

Zooplankton composition changes during a submarine post-eruptive process in waters of El Hierro (Canary Islands, Atlantic Ocean)

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Abstract

In order to know the impact on the zooplanktonic ecosystem of the eruptive submarine processes, three surveys were carried out (March and October, 2013 and March 2014) around the Hierro Island (World Biosphere Reserve, 2000), 15 months after the volcanic eruption (1.8 Km from the nearest coast and 275 m from the sea bottom). As a consequence of this phenomenon three main stress factors were found: increasing temperature, acidification and water deoxygenating with the highest implication of Fe enrichment. During this period the composition and diversity of main zooplankton species were analyzed in relation to the environment, observing high similarity (>85%) in the entire area, where the largest variability was due to the different seasons analyzed. In spring 2014 was however, double the abundance of the other months in relation to the cool water. The copepods were the dominant group (77%) with a high diversity and 126 spp identified. *Oncaea* and *Oithona* were the most abundant organisms, followed by the small *Clausocalanus* and *Paracalanus* group. They together with small species of Calanoids (*N. minor*, *M. tenuicornis*, *M. clausi*, *C. vanus*, *L. flavicornis*, *C. styliremis* and *A. danae*) and their juveniles contributed 70% of the whole copepod community. Therefore, it can be highlighted that the faunistic enrichment and the singularity of the Hierro island in the most western site of the Canary Islands, as well as the necessity of monitoring the protected area that can be considered as a “hot spot” for studies of natural changes in the Atlantic Ocean.

Keywords: Zooplankton composition, copepod species, submarine eruptive process, Canary Islands, Atlantic Ocean

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