

NERP Tropical Ecosystems Hub Project Factsheet

Understanding diversity of the Great Barrier Reef: Spatial and temporal dynamics and environmental drivers

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Project summary

Our current knowledge of the mechanisms that affect diversity of plants and animals on the Great Barrier Reef (GBR) is minimal. This project will map the diversity of groups of organisms and environments of the GBR using existing long-term and large-scale data, and relate biotic diversity to spatial, environmental and temporal drivers. These relationships will be interpreted in the context of risk, zoning and management.

Why this research is needed

Over-simplified definitions of diversity have limited our understanding and precluded the capacity to relate diversity to complex environmental drivers. A new statistical model of diversity, called the multinomial diversity model, can relate change in diversity to multiple predictors and their interactions. The new model now allows us to address questions such as:

- How does diversity change over time?
- Do rates of change vary between regions?
- What are the projected levels of diversity for future years?

Research-user focus

This project will address high priority research needs of local, state and Australian Government bodies by providing an increased understanding of the patterns and drivers of biodiversity over a large area of the Great Barrier Reef Marine Park. It will contribute to the 2014 Great Barrier Reef Outlook Report produced by the Great Barrier Reef Marine Park Authority (GRBMPA) and the Department of Sustainability, Environment, Water, Population and Communities.

Research Provider:



Find this project at www.nerptropical.edu.au

Theme 2: Understanding ecosystem function and cumulative pressures

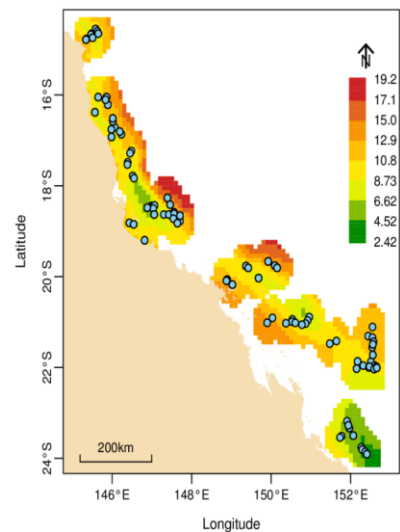
Program 5: Cumulative impacts on benthic biodiversity

Project: 5.1



Photo: Katharina Fabricius

A reef with high diversity of corals and fishes.



Mapping diversity of corals of the GBR. Diversity is estimated as the number of effective species and takes into account their relative abundances.

Outcomes

- Online interactive maps of the diversity of fishes, corals, other organisms and environments of the GBR.
- Quantification of changes in diversity in space and time for GBR organisms and environments.
- Identification of the main drivers of diversity on the GBR and greater understanding of how diversity changes in response to disturbances and threats.
- Diversity-based indicators of reef and seafloor condition.
- Assessment of the effects of the rezoning on diversity on GBR reefs and seafloor.

For more information about this project, contact:

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