

Meiofaunal community assessment of seamounts on the Southwest Indian Ocean Ridge

Tim Ferrero

Aquatic Invertebrates, Dep. of Life Sciences, NHM

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Species biodiversity and ecological function are two of the most important biological factors that define ecosystems. Globally, the marine ecosystem, especially the deep sea, is poorly documented and the Southwest Indian Ocean Ridge (SWIR) is noted as a particularly data deficient region. Seamounts on the SWIR are both numerous and diverse, extending from sub-polar waters in the SW to those beneath subtropical seas in the SE. The latitudinal range also follows a productivity gradient from relatively eutrophic in the south to relatively oligotrophic in the North. Seamounts are important as biodiversity hot spots and as models for the study of endemism and speciation in the deep sea. They are also vulnerable to on-going pressure from the fishing industry and the new threat of mineral mining. Therefore the study of seamount fauna provides an excellent opportunity to explore the role of diversity drivers such as primary production and disturbance, both anthropogenic (fishing) and natural (hydrodynamic regime), together with factors such as temperature, depth and oxygen concentration.

Deep water coral systems, often found on seamount systems, represent significant biogenic structuring and an understanding of their role in creation of habitat complexity and maintenance of biodiversity is crucial in developing conservation strategies. Nematodes are poorly known from seamounts but have the potential to provide important information on how disturbance and productivity affect seamount infaunal communities. Our study aims to provide an assessment of nematode community assemblages from the same depth across the SWIR seamounts and thus across a productivity gradient, using both morphological and molecular techniques in order to determine the extent to which disturbance and productivity gradients affect nematode assemblages. We also assess biogeographic patterns of nematodes across the SWIR and the role of biogenic habitat complexity.