

## **BUILD-UP PROCESSES AND GEOMORPHOLOGICAL EVOLUTION ON A VOLCANIC ISLAND: THE EXAMPLE OF FLORES ISLAND (AZORES, PORTUGAL)**

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The geomorphological evolution of a volcanic island, such as Flores, results of a continuous unbalanced equilibrium between constructive processes (effusive and explosive volcanic activities and tectonic uplifting movements) and destructive processes (marine abrasion, stream erosion, crater-forming volcanic explosions, caldera collapses and tectonic subsidence). The constructive processes are prevalent during the proto-insular and young insular stages; the destructive processes may be episodic during the constructive stages, but become predominant as the island gets older and older. Besides the constructive-destructive equilibrium, the emerged area of an oceanic island in each time depends largely on the eustatic sea-level fluctuations. The persistence of a general regressive tendency or an island uprise may allow the preservation of marine presence records, such as geomorphological and depositional records. In Flores Island, the records of (a) gaps in the volcanic activity and (b) erosional and depositional marine activity are shown as: (1) epiclastic deposits of marine origin; (2) erosional morphologies, such as abrasion platforms, terraces and cliffs; (3) intensive palagonitization of the volcanic rocks; (4) vertical changes of the structures in the submarine hydroclastic formations. Taking into account (1) the vertical crustal movements, which may occur in volcanic domains and (2) the sequence of regressive-transgressive trends in the relative sea-level as expressed by indicators of paleo-sea-levels, it is assumed that the morphological evolution of Flores Island comprehends four major stages: 1- Raising and lateral and vertical growth. 2- Build-up of the old destructive morphologies. 3- Vertical growth. 4- Build-up of the hydrovolcanic and erosional morphologies.