



**Making the Most of Masters**

## **MASTS - Making the Most of Masters – Project Proposal Form**



**Scottish Natural Heritage**  
**Dualchas Nàdair na h-Alba**  
**nature.scot**

### **SNH are using the following timescales to assess and agree MSc projects...**

Dec – Feb	Students submit ' <b>expression of interest' form</b> (1 <sup>st</sup> closing date Thursday 10 <sup>th</sup> January, 2 <sup>nd</sup> round open until Wednesday 13 <sup>th</sup> Feb 2019).
Feb-Mar	SNH review applications for MSc projects, develop ideas with students.
Mar	Students decide and commit to proposed projects with SNH (commitment to be made by 31 <sup>st</sup> Mar 2019), project planning continues.
May-Aug	Student project placement commences, fieldwork, write blog article if possible.
Aug-Sep	Student writes up project, including agreed output for SNH (Blog article, project summary or duplicate of dissertation report produced for university), feedback between SNH supervisor and student.

#### **Name and address of Organisation:**

Scottish Natural Heritage

#### **Name of the key contact in Organisation:**

Carol Hume

#### **Contact e-mail and phone number:**

[MARINECOASTALVOLUNTEER@nature.scot](mailto:MARINECOASTALVOLUNTEER@nature.scot)

#### **Title of proposed project:**

Fair Isle Demonstration and Research Marine Protected Area (D&R MPA) (SNH ref. P48)

#### **Project outline and intended outcomes:**

Ongoing project with main themes that can be explored:

- Sea birds - looking at long term trends, link to habitats, prey or human activities e.g.
  - 1) Continuation of Bonxie work: Focus on understanding the distribution, number and behaviour of club birds in relation to the airstrip. Requires Darvic ringing so that some birds can be identified.
  - 2) Eiders: Undertake population counts and study to understand productivity, feeding locations and how distribution is influenced by weather. Possibility to investigate genetics?
  - 3) Stormies: Set up camera traps to investigate level and source of predation at key nest sites. Trial method to get population estimate.
- Fisheries - identifying changes in fisheries efforts, links with meteorological data, use old

fishing diaries

- Sea caves - extracting existing knowledge, mapping, possible survey work (if suitably qualified)
- Benthic habitats - review of existing data, setting up MarClim transects, analysis of video data gathered in 2010
- Community - developing ways of including/gathering community data and anecdotal records e.g.
  - 1) Establishing relevant research activities and proposing additional research elements which feed into the D&R MPA objectives
  - 2) Adopting a coherent cross-sector partnership approach to use the various current and future databases and research elements to improve ecosystem knowledge.

**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?):**

*Re. Fair Isle projects - As any project on Fair Isle will require close work with their community, it is important that interested students consider this aspect carefully. SNH and university staff will help to assess which students are suited for this project. Students will also be likely to work with the Fair Isle community, the D&R MPA Advisory Group and stakeholders involved in this project. It is expected that some of the placement will be on Fair Isle. Note this is a remote small community (limited transport options and no 24 hour power) and we would expect any potential candidates to think carefully about whether they could cope with the remoteness/restrictions of island living and how they would fit into the community. Therefore there will be additional considerations in the selection process to ensure that the match is right for both the student and the Fair Isle Community.*

Preparation work to be carried out at the university. A relevant SNH staff advisor would help with the scope of the project, and ensure outcomes are relevant to our work as well as being beneficial to the university and student.

*Please note that SNH hope to provide basic funds for travel and fieldwork expenses relating to 2-3 MSc projects. This is dependent on agreeing appropriate and relevant students and supervisors, and agreeing the level of financial support for the particular project and circumstances.*

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**Title of proposed project:**

MPAs and Climate Change (SNH ref. P50)

**Project outline and intended outcomes:**

*Background* - Work has already been carried out related to the climate change risk for protected sites and there has been a review of the implications of climate change on the management of Marine Protected Areas (MPAs) and the implementation of the Marine Strategy Framework Directive (MSFD) by The Marine Climate Change Impacts Partnership (MCCIP). In order to best manage the activities in MPAs to protect the designated features whilst also recognising the pressures imposed by climate change it is important to develop a clear understanding of the scale and types of pressures that may be imposed by Climate Change.

*Outcome of contract with the Institute of Coastal and Estuarine Studies (IECS, University of Hull)* – This is still to be published but it provides a study of the sensitivity of marine habitats that are the focus of MPAs. It is an initial indication of their vulnerability within protected sites in Scottish waters. It brings together published work and expert opinion on climate change implications for these features.

*Project outline* – Review the report from IECS and complete templates for individual MPAs (those with habitat features) to summarise the outcome of the vulnerability assessments and provide a clearer picture about what the main climate changes pressures and issues may be for the MPAs. Potential to develop into a workshop to test site-summaries and get feedback from SNH and wider colleagues.

**NB.** Other projects are available in relation to this work e.g. undertake related work, whether policy focussed (taking results forward to site management and regional planning) or scientific (modelling, genetic links, connectivity with certain sites / features).

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**Title of proposed project:**

Investigate porpoise numbers, distribution and movements in tidal sounds in Shetland (SNH ref. P60)

**Project outline and intended outcomes:**

There is a lack of effort-related sightings data for porpoise in Shetland. This has been identified as a key data gap for the Shetland marine spatial plan and was an area identified as needing further work during the porpoise SAC assessment.

This study would undertake effort surveys at key tidal channels in Shetland - Mousa Sound, Noss Sound and Yell Sound. Mousa Sound work would allow a direct comparison with work undertaken by Peter Evans in the 1980s and 90s. Understanding the use of tidal channels by porpoise (and other species) will help inform likely interactions with renewable energy. We hope to have Passive Acoustic Monitoring systems (PAMs) in place so there may be the opportunity to compare sighting data with acoustic data.

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**Title of proposed project:**

Connectivity amongst marine ecosystems (SNH ref. P61)

**Project outline and intended outcomes:**

There have been numerous published studies on the connectivity between tropical marine ecosystems, i.e. coral reefs - seagrass beds - mangroves - beaches in relation to various fish species, sediment transfer, stability etc. To our knowledge there is a lack of similar studies in temperate waters including the UK/Scotland. This information has been highlighted as being important for effective MPA and marine conservation management - see Carr et al., 2017 (<https://doi.org/10.1002/aqc.2800>).

This project could take several forms – desk-study pulling together relevant published and grey literature, and knowledge of regional scientists to provide a starting point for further project development, (or something more long-term e.g. PhD where research could be undertaken looking at a particular ecosystem e.g. sea lochs or MPA and connectivity within PMFs/species within that ecosystem).

Connectivity work to date has looked at connectivity within species / habitats, this project would look to see whether this can be expanded for between different habitats, potentially considering species, sediment/nutrient flows..

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**Title of proposed project:**

Feasibility of a creel accreditation scheme in Scotland (SNH ref. P64)

**Project outline and intended outcomes:***Outline*

- Working with Scottish Entanglement Alliance\* (SEA), SNH and Seafish
- Taking data from SEA Fishers survey and Scottish Marine Animal Stranding Scheme (SMASS) strandings to find 'hot spots' for entanglement
- Review a few accreditation schemes (e.g. marine and terrestrial) with the aim of developing a suitable scheme for creel fishers.

*Outcomes*

- Mapped 'hot spots' (GIS)
- Written review of accreditation schemes
- Produce recommendations for a possible pilot scheme (e.g. location and possible method).

\*The Scottish Entanglement Alliance is a project funded through the European Maritime and Fisheries Fund (EMFF). Project partners are...

- SCFF – Scottish Creel Fishermen's Federation
- WDC – Whale and Dolphin Conservation
- BDMLR – British Divers Marine Life Rescue
- SMASS – Scottish Marine Animal Stranding Scheme

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In addition to MSc projects being offered directly by Scottish Natural Heritage, we have invited members of the Coastal Communities Network (CCN) (<https://www.communitiesforseas.scot/>) to submit proposals in collaboration with Flora and Fauna International (FFI). All proposals below have been submitted to SNH for sharing with MASTS. These have all gone through an initial feedback discussion from SNH.

<p><b>Name and address of Organisation:</b> Scottish Natural Heritage</p>
<p><b>Name of the key contact in Organisation:</b> Owen McGrath</p>
<p><b>Contact e-mail and phone number:</b> <a href="mailto:owen.mcgrath@nature.scot">owen.mcgrath@nature.scot</a></p>
<p><b>Title of proposed project:</b> Various projects from Coastal Community Network partners (SNH ref. P63)</p>
<p><b>Project outline and intended outcomes:</b></p> <p><b>Please see the list of projects below.</b></p> <ol style="list-style-type: none"> <li>1. A Proposal to Map the Habitat, Extent, Abundance and Biodiversity of <i>Ascophyllum nodosum</i> ecad. <i>mackaii</i> in the Marine Protected Area (MPA) of Loch Sunart (<i>proposed by COALAS- Community Association of Lochs and Sounds</i>).</li> <li>2. Testing the efficacy of ROV survey, for mapping the extent and distribution of northern sea fan (<i>Swiftia pallida</i>) in the Sound of Jura MPA (<i>proposed by Friends of the Sound of Jura-ROV</i>).</li> <li>3. Underwater camera sled for benthic surveys (<i>proposed by Friends of the Sound of Jura-SLED</i>).</li> <li>4. Wester Ross Marine Protected Area maerl bed recovery monitoring project (<i>proposed by Sea Change Wester Ross - Maerl monitoring</i>).</li> <li>5. Maerl bed relationship with Fisheries (Summer Isles study within Wester Ross Marine Protected Area) (<i>proposed by Sea Change Wester Ross – Maerl &amp; Fisheries</i>).</li> <li>6. Developing methods for the assessment and monitoring of (1) maerl habitat recovery and (2) wild fish populations in areas of maerl in Loch Ewe, Wester Ross Marine Protected Area. (<i>proposed by Skye and Wester Ross Fisheries Trust - Maerl monitoring</i>)</li> <li>7. Development of a methodology for monitoring the health and biodiversity of seagrass beds in and around the Wester Ross MPA (<i>proposed by Skye and Wester Ross Fisheries Trust – Seagrass monitoring</i>).</li> <li>8. Develop the concept of Marine Crofts providing environmental benefits and socio-economic opportunities for Coastal Communities along Scotland's west coast (<i>proposed by South Skye Seas Initiative - Marine Crofts - rope grown kelp</i>).</li> <li>9. Survey of Native Oysters in Southannan Sands (<i>proposed by Fairlie Coastal Trust</i>)</li> </ol>
<p><b>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</b></p>

**University), whether you foresee any Intellectual Property or confidentiality issues (and if so, what form might these take?):**

Preparation work to be carried out at the university. An advisor will be available from the relevant CCN group, and would help with the scope of the project, and ensure outcomes are relevant to their work as well as being beneficial to the university and student. SNH and FFI will also assist with project scope but day-to-day advice and supervision will be provided by CCNs and university supervisors.

**In collaboration with SNH, the Coastal Communities Network (CCN) and Flora and Fauna International (FFI) are using the following timescales to assess and agree MSc projects...**

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May-Aug	Student project placement commences fieldwork.
Aug-Sep	Student writes up project, including agreed output for SNH/CCN (Blog article, project summary or duplicate of dissertation report produced for university), feedback between CCN supervisor and student.

SNH are collaborating with the CCN and FFI, and hope to fund 1-2 MSc projects with a small bursary e.g. Travel and Subsistence, equipment, vessel hire. The CCNs will add to this by in-kind donations.