

PROJECT TITLE

Differences in macrobenthic communities under the influence of methane seepage

PROJECT DESCRIPTION

Methane is confirmed as one of the potent climate change gases with a global warming potential higher than carbon dioxide. Marine methane in the Southern Ocean (SO) is estimated to comprise about a quarter of the Earth's marine methane. In recent years, first records of methane seepages from the seafloor and raised methane concentrations in the overlying water column have been reported from sub-Antarctic islands and the Antarctic shelf. The origins, amounts and effects on the ecosystem of the methane emissions in the SO are still unknown. During the expedition M134 in 2017 with RV Meteor, macrobenthic fauna was collected from multicorer (MUC) deployments on the continental shelf of the sub-Antarctic island of South Georgia. In total, from 12 MUC deployments 44 MUC tubes were collected for macrobenthic faunal assessment and further analysis; of these 26 tubes were fixed in 96% ethanol and 18 tubes were fixed in 4% formaline solution. During the expedition, the 26 ethanol fixed tubes were sorted to higher taxon (phylum, class or order level), yielding 2953 specimens. The fauna from the 18 formaline tubes remains to be transferred into water, to be sorted into higher and lower taxon level and to be counted. The fauna needs to be identified to morphospecies before the macrobenthic diversity and community structure can be assessed. MUC tubes from the same deployments were used for core water, methane, solid phase, microbiology and sediment grain size analysis by the geologists and geochemists on board and their results from the top sediment layers (equivalent to those sampled for macrobenthos) will be made available as environmental parameters for macrobenthic community assessments and their drivers. The macrobenthic fauna diversity from the MUC cores will be assessed for community structure, for the environmental sediment surface parameters that drive the community structure, and for the potential influence of methane/sulphates on the macrobenthic community.

SUGGESTED LENGTH – 10 weeks

JOB DESCRIPTION

We are looking for an intern as a Macrobenthic community Analyst to join the Biodiversity, Evolution and Adaptation team. You will be working in a small team of benthic scientists identifying and analysing the community structure of macrofauna collected on the continental shelf of South Georgia. Your duties will involve:

- Work in a research lab and office environment.
- Use of stereomicroscope with imagery equipment.
- Identification of marine macrofauna from Phylum to morphospecies level.
- Univariate biodiversity assessments.
- Multivariate assemblage and environmental factor assessment.
- Involvement in the writing of a peer-reviewed manuscript.

WHAT ARE WE LOOKING FOR?

Some with good communication skills and the ability to discuss technical scientific information and produce a clear technical and scientific report. Good computer skills: Experience of Microsoft Office or equivalent. Experience of univariate and multivariate statistics (R, PRIMER or equivalent). Good decision making skills and an appreciation of when to seek advice from experience colleagues. Degree-level course or undergraduate degree in biological subject such as marine biology, zoology, ecology. Experience of stereomicroscope work. An interest in identification, taxonomy and systematics of marine invertebrates and photography.