

WHAT TO DO?

TSUNAMI SAFETY RULES



TSUNAMI

1. All earthquakes do not cause tsunamis, but many do. When you know that an earthquake has occurred, stand by for a tsunami emergency message.
2. An earthquake in your area is one of nature's tsunami warning signals. Do not stay in low-lying coastal areas after a strong earthquake has been felt.
3. Tsunamis are sometimes preceded by a noticeable fall in sea level as the ocean retreats seaward exposing the seafloor. A roar like an oncoming train may sometimes be heard as the tsunami wave rushes toward the shore. These are also nature's tsunami warning signals.
4. A tsunami is not a single wave, but a series of waves carrying a massive volume of water that can flood and inundate land for hours. The first wave may not be the largest. Stay out of danger areas until an "all-clear" is issued by a recognized authority.
5. A small tsunami at one point on the shore can be extremely large a few kilometers away. Don't let the modest size of one make you lose respect for all.
6. All warnings to the public must be taken very seriously, even if some are for non-destructive events. The tsunami of May, 1960 killed 61 people in Hilo, Hawaii because some thought it was just another false alarm.
7. All tsunamis are potentially dangerous, even though they may not damage every coastline they strike.
8. Never go down to the shore to watch for a tsunami. When you can see the wave, you are too close to outrun it. Most tsunamis are like flash floods full of debris. Tsunami waves typically do not curl and break, so do not try to surf a tsunami.
9. Sooner or later, tsunamis visit every coastline in the Pacific and all oceans. If you live in a coastal area, be prepared and know nature's tsunami warning signals.
10. During a tsunami emergency, your local civil defense, police, and other emergency organizations will try to save your life. Give them your fullest cooperation.



United Nations
Educational, Scientific and
Cultural Organization



Intergovernmental
Oceanographic
Commission



National Oceanic
and Atmospheric
Administration



Servicio Hidrográfico y
Oceanográfico de la
Armada de Chile



International Tsunami
Information Center

International Tsunami Information Center
A UNESCO/IOC - NOAA Partnership
E-mail: itic.tsunami@noaa.gov
Web: <http://www.tsunamiwave.info>

WHAT TO DO?

SENSING A TSUNAMI



Tsunamis can be detected using our human senses.
Recognize a tsunami's natural warning signs.

FEEL

- Big local earthquakes may cause tsunamis.
- **FEEL** the ground shaking severely, or for a long time?

SEE

- Tsunami may be preceded by a rapid fall in sea level as the ocean recedes, exposing reefs, rocks, and fishes on the sea bottom.
- Tsunami often come ashore as a wall of water, and quickly flood inland.
- **SEE** an unusual disappearance of water, or oncoming wall of water?

HEAR

- Abnormal ocean activity, a wall of water, and approaching tsunami create a loud "roaring" sound similar to that of a train or jet aircraft.
- **HEAR** the roar?

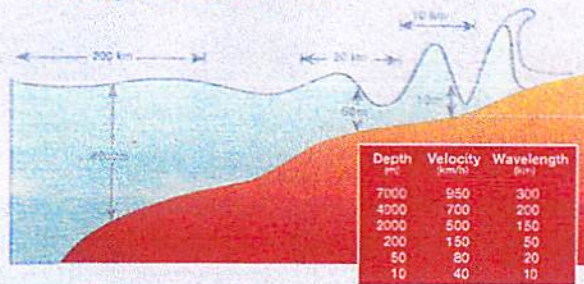
RUN

- Don't wait for official evacuation orders.
- Immediately leave low-lying coastal areas.
- Move inland to higher ground.
- **RUN** if you see a tsunami coming!

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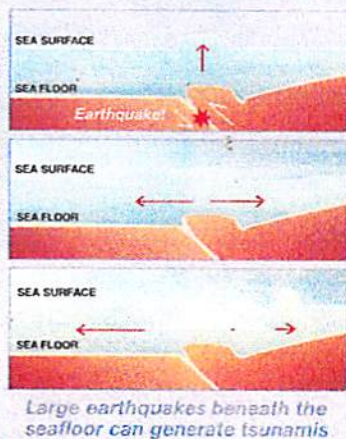
Tsunamis on the move...

Tsunamis slow down but grow in size as they come ashore.



Tsunamis ...

- Are a series of long-wavelength, long-period ocean waves. They are not surfing waves.
- Come ashore for hours. The first wave may not be the largest.
- Are caused primarily by earthquakes occurring below or near the seafloor.
- Are less frequently caused by underwater volcanic eruptions, landslides, slumps, and meteorites.



Tsunamis ...

- Travel at jet airliner speeds in the deep ocean, but the waves are only centimeters high and cannot be felt aboard ships.
- Slow down and grow in height tremendously upon entering shallow water.
- Can crest to 10-m high heights, strike with devastating force, and quickly flood all low-lying coastal areas.
- Threaten life and property.



Knowledge is Safety: Tsunami Warning Signs...

- A big earthquake is one of nature's warning signs. If you're at the beach and the ground shakes so hard you can't stand up, or it shakes for an unusually long time, a tsunami may have been generated.
- Tsunami may be preceded by a rapid fall in sea level as the ocean recedes, exposing reefs, rocks, and fish on the sea bottom. Tsunami often come ashore as a wall of water, and quickly flood inland.
- A loud roar like an oncoming train or jet aircraft may be heard as a tsunami rushes toward the coast.

What you should do...

- After an earthquake, move quickly inland and to higher ground.
- Tsunami from a local earthquake can strike in minutes, and before a tsunami warning is announced. If you notice nature's tsunami warning signs, act immediately.
- Tsunami from distant locations can take up to 24 hours to cross an ocean basin. Tsunami warnings will be announced advising when coastal communities should evacuate to safe shelters.
- Learn to recognize nature's warnings. Heed official tsunami warnings.
- Stay away from rivers and streams. If you see a tsunami, you may not be able to outrun it. Look for a sturdy, multi-storied, reinforced concrete building and climb to its highest floor or the roof. If there is no time, climb up and cling to a strong tree.
- If you're swept up by a tsunami, look for something to help you stay afloat, and to protect you from dangerous floating debris like houses, cars, and trees.

For more information contact International Tsunami Information Center, Hawaii USA
E-mail: itc.tsunami@noaa.gov Web: <http://www.tsunamiwave.info>

