

Tsunami Products

The Pacific Tsunami Warning System Program (TWS) was developed for monitoring tsunami potential and to ensure timely and efficient distribution of tsunami information. The West Coast/Alaska Tsunami Warning Center (WC/ATWC) in Palmer, Alaska serves the US West Coast including Washington state, Alaska, and British Columbia.

<http://wcatwc.arh.noaa.gov/events/eventmap.php>

The WC/ATWC has the sole responsibility for issuing tsunami warnings, watches, advisories, and information bulletins for the west coast of the United States and British Columbia from Alaska to the border between the United States and Mexico. The Pacific Tsunami Warning Center (PTWC) in Ewa Beach, Hawaii, provides tsunami warnings to most countries in the Pacific Basin, as well as to Hawaii and all other US interests in the Pacific.

Tsunami products are generated by WC/ATWC whenever specific criteria are satisfied. Tsunami watches, warnings, and advisories are disseminated by the National Weather Service.

Upon receipt of tsunami watches and warnings, coastal National Weather Service (NWS) offices such as those in Seattle and Portland, activate the Emergency Alert System (EAS) via NOAA Weather Radio. All broadcasters (TV, AM/FM radio, cable TV) receive the tsunami EAS message simultaneously as well as those with weather radio receivers in homes, businesses, schools, health care facilities, etc. Washington State Emergency Management also activates the All-Hazard Alert Broadcast (AHAB) siren systems located in remote coastal areas, alerting people in those isolated locations.

Upon receipt of tsunami watch and warning messages, local emergency management officials in coordination with Washington State Emergency Management can decide to activate EAS to evacuate low-lying coastal areas in advance of the potential initial tsunami wave. This EAS message is also received by broadcasters, weather radio receivers and AHABs to help provide widespread dissemination. Follow directions provided by your area emergency management officials – they will help save your life and those of your family and friends.

Tsunami Warning (TSUWCA, WEPA41):

When earthquakes occur within the WC/ATWC's area of responsibility (AOR), Tsunami Warnings are issued under the following circumstances:

- If the initial Richter magnitudes are greater than 7.0, but less than or equal to 7.5, WC/ATWC issues a tsunami warning if the tsunami is within two-hour's wave travel time from the coast
- If the initial Richter magnitudes greater than 7.5, WC/ATWC issues a tsunami warning if the tsunami is within three-hour's wave travel time from the coast. Warnings are updated half-hourly until cancellation or until a Final Supplemental Bulletin is issued.

**Tsunami Watch
(TSUWCA, WEPA41):**

When earthquakes occur within WC/ATWC's AOR, Tsunami Watches are issued under the following circumstances:

- If the initial Richter magnitudes are greater than 7.0 but less than or equal to 7.5, WC/ATWC issues a tsunami watch if the tsunami is between two-hour's and three-hour's wave travel time from the coast.
- If the initial Richter magnitudes are greater than 7.5, WC/ATWC issues a tsunami watch if the tsunami is between three-hour's and six-hour's wave travel time from the coast. Tsunami Watches may be included in a Tsunami Warning bulletin. Watches are updated half-hourly until cancellation or until a Final Supplemental Bulletin is issued.

**Tsunami Advisory
(TSUWCA, WEPA41):**

When earthquakes occur with initial Richter magnitudes greater than 7.5, and the epicenter is more than six-hour's travel time away from any part of the WC/ATWC's AOR, the WC/ATWC will issue a Tsunami Advisory Bulletin. The intent of the Advisory Bulletin is to inform participants within the WC/ATWC AOR that a significant earthquake has occurred, but there is not a threat of a tsunami for the west coast of the United States. The Tsunami Advisory states the Pacific Tsunami Warning Center (PTWC) at Honolulu has issued a tsunami warning for parts of the Pacific Ocean, **however, the warning is not for the Pacific coast, from Alaska to southern California.**

A Tsunami Advisory can be updated by the WC/ATWC hourly until:

- A Tsunami Warning or Watch becomes necessary within the WC/ATWC AOR,
- All Tsunami Warnings and Watches issued by PTWC are cancelled, or
- A Final Supplemental Bulletin is issued.

A Tsunami Advisory can be issued when the earthquake's Richter magnitude is greater than 7.5 and the tsunami is within six-hour's travel time to the WC/ATWC AOR, but there is no danger of the tsunami causing damage within the WC/ATWC area of responsibility.

**Tsunami Information Bulletin:
(TIBWCA, WEPA43):**

When earthquakes occur within the WC/ATWC AOR, with and the initial Richter magnitudes are from 6.5 to 7.0, WC/ATWC will issue a Tsunami Information Bulletin. The bulletin will state that a sizable earthquake has occurred, but a tsunami was not generated. The WC/ATWC will also issue a Tsunami information bulletin for earthquakes occurring outside its AOR with initially determined Richter magnitudes of 6.5 to 7.5.

Tsunami ALL CLEAR: A tsunami is a series of waves beginning with the forecast arrival time and lasting four or more hours after the first wave arrives. Hazardous currents can continue in the harbors and channels for several hours after the last wave arrives. Therefore, danger from a tsunami to people and property on the coast can persist for up to two hours after the last tsunami wave. After the tsunami warning is cancelled and little or no tsunami wave action is measured, local community emergency response officials will determine when to call an “all clear”.

Although WFO Seattle does not issue tsunami products, the warnings and watches issued by the WC/ATWC are broadcast over NOAA Weather Radio. The broadcast will describe the magnitude of the earthquake, its location, and estimated wave arrival times along the Oregon coast.

For local tsunami emergency plans, contact your local or county emergency manager.