



Science to Action:

Knowledge Transfer and Uptake in the Ningaloo Research Program

9th Annual Nature Conservation Conference

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and

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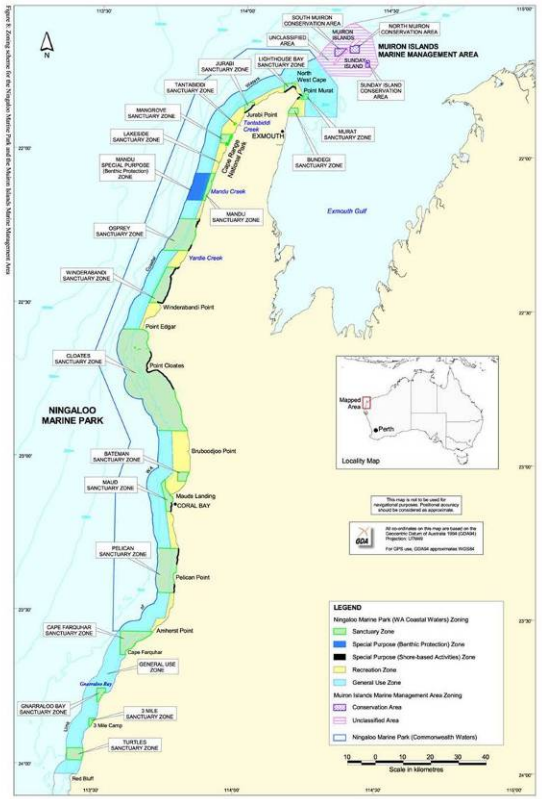
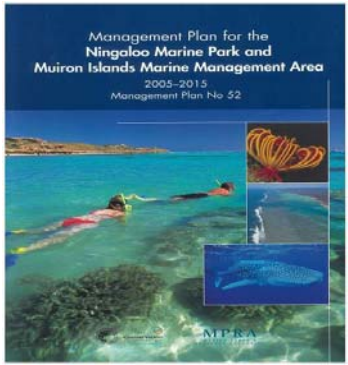


Improve the scientific underpinning for the conservation and management of Ningaloo Marine Park

Premier commits $5 million for research at NMP in 2004

WAMSI Node 3, CSIRO *Wealth from Oceans* National Research Flagship, AIMS

$30M+ over five years on management related research



western australian marine science institution

Ningaloo Research Program

- Habitats– deep water and lagoon
- Biodiversity – fish, sharks, invertebrates
- Geomorphology and hydrology
- Oceanography
- Sanctuary zones effective
- Human use
- Socio-economics of tourism and recreational use
- Management Strategy Evaluation (MSE)

47 research projects, >100 scientists, 8 agencies/Unis

www.ningaloo.org.au

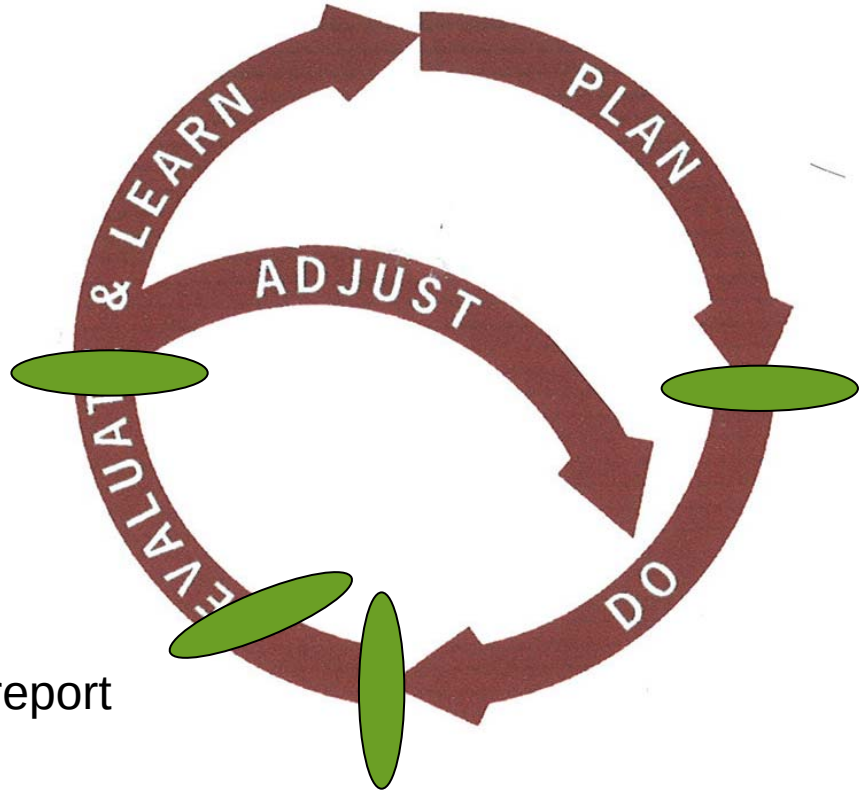
Knowledge transfer and uptake

WHAT?

- Movement of information between scientists and managers
- Influences management decisions and practices (policy, planning, operational)
- Relies on communication, trust and relationship building, interpretation of science and understanding of applications

Better science means better decisions

The adaptive management cycle



Results not interpretable by managers

Research not related to management questions

Failure to report to relevant managers

Can not access data

Key elements for knowledge transfer and uptake

- **Communication**
  - Symposia, publications, direct discussion
- **Data Management**
  - Storage, custodianship, accessibility
- **Integration**
  - Models to set context
- **Intermediary – Science / Management**
  - Marine Science Program

Knowledge transfer and uptake

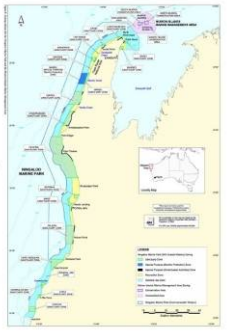
HOW?

1. Identify information needs and priorities (NMP Management Plan)
2. Focus research on agreed management questions
3. Ensure research stays on track
4. Identify implications of the research and potential application (with scientists and users)

Integration – Communication - Data Management

Intermediary science / management

Seven generic management strategies



- **Management frameworks** (legislation, policies, infrastructure)
- **Education** (brochures, posters, visitor centres)
- **Patrol and Enforcement** (on-the-ground, warnings, penalties)
- **Management intervention** (moorings, dive trails)
- **Public participation** ("friends of" groups, community monitoring)
- **Research** (baseline, process)
- **Monitoring** (trends)

Knowledge transfer and uptake

HOW?

5. Identify best format for research outcomes that will make the information useable
6. Develop prioritized list of management activities
7. Implement list

Integration – Communication - Data Management

Intermediary science / management

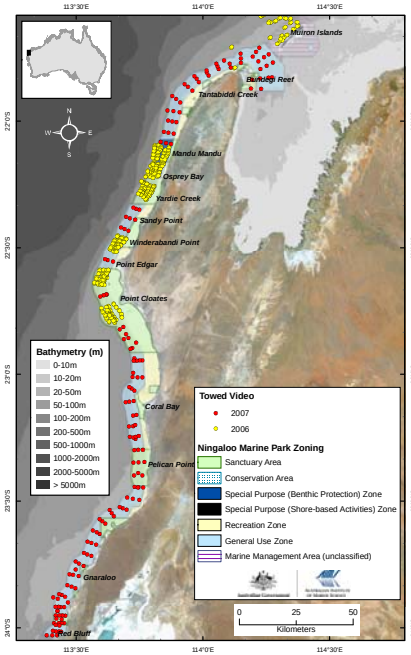
Example: Deep water biodiversity
(A. Heyward, AIMS)

Management Questions

- What are the major benthic communities?
- Are they adequately protected?
- What physical factors relate to biodiversity?

Application

- Adjust zones
- Future planning NMP and other tropical reefs
- Direct commercial/recreational activities
- Education programs - biodiversity, new species, global significance



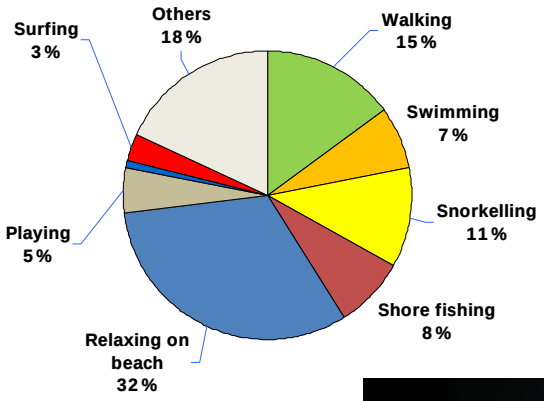
Format - GIS referenced maps, reports, pictures

Users - MPA planners, MSP, operational managers

Activities – habitat map, rec for zone amendments, guideline on biodiversity/environmental correlates

Example: Human use patterns

(L. Beckley, Murdoch)



Management Questions

- Where and when do people spend time in NMP
- What are they doing?
- What natural values are under pressure?

Application

- Inform future planning (visitor infrastructure)
- Target education to sensitive issues/behaviours
- Direct commercial/recreational activities
- Focus compliance activity
- Provide monitoring methods and indicators

Format - GIS referenced maps, reports, pictures

Users - MPA planners, MSP, operational managers, PVS

Activities – map series of spatial/temporal use, recommendations, guidelines on monitoring methods

Summary

- Knowledge transfer relies on effort from both sides
- Open dialogue and ongoing interaction is critical
- MSP has a role as intermediary for marine conservation

For more information on the NRP:

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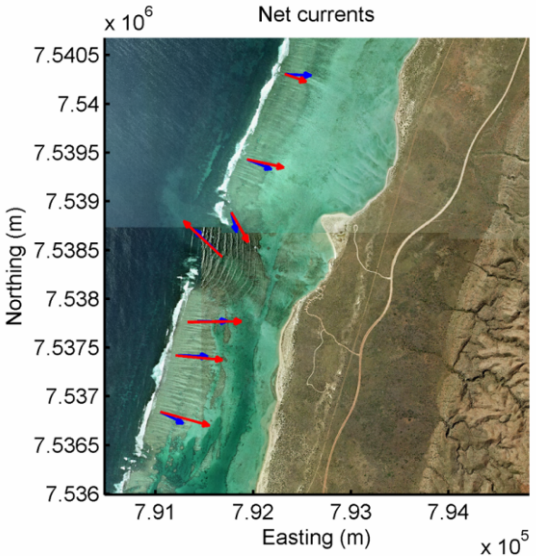
www.ningaloo.org.au



Example: Oceanography of Ningaloo Reef

Management Questions

- How does water circulate across the reef and through the lagoons?
- How does this influence biodiversity distribution?
- Where are risky/vulnerable sites (e.g oil spill, public safety)?



Application

- Adjust zone – size, configuration (spatial scale)
- Recreation and tourism planning – public safety
- Planning sites for moorings, dive trails, etc
- Adapting to climate change

Format – Model and outputs, reports, current circulation maps

Users - MPA planners, MSP, operational managers, tourism and recreation planners, DPI

Management Relies on Sound Science

- **Inventory** - Describe the natural environment
- **Baseline** – natural variation (time and space)
- **Process** - cause-effect links (biological, physical, threats…)
- **Prediction** - understand response to change and pressures (models)

Marine Protected Area Management: Management Plans

- Identify social and ecological assets
- Current status and information gaps
- establish objectives and targets
- Risk assessment: value, threat and level of current knowledge