

**Bangor Fund Report**Victoria Pace and Lucy Herbert – Undergraduate students in School of Natural Sciences

In February we were fortunate enough to experience a week-long trip to Iceland to further our understanding of topics related to our dissertations. This opportunity was made possible through a grant offered by the Bangor Fund. This new-found knowledge was provided by Dr Filipa Samarra of the Marine and Freshwater Research Institute, Reykjavik, lead investigator of the Icelandic Orca Project.

The money obtained through the fund contributed to the purchase of return flights for the both of us from Manchester airport to Reykjavík–Keflavík Airport, in addition to this, two return train tickets to Manchester were also purchased along with accommodation bookings.

During our time at the Institute, Dr Samarra provided comprehensive guidance in analysing the data we had collected prior to our trip on North Atlantic killer whales for our dissertation questions. This entailed the use of the programme 'SOCPROG' for MATLAB, which enabled us to quantify the social bonds between individuals as well as their temporal and spatial patterns in Scottish waters. This was used in conjunction with some of Dr Samarra’s data to compare to similar studies in Icelandic locations. As such, the objectives outlined in our original funding application – the proposed questions investigated through our dissertations – were met, with additional benefits being obtained using Dr Samarra’s own data which was kindly provided.

Of the week that was spent in Iceland, five of those days were utilised for data analysis at the Institute. This length of time was required for us to master our different uses of SOCPROG, in which we attempted to analyse practice data sets provided by the programme before moving on to our own data once we were more confident. One of the most difficult parts of this task was learning how to format the data for SOCPROG to be able to process it accordingly. Dr Samarra's help was invaluable in this aspect particularly. The specific fine tuning the data required would have been extremely difficult to convey over email or Skype, thus our visit to Iceland was an incredible help in creating our dissertations. Furthermore, Dr Samarra was able to provide us with copies of two Icelandic photo ID catalogues that allowed us to identify individual killer whales who were not previously known to travel to Britain, giving our project more far-reaching aspects than previously anticipated.

Photos that we sourced from tourists and wildlife photographers in Scotland, and successfully identified, have been used in Dr Foote's 2019 Photo-ID Catalogue of Scottish killer whales1. This ID guide can be used to identify killer whales based on physical characteristics and can also give suggestions on which other individuals are likely to be spotted together, using previous association data, some of which has been updated through our dissertation projects. Also, Dr Foote's original photo-ID guide was created in 2009, and our project in 2019 gave an interesting comparison of population structures 10 years later which may help contribute to ongoing and future projects.

Both of us achieved A grades for our dissertation projects, which were worth 30 credits. Largely thanks to this, we also both earned first class honours in our degrees. It may be that without Dr Samarra's help during our trip to Reykjavik, we would not have been able to accomplish this, and as such we are very grateful to both Dr Samarra and the Bangor Fund for the parts they had to play in our success.

It would be unjust to not include the acknowledgment of Dr Andrew Foote, our dissertation supervisor, without whom this trip and our dissertations would not have been possible. Dr Foote’s well-established connections enabled us access to the institute, as well as the generous help offered by Dr Samarra.

Through our visit we represented the university and demonstrated our enthusiasm for broadening our knowledge of field-based study. In doing so, we hope to have contributed to the university’s international renown through our representation.



