



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

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



Physical Effects Due to Proximal Impact of Volcanic Products at Turrialba Volcano: Costa Rica. October 2014- June 2016.

Duarte, Eliecer¹

¹OVSICORI-UNA Costa Rica

Key words: Costa Rica, Turrialba, proximal impact, lahars, pyroclasts

Posterior to four phreatic eruptions, after 2010 (one per year) Turrialba volcano unblocked its conduit in October 2014. From then on, a series of alternated eruptions have taken place impacting severely 3kms around the active crater, specially the two west quadrants of the volcano. Proximal zones (0-3 kms) of potential hazards have been affected by direct impact of bulky products. In the near future this same area can be impacted by backflood of numerous deep valleys, river bank collapse and inundation by lahar deposits in distal lowlands. It is possible that newly deposited pyroclastic material, along with an important volume of mobilized old deposits (charged with recently accumulated organic material) will be eroded and rapidly transported down the slopes and abundant basins. So far only pyroclasts, ash, gases and vapor have impacted the area nonetheless other eruptive modalities may trigger (vg. Pyroclastic flows and lava tongues or domes) in the near future thus increasing the impact already observed and documented. Ejection and deposition of air-borne fragmental volcanic material, from explosive and passive eruptions, constitute the thicker layers of deposits around the emitting point combining juvenile and accidental products. Erupted material has reached up to 3 kms (above the summit) and it has blanketed the slopes several square kms around the active crater. Thickness of deposits vary from 3 m near the crater to 8cms; 3 kms downwind. High-velocity ejections have reach up to 800 m from the vent regardless of the wind patterns and have left metric-size impact craters in the surroundings of the summit. Our talk will depict burial and environmental degradation around the summit. A map of the studied area will show differential impacts by thickness of recent products; specially towards the west of the volcano.