



PROJECT PROPOSAL FORM

Making the Most of Masters aims to improve collaboration between employers and universities by providing opportunities for masters 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.

Covid implications – the ongoing situation around Covid may suit desk-based/data studies that will easily facilitate remote working and remote supervision. If restrictions allow, in person projects are always welcomed.

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 **16:00 on Friday 29th October 2021**.

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, discussions will take place to ensure the most suitable student is 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:

Chris Eastham

Contact e-mail and phone number:

MARINECOASTALVOLUNTEER@nature.scot / 07425 929403

Title of proposed project:

Fair Isle Demonstration and Research Marine Protected Area (D&R MPA)

Project outline and intended outcomes:

There are a number of potential projects within the Fair Isle D&R MPA:

1. Changes in fishing activity: Comparing present day and historic fishing activities using remote sensing data and archive fishing diaries.

Using open access remote sensing data to monitor present-day fishery activity and use archive fishing diaries to build a picture of historic fishing activity.

Monitoring current fishing activity

- Remote sensing data is becoming increasingly available and can be used to support fisheries monitoring, control and surveillance.
- Two satellites can be used for monitoring purposes. Sentinel 1 (low-res but weather independent) and Sentinel 2 (high-res, can infer vessel activity, but can only be used during the day and on clear days). These two satellites can be used to complement each other and provide information on vessels operating in the local area.
- Satellite data can be accessed through 'Copernicus' and other open access sites. Data can then be analysed using SNAP and/or Qgis. This can be used to detect vessels and their coordinates and can provide information in fishing activity.
- Vessel tracking data, such as AIS, can be used to complement the remote sensing data, i.e. vessel type and routes.

Analysing historic fishing activity

The diaries of Andrew Eunson provide an account of maritime activity between 1913 and 1953. Information provided in these diaries include:

- Records of the weather of each day.
- Vessels that were passing or working around the island and the activity of each of the vessel (fishing, cargo or passenger).
- Fishing trips undertaken from the Fair Isle community.
- Species and quantity of fish caught, the time of year and the location of the fishing grounds.

2. Various seabird projects including:

- Identification of prey species and provisioning for shag and black guillemot chicks throughout the breeding season.
- Understanding foraging habits of shags and black guillemot using tracking data.
- Monitoring activity and measure foraging behaviour of kittiwake.
- Using tracking data to understand seabird distributions, activity patterns and habitat use.

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?):

Some of the projects may involve travel to the Fair Isle. This will depend on construction of the bird observatory and accommodation available on the island.