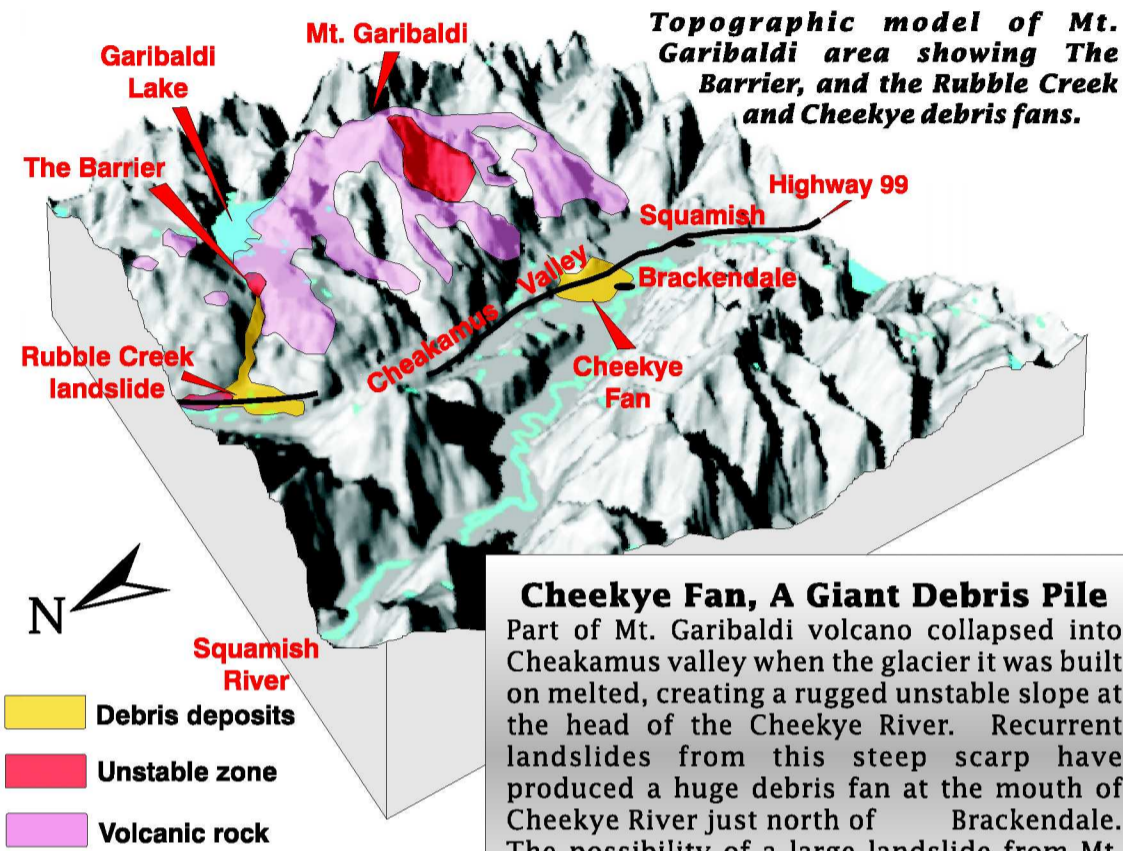


LIVING IN THE SHADOW OF VOLCANOES

Mt. Garibaldi: Unstable Slopes

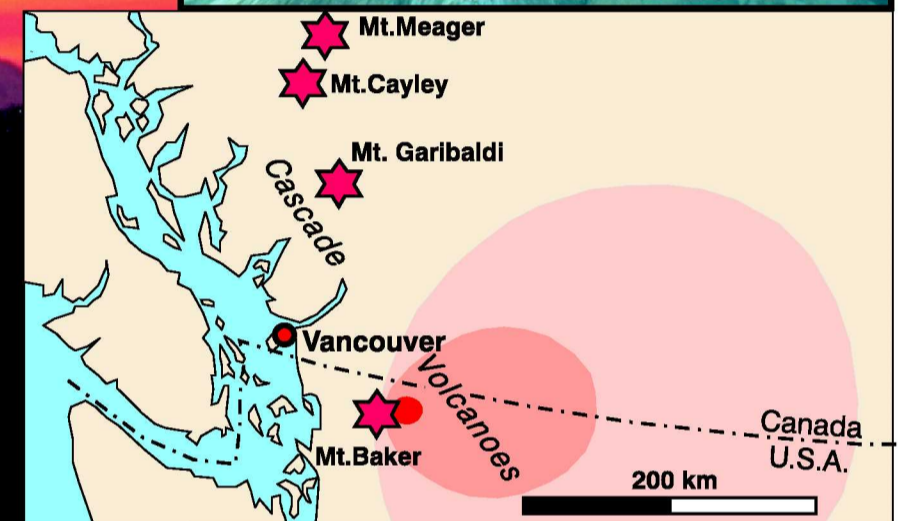


Cheekye Fan, A Giant Debris Pile
Part of Mt. Garibaldi volcano collapsed into Cheakamus valley when the glacier it was built on melted, creating a rugged unstable slope at the head of the Cheekye River. Recurrent landslides from this steep scarp have produced a huge debris fan at the mouth of Cheekye River just north of Brackendale. The possibility of a large landslide from Mt. Garibaldi places limits on expansion of Brackendale on the fan.

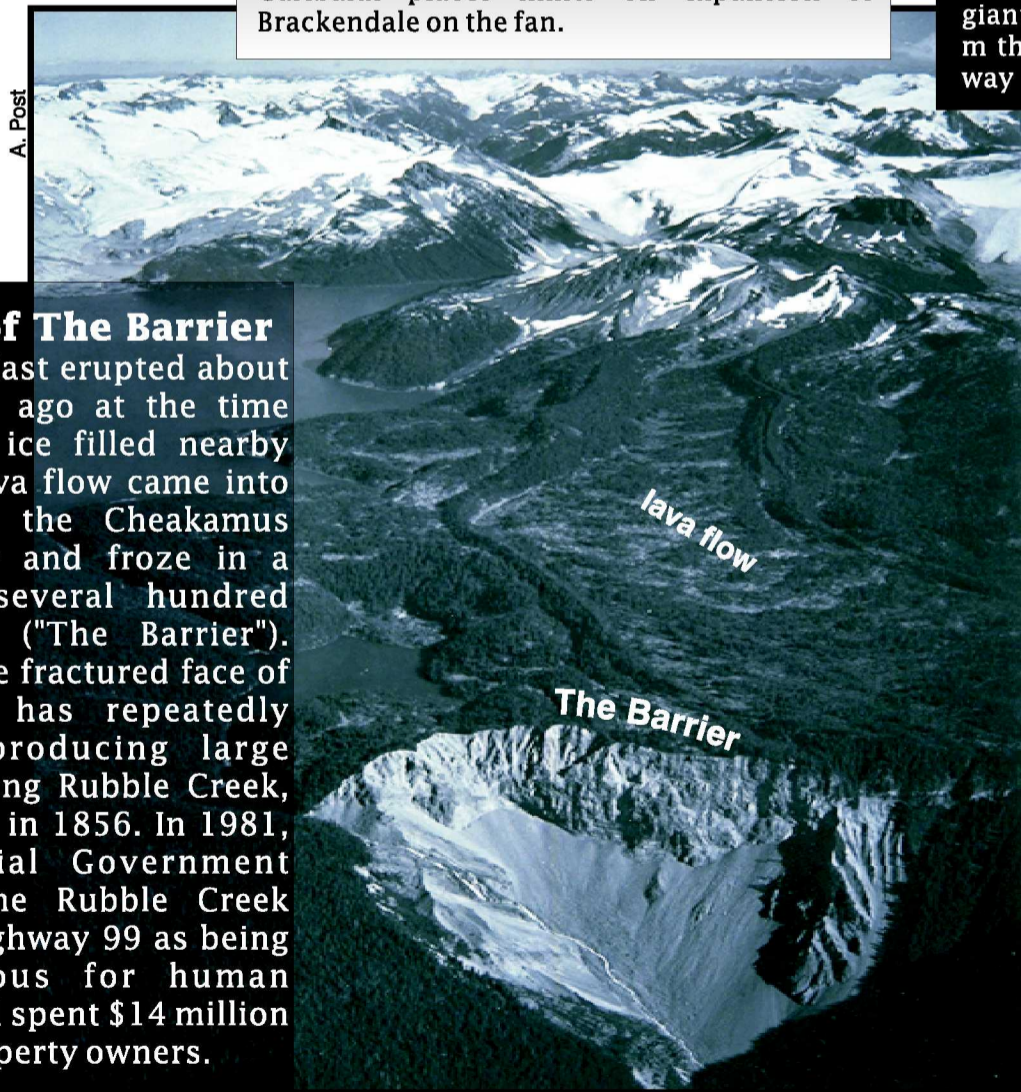
C. Hickson

Mt. Baker The Sleeping Giant

Mt. Baker looms above the Vancouver skyline. This volcano has been built by numerous eruptions over the last 30,000 years. Its conical shape reflects its status as an active volcano and distinguishes it from more eroded, dormant volcanoes like Mt. Meager, Mt. Cayley, and Mt. Garibaldi. Mt. Baker is built by several processes. Molten rock can flow quietly out onto the surface as lava. In contrast, forces can explode magma, producing a cloud that "rains" ash hundreds of kilometres down wind from the volcano. Ash can be a hazard to aircraft and can create breathing problems for humans and livestock. Avalanches of hot volcanic rock and gas mix with water melted from snow and ice to form giant debris flows. About 7000 years ago a debris flow at least 100 m thick, from Mt. Baker, flowed down the Nooksack River all the way to Puget Sound.



Likely area of ash fallout during a future eruption of Mt. Baker based on prevailing winds to the east.



Collapse of The Barrier

Mt. Garibaldi last erupted about 13 000 years ago at the time when glacier ice filled nearby valleys. A lava flow came into contact with the Cheakamus valley glacier and froze in a steep face several hundred metres high ("The Barrier"). Since then, the fractured face of The Barrier has repeatedly collapsed, producing large landslides along Rubble Creek, most recently in 1856. In 1981, the Provincial Government designated the Rubble Creek area along Highway 99 as being too hazardous for human habitation and spent \$14 million to buy out property owners.

Mt. Meager: STILL COOKIN' !

RECENT ERUPTION!

Mt. Meager, shown in this cut-away block diagram, is a dormant volcano. However, about 2400 years ago it erupted a great volcanic cloud that deposited ash as far east as Alberta. The eruption was similar in size to the 1980 eruption of Mt. St. Helens.

TAPPING ENERGY FROM THE EARTH

The earth beneath Mt. Meager is hot. Surface waters seep under the volcano and become heated, then rise along fractures to reach the surface as hot springs. Holes have been drilled to 3000 m below the mountain to test this hot water plumbing system as a geothermal energy source. When hot water rises quickly in a drill hole it changes to steam; the force of this expanding steam can be used to generate electricity.

