Volcanic Hazards in Western Canada - FACT SHEET

The central to westernmost regions of British Columbia and Yukon Territory (see Figure 1) contain volcanoes known to have erupted in the last 10,000 years (abbreviated as 10 ka). **Cinder cones** and **lava flows** have formed at such locations as: Volcano Mountain, Y.T. (about 5-10 ka); Edziza, northern B.C. (about 1-2 ka); Hoodoo, northern B.C. (about 7-10 ka); Tseax, central B.C. (about 0.2-0.3 ka); Nazko, central B.C. (about 7 ka); Kostal, east central B.C. (less than 10 ka); and Garibaldi, southwestern B.C. (Less than 10 ka). **Explosive eruptions** are also known to have occurred at Mount Meager, southwestern B.C. (2.35 ka), Edziza and Hoodoo. Two possible historic eruptions in Canada were reported in the 1800s but cannot be verified: one near Atlin, B.C., and the other near Williston Lake, B.C.

The risks associated with young volcanic activity in western Canada are low. Most of western Canada's volcanoes occur in sparsely populated areas and the majority of these young deposits are lava flows. The main risks associated with lava flows are disruption of local forestry and fishing industries. However, the three areas of explosive activity have greater hazard potential. Explosive eruptions at Edziza and Hoodoo, if repeated, might generate hazards to air traffic in western Canada. Similarly, the explosive eruption at Mount Meager, 2,350 years ago, produced volcanic ash found as far east as central Alberta. A similar eruption could disrupt air traffic in southern British Columbia and Alberta, as well as generate local flooding.

In Canada, much of the volcanic risk comes from volcanoes in neighbouring parts of the United States (Alaska, Washington, Oregon and California). Much of southern British Columbia and southern Alberta have received ash from past explosive eruptions of volcanoes like Mt. St. Helens in Washington and Crater Lake (Mount Mazama) in Oregon. Central Yukon Territory was blanketed by ash from an eruption of Mount Churchill 1,300 years ago. The 1980 eruption of Mount St. Helens dusted south eastern British Columbia with ash, and a 1992 eruption of Mount Spurr (in western Alaska) closed the Alaska Highway in the Yukon Territory for a few hours.

In southwestern British Columbia, the nearby Juan de Fuca subduction zone (Figure 2) is the driving force behind the creation of the Cascade volcanoes. Consequently, the lower mainland is subject to several types of volcanic hazards, most commonly volcanic ash falls. Mount Baker, one of the Cascade volcanoes (located approximately 100 km southeast of Vancouver), is the closest potentially active volcano to the Lower Mainland. Mount Baker is expected to erupt at sometime in the future. Its last period of eruptive activity was in the mid 1800s. Steam plumes rising from fumaroles (hot steam vents) near the volcano's summit can sometimes be viewed from the Lower Mainland.

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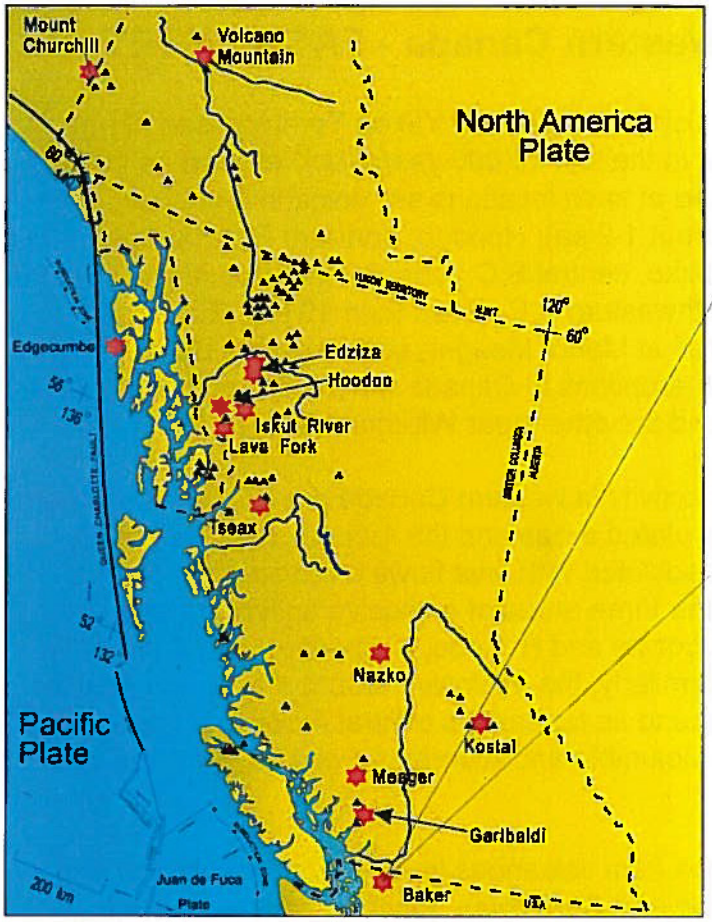
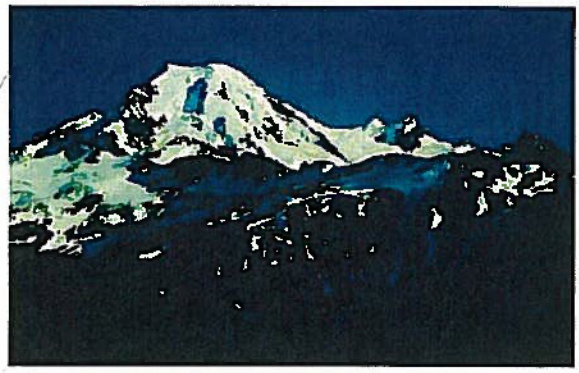


Figure 1. Distribution of geologically young volcanoes in Canada



Mount Baker forms a prominent landmark visible from much of southwestern British Columbia. The peak of the 3285 m high volcano is often shrouded in clouds, but on a clear day, steam can be seen rising above Sherman Crater, which is just out of view to the right of the summit in this photograph. (Photo: C.J. Hickson)

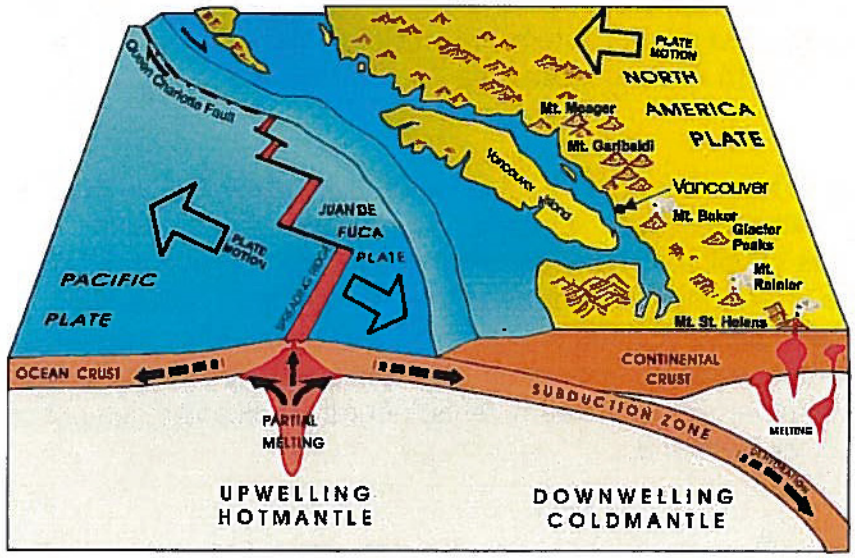


Figure 2. This diagram shows major features of a subduction zone and spreading ridge, such as are found off the coast of southwestern British Columbia. The North America Plate is travelling westward and colliding with the smaller Juan de Fuca plate. The collision creates earthquakes and volcanoes. The chain of volcanoes that forms is called an "arc". Mts. St. Helens, Rainier, Baker, Garibaldi, and Meager belong to the Cascade Magmatic Arc.

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