

WHAT IS A TSUNAMI AND WHY DO THEY OCCUR ?

Tsunamis are giant waves caused by undersea earthquakes. Such earthquakes can occur thousands of miles away which generates a series of large waves that travel across the ocean arriving on our local beaches hours after the earthquake. A more devastating series of tsunamis will come from an earthquake along the Cascadia Subduction Zone, one of the largest active faults in North America. This fault zone lies 32-70 miles off shore and roughly parallels the coast. Tsunamis generated by this local event may begin striking the coast within 20-30 minutes after the earthquake, and localized flooding may occur even sooner. ***Remember that a tsunami is not one wave but a series of waves. People have died when they assumed they were safe because they survived one large wave, only to be caught by a later arriving, larger wave.***

WHERE DO TSUNAMIS OCCUR ?

Tsunamis have struck the Oregon coast repeatedly over history with smaller distant-generated waves occurring about every 20 years. The last significant distant-generated tsunami was in 1964 caused by a magnitude 9.2 earthquake in Alaska. The Cascadia Subduction Zone last created a devastating locally-generated tsunami about 300 years ago. The best scientific evidence indicates that these events have occurred between 100 to 1000 years apart, with an average of every 500 years.

People on the open beach, low-lying areas of the beach, by bay mouths, by bay tidal flats, in low parts of coastal cities and towns, and near mouths or upstream banks of rivers draining into the ocean are at greatest danger from tsunamis. See the Tsunami Inundation Zone map included with this brochure.

This brochure was produced based upon the best available information at the time of publication.

Every effort was made to ensure that all references and information in this brochure is compatible with existing standards.

HOW CAN I SAVE MYSELF FROM AN EARTHQUAKE AND TSUNAMI?

1. If indoors during an earthquake, stay indoors. Take cover under a desk or table, stand in a doorway, hall or against inside walls. Stay away from glass or heavy objects that may fall. If outdoors, move to open areas away from buildings, power lines, walls and trees.
 2. If the earthquake is strong enough that you can not stand up during it, you must immediately move away from the darkened areas shown on the map. If at all possible, evacuate hazard areas on foot because damage/blockage to roadways and bridges may have occurred. If a bridge is your only access to high ground or away from a low-lying danger zone, exercise extreme caution in crossing as the bridge may have been structurally damaged and wave surges can come over bridges in some cases. If you are in a hazard zone, don't wait for official warning to evacuate after a strong earthquake because the tsunami may strike before a warning can be issued.
 3. If you think you have time, grab your disaster supply kit as public safety officials may be unable to provide much assistance for hours to days depending on your location and the extent of damage. If you are able, warn or help elderly or disabled neighbors.
 4. Do not return to low areas after the first wave. The next arriving waves may be larger and go farther inland or to higher ground. This wave activity may continue for hours so wait for official notification of when the tsunami danger has passed.
 5. **NEVER GO TO THE BEACH TO WATCH FOR ANY TSUNAMI, EITHER LOCALLY GENERATED OR DISTANT.** Tsunamis move faster than you can run, the incoming traffic disrupts safe evacuations, and local public safety officials will not risk their personnel trying to rescue people who take such stupid chance
- FOR ADDITIONAL INFORMATION CONTACT: ***
Your local fire department or public official.

The Clatsop County Sheriff's Office 503-325-8635

Nature of the Northwest Information Center
503-872-2750

Log on to the Oregon Geology Department website at
<http://sarvis.dogami.state.or.us>

ASTORIA SPECIFIC INFORMATION

The City of Astoria has limited risk from rapid tsunami inundation due to a local earthquake, but people should move away from the shaded area on the map.

A greater danger probably exists from the hazards created by the earthquake and may include, damage to roadways, power lines, fuel and chemical storage sites, and slippage on hillsides.

People should not attempt to cross any of the bridges across the bay or river. People in the Lewis and Clark area should move away from the water and move to higher ground towards the school.



WHAT KIND OF WARNINGS ARE GIVEN FOR TSUNAMIS ?

The West Coast and Alaska Tsunami Warning Center gives the initial warnings for tsunamis generated by earthquakes effecting the west coast of the United States and Canada. County and local emergency service officials will provide additional warnings and specific evacuation directions for such events.

In the event of a Cascadia Subduction Zone event, local ground shaking **hard enough to make standing difficult**, may be the **only** warning that will be generated before the series of giant waves come ashore. Local officials may not have time to give additional information or advise. There is a potential for an off-shore earthquake that can cause a tsunami that may not generate local ground shaking. If you see a sudden and dramatic rise or fall in coastal water, a tsunami may be approaching. Do not wait to investigate, instead move to higher ground as quickly as possible

**Potential Tsunami Inundation Zone
Generated from a Major
Cascadia Earthquake Event**

Astoria Area

