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'Understanding volcanoes and society: the key for risk mitigation'



Integrating Indigenous knowledge and science – Characterising the eruptive history of Tseax volcano, British Columbia, Canada

Glyn Williams-Jones¹, Kelly Russell², Mansell Griffin³, Yannick Le Moigne¹, Rachel Warwick¹, Nathalie Vigouroux^{1,4}

¹Department of Earth Sciences, Simon Fraser University, BC, Canada;

² Department of Earth, Ocean & Atmospheric Sciences, University of British Columbia, BC, Canada;

³ Nisga'a Lisims Government, BC, Canada;

⁴Department of Earth & Environmental Sciences, Douglas College, BC, Canada

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Recent volcanic activity in western Canada is not widely recognised despite the occurrence of, at least, four eruptions during the last 4,000 years. This situation results from the low eruption frequency, the remoteness of Canadian volcanoes, and low population density. One of the few events with any confirmed observations is that of the 1700s eruption of Tseax volcano, Wil Ksi Baxhl M'ihl, a polygenetic cinder cone in NW British Columbia. The most recent explosive and effusive eruption of the volcano formed a 32 km long basanite lava flow covering ~40 km². The eruption is identified as leading to the deaths of >2000 people of the Nisga'a Nation living in two villages (Wii Lax K'abit and Lax Ksiluux) on the banks of the Nass River, ~20 km from the volcano. Although no written records of the event exist, a rich oral history describes in detail the eruption and emplacement of the lava flow. For example, the Nisga'a story of the eruption tells of two children that in showing disrespect to Pink salmon had angered the Creator - the salmon are in the Nass River from late summer to early fall. Scouts sent to investigate the smoke, from their vantage point on Genuu Axwt (a ridge on the western side of Tseax River) saw Laxm'ihl, a monster with two flaming eyes, a body of mist and smoke and legs of fire - there is a smaller cinder cone ~500 m north of Tseax cone that was likely contemporaneously active. Although this is one of Canada's worst natural disasters, only limited scientific studies have been carried out to date. As such, this study aims to capitalise on the detailed observations recorded in the Nisga'a oral history to more accurately characterise the volcanic history of Wil Ksi Baxhl M'ihl, Where the Fire Runs Out.