

IOC/TSR Note on
M8.8 Kamchatka Earthquake and Tsunami
29 July 2025 23:24 (UTC)
v7 (31 July 2025 11:00 CET)

An earthquake at a depth of 21km with a magnitude of 8.8 ([USGS](#)) on 29 July 2025 23:24 (UTC) offshore Kamchatka, Russia resulted in a TSUNAMI THREAT MESSAGE issued by the Pacific Tsunami Warning Center (PTWC), Tsunami Service Provider (TSP) of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System (ICG/PTWS), 10 min after the event indicating the possibility of hazardous tsunami waves (based on magnitude 8.0 and depth of 74 km) for coasts located in Russia and Japan within 300 km of the earthquake epicenter.

According to [The Guardian](#), the M8.8 earthquake triggered tsunami waves of up to 5 metres nearby and swept away buildings on the coastal area of Severo-Kurilsk, the main settlement on **Russia's** Kuril Islands in the Pacific. According to [BBC](#), electricity has been shut off after the earthquake damaged a power grid in Russia's Sakhalin region. Sakhalin has declared a state of emergency in its northern Kuril Islands. Russian state television has aired footage of tsunami waves sweeping through a coastal town in the far east of the country, carrying buildings and debris into the sea. Kremlin spokesperson informed the media that all warning systems had worked properly, and no casualties have been reported. Part of the Russian port town of Severo-Kurilsk population of around 2,000 people has been flooded. Tsunami alert was lifted in Russia's Kamchatka region around 12:30 CET on 30 July 2025. Residents in many parts of **Japan** are under evacuation orders to seek high ground and stay away from the coasts. Japan has ordered 1.9 million Japanese people to evacuate, warning that tsunami waves could continue for more than a day. Broadcaster Asahi TV reported a 58-year-old woman died when her car fell off a cliff while she was evacuating in central Japan's Mie prefecture, [Reuters](#) reports. Workers at the Fukushima Daiichi and Fukushima Daini nuclear plants in Japan have been evacuated and moved to higher ground. The International Atomic Energy Agency (IAEA) reported that it is in contact with Japanese national authorities about the earthquake and resulting tsunami and initial reports indicate there has been "no safety impact for nuclear power plants along the Pacific coast. A tsunami advisory has been issued for most coastal areas of British Columbia, **Canada's** most western province. California (**USA**) has asked people to stay away from the coast. International Tsunami Information Center (ITIC) reported on activation of the sirens and evacuations in Hawaii (**USA**). **China**, the **Philippines**, **Indonesia**, **New Zealand** and even **Peru** and **Mexico** have issued national tsunami alerts. **French Polynesian** authorities have increased the maximum wave height prediction for the island of Nuku Hiva from 2.2m) to 4m. In **Colombia**, the National Unit for Disaster Risk Management downgraded its initial tsunami alert to an advisory for the Pacific coast. Maritime traffic has been restricted, and some coastal areas and beaches have been evacuated as a preventive measure. In **Ecuador**, maritime activities were suspended, and beaches, docks and low-lying coastal areas were evacuated. A tsunami advisory was declared for the Galápagos Islands and local authorities have announced provisions to begin preventative evacuations of coastal areas deemed vulnerable to the tsunami threat. **Peru** has closed 65 of its 125 Pacific ports amid a tsunami warning. **Chile** issued a red alert, the highest level, for Pascua Island. A tsunami alert is also in effect for a wide stretch of the country's northern and central coastline and precautionary advisory was issued for the southern regions of Aysén, Magallanes, and the Chilean Antarctic Territory. A number of island nations in the South Pacific have downgraded their tsunami warnings. Tsunami alert has been cancelled in **Tonga**. In **Fiji**, tsunami watch advisory has been cancelled, with the government announcing the "all clear". In the **Cook Islands**, tsunami advisory is cancelled as there is "no longer a tsunami threat" and "no

significant impacts have been reported". **Samoa's** Disaster Management Office reported on social media that its tsunami watch remains in place, with "wave activity and strong coastal currents" observed in some areas. Authorities advise the public to stay away from coastal areas.

At 0016 UTC, 52 min after the event, PTWC issued its 2nd TSUNAMI THREAT MESSAGE with the revised magnitude of 8.7 and depth of 74km indicating that tsunami waves reaching

- more than 3 meters are possible along some coasts of Northwestern Hawaiian Islands... and Russia.
- 1 to 3 meters are possible along some coasts of Guam, Hawaii, Japan, Johnston Atoll, Midway Island, Northern Marianas, and Palmyra Island.
- 0.3 to 1 meters are possible for some coasts of Chuuk, Kosrae, Marshall Islands, Palau, Philippines, Pohnpei, Wake Island and Yap.
- less than 0.3 meters above the tide level for the coasts of DPR of Korea, Republic of Korea and Taiwan Province of China.

For the same event, threat messages were also issued by the Northwest Pacific Tsunami Advisory (JMA), IOTWMS Tsunami Service Providers Australia (JATWC), India (ITEWC) and Indonesia (InaTEWS-BMKG).

At 01:07 UTC, PTWC issued its 3rd TSUNAMI THREAT MESSAGE message (M8.7, depth 74km) indicating offshore tsunami observations of 0.9m at DART [21416](#), updating its forecast as

- more than 3 meters along some coasts of Ecuador (Galapagos), Northern Hawaiian Islands and Russia.
- 1 to 3 meters long some coasts of Chile, Hawaii, Japan, Northwestern Hawaiian Islands and Solomon Islands.
- 0.3 to 1 meters for some coasts of Antarctica, Central American Countries, and Pacific Islands...
- less than 0.3 meters for the coasts of Australia, Brunei, China, DPR of Korea, Malaysia, Republic of Korea, and Vietnam.

At 01:48 UTC, PTWC issued its 4th TSUNAMI THREAT MESSAGE message (M8.7, depth 74km) indicating additional offshore tsunami observations of 0.28m at DART [21414](#).

At 02:18 UTC, NWPTAC(JMA) reported on tsunami observations of 0.3m at Hanasaki and Ofunato tide gauges and 0.2m at Choshi tide gauge in Japan.

At 03:07 UTC, PTWC issued its 5th TSUNAMI THREAT MESSAGE message (M8.7, depth 74km) indicating additional tsunami observations of 0.32 m at Hanasaki Hokkaido tide gauge in Japan.

At 04:37 UTC, PTWC issued its 6th TSUNAMI THREAT MESSAGE message (M8.7, depth 74km) indicating additional tsunami observations in the Pacific with less than 1m wave height. 1m tsunami wave has been observed at the [Midway tide gauge](#). Tsunami arrived with <30cm wave height to [Port Allen \(Hawaii\)](#) at 05:31 UTC.

At 06:23 UTC, PTWC issued its 7th TSUNAMI THREAT MESSAGE with a revised magnitude (M8.8, depth 74km) indicating tsunami observations around 1.2 m in Hawaii

(Kahului Maui and Haleiwa). The measurement for Kahului Maui was updated as 1.74 in the 8th message of the PTWC issued at 07:24 UTC. Coastal Amplitude Forecasts disseminated in this message can be found in Figure 1. Less than 50 cm tsunami wave height has been observed in New Caledonia, according to the 12th message of PTWC issued at 12:04 UTC. 1.04m wave height was observed in Galapagos (Ecuador), as reported in the 16th message of the PTWC issued at 16:32 UTC.

PTWC issued its 24th and last message 01:57 UTC on 31 July 2025 (approximately 27 hours after the origin time) stating that the tsunami threat has now largely passed. Tsunami arrived in Chile within 24-27 hours' time window and the maximum wave height reported in this last message was 1.03m at Coronel tide gauge.

Russian Academy of Sciences' United Geophysical Service reported that the Klyuchevskoy volcano on Russia's Kamchatka peninsula began erupting after the M8.8 earthquake on 29 July 2025, according to [Reuters](#). Located around 450 km (280 miles) north of the regional capital, Petropavlovsk-Kamchatsky, Klyuchevskoy is one of the highest volcanoes in the world.

The Federal Service for Hydrometeorology and Environmental Monitoring of the Ministry of Natural Resources and Environment (Roshydromet), regional authorities and the Ministry of Emergency of the Russian Federation are collecting and analyzing data about the National Tsunami Warning Center (NTWC) operations, maximum sea level rises and damage, which will allow to adjust the tsunami hazard assessment of the Pacific coast of Russia.

The 29 July 2025, Mw 8.8 Kamchatka earthquake is the largest event to occur globally since the 2011 Mw 9.0 Tohoku, Japan earthquake, and among the top ten largest earthquakes to occur globally since 1900. The 29 July 2025, Mw 8.8 event is the latest in a sequence of earthquakes occurring offshore of the Kamchatka peninsula that began 10 days earlier. Preceding the Mw 8.8 earthquake were 50 Mw 5.0+ earthquakes, including an Mw 7.4 earthquake on 20 July 2025, and three Mw 6.6 earthquakes. As of 4:00 AM UTC, 30 July 2025, there have been 24 aftershocks greater than Mw 5.0, including Mw 6.9 and 6.3 events ([USGS](#)).

The Kuril-Kamchatka arc has frequent moderate-to-large earthquakes and has hosted 31 additional M 6.5+ events within 250 km of the July 29, 2025, earthquake over the preceding century. This includes a [M7.4 earthquake on July 20, 2025](#), which would now be considered a foreshock of the July 29, 2025, M8.7 event. The July 29, 2025, epicenter is located 45 km southeast of the [1952 M 9.0 Kamchatka earthquake](#) epicenter, which resulted in a destructive, Pacific-wide tsunami ([USGS](#)). While this event generated 13m waves locally in Kamchatka, maximum wave amplitude observed in California was 1.4m and less than 1 m elsewhere on the West Coast of USA.

PTWC Coastal Tsunami Amplitude Forecast

Actual amplitudes at the coast may vary from forecast amplitudes due to uncertainties in the forecast and local features. In particular, maximum tsunami amplitudes on atolls and at locations with fringing or barrier reefs will likely be much smaller than the forecast indicates.

This message is issued for information only in support of the UNESCO/IOC Pacific Tsunami Warning and Mitigation System and is meant for national authorities in each country of that system. National authorities will determine the appropriate level of alert for each country and may issue additional or more refined information.

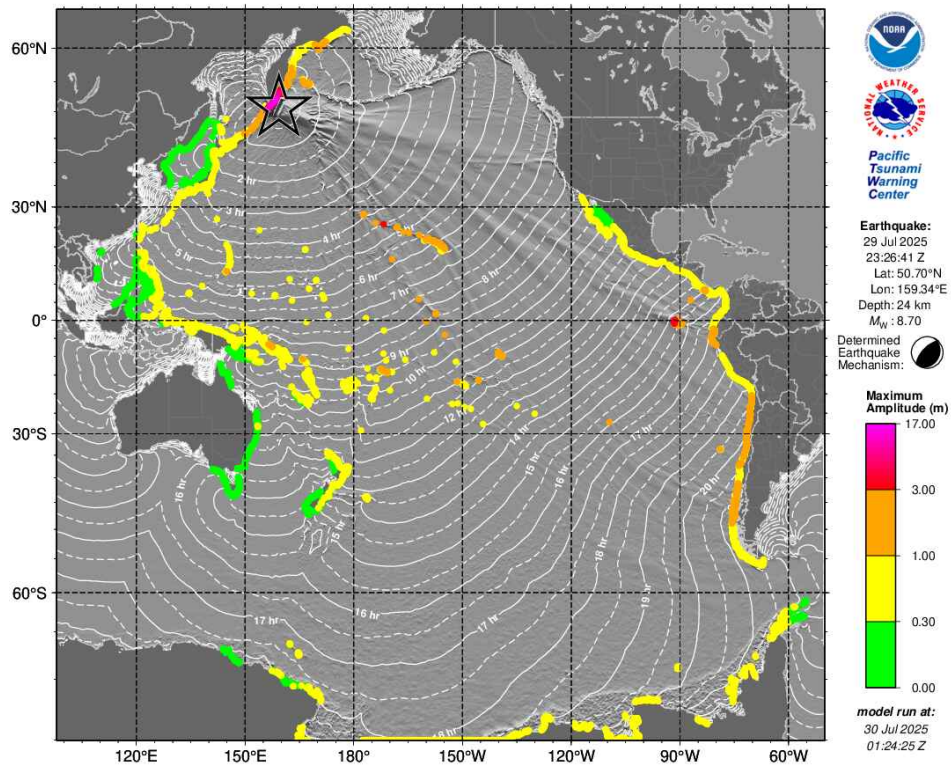


Figure 1: Coastal Amplitude Forecast of the 7th PTWC Message issued at 06:23 UTC on 30 July 2025. Please note that the map is based on M8.7 even though the magnitude has been upgraded as M8.8.

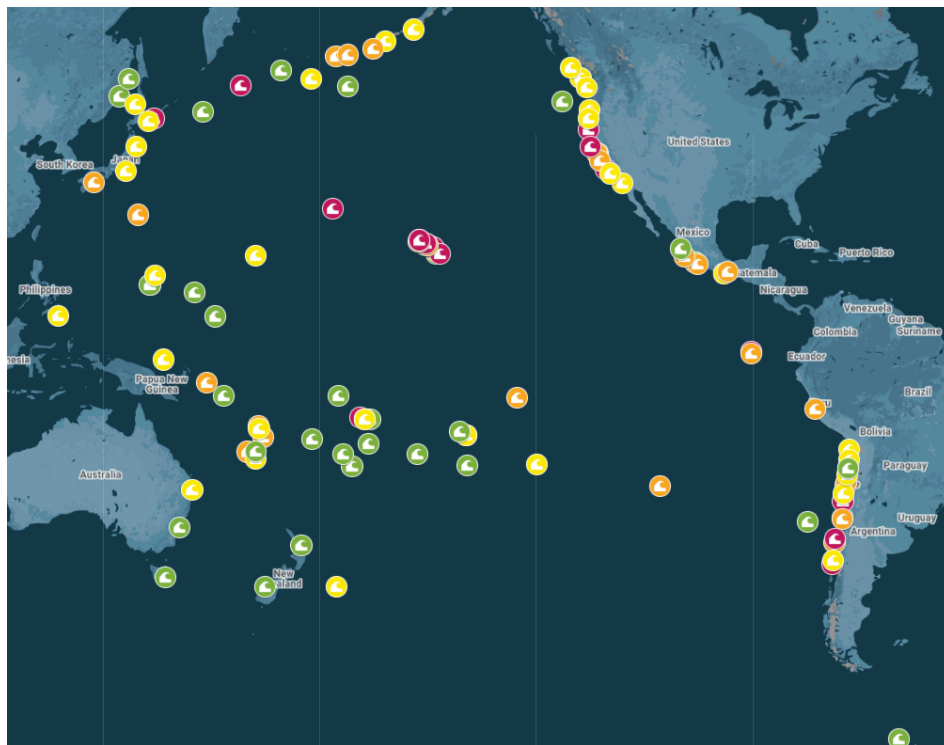


Figure: Sea-level observations as reported in the 24th and the last message of the PTWC issued at 01:57 UTC on 31 July 2025 (GREEN: 0-0.5m, YELLOW: 0.5-1.0 m, ORANGE: 1.0-1.5, RED: 1.5-1.74m as the maximum reported wave height). Map created using Google Maps.