



Geoheritage value of the UNESCO site at Leon Viejo and Momotombo volcano, Nicaragua

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The Momotombo volcano has a special place in the history of Nicaragua. It is perfectly visible from the Capital, Managua, and from the major city of Leon. The old capital "Leon Viejo", founded in 1524 was abandoned in 1610, after a series of earthquakes and some major eruptions from Momotombo. The site was subsequently covered by Momotombo ash. A major geothermal power plant stands at the base of the volcano. Momotombo had been dormant for a hundred years, but had maintained high fumarole temperatures (900°C), indicating magma had been close to the surface for decades. In recent years, seismic activity has increased around the volcano. In December 2015, after a short ash eruption phase the volcano erupted lava, then a string of Vulcanian explosions. The volcano is now in a phase of small Vulcanian explosions and degassing. The Leon Viejo World Heritage site is at risk to mainly ash fall from the volcano, but the abandonment of the old city was primarily due to earthquakes. Additional risks come from high rainfall during hurricanes. There is an obvious link between the cultural site (inscribed under UNESCO cultural criteria) and the geological environment. First, the reactivation of Momotombo volcano makes it more important to revise the hazard of the site. At the same time, Leon Viejo can provide a portal for outreach related to the volcano and for geological risk in general. To maximise this, we provide a geosite inventory of the main features of Momotombo, and its environs, that can be used as the first base for such studies. The volcano was visited by many adventure tourists before the 2015/2016 eruption, but is out of bounds at present. Alternative routes, around the volcano could be made, to adapt to the new situation and to show to visitors more of the geodiversity of this fascinating volcano-tectonic and cultural area.