

## WHAT YOU NEED TO KNOW ABOUT TSUNAMIS



Tsunamis are a series of unusually big waves formed by a large-scale disturbance of the surface of a water body. One of the primary causes of tsunamis are earthquakes, but tsunamis can also be caused by near-shore and underwater landslides, near-shore and underwater volcanoes, man-made explosions on or underwater, and even by space objects impacting water bodies.

In deep, open-ocean water, these waves are often less than a metre high and can travel at speeds up to 1,000 kilometres per hour. However, as they reach shallow water the leading edge of the waves begin to slow down, and the wave begins to “pile up” behind causing the wave to grow in height. The crests of these waves can be several metres high by the time they reach the shoreline. Sometimes, however, the crest of the wave isn’t the first to arrive, the trough is. In this case, instead of very high water levels, the first sign of a tsunami is what appears to be a very, very low tide.

Although rare, the impact of these waves on coastal communities can be devastating. At the first sign or report of a tsunami move yourself and your family to high ground. It is important to note that the largest of the tsunami waves is usually the third or fourth wave and there can be anywhere from a few tens of minutes, to more than an hour between wave crests.

In British Columbia there are two main types of two tsunami threats. The first threat is from tsunamis that are generated out in the Pacific Ocean. These tsunamis could severely impact BC’s outer coastal communities with waves from the north, south or west. The second threat is from tsunamis that are generated in local waters. These local tsunamis can be triggered by earthquakes, landslides and/or underwater slides and can have an impact on other coastal areas of British Columbia.

### **Rare But Serious...**

- The probability that a tsunami will do damage along our coast is small — but very real.
- If you live in a coastal area of British Columbia, you and your dependents need to be prepared to respond to a potential tsunami and know what to do.
- In the event a distant tsunami is generated, notifications may be issued to the media and local emergency officials who will keep people in their communities informed.

- Terms that are used during dissemination of earthquake and tsunami information include:

**Tsunami Warning Message:** *This is the highest and most serious level of tsunami notification.* Warnings are issued when there is imminent threat of a tsunami or confirmation of a tsunami wave. When communities are issued a warning, local emergency plans should be activated and public safety actions taken. Such actions are likely to include the immediate evacuation of at-risk coastal areas and restricting access to emergency response routes and coastal beaches. Warnings are updated as conditions change.

**Tsunami Advisory:** *The second highest level of tsunami alert.* Advisories are issued due to the threat of a tsunami that has the potential to produce strong currents dangerous to those in or near the water. Significant inundation is not expected for areas under Advisory but coastal regions prone to damage due to strong currents may be at risk. Appropriate actions by emergency management personnel may include closing beaches and evacuating harbours and marinas. Additionally, local officials may opt to move boats out of harbours to deep waters, if there is time to safely do so.

**Tsunami Watch Message:** This is notification based on early seismic information that provides advanced alerting to areas that could be impacted if a tsunami has been generated. When communities are issued a Watch, local emergency plans should be activated, and local authorities should prepare for possible evacuation in the event that their area is upgraded to a Warning.

**Tsunami Information Message:** This is awareness notification. Tsunami information messages may be issued based only on preliminary seismic information without confirmation of a tsunami wave. These types of messages are issued as a means of providing advance alert to areas that could be impacted by a tsunami.

**Tsunami Cancellation Message:** This cancellation message is issued when a Warning or Watch message has been issued but where damaging waves have NOT been generated.

**Tsunami All Clear Message:** This is issued when a tsunami has been generated and the threat of further tsunami is over. This message is to advise stakeholders that the tsunami event is over and no further waves are expected.

### **In the event of a Tsunami...**

- **Move to higher ground, until all-clear bulletin.**
  - if you live in a coastal area and feel strong shaking from an earthquake, prepare to move immediately to higher ground (greater than 10 metres or 30 feet above the tide line)
  - if you hear a tsunami bulletin, follow information and instructions immediately.
  - if you hear a tsunami evacuation order is given, move immediately to higher ground (greater than 10 metres or 30 feet above the tide line)
  - stay tuned to your radio for further tsunami updates.

- do not use the telephone for 24 hours except to report life threatening emergencies.
- **Follow the instructions of all emergency officials.** This is for the safety of you and those around you.
- **Do not go to the beach to watch.** Remember all areas of the coastline will not be impacted equally. Within very short distances the impact of a tsunami can vary considerably. In as little as one kilometre, depending on the shoreline shape and the direction of the wave, there could be tens of metres difference in the impact of the tsunami.

### **Protect Yourself, Your Dependents, and Your Property...**

- Know where you and your dependents will evacuate to in the event of a tsunami.
- Know how you will get to your evacuation site.
- Maintain emergency supply kits in state of readiness for unexpected evacuation.
- If you receive a tsunami alert, prepare to leave for high ground.
  - move valuable furniture to upper floors and take important papers and valuables with you.
- If you receive a Tsunami Order to leave your home:
  - turn off the gas, power and water to your home.
  - remove pesticides and other dangerous goods from low lying areas. lock the doors,
  - gather your emergency supply kit including water, toiletries, medicines, extra clothing, first aid kit and food for you and your dependents (including pets!).
  - ensure you take a battery-operated portable radio and extra batteries with you and stay tuned to emergency broadcasts.
  - move to safe ground inland or above at least 10 meters or 30 feet elevation.

**Give emergency coordinators and First Responders (Fire, Police, Ambulance) your fullest cooperation.**

Tsunami Zone Map [Click here>>](#)

Types of Notification [Click here>>](#)

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