

Are You Ready For an Earthquake in BC?

British Columbia experiences over 1,200 earthquakes a year, 300 of which occur in the lower mainland and on Vancouver island. Almost all of these earthquakes are too small to be felt. However, a stronger earthquake could occur at any time. It may happen during the day or at night, on a weekend or a workday, in any season and in any weather condition.

British Columbia is vulnerable to two types of earthquakes: those occurring within the earth's crustal plates and those occurring at the interface between crustal plates. Earthquakes that originate within a plate are seldom greater than magnitude 7.5 and typically shake for less than one minute. In contrast, earthquakes that originate between plates are usually larger than magnitude 8.0 and the shaking may last as long as 3 or 4 minutes.

British Columbia is vulnerable to the largest type of earthquake called a "subduction" quake, which occurs between two plates. The Cascadia Subduction Zone is located approximately 100 kilometres west of Vancouver Island and earthquakes here recur every 550 years on average. The range of recurrence, however, varies from 200 years to 900 years. The last subduction earthquake was in January 1700 – 304 years ago.

The most powerful earthquake ever recorded in Canada is a magnitude 8.1 earthquake in the Queen Charlotte Islands--and the largest earthquake likely to have occurred in Canada is the 1700 Cascadia Earthquake with an estimated magnitude of 9.0.

What's the largest earthquake possible?

The largest earthquakes recorded on earth are subduction earthquakes--measuring magnitude 9.5 off the coast of Chile in 1960 and magnitude 9.2 in Alaska in 1964. Generally the size of an earthquake is controlled by the length of the faults on which they occur. The *longer* the fault--the *stronger* the potential earthquake. Currently, there are no known faults capable of generating a magnitude 10.0 or larger earthquake.

Information Links

http://earthquakescanada.nrcan.gc.ca/index_e.php

<http://www.em.gov.bc.ca/Mining/Geolsurv/Surficial/quake>

http://www.pep.bc.ca/hazard_preparedness/earthquake_preparedness.html

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What can I expect during an earthquake?

Hear: Sometimes you'll hear a bang or rumble before the earth starts shaking--at other times there is no discernable sound to alert you. During the earthquake, it can be quite noisy as buildings shake and objects move around and bang into one another.

Feel: Often you'll feel a slight shaking or rumbling to begin with, like the feeling of a truck going by. This may suddenly increase or dissipate within seconds. Take these few seconds to "Drop, Cover and Hold"...**Drop** under some heavy furniture or into an alcove, **Cover** your head and torso as best you can to prevent being hit by falling objects and **Hold** onto the object covering you so that you remain covered.

See: Pets may act strange or restless before an earthquake. During a stronger earthquake, you may see trees and buildings shaking--and possibly some damage like falling bricks, signs or windows. You may even see waves moving across the ground. Very strong earthquakes are likely to cause damage to infrastructure, roads, buildings and utilities.

Smell: You may smell gas, sewage, or smoke from fires igniting following the earthquake.

Do I know how to protect myself during an earthquake?

- Know in advance where the safest spots are at home, at work or at school, so you can go to one of these places as soon as you feel a quake.
- Indoors, the safest places are beneath sturdy furniture, beside a solid inside wall, or inside an inner hallway.
- Avoid windows. Stay away from heavy objects that can fall from ceilings, shelves and cupboards, or top-heavy furniture that could tip over. Never use an elevator.
- If you're outdoors, stay in the open, away from trees, buildings and power lines.
- You could be driving when a quake hits. Stop your car away from overpasses, bridges and power lines and stay inside your vehicle.
- Once you're in a safe place protect your head and hold on until all motion stops. Lock your wheels if in a wheelchair.
- All members of the family - especially children - should know what to do when an earthquake hits. A practice drill once a year is an excellent safety measure.

What should I do when the motion stops?

- You or others may be injured. Treat yourself first and then assist others.
- If you smell gas, turn it off. Check for any small fires. Turn off the main water tap if necessary. Be aware of other possible hazards, such as broken glass or weakened walls.

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- Check your phone and hang up the receiver if it is off the hook. Don't use your phone unless it is a life threatening emergency. Phone lines need to be open for emergency responders.
- If you and your family are OK, check on your neighbours to see if you can offer assistance. You can also put a large "OK" sign in your window to let emergency workers know that they can concentrate on other houses.
- A battery-operated radio or your car radio will link you to the instructions of emergency workers and news in your community.
- Gather your emergency supplies together. Keep everyone warm, well hydrated, well fed, and rested.

Do I know how I'll contact family members if we're separated when the earthquake strikes?

- Part of your earthquake preparedness should be to decide in advance on a meeting place. It could be your home - or a place that's more central to the places you and your family work or go to school in case the earthquake strikes during a workday.
- Agree on one out-of-area person that everyone will phone to report they are safe. Get every family member in the habit of carrying identification, medical alert information and emergency phone money and numbers at all times.
- If you live alone or need extra assistance because of a disability, make arrangements in advance for someone living nearby to check in with you if there is an earthquake. Keep a whistle on hand for signalling.

Do I have emergency survival kits in my home, car and work place?

- Everyone should be prepared to be self-sufficient for 72 hours following an emergency like an earthquake.
- Important items to have in emergency kits include: three days of food and water per person, money, a battery-powered radio, flashlight, extra batteries, candles, waterproof matches, first-aid supplies, extra prescription medications, personal toiletries, cooking utensils, blankets or sleeping bags and extra clothing.

Have I taken measures to make my home safer and protect my property from a possible earthquake?

- There are a number of ways to prevent or reduce injuries and damage.
- Install latches on cupboards, and secure water tanks, top-heavy furniture, appliances or computers and other items against movement. Refer to emergency preparedness manuals that are available in bookstores and libraries.