

NERP Tropical Ecosystems Hub Project Factsheet

Dynamic vulnerability maps and decision support tools

for the Great Barrier Reef
Project leader: Dr Ken Anthony (AIMS)

Project summary

To support management of the Great Barrier Reef Marine Park, coral reef managers need decision support tools that can integrate physical and biological information at a variety of spatial and temporal scales. In this project we will construct vulnerability maps for the Great Barrier Reef (GBR) that combines our knowledge of ocean warming, hydrodynamics, ocean chemistry with ecological responses of coral reef organisms. By combining reef vulnerability maps with social and financial criteria reef managers can optimise management planning under different environmental scenarios.

Research-user focus

This project will facilitate coral reef conservation and management by Australian government bodies, particularly Great Barrier Reef Marine Park Authority and the Department of Sustainability, Environment, Water, Population and Communities.

Why this research is needed

One of the greatest challenges for management planning of the GBR is to understand how to best protect reef ecosystems from different types of threats. Developing research based tools for reef managers will help identify reef areas of potentially high resilience and sensitive areas that need extra protection.

Outcomes

- A novel, innovative framework for reef vulnerability assessments;
- The development of dynamic vulnerability maps for the GBR; and
- The project will help deliver resilience-based decision support for the GBR.

Research provider:

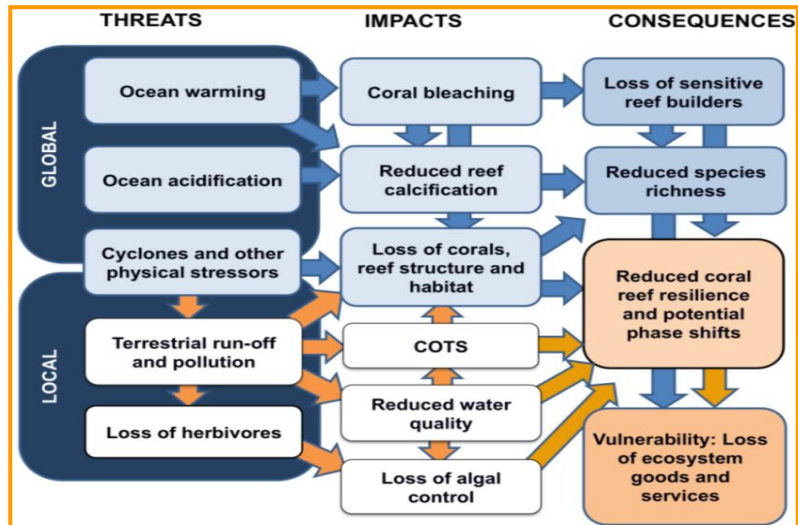


Fig.1 Linkages between global drivers (climate change, ocean acidification and partly storms) and local/regional drivers on the resilience and vulnerability of coral reefs. Anthony and Marshall 2012

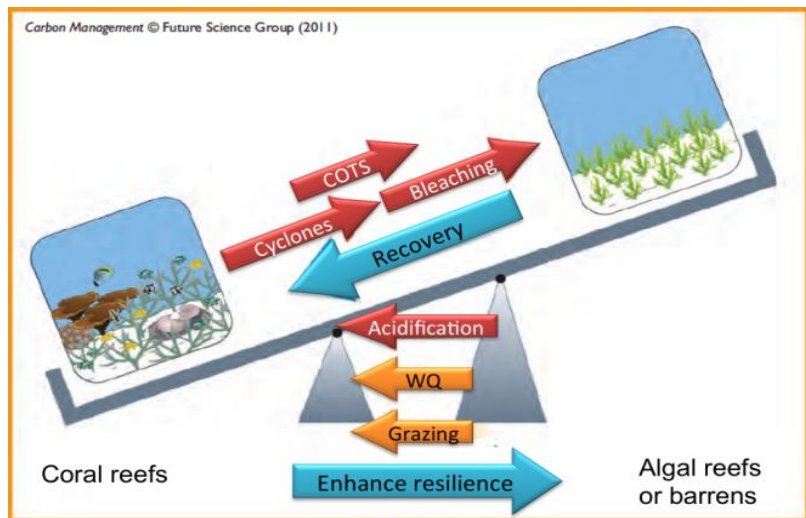


Fig. 2 Conceptual resilience model: managing disturbances such as the Crown-of-Thorns starfish supports reef resilience. Anthony and Marshall 2012 with thanks to John Bennett.

Find this project at nerptropical.edu.au
Theme 3: Managing for Resilient Tropical Systems
Program 9: Decision support systems for GBR managers
Project 9.1

For more information about this project, contact:
Dr Ken Anthony, Australian Institute of Marine Science
K.Anthony@aims.gov.au

