

# A geoheritage valuation to prevent environmental degradation of a new volcanic landscape in the Canary Islands

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## Abstract

On 19 September 2021, a new monogenetic volcano (Tajogaite) erupted on the island of La Palma (Canary Islands, Spain). After 86 days of strombolian eruption, with emissions of volcanic material, a pyroclastic cone 200 m high and 800 m in diameter was formed. Successive lava flows descended the western slopes and reached the sea on 29 September. On descending the coastal cliffs and entering the sea, the lava flows formed two lava deltas of 75 and 5 ha, on the submarine island shelf, backed by fossilized coastal cliffs. This work presents an approach, using comparative and numerical methods, to estimate the geoheritage value and support the conservation of a new volcanic landscape in an island territory with high anthropic pressure on land uses. In a first phase, a cartographic inventory was made of all the volcanic formations similar to the new volcano in the geological domain of the Canary Islands. In a second phase, their representativeness (A), rarity (R), diversity (D), integrity (I) and observability (O) was quantitatively measured by means of dimensional estimators. The results obtained show that the new volcano presents a geological value of the first order in the context of the Canary Islands, which is one of the most prominent hot-spot archipelago worldwide. Its value is based above all on its high conservation state with respect to the similar volcanoes in the Canary Islands. The high mismatch found between the intrinsic geological value and the environmental protection of this area, justifies the development and application of urgent basic guidelines for its protection, as well as the promotion of geotourism as opposed to alternative land uses.

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