**Funded PhD Studentship**

Applications are invited from suitably qualified candidates for a full-time PhD (Structured PhD programme) in Biology and Environmental Science to complete a PhD **on examining greenhouse gas fluxes in degraded and intact saltmarsh ecosystems,** as part of a larger project on saltmarsh restoration (SOS project) funded by the Environmental Protection Agency. We seek to recruit a motivated early stage researcher with a keen interest in **greenhouse gas fluxes and restoration ecology.** This PhD position will be based in the School of Biology and Environmental Sciences, University College Dublin and contribute to the multi-institutional SOS project in collaboration with South Eastern Technological University (SETU), the Scientific Advice and Research Directorate National Parks and Wildlife Service and the Department of the Environment, Climate and Communications (DECC) for 48 months. Anticipated start date: 1 September 2025.

**SOS Project background**

Saltmarshes provide highly valued ecosystem services, such as coastal protection from storm surge, carbon storage, nutrient cycling, and habitat provision. However, a combination of anthropogenic pressures and climate change has led to a steep decline in saltmarsh habitat. Improved management and restoration of saltmarsh habitats is therefore poised to contribute to enhanced climate mitigation and adaptation and increased biodiversity. Through fine-scale monitoring this project aims to understand how degradation impacts saltmarsh functions and services and to use this knowledge to develop and implement restoration solutions for these habitats in Ireland. Cross-cutting work packages will be carried out by the multidisciplinary team focusing on hydrological and water quality parameters, greenhouse gas fluxes and vegetation dynamics and remote sensing of physical extent and condition at degraded and reference sites. Engagement with stakeholders will be a key goal throughout this project. The project will deliver solutions for restoration and a toolbox for managers and restoration practitioners.

This PhD project will focus on quantifying greenhouse gas emissions and vegetation dynamics in degraded and intact saltmarsh habitats through fine-scale monitoring. Microbial respiration of CO2, and CH4 and N2O production and emission have the capacity to offset gains in carbon accumulation from plant photosynthetic inputs and allochthonous carbon inputs. To date, accurate quantification of the potential offsets of carbon sequestration at degraded saltmarsh sites is lacking globally. It is anticipated the PhD candidate will carry out the following broad tasks to fulfil the projects research aims:

* Monitor GHG fluxes at degraded sites and intact reference site.
* Continue to run an Eddy Covariance tower situated at reference site for full understanding of CO2 sequestration at reference site and variability over yearly timescales.
* Monitor vegetation dynamics including coverage, condition, biomass and height parameters to understand plant mediated GHG emissions.
* Integrate results with other PhD projects to inform best conservation and restoration management.

The successful candidate will undertake extensive fieldwork in remote saltmarshes across Ireland, employ a wide range of field and lab-based techniques, assist with the running of an eddy covariance tower, and interact with the wider project team, whereby some travel to partner laboratories (SETU) may be required.

**Requirements**

Applicants should have a good primary degree (First or Second Class Honours) in an appropriate discipline (Marine Science/Biology, Botany/Plant Science, Marine Biogeochemistry).

The successful candidate should be highly self-motivated and have some background and particular interest in saltmarsh biology, biogeochemistry and ecology. In addition to a relevant degree(s), the successful candidate will ideally have some additional research experience (e.g. MSc) in marine/coastal fieldwork, greenhouse gas monitoring, habitat mapping and GIS. The successful candidates will be very strong communicators. In addition, a driving licence valid in Ireland is essential to access remote field sites.

**Award**

The successful candidates will be enrolled for a 48-month Structured PhD programme (<https://www.ucd.ie/graduatestudies/>)

**Stipend**: The student will receive a tax-free stipend of €25,000 per year, full coverage of tuition fees (EU or Non-EU) and funds for conference travel. In addition, the School of Biology and Environmental Science (SBES) requests that all postgraduate research students act as demonstrators in undergraduate practical classes, for at least one module per Autumn and Spring trimester. Remuneration is provided and the UCD HR pay rates can be found [here](https://www.ucd.ie/hr/pay/tutorsdemonstrators/).

**Equality and diversity:** UCD is committed to creating an environment where diversity is celebrated and everyone is treated fairly regardless of gender, age, race, disability, ethnic origin, religion, sexual orientation, civil status, family status, or membership of the travelling community (<https://www.ucd.ie/equality/>). Applications from all suitably qualified candidates will be considered.

**Informal enquiries are welcome and should be made to Dr Grace Cott (grace.cott@ucd.ie).**

**To apply please e-mail grace.cott@ucd.ie by June 19th, 2025 a single pdf document with a detailed curriculum vitae describing any previous research experience, a cover letter detailing your research interests and goals, and the contact details (e-mail and phone number) of at least two academic referees.**