Experiences in adaptation planning in the Great Barrier Reef

Paul Marshall, Roger Beeden, Chloe Schauble, Peter McGinnity

Climate Change Group
Great Barrier Reef Marine Park Authority
Bleached reef
Damaged reef
First-pass VA for the GBR

Introduction

Vulnerability of species and species groups

Vulnerability of GBR habitats

Enabling management

The Great Barrier Reef (GBR)
- Climate and climate change on the GBR
- Oceanography and climate change
- Resilience, climate change & the GBR

Marine microbes
- Plankton
- Macroalgae
- Seagrasses
- Mangroves & tidal wetlands
- Reef-building corals
- Benthic invertebrates
- Fishes
- Sharks & Rays
- Seabirds
- Marine reptiles
- Marine mammals

Coral reefs
- Pelagic systems
- Coasts and estuaries
- Islands and cays
- Geomorphological features
- Palaeoecology

Industries and communities
- Vulnerability & management implications

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First-pass VA for the GBR
Adaptation Plan for the GBR

GREAT BARRIER REEF
Climate Change Action Plan 2007-2012

Adaptation R&D

1. Targeted science
2. Build ecosystem resilience
3. Build adaptive capacity
4. Reduce climate footprints

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Framework for adaptation planning

Outcome
- Understand problem
- Identify risk-reduction strategies
- Prioritise adaptation activities
- Build resilience

ADAPTATION
Framework for adaptation planning

**Output**
- Vulnerability Assessment
- Resilience Analysis
- Adaptation Plan
- Implementation Plan

**Outcome**
- Understand problem
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- Build resilience

**ADAPTATION**
Case study 1

Adapting management

- Opportunities for management
- Heat
  - Healthy coral
  - No bleaching
  - Protect resistance determined by Environmental factors Intrinsic factors
  - Bleaching
  - Build tolerance determined by Coral health Exposure Intrinsic factors
  - Mortality
  - Promote recovery determined by Connectivity Herbivory Water quality Recruitment
  - Unhealthy ecosystem
  - Support human adaptive capacity determined by Economic diversity Supportive policy Capital and technology Human resource skills
  - Socioeconomic decline
  - Surviving ecosystem
  - Recovering ecosystem
  - Socioeconomic adaptation
Case study 1

Adapting management

Wooldridge and Done, 2009
Case study 2

A participatory approach - tourism

Awareness-raising workshops
Action Group
Strategy workshops
Adaptation Plan
Case study 3

An analytical approach – aquarium fishery

Ecological risk assessment
Supply chain analysis
Industry adaptation plan
Case study 4

A combined approach – reef line fishery

Funding industry capacity

Engaging industry - calculator

Resource dependency analysis

Modelling drivers of success

"Future-proofing” workshops

Industry sustainability plan
## From knowledge to action: adoption

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**Diagram Description**

The diagram illustrates the process from understanding a problem to building resilience. The process begins with understanding the problem, moving to identifying risk-reduction strategies, prioritizing adaptation activities, and finally building resilience. The output of each step informs researchers, policy makers, and resource users, each with their own set of outputs as indicated.
From knowledge to action: adoption

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What have we learned

- Imperative for adaptation
- Various adaptation pathways
- Adoption is the end-game
- Integration is not an afterthought
- Invest in adaptive capacity
- Adaptation builds stewardship
For more information, or to share adaptation planning experiences:

climatechange@gbrmpa.gov.au