PhD Scholarship in Marine Habitat Restoration

Restoring habitats is a global priority because habitat loss and degradation are major causes of biodiversity loss. Despite billions of dollars spent annually, restoration often fails because animals do not respond as expected or desired to restoration actions. Why this happens, and how we can increase restoration success, are key knowledge gaps.

Is animal behaviour the 'missing link'? Restoration is based on what humans perceive to be good habitats. Yet, when environments change rapidly (e.g., by restoring habitats), many animals behave in unexpected ways, suggesting a misalignment between human and animal perceptions of habitat. This is very likely in coastal marine ecosystems where measuring animal responses to restoration has not been a priority. Thus, marine habitat restoration might unintentionally create poor-quality habitats that animals mistakenly prefer. Alternatively, animals may avoid restored sites if they cannot detect improved conditions. Without knowing whether restoration creates habitats that animals prefer and that provide suitable conditions for survival and reproduction, we cannot understand why such restoration 'surprises' occur or how to mitigate them. This limitation arises because we almost always assess animal responses to restoration using indirect fitness measures (e.g., measures of association) and rarely consider habitat preference.

This PhD project aims to fill this knowledge gap by:

1. Identifying what makes a 'good' habitat by comparing direct fitness measures (condition, growth, reproduction and survival) and the resulting population trajectories in restored/unrestored habitats.

2. Determining when animal preferences can limit restoration success through studies of habitat selection.

3. Applying this knowledge to assess current seagrass, kelp forest, and shellfish restoration projects in Western Australia and Victoria.

By integrating behavioural ecology with restoration practice, this project will provide major conceptual advances to restoration ecology so that future efforts deliver greater biodiversity benefits by better targeting the elements of habitats that are most important to animals.

- The scholarship is open to both domestic and international applicants who have completed (or will complete) a qualifying degree (e.g., a Bachelors degree with honours or a Masters degree, with evidence of successful completion of a significant research project).

- Funding available: $35k per annum (tax free) for up to 4 years + relocation expenses (to be negotiated), with an expected start within the first 3 months of 2025.

- Applicants will be assessed based on the following selection criteria:

  o Level of academic achievement in the qualifying degree
  o Level of research experience, particularly in the application of scientific diving
  o Level of familiarity with seagrass, kelp forest, and/or shellfish reef ecosystems
  o Level of expertise in relevant disciplines (e.g., behavioural ecology, restoration ecology, marine ecology)

Closing date for expressions of interest is **15 November 2024**. Please submit a cover letter outlining your interest in the project and experience relevant to the selection criteria, academic transcripts, and CV with contact details for two referees to: Professor Steve Swearer (**stephen.swearer@uwa.edu.au**).