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Volcanic geomorphosites assessment in North Lisbon region

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The main goal of this work is to present the first systematic inventory and scientific assessment of the geomorphosites related with the Lisbon Volcanic Complex (CVL). This geologic unit of the Upper Cretaceous, Campanian (70 to 72,6+/- 3,1 Ma) (Ferreira e Macedo, 1979), is an heritage of magmatic activity related to North Atlantic opening. The CVL covers about 150 km² of the 9 North Lisbon region municipalities. Basalt represent 70% of the rocks of the CVL, showing the predominance of an effusive activity and a subaerial volcanism. This geological complex feature also includes other types of volcanic rocks, such as rhyolite or trachyte, or even some interspersed sedimentary rocks.

The most visible impacts on the landscape of the volcanic activity on North Lisbon region are a few traces of cones, large extensions of lava flows and pyroclastic materials, and local structures such as chimneys, necks, dykes and sills. Volcanic cones are heavily eroded however their dominant elevation remains partly preserved by compact basaltic chimneys or necks.

Some of major cones, by their panoramic views, coupled to some particular lavic features, as columnar disjunction in hexagonal prisms, are the most relevant volcanic geotouristic attractions of the North Lisbon region, by its scientific, cultural/historical, scenic/aesthetic and social/economic values, due to human perception of geomorphological landforms and processes.

A selection, fundamental description, scientific assessment and mapping of main geomorphosites, will be carried out, as a contribution to publicize the single volcanic region in Continental Portugal, in order to reduce its vulnerability, preserving this geoheritage from destructive anthropic actions. In addition, it will be suggested geotrails between geomorphosites and will be proposed instructive-educational panels, to inform about the natural processes and mechanisms that originated these volcanic landscapes.

The geomorphosites, with a recognized scientific and didactic values, include single places and areas, where volcanic rocks and structures encompasses a considerable extension, and also panoramic viewpoints, particularly the dominants volcanic cones from where a great variety of regional landforms can be observed. Also additional values, namely cultural material or immaterial and religious features, are coupled to some of these geomorphosites, particularly to the dominant landforms.

Key words: Volcanic landforms, geomorphosites assessment, landscape conservation, North Lisbon region, Portugal

