



MASTS-SFC Saltire Emerging Researcher Scheme (MASTS-SERS)

Final Report

MASTS in association with the Scottish Funding Council supported the Saltire Emerging Researcher Scheme, which represented an important and exciting opportunity for Post Graduate Researchers (PGR) and Early Career Researchers (ECR) to engage in substantive collaboration with colleagues from Europe (EA, EEA and EFTA countries).

The scheme aimed to promote mobility between Scotland and European research partners with the aim of strengthening existing, and seeding future, research relationships. Participants are expected to demonstrate the impact of their exchange through the publication of novel research work, the formation of new collaborations and project/ funding submissions, and the dissemination of their results.

As your exchange has now come to a close, we ask that you reflect on the exchanges and provide a report by filling in the form below. The reports will need to demonstrate the potential benefits of the grant for both the recipient and their collaborators. Please return this within four weeks of completing your exchanges to masts@st-andrews.ac.uk. When you do so, you are agreeing that your answers may be used to promote the activities of MASTS, including being used on the website and social media channels.

Please note that MASTS may also contact you, the participants, and/or your supervisors to gather additional post-exchange impact information. This information must be provided on request.

Contact information

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Exchange overview

Title	A pilot study towards understanding the connectivity of United Kingdom and Norwegian black-legged kittiwake populations across the North Sea
Start date	05/06/2022
End date	12/06/2022
Project location(s)	Norwegian Institute for Nature Research (NINA), P.O. Box 5685 Torgarden, 7485 Trondheim, Norway

Abstract (max 300 words)

Provide a brief summary of the exchange using language accessible to a non-specialist. Describe what the exchange objectives were, the activities that were carried out, and the subsequent outcomes. This may be published on the MASTS website.

The black-legged kittiwake is a Northern Hemisphere seabird of international conservation concern. Previous studies and anecdotal evidence demonstrate that kittiwake populations are connected at regional and transocean scales, yet knowledge of the occurrence and frequency of these long-range dispersal events, including of their importance to population trends, is highly limited. National marine spatial planning procedures for offshore renewables developments therefore follow a precautionary approach, treating kittiwake populations as closed units. This exchange project comprised a research collaboration between the University of Aberdeen and the Norwegian Institute for Nature Research (NINA) towards understanding the connectivity of UK and Norwegian kittiwake populations across the North Sea. Activities included the collection of sources of genetic information (i.e., feathers) from breeding kittiwake colonies along the Norwegian coastline that have been identified as likely relevant to UK populations. A further key aim was also to facilitate the sharing of long-term colour-ringing and colony count datasets, and the integration of Norwegian datasets with their UK counterparts. The results of this exchange project are currently being implemented within a wider research project aiming to address a critical lack of biological realism in ornithological Environmental Impact Assessments for marine renewables. We anticipate that the long-term impacts of this 2022 MASTS-SFC SERS-funded exchange project will be demonstrable within future policy laying the foundations for green energy production across the North Atlantic.

Impact (max 600 words)

Please demonstrate the impact of your exchange from your perspective, and that of your exchange partner. Describe what the wider benefits of the exchange were to you as participant, your own and host institutions, and the wider community.

The research impact of the exchange project can be demonstrated within the following areas:

Building capacity to carry out meaningful research: I collected genetic information and long-term datasets from locations representing a) important geographic gaps within previous population structure analysis for the black-legged kittiwake, and b) from a country identified to be a key new offshore wind market and that has jurisdiction over kittiwake

populations known to feed breeding birds into UK populations currently at risk from existing offshore wind farms. The use of these data within a larger metapopulation analysis provides capacity for such work to be novel and high impact.

Instrumental impact – changing behaviours: I collected (moulted) feathers from birds that were being processed for ringing, thereby gaining genetic resources associated with known individuals and demonstrating the viability of using a non-invasive method to generate individual-level genetic data. I hope that, following the release of the findings of this project into the public domain via peer-reviewed papers, such information will enable those in the wider research and HEI community to refine future research strategies to foster the ethical treatment of endangered seabirds by reducing the use of more invasive methods, such as blood sampling.

The wider benefits of the exchange project to myself, the participant, are **capacity building through researcher professional development**. Firstly, I benefitted from training and mentoring both when collecting my samples and when assisting with additional fieldwork led by my host. As a postgraduate research student, I particularly benefitted from developing a set of specific skills and attributes across the exchange period, including, the practical application of research methods, preparation and prioritization, responsiveness to change, networking and reputation and esteem. I was able to enhance my knowledge of the standards, requirements and professional conduct that are needed for the effective management of research, including health and safety, attribution and co-authorship, project planning and delivery, risk management and financial management. Furthermore, I benefitted from the enhanced knowledge and understanding gained throughout the exchange that has allowed me to engage further with the wider social, cultural and economic broader context of the exchange project. I was also able to expand my collaborative network through actively engaging with researchers face-to-face at the host institution. I gained followers on social media, and therefore increased the reach of my work across the wider academic and non-HEI community, by regularly posting about my exchange project on LinkedIn.

The host institution benefitted directly from this exchange project because we ensured that the exchange objectives progressed, at least in part, **research questions within their remit**. Both the host and home institutions have gained **increased visibility** as international collaborators and will receive **accreditation** within outputs such as publications, conference presentations and press releases. This exchange project also supports a number of commitments set out in the **University of Aberdeen ‘2040 Commitments’** plan, including, no. 9: *[to] listen to and work with external stakeholders regionally and globally to build partnerships that deliver imaginative solutions to societal and industrial challenges*, no. 13: *[to] harness our research expertise to form partnerships and networks around the world to meet the challenges of our age*, and no. 18: *[to] excel in research that addresses the climate emergency, enables energy transition and the preservation of biodiversity*.

I believe the wider, non-academic community has benefitted from **public engagement opportunities** whilst I was on placement. We met with members of the public around urban kittiwake colonies and participated in discussions about how strategic research informs

environmental spatial planning – particularly important where these colonies are sources of human-wildlife conflict, such as Rørvik.

Outputs (max 300 words)

Has this exchange resulted in clear outputs, such as the generation of a proposal, research results, or publication? Please provide brief details here. Do any of these outputs have relevance to larger programmes such as the UN SDGs, Blue Economy Action Plan etc?¹

The success of the exchange project has meant that the spatial scope of the wider PhD project that it contributes to is able to be demonstrated within a multi-author conference poster to be presented at the 15th International Seabird Group Conference (22 – 26 August 2022). I have also visualised the objectives of the exchange project as an infographic for the upcoming Sustainable Management of UK Marine Resources (SMMR) Infographics Showcase event. The success of this exchange is also underpinning a funding application in development to investigate the application of microsatellite sequencing methods for quantifying immigration and emigration rates between kittiwake colonies. Each of these outputs are highly relevant the United Nations Sustainable Development Goals(UN SDGs)13: Take urgent action to combat climate change and its impacts, and 14: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development. Specifically, the context and scope of the funding application in development will directly contribute to research facilitating UN SDG Target 13.2: the integration of climate change measures into national policies, strategies and planning, and the use of ecosystem-based approaches to managing marine areas (UN SDG Indicator 14.2.1).

The Future (max 300 words)

How do you plan to ensure a sustainable collaboration in the longer-term and maximise opportunities and impact in the future? How will you carry forward the benefits now the exchange has been completed? Please outline five concrete plans for future collaboration as a result of your exchange.

We have worked to ensure a sustainable collaboration between home and host institution by formalising the use of the data shared with appropriate data-sharing agreements. To maximise opportunities and impact in the future, researchers (UGR, PGR and above) will be encouraged to use the samples collected as part of this exchange for future studies, for example the use of feather samples for stable isotope analysis. The collaboration between home and host institution will be furthered by means of follow-on plans including, 1) fieldwork in Norway in summer 2023 to collect samples from more locations, such as in Karmøya, where NINA has recently tracked birds transiting between international colonies, 2) a project to understand the origins of kittiwakes breeding on offshore platforms in the southern Norwegian Sea, 3) a project using ectoparasites to infer population connectivity of kittiwakes on a finer spatial scale, 4) the participant joining NINA as an intern (likely to occur in 2023/2024), and, 5) collaboration on a number of multi-authored publications to disseminate the results of this exchange project and those detailed above.

Any further comments (max 500 words)

¹ All successful applicants will be expected to represent, promote and formally acknowledge the sponsors (MASTS, SFC & Scottish Government) during the course of their project and in any subsequent related outputs. All research outputs and any material used publicly must carry the funders' logos. The following acknowledgement should be used in all publications resulting from this funding. ["This work received funding from the Scottish Funding Council Saltire Emerging Researcher Scheme and the MASTS pooling initiative (The Marine Alliance for Science and Technology for Scotland) and their support is gratefully acknowledged. MASTS is funded by the Scottish Funding Council (grant reference HR09011) and contributing institutions"]

Please use this space to provide any additional comments. These may include, but are not limited to; what you would do differently if you could take the exchange again; what contingency measures you had to use (if any); details of any unexpected benefits or problems; any significant variations in costs;

Unexpected problems: the dates of the exchange were changed to suit the host institution, as such I was not able to visit for the proposed trip duration due to other commitments. A last-minute change of plan by an associate of the host institution meant that I was not able to collect samples at one location. As a compromise, I was able to still visit the site to resight birds and to record the environment and physical features of the colony. Due to the shortened length of visit and unavailability of contacts, we have used the contingency measures as set out in the funding application - samples are going to be collected by ringers next season and posted to the host institution for collection. **An unexpected benefit:** we were able to use the opportunity to assess the prevalence of ticks at urban colonies, to inform the feasibility of follow-on projects. **Variations in costs:** although the total costs did not approach the amount requested, I did underestimate the cost of accommodation in Norway as that the travel agent used by the home institution did not allow me to book the cheapest options (i.e., hostels) in preference to (more expensive) hotels.

Final expense report

Item Number	Description	Cost per Unit	Number of Units	Total Amount (£)
1	Accommodation Alesund 1 night, Scandic Alesund	200.00	2	400.00
2	Accommodation Trondheim 1 night, Thon Hotel Trondheim	121.61	1	121.61
3	Accommodation Trondheim 1 night, Clarion Hotel Trondheim	108.84	1	108.84
4	Train (advance single) Dundee - Aberdeen, The Trainline + taxi to station	17.50	1	17.50
5	Train (anytime single) Aberdeen - Dundee + bus from airport to station	18.70	1	18.70
6	Ferry (deck space) Trondheim - Alesund, Hurtigruten Limited	44.00	1	44.00
7	International flight Aberdeen - Trondheim, Scandinavian Airlines System	351.19	1	351.19
8	International flight Alesund - Aberdeen, Wideroe	153.07	1	153.07
9	Domestic flight Trondheim - Rorvik, Wideroe	128.20	1	128.20
10	Bus Trondheim -Vaernes airport	16.78	2	33.56
11	Bus Alesund – Vigra airport	12.87	1	12.87
12	Internet	15.02	1	15.02

13	Sample consumables (envelopes, samples, permanent markers)	41.34	1	41.34
14	Subsistence	18.23	6	109.39
Total				1555.29
In-kind contributions	Travel expenses (i.e. fuel costs) to/from sampling locations.	500.00	1	500.00
	Supervision/administration/logistics from NINA	1000.00	1	1000.00
In-cash contributions	n/a			
Grand Total (Total requested from scheme + In-kind + Cash)				3055.29