

NERP Tropical Ecosystems Hub Project Factsheet

Significance of no-take marine protected areas to regional recruitment and population persistence on the GBR

Project leader: Professor Geoff Jones (JCU)

Project summary

This project uses genetic parentage analysis, biophysical modelling and information on coral trout larval behaviour to determine:

- Patterns of recruitment of coral trout larvae within and among inshore and offshore reefs in the southern Great Barrier Reef.
- The size of the contribution of no-take marine protected areas (green zones) to stocks of coral trout populations in fished areas (blue zones).
- The likely long-term persistence of coral trout populations considering rates of larvae production within no-take zones, fishing pressure outside no-take zones and the design of the no-take reserve network.
- The strengths and weaknesses of the existing marine reserve network for conserving target fish species.

Why this research is needed

Previous research has shown compelling evidence for green zones as an effective conservation and fisheries management tool. However, the scale over which reserves benefit fisheries by providing stock and the degree to which they contribute to maintaining fish populations in the long term needs to be evaluated.

Research-user focus

Results from the project will be valuable for marine park managers, state and Australian Government agencies, conservation organisations, fisheries managers and commercial and recreational fishers. Research-user organisations include the Great Barrier Reef Marine Park Authority, the Department of Sustainability, Environment, Water, Population and Communities, the Queensland Department of Agriculture, Fisheries and Forestry, Queensland Seafood Industry Association and CapReef.

Project Partners:

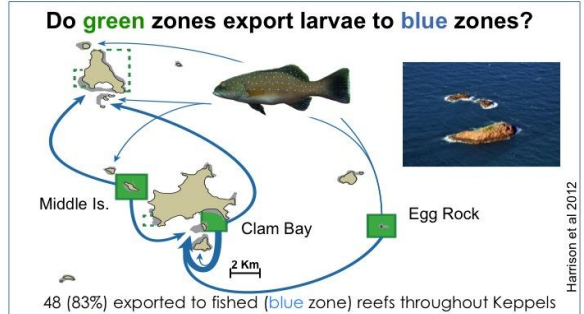


Find this project at www.nerptropical.edu.au

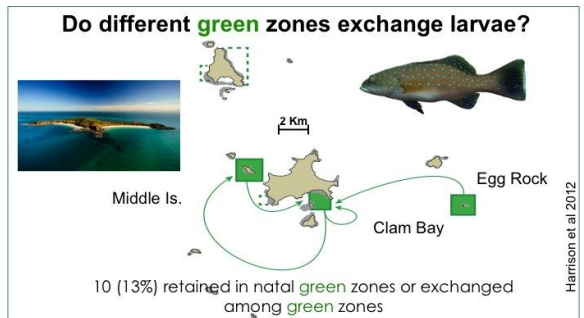
Theme 3: Managing for resilient tropical systems

Program 8: Effectiveness of spatial management on the GBR

Project: 8.3



Dispersal of coral trout larvae from no-take marine reserves (green zones) to areas open to fishing (blue zones) at the Keppel Islands, as identified from parentage analysis.



Dispersal of coral trout larvae within and among no-take marine reserves (green zones) at the Keppel Islands, as identified from parentage analysis.

Outcomes

This project will show patterns of dispersal of coral trout larvae on a large regional scale and assess how marine reserves contribute to persistence of coral trout populations over future generations.

Outcomes of the project will include:

- Estimates of the size of the contribution of marine protected areas to maintaining coral trout stocks in fished zones in the southern Great Barrier Reef.
- A better model that incorporates information on coral trout behaviour and the availability of critical habitat to better predict patterns of coral trout recruitment in the southern GBR.
- Population models that incorporates data on the observed and predicted dispersal of fish larvae to evaluate the effectiveness of reserve network design and the impacts of fishing pressure outside reserves on long-term population persistence.

For more information about this project, contact:

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