

PhD: Blue carbon in a changing world (based at University of Glasgow)

Carbon sequestration by natural systems may be a solution for slowing down atmospheric CO₂ increases. The sequestration of carbon into ocean sediments by marine ecosystems for long-term storage is termed 'blue carbon', to differentiate it from carbon stored in terrestrial ecosystems such as forests. Coralline algae are a globally ubiquitous, highly calcified type of macroalgae (i.e. seaweed) found from the intertidal to the lower limit of the photic zone (300+ m), forming vast reef-like structures that harbour high biodiversity at multiple trophic levels. Accumulations of coralline algae create deposits (known as maerl beds) spanning the last 20,000 years. There is evidence that these beds store significant quantities of carbon, acting as globally-important blue carbon repositories. This project will investigate the spatio-temporal response of blue carbon to environmental change, using the extensive maerl beds in Scotland. The student will utilise a multi-disciplinary approach that will combine field and laboratory research, developing skills in carbon biogeochemistry, stable isotope ecology, marine carbonate chemistry and spatial modelling. Partnership with Marine Scotland and Scottish Natural Heritage will allow the scholar to directly engage with marine policy and management, providing a unique opportunity for multi-sector experience and research-policy translation. Deadline for applications: 18th December 2017.