

## **Preliminary analysis of slope instability processes triggered in the Guilherme Creek watershed (Nordeste Municipality, S. Miguel Island, Azores)**

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The Northeast Volcanic Complex is located in the NE sector of S. Miguel Island (Azores) and comprises geological formations with about 4 million years old, extremely weathered. This fact, allied to the steep slopes on the area, promotes the occurrence of slope instability phenomena. In particular, the Guilherme Creek watershed has a high recurrence of this type of geological hazard, mainly triggered by precipitation, which promotes a high density of landslides in the area.

Considering as main objective the landslide susceptibility analysis in the Guilherme Creek watershed, using statistical/probabilistic methods, it is ongoing an inventory process of these phenomena in a GIS, based on the aerial photography interpretation and fieldwork.

Currently, the inventory is concluded based on aerial photography from 1982 and orthorectified aerial photography from 1995 and 2005. In order to validate and update the landslide inventory produced in the office, fieldwork has been carried out using, besides more traditional techniques, a drone (DJI Phantom 4 PRO). This tool has allowed the study of steep slopes, which would otherwise be impossible to access in an area with a high forest density and very steep slopes.

Until now, 517 landslides have been identified in the study area, mainly belonging to slides and falls typologies.

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