



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:

Karen Hall/ Steven Hawkins

Contact e-mail and phone number:

Karen.hall@nature.scot Steven.hawkins@nature.scot

Title of proposed project:

Investigating seasonal patterns and spatial hotspots of otter mortality associated with the road network in Shetland

Project outline and intended outcomes:

Otters are a European Protected Species (EPS) and are widespread throughout Shetland. There are around 800-1,000 otters living in Shetland – the highest density of otters in Europe.

The number one cause of mortality (excluding natural causes) of otters in Shetland is recorded as road traffic. The road network in Shetland in general follows the coast and otters may need to cross this to get to fresh water supplies on the land side. Otters must keep their fur free of salt using freshwater for it to remain effective as insulation. Though historically found to be nocturnal hunters elsewhere, here they very much prefer to forage during daylight hours, with their daily routines revolving around the rhythms of the tides. This means that the times when otters are active are also the times when more vehicles are on the roads.

This project would analysis the existing data on otter mortality in Shetland to see if there are any clear seasonal peaks (it is thought that mortality increases at the times when the clocks change), or any spatial hotspots. In addition, we would like to see how environmental parameters may influence this by looking at weather, daylight hours and tide. Habitat availability for holts, prey, freshwater sources and distance of roads to the sea will all be looked at. Where possible, information on large construction or other projects that may have led to increased transport will also be looked at to see if this led to increases in mortality.

The outputs of the project are to:

- 1) a better understanding of the seasonal and spatial hotspots of otter mortality.
- 2) to identify key times when addition promotion of otter awareness should be targeted
- 3) to suggest mitigation for key hotspots – such as signage, otter tunnels,

reflecting devices

4) to develop best practise for transport associated with large developments that go past any hotspots.

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?):

Most of the analysis can be done remotely at a place of the students choosing. It would be beneficial if the student can visit Shetland for some fieldwork (c2 weeks) to see some of the locations and think further about mitigation options. This would also give the student the opportunity to meet other experts and other relevant stakeholders as well as observing otters in the wild.

GIS skills would be beneficial, and training may be available if the student does not have experience in this. The project may involve statistical analysis but will be determined through further scoping of the project.

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.