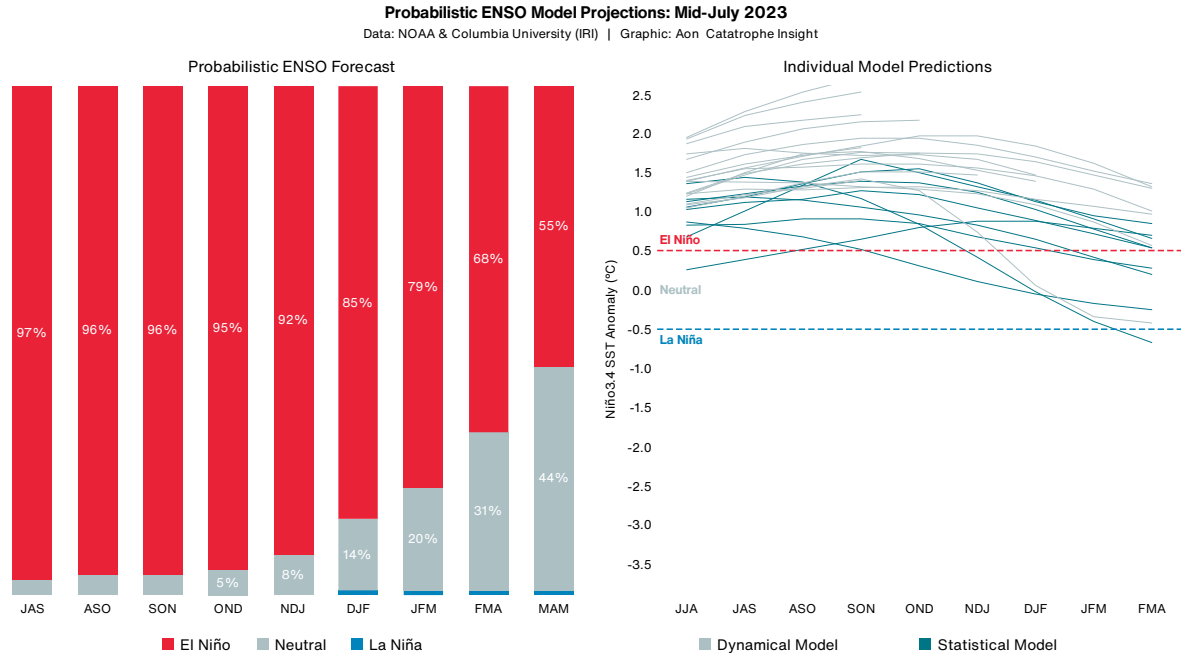


Source: Climate Reanalyzer, Climate Change Institute, University of Maine, USA

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



El Niño-Southern Oscillation (ENSO)



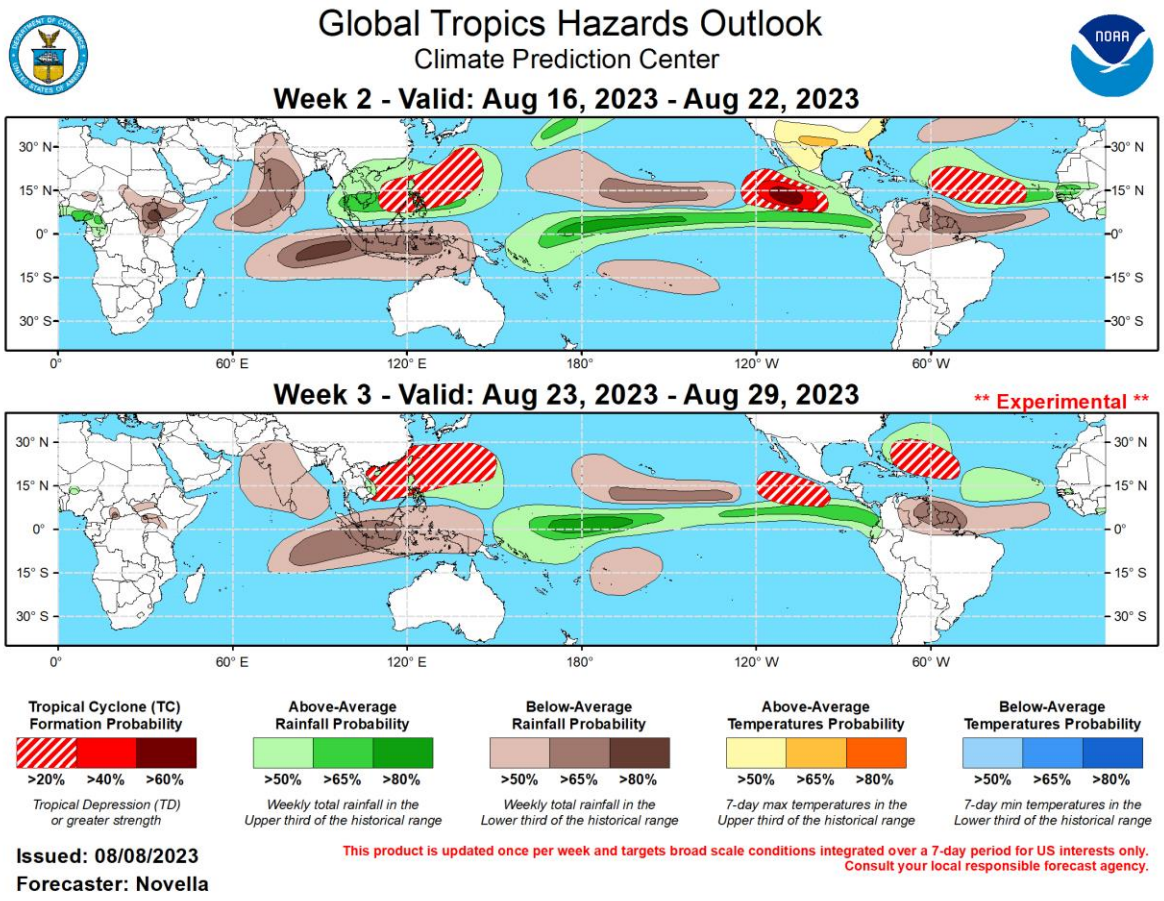
El Niño: *Warm phase of an ENSO cycle. Sea surface temperatures of +0.5°C occur across the east-central equatorial Pacific.*

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.*

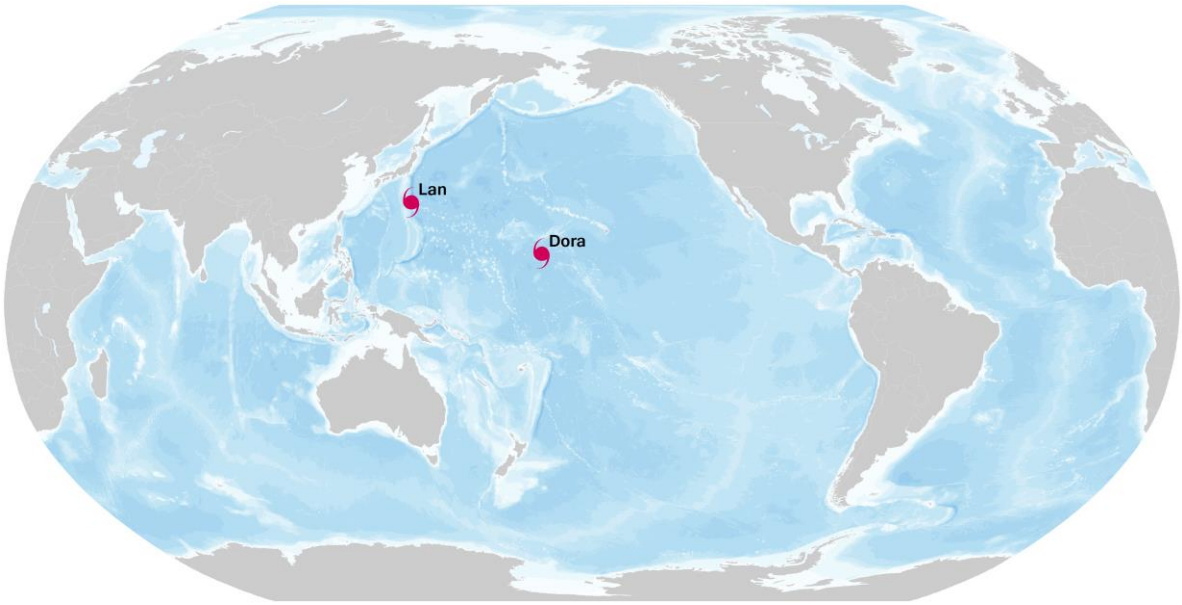
El Niño (La Niña) is a phenomenon in the equatorial Pacific Ocean characterized by a five consecutive 3-month running mean of sea surface temperature (SST) anomalies in the Niño 3.4 region that is above the threshold of +0.5°C (-0.5°C). This is known as the Oceanic Niño Index (ONI).

Global Tropics Outlook



Source: Climate Prediction Center (NOAA)

Current Tropical Cyclone Activity



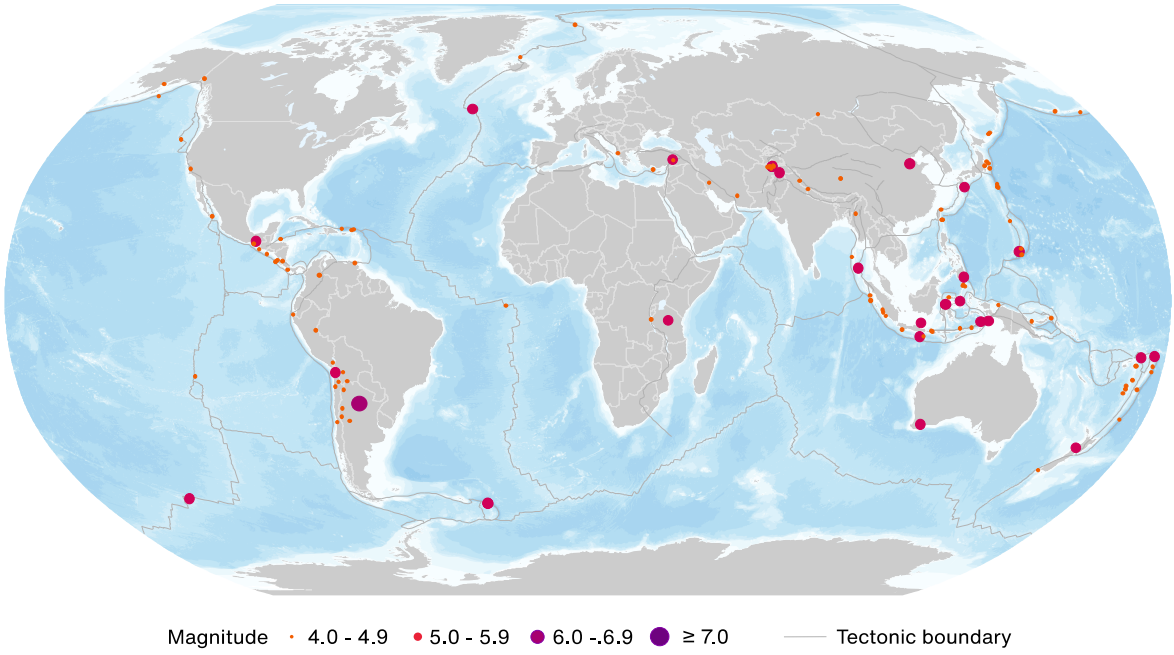
Tropical Depression Tropical Storm Category 1 Category 2 Category 3 Category 4 Category 5

Name	Location	Winds	Center
HU Dora	13.5N, 175.5W	120	995 miles (1600 km) W from Majuro, Marshall Islands
TY Lan	27.4N, 142.8E	130	600 miles (965 km) S from Tokyo, Japan

* 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)

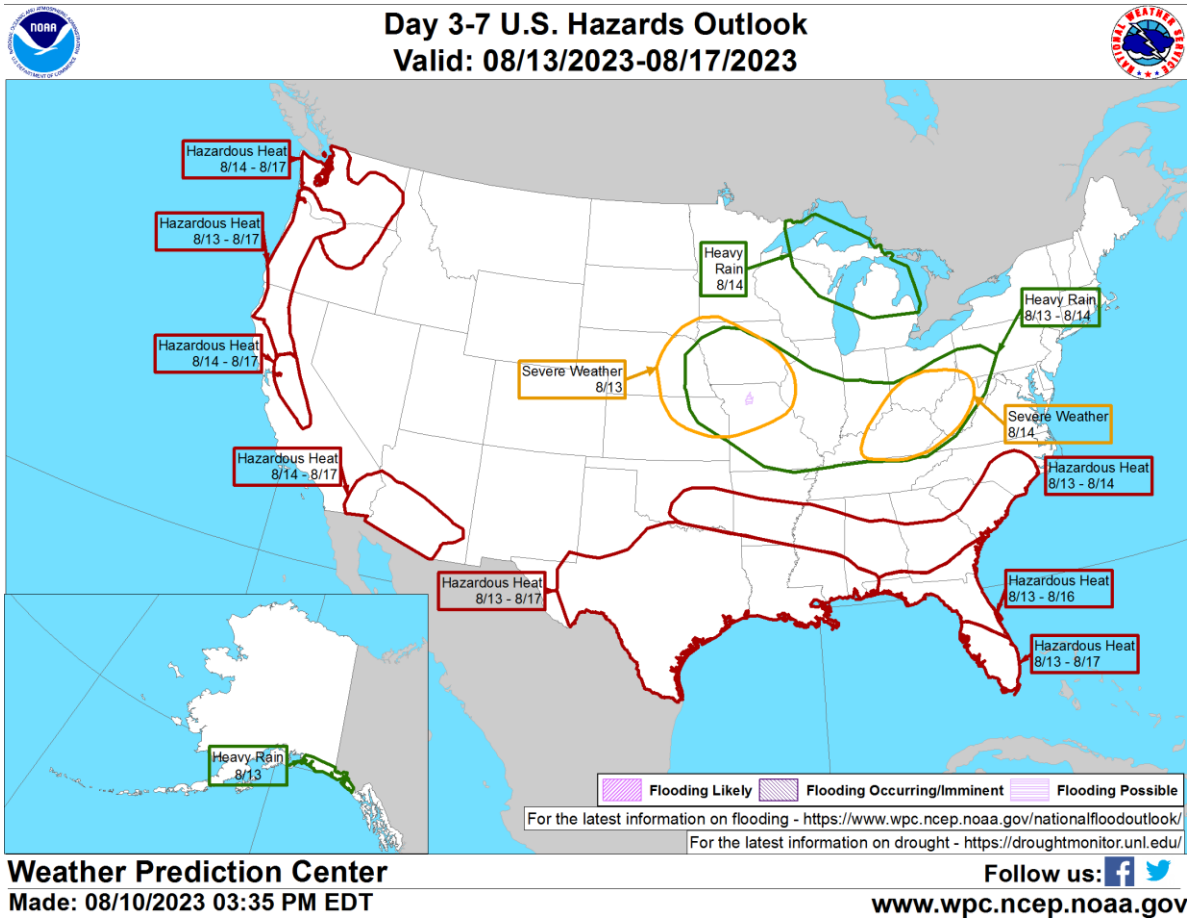
Global Earthquake Activity (≥M4.0): August 4-10



Source: United States Geological Survey

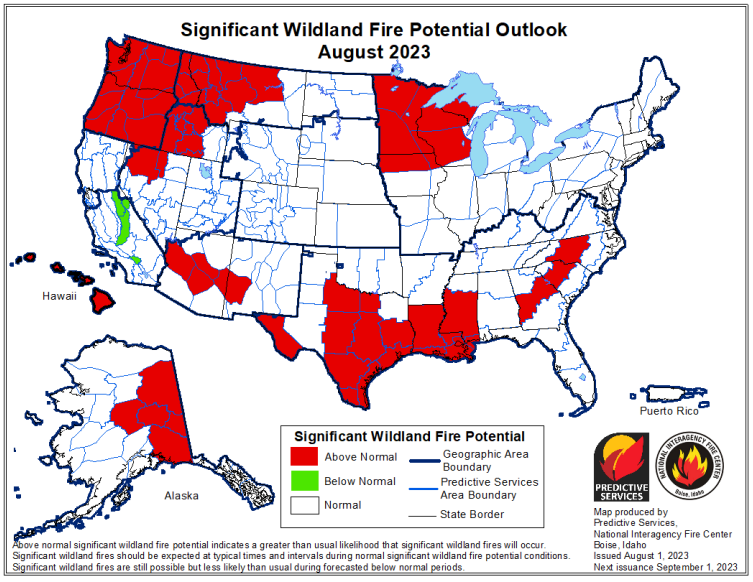
Date (UTC)	Location	Mag	Epicenter
8/5/2023	28.21S, 63.19W	6.2	Matara, Argentina

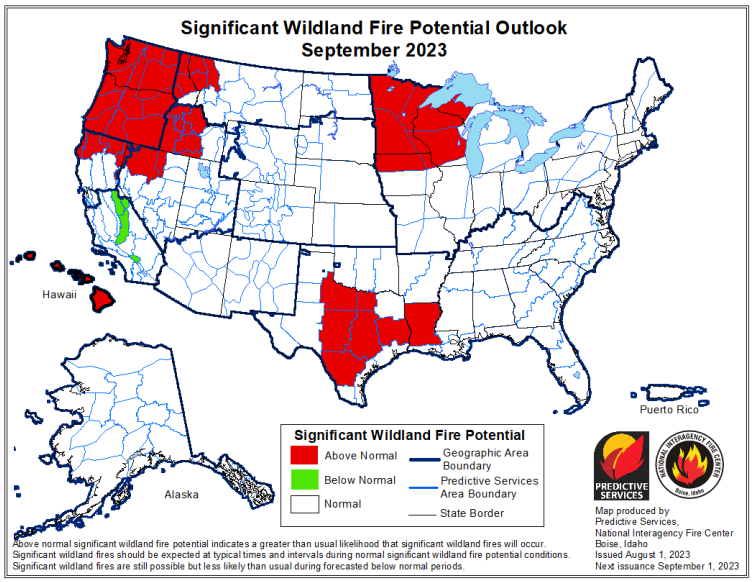
U.S. Hazard Outlook



Source: Climate Prediction Center (NOAA)

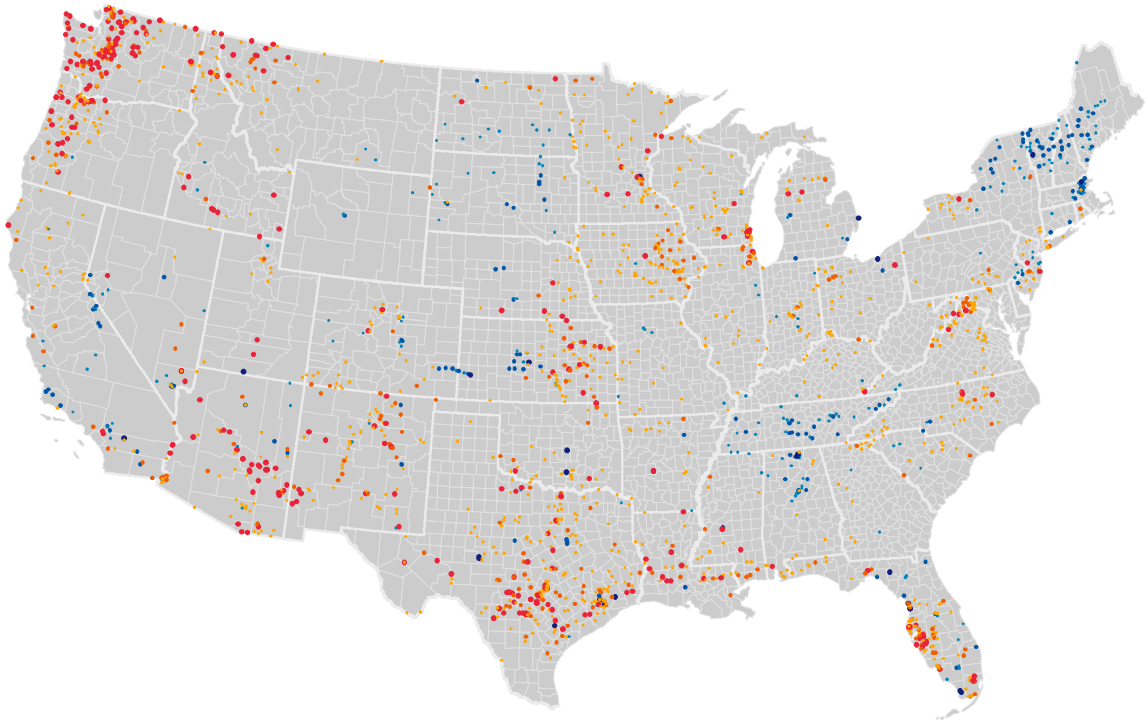
U.S. Wildfire: Significant Fire Risk Outlook & Activity





Source: NIFC

U.S. Current Riverine Flood Risk



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 steam 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

Slovenia, Austria: Flooding

Slovenia's environmental agency (ARSO)
Damage after 'apocalyptic' flooding to pass €500 million, *The Slovenia Times*
Civil defense warnings extended, *Carinthia.orf.at*

United States: Wildfire

NASA/NOAA Suomi NPP satellite
NASA FIRMS
County of Maui

United States, Canada: SCS & Flooding

NWS St. Louis

Japan, South Korea: Typhoon Khanun (Update)

JTWC

Typhoon Khanun Turns Deadly in South Korea, The New York Times

Natural Catastrophes: In Brief

National Emergency Response Centre of India (NDMIndia)
ASEAN Disaster Information Network (ADINet)

Contacts

Michal Lörinc
Head of Catastrophe Insight
michal.lorinc@aon.com

Ondřej Hotový
Catastrophe Analyst
ondrej.hotovy@aon.com

Antonio Elizondo
Senior Scientist, Catastrophe Insight
antonio.elizondo@aon.com

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