



PROJECT PROPOSAL FORM

Making the Most of Masters aims to improve collaboration between employers and universities by providing opportunities for postgraduate students to undertake work based projects as an alternative to a traditional university dissertation. Projects should address a real need within the host organisation and be beneficial to both host and student.

The Marine Alliance for Science and Technology for Scotland (MASTS), pools the majority of Scotland's marine research capacity. MASTS members provide Masters courses in a range of marine related disciplines and many of their students are keen to undertake applied projects outside of academia.

Notes on Topic Selection

A relevant academic will work with your organisation to refine your proposed topic and ensure it meets both your needs and the academic requirements of the student. Projects should typically be achievable within a 12–16 week timeframe (including writing the final report).

Your proposed project could be:

- A specific project title or topic for the student to deliver;
- A general idea of a business need which requires further development;
- A core research theme to be developed by the student into a bespoke project;
- An intended outcome for the organisation.

The level of detail you provide will determine the extent to which further discussion may be required with the relevant programme director to ensure suitability.

desk-based/data studies that will easily facilitate remote working and remote supervision are welcome, as well as in person and/or experimental based projects where appropriate.

What's Next?

Please send your completed form to the MASTS Programme Coordinator & Deputy Dean of Grad School, Dr Emma Defew (masts@st-andrews.ac.uk) before the deadline.

Following submission of the form, it will be channeled to the leaders of the various Masters programmes that operate within the MASTS community and a representative from the most relevant programme or department will get in touch to discuss the project scope, delivery and the selection of an appropriate student. If more than one student expresses an interest in your project, you will need to ensure discussions take place to enable the most suitable student to be matched with your project. The projects themselves usually won't start until May or June.



MASTS - Making the Most of Masters – Project Proposal Form

Name and address of Organisation:

NatureScot
Great Glen House, Leachkin Road, Inverness, IV3 8NW.

Name of the key contact in Organisation:

Murray Borthwick / Corinne McElhinney

Contact e-mail and phone number:

murray.borthwick@nature.scot / corinne.mcelhinney@nature.scot

Title of proposed project:

Investigating macro-avoidance behaviour of black-legged kittiwake *Rissa tridactyla* to inform collision risk modelling for offshore wind farm impact assessments.

Project outline and intended outcomes:

Black-legged kittiwake *Rissa tridactyla* are vulnerable to the impacts of offshore wind farms in the form of distributional responses (barrier and displacement) and collision with wind turbine blades. [Collision risk models](#) currently used in impact assessments include an [avoidance rate](#) as an input parameter to the model. However, this avoidance rate considers micro-avoidance only, whereby birds avoid rotating blades in the last moments before a potential impact. Avoidance rates in existing collision risk models do not consider the rate at which birds are deterred from entering an offshore wind farm altogether, thus eliminating the risk of collision – known as macro-avoidance.

There is a risk of double-counting impacts of distributional responses and collision impacts in offshore wind farm impact assessments since birds which are displaced/avoid the wind farm cannot also collide with offshore wind turbine blades. As a result, there is then a risk of overestimating the impacts of offshore wind farms on seabird populations. However, evidence of distributional responses in kittiwake is conflicting, with both avoidance and attraction to offshore wind farms having been observed. There is therefore a need to review the existing empirical evidence base to determine whether there is a consistent trend in avoidance or attraction behaviour in kittiwake and/or the potential drivers behind avoidance and attraction behaviour.

The project would build upon the Natural England-commissioned study by [Pavat et al. \(2023\)](#) which investigated macro-avoidance behaviour in northern gannet by reviewing empirical evidence from offshore wind farms to produce recommendations for offshore wind farm impact assessments. Subsequently, UK [SNCB guidance](#) has recommended the adoption of macro-avoidance rates for

gannet in collision risk modelling (with some variation between SNCBs) from this study.

The output of this project will be to provide recommendations for future collision risk modelling of kittiwake in offshore wind farm impact assessments. There is also the potential to update the work by [Pavat et al. \(2023\)](#) on gannet macro-avoidance behaviour, using studies published since this work was undertaken.

Any additional comments e.g. details of specific disciplines required, methods to be used, travel involved, where the work would take place (i.e. at the host site or at the University), whether you foresee any Intellectual Property or confidentiality issues (and if so, what form might these take?):

The project can be completed remotely at the student's university and there would be no planned fieldwork.

Statistical modelling skills would be beneficial to explore trends and relationships in distributional responses across empirical studies. Interest in seabird ecology, tracking methods (GPS, satellite, radar tracking) and offshore wind impact assessments would also be beneficial.

Training can be provided on the collision risk modelling tool used in offshore wind impact assessments.

We plan to host a MSc student seminar at the end of August 2027 at NatureScot's HQ in Inverness. We invite the student to present their research at this seminar and meet with relevant colleagues as well as other MSc students carrying out projects within NatureScot. We plan that travel and subsistence could be covered for this journey, although this will be confirmed nearer the time.