



Cities on Volcanoes 9
November 20-25, 2016
Puerto Varas, Chile

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



Updating Of The Ash Fall Hazard Map For Nevado Del Huila Volcano (Colombia) After The 2007-2010 Activity

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Keywords: Ash Fall, Hazard Map, Simulation, Tephra-2, Hazard Zonation

Nevado del Huila volcano (VNH), 5364 m.a.s.l., in the SW of Colombia, is dominantly effusive. Before 2007, its known historic activity consisted in fumarolic manifestations, presence of hot springs, noises, some incandescence and scant instrumental seismicity recorded by Colombian Geological Survey (SGC) through the Popayán Volcanological and Seismological Observatory (OVSPop). Between February-2007 and November-2008, three eruptions took place, each one generated ash falls, lahars and with the last one, two lava domes (joined in one in a relatively short time) were emplaced on the SW flank of the VNH Central Peak. Associated to this activity, between 2007 and 2010, abundant and small ash fall events occurred, which spread its deposits around the volcano, beyond the hazard zone for this type of event defined in the previous version of the volcanic hazards map. The updating of the VNH hazard map for this phenomenon was assigned to the SGC as part of the strategic hazard assessment actions to be carried out for the government. Only a few data about deposited ash thicknesses were measured, because they were very thin at the field on the save sampling places and they were erased very soon by rain or wind. Data and imagery of ash dispersions clouds by VAAC of Washington for this activity were used and this information was combined with scarce field data, digital processing and seismological data from this activity. The dispersions of these ash emissions were approximately reconstructed in order to obtain an event type of ash fall and to get an input volume to simulate through the software TEPHRA-2. A zonation map for a reference eruptive ash fall event was made according to thicknesses established between 0.5 mm to 1 cm (low hazard zone), 1 cm to 10 cm (medium hazard zone) and > 10 cm (high hazard zone).