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Diversity trends from SO-AntECO: patterns between benthic habitats within the South Orkney Islands MPA

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The South Orkney Islands are a small archipelago located in the Southern Ocean, 375 miles north-east of the tip of the Antarctic Peninsula. In 2009, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) established the South Orkney Islands Southern Shelf Marine Protected Area (SOISS MPA). The MPA is designed to contribute towards the conservation of biodiversity in the Scotia Sea region, and to protect representative examples of benthic and pelagic habitats.

SO-AntEco (South Orkneys - State of the Antarctic Ecosystem) was a British Antarctic Survey led expedition with an international team of scientists from the SCAR AntEco research programme. The expedition aimed to investigate species diversity, assemblage composition, abundance and habitat zonation along the shelf break of the South Orkney Islands, and to map the locations and distribution of all species found that were identified as VME (vulnerable marine ecosystem) taxa. A total of 124 trawled gear and 34 video/camera deployments were conducted during ~17 days of science. In total, over 700 seafloor habitat photographs and 3,900 live specimen photos were taken with over 38,000 individual animals collected and preserved for future analyses. Eighteen phyla were found from depths between ~500 m and ~2000 m.

We present the observed patterns in diversity and habitat variability within the MPA as well as the policy relevant findings and how these results will be used to contribute information and scientific advice for the SOISS MPA review and for the development of spatial management in this region more. These results will contribute to the MPA review which will be undertaken by CCAMLR in 2019 as well as ongoing work to develop a system of MPAs for the southern Scotia Sea/western Antarctic Peninsula region. Such work relies on the provision of policy-relevant scientific advice on patterns of biodiversity and understanding of benthic ecosystems.