

Understanding and Enhancing Social Resilience to Water Quality Change in the Great Barrier Reef region

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Project Overview

- Issue: Insufficient understanding of social resilience in linked social and ecological systems in the Great Barrier Reef.
- Research aims and objectives:
To develop a set of indicators of social resilience to water quality change at 3 scales:
 1. Whole of GBR
 2. Catchment
 3. Community

that are accepted by and useful to research users.

Project Overview Cont'd

- **THEORETICAL FOUNDATIONS/APPROACHES:**

Resilience "of what to what"

Indicators "of what" (social system at 3 different scales) and "to what" (perturbations that impact upon water quality)

Thresholds of Potential Concern (TPC)

Social system too complex & dynamic, insufficient data, therefore adaptively develop & modify TPCs with end-users.

Adaptation of theoretical frameworks/indicators to measure communities' and catchments' ability to respond to targets/actions articulated in policy documents and monitoring programs.

Key People

- **RESEARCH TEAMS**

- GBR: Kostas Alexandridis, Erin Bohensky, Tim Lynam & Samantha Stone-Jovicich (Resource Futures, CSIRO Sustainable Ecosystems)

- Catchment: Helen Ross, Michael Cuthill, Bradd Witt, Christine King (UQ – Natural and Rural Systems Management, Boilerhouse)

- Community: Margaret Gooch, Hilary Whitehouse, Jo Balatti, 2 PhD students (JCU, School of Education)

Key People (con'd.)

- **STAKEHOLDER GROUPS/RESEARCH USERS**
 - GBR: FNQNRM, WTMA, GBRMPA, MTSRF (also peak industry bodies, Reef Partnership)
 - Catchment: as above and Regional NRM bodies, catchment bodies, ARC, LG – ROC, GBRMPA Regional Offices, Regional Coordination Group
 - Community: Catchment coordinating committees; Councils; Industry bodies; Local Chambers of Commerce; Local Politicians, schools, grassroots NRM groups

Methodology

- GBR scale – integrated approach combining:
 - Review of historical case studies and data
 - Semi-structured interviews with staff of government agencies, industry associations, and civil organisations
 - Development of water quality scenarios

Methodology Cont'd

- Catchment and community scales - Participatory approaches within case studies, combined with secondary data:
 - Review of theoretical frameworks for resilience and community responsiveness, linked to participatory processes for generating indicators, types of indicators generated elsewhere
 - Consultation with research user bodies, cognate MTSRF projects
 - Link to water quality management action planning under Reef Plan and regional NRM bodies
 - Participatory processes to elicit user goals and develop indicators of community resilience
 - Community-level data gathered through participant observation, personal interviews, document analysis, facilitated group discussions; and community-based water quality monitoring programs

Project Research Outputs & Timeframes

Outputs	Timeframe
<u>Definition of social resilience</u> for use at the three scales, in relation to water quality change. <u>Metadatabase of data or knowledge sets</u> , including case studies and expert knowledge, to develop social resilience indicators	30 June 2007
<u>Characterisation of water quality change</u> for use at GBR scale <u>Conceptualisation of GBR-scale social resilience</u> to water quality change	30 Dec 2007
<u>Published case study analyses</u> <u>Content for MTSRE Fact sheets</u>	June 2008- June 2010
<u>Analytical process</u> to develop and test user accepted, theoretically defensible and project relevant indicators of social resilience to water quality change at the GBR scale	Ongoing

Key Challenges & Opportunities

Challenges:

- Social resilience is not well understood; limited empirical research exists on the topic
- Linking across scales may be difficult because resilience may be scale-dependent

Opportunities:

- To develop a more empirical definition or measure of resilience
- To use a common issue to investigate social resilience at 3 different scales and across scales (i.e. is a more resilient GBR achieved only by undermining resilience of some catchments or communities?)

Challenge **AND** Opportunity:

- Researchers represent a variety of backgrounds, expertise, experience and paradigms