

PROJECT TITLE: Marine Ecosystems and Biogeochemistry under Future Climate Change

Project Science Theme: Climate change and Risk

Project keywords: Ocean, Climate, Ecosystem, Predictions, Models

Lead Institution: Plymouth Marine Laboratory (PML)

Lead Supervisor: Lee de Mora, PML, Marine Systems Modelling

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Webpage: <https://pml.ac.uk/sciencetopics/Marine-Systems-Modelling/>

Project aims and methods:

Addressing climate change is one of the most important challenges facing humanity. The ocean is already subject to numerous threats linked to climate change, including warming, acidification, habitat loss and more. This project will assess the impact of climate change on the marine ecosystem and its services like carbon sequestration or food production. Using the marine component of existing Earth System Model simulations from the Coupled Model Intercomparison Project (CMIP) and similar products, the candidate will explore questions such as:

How will marine ecosystems recover in a net-zero climate?

How will future international climate change policy impact ocean life?

Does CMIP7 improve representations of marine ecosystems over CMIP6?

Could model comparison tools like ESMValTool be more suitable for marine models?

How well do CMIP models capture the marine ecosystem and associated services and what can be done to mitigate negative impacts?

Can climate projections be used to define sustainable Marine Protected Areas?

What model development & sensitivity experiments are needed to improve marine ecosystem models?

The candidate will work in collaboration with international experts in climate change impact and marine ecosystem modelling and will be given all the tools and knowledge needed to independently generate and communicate climate change research.

Useful recruitment links:

For information relating to the research project please contact the lead Supervisor via: ledm@pml.ac.uk

Please apply to the University of Bristol as the registered University for the project. The project will still be hosted at Plymouth Marine Laboratory.

To submit an application, you will need to apply via the [University of Bristol application page](#). It is important that you follow the detailed instructions provided when applying for the project and be sure to read the prospectus carefully. We advise you to download the 'Admissions Statement' for Physical Geography from the prospectus and follow the instructions. **When applying for projects in the School of Geographical Sciences please choose 'Geography- PhD' in the 'find a programme' box.**

When applying please include in your application the [NERC GW4+ DLTP personal statement \(Office document, 194kB\)](#) version of a personal statement.

There is an additional '[applicants questionnaire](#)' that the DLTP require, so please complete this at the time of application as well.

The application deadline is Monday 13 January 2025 at 2359 GMT.