

Grant Application Details

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Activities covered by grant: Travel and accommodation expenses for Sea Survival Course in South Shields, along with cost of Sea Survival Course. Cost of ENG1 Medical Test in Glasgow. These were undertaken to meet the legal requirements of boarding the research vessel FRV Scotia in December 2012. Travel to/from Aberdeen to join FRV Scotia.

Summary

The aim of my PhD research is to model the population of the zooplankton species *Calanus helgolandicus*. This research is being undertaken at the University of Strathclyde with my supervisors Dr. Douglas Speirs and Prof. Michael Heath. This will involve the critical use and interpretation of data from research cruises. It is widely thought that the quickest and easiest, if not most comfortable, way to gain this understanding is to join a research vessel for a cruise.

I joined the FRV Scotia on the 11th December 2011 for a 12 day cruise of the North East Atlantic, travelling as far north and west as the Faroe Islands. The FRV Scotia was researching the behaviour of the species *Calanus finmarchicus* during winter. Due to its close relationship to *Calanus helgolandicus*, an understanding of this may be applicable to *Calanus helgolandicus*.

To meet the legal requirements for boarding a research vessel, I was required to attend a MCA approved Sea Survival Course, and take an ENG1 Medical Test.

Scientific Purpose of Study

Recent scientific research indicates that the North Sea population of zooplankton species requires a large inward migration from the Atlantic to explain summer population levels. In simplified terms during winter the populations are thought to live at low depths in the North East Atlantic, in particular the Faroe-Shetland Channel. After this 'overwintering' phase they rise to shallower waters and a significant proportion of this population is involved in the spring 'invasion' of the North Sea.

The main scientific purpose of this cruise was to sample how population levels of *Calanus finmarchicus* varies with depth in a number of areas in the region of the Shetland and Faroe Islands. There were three main objectives during the cruise. Plankton and hydrographic samples were taken using the ARIES sampler in the Faroe Shetland Channel. Routine hydrographic sampling was carried out at a number of other stations, and finally three mooring stations were to be recovered and serviced. The first objective was of most direct relevance to my research work.

Cruise outline

The vessel left Aberdeen on the morning of 11th December. The first day was spent testing the sampling equipment prior to moving into deeper waters. The chief scientist John Dunn gave me an overview of the equipment used and of processing methodology. Work began on the first line at the start of the 12th December. The boat then experienced poor weather and it dodged for a period, and then moved to retrieve moorings in heavy seas.

Two moorings were retrieved, but the third was not. The ship then proceeded to carry out hydrographic and plankton samples. I aided with the processing of water samples, and microscopists and hydrographers gave me explanations of their work. Of particular importance were explanations of how the microscopic analysis was used to calibrate *Calanus finmarchicus* measurements. Having completed the hydrographic and zooplankton lines the ship then made a final effort to retrieve the remaining mooring, however this proved unsuccessful. The boat then returned to Aberdeen on the 22nd December.

Training Details

I attended a Sea Survival Course in South Shields on the 28th November 2011. This was split into two sections. The first, much easier, section was a three hour taught session on survival techniques and the correct usage of survival equipment. This was then followed by a wet session in a specialist pool. The aim of this was to simulate a number of different survival situations. They included group-swimming, boarding a life raft, abandoning a ship and being lifted to safety by a helicopter. The ENG1 medical was a standard medical test to ensure I did not have any medical conditions that would cause significant risk on board.



Retrieving the ARIES sampler