

PROJECT TITLE: Measuring and Delivering Long-term Success in Coral Reef Restoration

Project Science Theme: Evolution and Biodiversity

Project keywords: coral-spawning, larval-settlement, reef-restoration, acoustic-enrichment, bioacoustics

Lead Institution: Bristol

Lead Supervisor: Prof. Steve Simpson, Bristol, School of Biological Sciences

Co-Supervisor: Dr Sophie Nedelec, University of Exeter, Biosciences

Co-Supervisor: Dr Hugo Harrison, University of Bristol, School of Biological Sciences

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Project aims and methods:

Coral reefs host immense biodiversity and provide invaluable ecosystem services, but are increasingly impacted by local and global threats. Restoring reefs at scale is an urgent global endeavour.

Working at the iconic HOPE Reef (Sulawesi), we can test whether established restoration reefs produce offspring that augment surrounding reefs and attract corals spawned elsewhere, thus becoming self-sustaining reefs. Furthermore, we can innovate tools to accelerate and monitor recovery through larval propagation and bioacoustics. Best practice will be co-developed in partnership with local communities, building a global framework for optimising restoration success.

The candidate and supervisors will co-create this interdisciplinary PhD according to innovation, fieldwork and training opportunities. Potential aims include:

1. Combine seasonal monitoring with molecular analysis to track self-recruitment, dispersal and connectivity via reproductive output and larval settlement between/within restored and natural reefs.
2. Innovate targeted interventions that reduce reproductive bottlenecks—including species selection, microhabitat design and spatial configuration of settlement habitat—to improve spawning and settlement outcomes.
3. Develop bioacoustic tools to enhance larval settlement (acoustic enrichment), improve ex situ development (acoustic conditioning) and retain larvae at release sites (acoustic anchoring).
4. Build a stakeholder engagement programme, focussing especially on empowering women and children, to optimise restoration success.

Project CASE partner:

Mars Sustainable Solutions will provide £30,000 over the course of the PhD.

Useful recruitment links:

For information relating to the research project please contact the lead Supervisor via:
S.Simpson@bristol.ac.uk

Bristol NERC GW4+ DTP Prospectus:

<https://www.bristol.ac.uk/study/postgraduate/research/great-western-four-doctoral-training-partnership-nerc/>

How to apply to the University of Bristol:

<http://www.bristol.ac.uk/study/postgraduate/apply/>

The application deadline is Thursday 8 January 2026 at 2359 GMT