

## Expedition Fund Report 2018

The focus of this work was to document living marine, brackish water and freshwater ostracods within the Loch of Harray, Loch of Stenness and Tidal channel (Brig o'Waithe) on mainland Orkney for use as bio indicators. This was accomplished through documenting the ostracod fauna with their distributions throughout the lochs. Research from previous trips made by Professor David Horne to Orkney has shown the presence of a salinity indicator, *Cyprideis torosa*, acting as a salinity proxy for this study.



Picture of sampling being conducted within the loch of Harray, taken by Professor David Horne.

Ostracods were gathered through the process of disturbing the sediments, gathering it into a net by sweeping and kick sampling making sure to have included a range of habitats within each sampling location up to a maximum depth of about  $\frac{1}{2}$  a meter. This is important as ostracod communities are associated with substrates of differing sizes.

Once this initial sediment was collected it was filtered using a sieve and then again using a coffee filter and placed in a container which was topped up with water from the sample location. This process enabled the sediments to be reduced as much as possible eliminating clogs and debris that may hide the ostracods. This sampling was carried out every morning of the trip.

Under the microscope the Ostracods were picked and condensed separating them from the debris. Through this observation under a microscope specific characteristics of the ostracods were noted, this included how they moved and any patterns on their shells that could distinguish them. It was important to do the preliminary picking whilst they were alive in order to make note of these. The microscope work was carried out every evening of the trip.

A few of the Ostracods that have been identified for this location:

- *Cyclocypris laevis*
- *Cytherura gibba*
- *Limnocythere inopinata*
- *Cypreideis torosa*

During the afternoons whilst in Orkney we visited Neolithic archaeological sites including Skara Brae and the Ring of Brodgar. These were not only interesting, but they also helped feed into other modules in which I have completed this semester. For instance, visiting the Neolithic sites has helped me with a module called Ancient Human Occupation of Britain as it allowed me to gain first-hand experience of the sites discussed better preparing me for the lectures and assignments. In addition, it was beneficial for my Dissertation work as it allowed for me to see and explore how the landscape would have been in the past which could have had an influence on the present-day conditions of my sampling locations.

This work was important as the salinity of the environment influences the aquatic structure through impacting water conditions suggesting monitoring of the aquatic communities is needed. In addition, it provided more knowledge on ostracod ecology and distribution aiding in the conservation of the area through being better informed and the project allowed me to gain experience in taking part in valuable research into conservation.

The fund helped me through covering the costs of my plane tickets from London Gatwick to Glasgow and then from Glasgow to Kirkwall, covering the travel and accommodation costs of the trip providing an opportunity for important fieldwork analysis for my Independent Geographic Research project/PES to be conducted.