

What is a tsunami?

A tsunami is a series of ocean waves which are sometimes generated at the same time as an earthquake occurs beneath the sea floor. Following an earthquake far away in the Pacific Ocean, it may take hours for waves to reach coastal British Columbia, and there is a *Tsunami Warning and Alerting Plan* in place to pass the warning to coastal residents as quickly as possible.

If you are near the ocean and you feel a large earthquake, you should go inland or to higher ground immediately. If a tsunami were to be generated close to British Columbia, waves could reach shore within a few minutes and there would not be enough time for officials to issue a warning.

Tsunamis are not "tidal waves". They have nothing to do with tides, or weather, and they act quite differently from ordinary waves. They can move through the open ocean at hundreds of kilometres an hour and be scarcely noticed, even when they pass under a boat. But, when they reach shallower water near shore, they become a very powerful surge of water or even huge breaking waves.

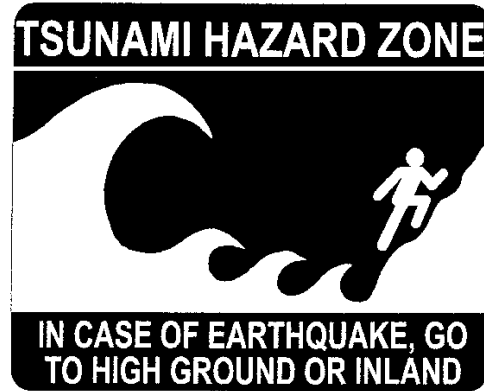
The force of tsunami waves can cause great destruction in harbours (tsunami is a Japanese word meaning "harbour wave"), and the height of tsunami waves increases as they run into rivers and coastal channels.

In 1964, a large earthquake in Alaska triggered a tsunami that caused damage all the way to California, including several million dollars damage in Port Alberni here in British Columbia. Because the warning system worked, an evacuation was possible and there was no loss of life.

The first wave of a tsunami is often not the largest. Other waves may follow every few minutes, for a period of hours.

What can I do to protect myself from a tsunami?

Remember that you may have to act on your own to evacuate areas at risk following a strong local earthquake.



Know your local community's suggested evacuation routes to safe areas, where shelter can be provided while you await the "all clear". As with all individual emergency preparedness guidance, be prepared to survive on your own for at least three days.

Prepare an emergency supplies kit for your home, car and work. Take a first aid course and learn survival skills.

If you are on a boat when a tsunami is coming, you should leave the harbour for the open water, where tsunami effects are minimal.

If you are in a float plane in a harbour, take off for a safe landing area on a lake or on land, or away from areas at risk.

Tune to a radio station that serves your area and listen for instructions from emergency officials. **FOLLOW THESE INSTRUCTIONS AND WAIT FOR THE "ALL CLEAR" BEFORE RETURNING TO THE COAST.**

Call 9-1-1, or your local fire, police and ambulance services only for life threatening emergencies.

If you are camping on a beach or near the ocean, you may have to abandon your belongings in order to save your life.

NEVER go to the coast to watch a tsunami. A tsunami moves faster than a person can run.

How do I get inland or to higher ground?

You should proceed on foot, especially if there has been a strong local earthquake. Damaged roads and bridges and debris caused by the earthquake may prevent driving.

To be safe you should go to ground that is at least 15 metres above sea level. Even though waves should not exceed 8 metres, they are often forced to "run up" to higher ground by the pressure of following waves.



Communities may have this sign designating evacuation routes for the fastest and safest way to travel from areas that are expected to be flooded. If there are no evacuation route signs, take a route that avoids tidal flats, the shores of coastal rivers, and bay areas.

How will I be warned of the arrival of a distant tsunami?

Once a community is told that a tsunami is (or may be) expected, the community's local emergency plan will determine how the warning is passed to individuals. In some communities, a siren is used, while others

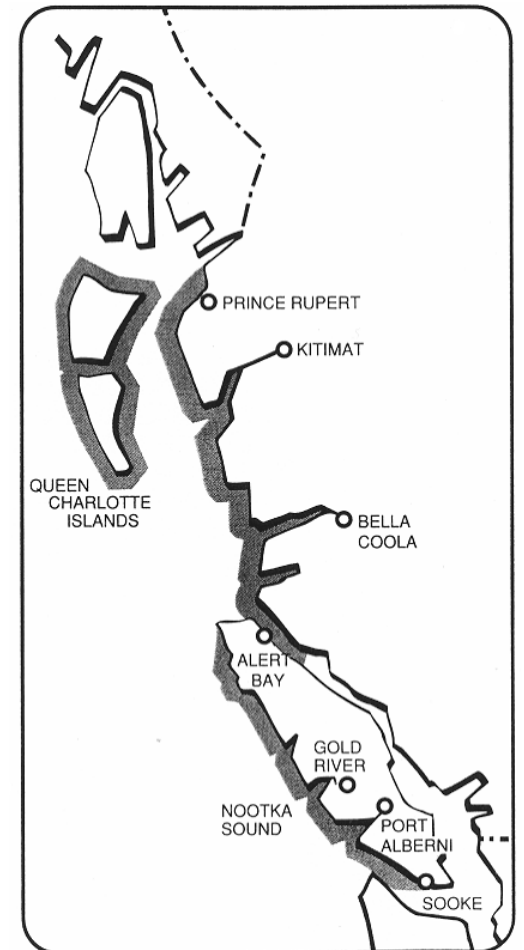
depend on a telephone fan-out or a door-to-door system. You should find out which method your community will use.

Once you have the initial warning, listen to your radio for updates.

Ships will be warned by Coast Guard marine radio, and aircraft by NavCan.

What areas are at risk from tsunamis?

The shading on the outline map below indicates those coastal areas that could experience a damaging tsunami generated in conjunction with either a close or distant earthquake.



ABOUT THE BRITISH COLUMBIA TSUNAMI WARNING AND ALERTING PLAN

Warning of tsunamis in the Pacific Basin is the subject of an international protocol established by the United Nations Intergovernmental Oceanographic Commission (IOC) in 1946. The tsunami warning system, managed by the United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), is designed to detect tsunamis and provide prompt notification to all nations bordering the Pacific Ocean.

British Columbia, which is the only part of Canada with a section of the Pacific Ocean as its coast, has an important responsibility under the protocol. The Provincial Emergency Program (PEP) must receive alerts and warnings from the West Coast/Alaska Tsunami Warning Center and relay those alerts and warnings (with refinements for Canadian coast and tidal conditions) to all sectors of the population at risk in the province.

PEP will promptly advise:

- all BC coastal local governments in the risk areas;
- the RCMP (whose detachments cover broader areas than local governments, such as First Nations Lands and National Parks);
- Canada Coast Guard, and Navigation Canada whose communications systems directly reach ships and float planes;
- Media networks and outlets; and
- Emergency Preparedness Canada and the Canadian Forces.

PEP will also coordinate with the Canadian Hydrographic Service, Fisheries and Oceans Canada prior to issuing detailed wave height and wave arrival information.

Warnings are in the form of **BC Tsunami Advisory Bulletins**, of five different types, briefly described here:

- **Tsunami Warning:** A tsunami exists (or *may* exist and the travel time to any portion of the BC coast is under three hours). Intended to cause recipients to consider activating local evacuation plans.
- **Tsunami Watch:** An earthquake has occurred which is capable of generating a tsunami and the travel time to any portion of the BC coast is more than three hours. Intended to cause emergency personnel to be on standby.
- **Tsunami Information:** *May* be issued to advise of a major earthquake in the Pacific region, where a damaging tsunami is not expected to reach BC.
- **Tsunami Cancellation:** Cancels all previous advisories; the threat of tsunami damage has ended.
- **Tsunami All Clear:** No further tsunami waves are expected and local authorities may issue their own "all clear".

For additional information:

The British Columbia Tsunami Warning and Alerting Plan, as well as other all-hazard preparedness and awareness information, is on the PEP Web site at:

<http://www.pep.bc.ca/>

PEP maintains a toll-free message line with emergency preparedness information, at:

1-888-811-6233

Contact your local community emergency program coordinator, or one of the following PEP offices:

PEP Headquarters
PO Box 9201 Stn Prov Govt
Victoria, BC V8W 9J1
Tel: (250) 952-4913
Fax: (250) 952-4888

Vancouver Island Region
PO Box 9201 Stn Prov Govt
Victoria, BC V8W 9J1
Tel: (250) 952-5848
Fax: (250) 952-4983

South West Region
Green Timbers
9800-140th Street
Surrey, BC V3T 4M5
Tel: (604) 586-4390
Fax: (604) 586-4334

Central Region
1255-D Dalhousie Drive
Kamloops, BC V2C 5Z5
Tel: (250) 371-5240
Fax: (250) 371-5246

South East Region
403 Vernon Street
Nelson, BC V1L 4E6
Tel: (250) 354-6395
Fax: (250) 354-6561

North East Region
1541 South Ogilvie Street
Prince George, BC V2N 1W7
Tel: (250) 612-4172
Fax: (250) 565-6886

North West Region
2914 Eby Street
Terrace, BC V8G 2X5
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Prepare for Tsunamis in coastal British Columbia

