

**CURRENT AND PROPOSED MARINE RESEARCH
PROJECTS RELEVANT TO THE ROWLEY SHOALS
MARINE PARK AND THE MERMAID REEF
MARINE NATIONAL NATURE RESERVE**

Data Report: OOS/RSMP-2007/02



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Attention:

In the event that any relevant projects are not included within this report please advise Department of Environment and Conservation (DEC) Marine Science Program on (08) 9334 0299. This information will be greatly appreciated.

Reminder:

Any research conducted within Marine Protected Areas and/or involving native flora and fauna requires departmental (DEC) licensing.

Contact DEC Wildlife Licensing:
17 Dick Perry Ave, Technology Park,
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Copies of this report may be obtained from:

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SUMMARY

This report contains a list of ten current and three proposed scientific research projects relevant to the conservation and management of the Rowley Shoals Marine Park (RSMP) and the Mermaid Reef Marine National Nature Reserve (MRMNNR).

An accompanying bibliographic report (Edwards & Bancroft, 2007) lists all published and unpublished reports and papers relevant to the RSMP and MRMNNR, as of June 2007. Collectively, these reports address high priority management strategies within the RSMP management plan (Department of Environment and Conservation, 2007) and the MRMNNR plan of management (Environment Australia, 2000).

This current and proposed research report will be used to identify gaps in the knowledge and information base necessary for management of the RSMP and MRMNNR, so that research can be prioritised to close those gaps. This report will be widely available to all providers of marine science to facilitate a strategic and collaborative approach towards marine research in the RSMP and MRMNNR.

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1 INTRODUCTION

The Rowley Shoals are made up of three isolated shelf atolls (Mermaid, Imperieuse and Clerke Reefs) off the north-western Australian coast, approximately 260km west of Broome (Department of Environment and Conservation and Marine Parks and Reserves Authority, 2007). In 1990, Imperieuse and Clerke Reefs were declared as the Rowley Shoals Marine Park (RSMP), which has recently been extended in the Rowley Shoals Marine Park Management Plan 2007-2017 (Department of Environment and Conservation and Marine Parks and Reserves Authority, 2007). The Mermaid Reef Marine National Nature Reserve (MRMNNR) was established by the Commonwealth government in 1991, and is managed by the Department of Environment and Conservation (DEC) under a Memorandum of Understanding with the Department of Environment and Water Resources. Due to the remoteness of these reefs, they have been largely unstudied by marine scientists in the past. However, in recent times the pristine state of this area has brought new found interest from a variety of researchers.

This report was initiated by the DEC's Marine Science Program (MSP) and has an accompanying bibliographic report (Edwards & Bancroft, 2007) which lists all published and unpublished reports and papers relevant to the RSMP and MRMNNR, as of June 2007. Collectively, these reports address high priority management strategies within the RSMP management plan (Department of Environment and Conservation, 2007) to "*develop and maintain a database of historical and current research in the park*", to "*develop and progressively implement a coordinated and prioritised research program focused on key values and processes of the park*" and to "*identify, prioritise and communicate high priority ecological and social research projects relevant to management of the park...*" and the MRMNNR plan of management (Environment Australia, 2000) to "*develop research and monitoring programs that will provide information for management*".

The objective of this report is to comprise a comprehensive list of all the current and proposed marine research projects relevant to conservation and management of the RSMP and the MRMNNR. The information within this report allows gaps in knowledge and information necessary for successful management of the RSMP and the MRMNNR, to be identified. Future research and monitoring programs will address these gaps.

Every effort has been made to ensure that all relevant current and proposed marine scientific research projects have been included into this report, which is current as of June 2007.

2 METHODS

The following process was undertaken to source the information presented in this report:

- Contacted key Western Australian marine research leaders, including researchers from the Australian Institute of Marine Science (AIMS), Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO), Department of Fisheries (DoF), Western Australian Museum (WAM) and DEC.

- Contacted academic research leaders from the main universities in Western Australia including the University of Western Australia (UWA), Edith Cowan University (ECU), Murdoch University (MU), Curtin University of Technology (CUT) and Notre Dame University (NDU).
- Contacted academic research leaders from other Australian universities that have a marine focus, including James Cook University, Charles Darwin University and Southern Cross University.
- Conducted internet searches of the web sites of all the above universities and State and Commonwealth government agencies.
- Contacted Australian Customs/CoastWatch.
- Contacted the Executive Officer of the Australian Marine Science Data Network, BlueNet, in Tasmania.
- Conducted general Internet searches using Google and other search engine tools.

3 RESULTS

As of June 2007, there were ten current and three proposed scientific research projects relevant to the conservation and management of the RSMP and the MRMNRR.

Details of these projects are given in Section 4.1 and 4.2 respectively.

4. LIST OF CURRENT AND PROPOSED MARINE RESEARCH PROJECTS

(Acronyms for the institutions listed in the tables below are defined in Appendix I)

4.1 CURRENT RESEARCH PROJECTS

RESEARCHER	PROJECT TITLE	STATUS	INSTITUTION	SUPERVISOR/S	CONTACT DETAILS	NOTES
Bryce, C.	A marine biological survey of Mermaid Reef (Rowley Shoals), Scott and Seringapatam Reefs: A preliminary report	Final analysis pre-publication	WAM	Clay Bryce	Clay.Bryce@museum.wa.gov.au	Survey: 11-29 Sept 2006. Report completion: 7 November 2007.
Cappo, M.	Comparison of patterns of community composition of demersal fishes in deeper shelf habitats – influences of biogeography, habitat type and ontogeny	Half-way through analyses for PhD chapters, 5 months left at JCU, part-time candidature expires 2009	JCU		m.cappo@aims.gov.au	Phd (part-time) started in 2003.
Galloway, F.	Human usage data collection	Database currently being developed	DEC	Fiona Galloway	fiona.galloway@dec.wa.gov.au	Database to be completed and available mid 2007. Objective: determining human usage patterns from commercial tour operations (CTO)
Galloway, F.	Red tailed tropic bird population trends (Bedwell Is. at Clerke Reef)	Ongoing	DEC	Fiona Galloway	fiona.galloway@dec.wa.gov.au	Objective: Monitor population trends on island.

RESEARCHER	PROJECT TITLE	STATUS	INSTITUTION	SUPERVISOR/S	CONTACT DETAILS	NOTES
Galloway, F.	Recreational fishing trends	Database currently being developed	DEC	Fiona Galloway	fiona.galloway@dec.wa.gov.au	Database to be available mid 2007. Current project underway (overseen by IDC) to integrate DEC and DoF commercial fishing tour operator logs for data collection. Objective: Identify trends in fishing of commercial tour operators: species caught (and released) and effort.
Galloway, F.	Tour operator data collection program (TODCP)	Current	DEC	Fiona Galloway	fiona.galloway@dec.wa.gov.au	Objective: Data collection via commercial tour operators and incorporates the 3 projects above
Newman, S.	Description of the deep slope fish fauna of the Rowley Shoals	Current (unpublished)	Fisheries WA	Stephen Newman	Stephen.Newman@fish.wa.gov.au	Currently unpublished.
Newman, S.	Demographic analysis of selected deep slope reef fish from the Rowley Shoals	Current (unpublished)	Fisheries WA	Stephen Newman	Stephen.Newman@fish.wa.gov.au	Currently unpublished
Newman, S.	Examination of linkages and gene flow of numerous fish species between Rowley Shoals, Scott Reef and the wider Indian Ocean	Current (unpublished)	Fisheries WA	Stephen Newman	Stephen.Newman@fish.wa.gov.au	Currently unpublished
Underwood, J.	Gene flow, recruitment and disturbance in two coral species on coastal and offshore reefs of north-western Australia	Data has been analysed and manuscript is almost ready to be submitted	UWA and AIMS.	Mike Johnson (UWA), Luke Smith (AIMS) and Madeline van Oppen (AIMS)	underj01@student.uwa.edu.au	Field trip 26/04/05- 02/05/05 to collect coral samples for DNA analysis. Overall project to finish Nov 2007.

4.2 PROPOSED RESEARCH PROJECTS

RESEARCHER	PROJECT TITLE	STATUS	INSTITUTION	SUPERVISOR/S	CONTACT DETAILS	NOTES
Berkelmans, R.	Long term monitoring of sea temperatures in Commonwealth tropical Marine Protected Area's ("Sea Temps: Sea temperature monitoring program")	First loggers to be deployed by mid 2007	AIMS	Ray Berkelmans	r.berkelmans@aims.gov.au	Part of a wider national project: "Seatemps". Financial contributors are: AIMS, GBRMPA, CRC Reef Research Centre, Ports Corporation of Queensland, Department of Environment and Water Resources and NSW Marine Park Authority.
Long, S.	Comparative marine biodiversity surveys of the Rowley Shoals Marine Park and the Mermaid Reef Marine National Nature Reserve Western Australia	Proposed to start Nov 2007	DEC/AIMS	Suzanne Long	Suzanne.Long@dec.wa.gov.au	Collaboration between DEC, AIMS and DEWR.
Williams, A.	Survey of the North West Region of Australia to characterize deepwater habitat around an existing Commonwealth MPA and identify conservation values of the broader area	Scheduled June 2007	CSIRO	Nic Bax	Nic.Bax@csiro.au Alan.Williams@csiro.au	Survey co-funded by CSIRO and DEWR. Sampling within Imperieuse sanctuary zone.

5. DATA MANAGEMENT

This database will be stored and updated in both EndNote Version X and Microsoft WORD form. The Microsoft WORD document provides a list of all the projects and basic information about each project. The EndNote library is a searchable bibliographical database that can provide more detailed information on each project such as abstracts or project aims and objectives.

4.3 REPORT

Hard copies of this report will be held at five locations:

1. Marine Science Program (MSP) Library, Department of Environment and Conservation, Science Division, 17 Dick Perry Ave, Technology Park, Kensington, WA, 6151. Ph: (08) 9334 0299.
2. West Kimberley District Office, Department of Environment and Conservation, 111 Herbert Street, Broome WA 6725. Ph: (08) 9195 5500.
3. Woodvale Science Library, Science Division, Department of Environment and Conservation, Ocean Reef Rd., Woodvale, WA. Ph: (08) 9405 5100 Fax: (08) 9306 1641.
4. Archives, Woodvale Science Library, Science Division, Department of Environment and Conservation, Ocean Reef Rd., Woodvale, WA. Ph: (08) 9405 5100 Fax: (08) 9306 1641.
5. Serials Section, State Library of Western Australia, Alexander Library Building, Perth Cultural Centre, Perth, Western Australia 6000.

Digital copies of this report will be held at the following:

1. On CD-ROM [MSP_2007-02]
2. On the DEC Science Division server:

T:\529-CALMscience\Shared Data\Marine Science Program\MSP_REPORTS\MSP_2007-02.pdf

4.4 DATABASE

The database will be located on the DEC Science Division Server:

T:\529-CALMscience\Shared Data\Marine Science Program\MSP_DATABASES\Rowley Shoals Research Database\RSMP and MRMNRR research 2007\Rowley Shoals Projects.enl

4.5 DATABASE MAINTENANCE

Maintenance of the database will be the responsibility of the MSP. However information regarding any current or future research relevant to the RSMP and the MRMNRR will be gratefully accepted by the MSP or West Kimberley District Office from any person or institution/organisation.

The database will be updated on a six-monthly basis in order to enter new research proposals or to remove completed projects, and enter the outputs into the Rowley Shoals bibliographic database (Edwards & Bancroft, 2007).

Please forward information regarding any current or future research relevant to the RSMP and the MRMNRR to the MSP or West Kimberley District Office. Contact details as below:

1. Marine Science Program, Science Division, 17 Dick Perry Ave, Kensington WA 6151.
Ph: (08) 9334 0299
Email: Kevin.Bancroft@dec.wa.gov.au
2. West Kimberley District Office, 111 Herbert St, Broome WA 6725.
Ph: (08) 9195 5500

6. REFERENCES

- Department of Environment and Conservation (2007). Rowley Shoals Marine Park Management Plan 2007-2017. Prepared for the Marine Parks and Reserves Authority by the Department of Environment and Conservation, Perth, Western Australia. 77 p.
- Edwards, A. and Bancroft, K. (2007). Bibliography of marine scientific research relevant to the Rowley Shoals Marine Park and the Mermaid Reef Marine National Nature Reserve. Data Report: OOS/RSMP-2007/01. Marine Science Program, Science Division, Department of Environment and Conservation, Perth, Western Australia. 15 p.
- Environment Australia (2000). Mermaid Reef Marine National Nature Reserve: Plan of management. Environment Australia, Canberra, Australian Capital Territory, 58 p.

APPENDICES

APPENDIX I. LIST OF ACRONYMS

AIMS	Australian Institute of Marine Science
CALM	Department of Conservation and Land Management
CRC	Cooperative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CTO	Commercial Tour Operators
CUT	Curtin University of Technology
DEC	Department of Environment and Conservation
DEWR	Department of Environment and Water Resources
DoF	Department of Fisheries
ECU	Edith Cowan University
GBRMPA	Great Barrier Reef Marine Park Authority
JCU	James Cook University
MRMNNR	Mermaid Reef Marine National Nature Reserve
MSP	Marine Science Program
MU	Murdoch University
NDU	Notre Dame University
NSW	New South Wales
RSMP	Rowley Shoals Marine Park
RTTB	Red tailed tropic bird
UWA	University of Western Australia
WAM	Western Australian Museum