



## **The submarine volcano eruption at the island of El Hierro: physical-chemical perturbation and biological response**

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On October 10 2011 an underwater eruption gave rise to a novel shallow submarine volcano south of the island of El Hierro, Canary Islands, Spain. During the eruption large quantities of mantle-derived gases, solutes and heat were released into the surrounding waters. In order to monitor the impact of the eruption on the marine ecosystem, periodic multidisciplinary cruises were carried out. Here, we present an initial report of the extreme physical-chemical perturbations caused by this event, comprising thermal changes, water acidification, deoxygenation and metal-enrichment, which resulted in significant alterations to the activity and composition of local plankton communities. Our findings highlight the potential role of this eruptive process as a natural ecosystem-scale experiment for the study of extreme effects of global change stressors on marine environments.