MARINE MANAGEMENT SUPPORT:
NINGALOO

FIELD SURVEY OF THE FILTER FEEDER COMMUNITIES IN EXMOUTH GULF, NINGALOO MARINE PARK (4 – 8 December 2002)

Field Programme Report: MMS/NIN/NMP - 69/2002

Prepared by
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ACKNOWLEDGEMENTS

Direction

- Dr Chris Simpson - Manager, Marine Conservation Branch (MCB), Nature Conservation Division.

Department of Conservation and Land Management Collaboration

- Kevin Bancroft - Marine Ecologist, Marine Conservation Branch (Project Leader).
- Andrew Hill - Senior Marine Planner, Marine Conservation Branch.
- Stuart Field - Marine Planner, Marine Conservation Branch.
- Jennie Cary - Manager, Exmouth District.
- Roland Mau – Marine Operations Officer, Exmouth District.
- Nick D'Adamo – Senior Oceanographer, Marine Conservation Branch.

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Copies of this report may be obtained from:

Marine Conservation Branch
Department of Conservation and Land Management
47 Henry St., Fremantle, Western Australia, 6160
Ph: 61-8-9336 0100; Fax: 61-8-9430 5408

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1 INTRODUCTION

1.1 GENERAL BACKGROUND

This report presents the details of a marine ecological communities survey to be undertaken from 4 to 8 December 2002, in Ningaloo Marine Park. This survey is being undertaken to locate and determine the extent of filter feeder communities, which are known to be present in the inshore areas of northern Ningaloo Marine Park. This data will be utilised to update the marine benthic habitat map, which is was developed by the Marine Conservation Branch (MCB) of the Department of Conservation and Land Management.

At present the marine ecological communities map for the Ningaloo Marine Park contains no information on the filter feeder communities. This project, which is being coordinated by the MCB in collaboration with the Department's Exmouth District, aims to help rectify the informational deficiencies by verifying and making additions to the current broadscale marine benthic habitat map.

The data acquired during this survey will contribute to the broadscale marine ecological communities map of the Ningaloo Marine Park, required by the Department to implement management strategies highlighted in the Ningaloo Marine Park Management Plan 1989-1999 (Department of Conservation and Land Management, 1989). It will also contribute to the information base required for the long-term management of this internationally significant area.

This data will also be used for the assessment of management zoning within the Ningaloo Marine Park for the review of the Ningaloo Marine Park Management Plan.

1.2 OBJECTIVES

The primary objective of this survey is to: improve the knowledge base of the filter feeder communities of northern Ningaloo Marine Park by identifying the areas and obtaining an indication of their extent.

The secondary objective of this survey is to opportunistically collect still photographs of the coastal habitats and marine activities of the Ningaloo Marine Park for educational purposes.

2 METHODS

2.1 SURVEY AREA

The study area for this field survey lies within Ningaloo Marine Park. The target area is in Exmouth Gulf to North-West Cape, out to the marine park boundary.

2.2 SITE SELECTION

The sites selected for this field survey are located within Ningaloo Marine Park particularly in the northern areas from North-West Cape to Bundegi . These areas have been chosen in an attempt to identify areas with extensive filter feeder communities, which have not been identified on the current habitat map.

2.3 SAMPLING METHODS

At each site a visual observation of the seabed will be made using either a bathyscope placed over the side of the field survey vessel or a drop-down camera will be lowered over the side of the vessel and 30 seconds of video footage of the seabed will be recorded. The instruction for the use of the dropdown video camera are presented in Appendix I.

Opportunistic collection photographs for educational purposes will be taken using the Canon EOS camera.

Site number, date, time, water depth, GPS coordinates and habitat description will be recorded on proforma habitat data sheets (Appendix II) for each site.

Note that the daily program will be determined with consideration to weather and tide conditions.

3 PROJECT MANAGEMENT

3.1 SURVEY TEAM

The survey team will be comprised of three Department of Conservation and Land Management personnel (Marine Conservation Branch) with support from Exmouth District staff.

3.1.1 Marine Conservation Branch personnel

Kevin Bancroft	Project Leader	Ph (w):	(08) 9336 0102
	Marine Ecologist	Mob:	0417 401 200
		Fax:	(08) 9430 5408
		Ph (h):	(08) 9448 8192
Andrew Hill	Team member	Ph (w):	(08) 9336 0117
	Senior Marine Planner	Mob:	0438 008 850
		Fax:	(08) 9430 5408
		Ph (h):	(08) 9330 1542
Stuart Field	Skipper	Ph (w):	(08) 9336 0103
	Marine Planner	Fax:	(08) 9430 5408
		Ph (h):	(08) 9385 0278

3.1.2 Exmouth District personnel

Jennie Cary	Manager	Ph (w):	(08) 9949 1676
	District Manager	Fax:	(08) 9949 1580
Roland Mau	Marine Conservation Officer	Ph (w):	(08) 9949 1676
		Fax:	(08) 9948 1580

3.2 PROJECT COLLABORATION

This survey is being coordinated and supported by the MCB with assistance and logistical support provided by the Exmouth District. The District supports this project by the provisioning of assistance in the form of a vessel, a vehicle and some field equipment. Other assistance will be provided in the form of administrative support with access to phones and office equipment.

3.3 FLIGHT ITINERARY

Flight details are as follows:
Airline: Skywest

Perth to Exmouth
Departure flight: XR155
Departure date Wednesday 04 December 2002
Departure time: 0945
Arrival time: 1305

Exmouth to Perth
Departure flight: XR152
Departure date Sunday 08 December 2002
Departure time 1815
Arrival time: 2125

3.4 FIELD ITINERARY

Table 1: Field itinerary for the survey

Date	Activity
Wed 4 Dec 2002	• Depart from Perth 0945hrs • Arrive Exmouth 1305hrs • Book into Exmouth Osprey Resort (Potshot Hotel) • Preparation for field work • Meet with local commercial dive and tour operators.
Thurs 5 to Sun (AM) 8 Dec 2002	• Undertake field programme in deeper waters using Exmouth District vessel. • Survey area determined with consideration to weather and sea conditions
Sun (PM) 8 Dec 2002	• Book out of accommodation • Clean Exmouth vessel • Pack field equipment and arrange cartage • Brief District staff on preliminary results • Depart Exmouth for Perth 1815hrs • Arrive Perth 2125hrs

3.5 SAFETY

3.5.1 General

Field operations shall be carried out in accordance with departmental procedures and protocols. Overall responsibility for field procedures during this field trip and the personal safety of all team members rests with the Project Leader.

3.5.2 Boating

All boating operations shall be carried out in accordance with Department for Planning and Infrastructure regulations and also conform to the Department of Conservation and Land Management's draft procedure for safe marine operations, "*Draft procedure guideline statement safe marine operations in CALM"* (Department of Conservation and Land Management, in prep.).

Alterations to the itinerary based on safety aspects related to weather conditions and sea-state are the responsibility of the Vessel Master in consultation with the Project Leader.

Prior to departure each day the Project Leader will log on with the Exmouth District office, detailing the proposed activities for the day. Upon return the Project Leader will log off with the Exmouth District office. An intermediate contact will be made with the Exmouth District at approximately 1200 hrs every day.

3.5.3 Snorkelling

All snorkelling operations shall be carried out in accordance with the Department of Conservation and Land Management's dive code, "*A code of practice: safe work in CALM scientific diving*" (Department of Conservation and Land Management, 1998).

3.6 COMMUNICATIONS AND EMERGENCY CONTACTS

3.6.1 General

- The survey team will contact the Exmouth District office at 1200 hrs everyday to collect any messages.
- The vehicle is equipped with a Department of Conservation and Land Management VHF radio.
- The survey team will also have mobile phones but coverage may be intermittent in places.

The method of communication with the survey team is as follows:

- Before 0700 hrs ring the accommodation (Potshot Hotel Resort ph. 9949 1200) or mobile (0417 401 200).
- Between 0700 hrs and 1200 hrs contact the Exmouth District office and leave a message.
- The survey team will contact the Exmouth District office at approximately 1200 hrs everyday.
- After 1200 hrs leave a message at the accommodation or mobile numbers.

3.6.2 Department of Conservation and Land Management offices

Marine Conservation Branch, Fremantle:
Ph: (08) 9336 0100
Fax: (08) 9430 5408

Exmouth District, Exmouth:
Ph: (08) 9949 1676
Fax: (08) 9949 1580
Department VHF channels 11 (Exmouth) and 17 (Coral Bay)

3.6.3 Volunteer Marine Rescue

Exmouth Volunteer Marine Rescue - 9949 2382
VHF ch 16 & 21
27mhz ch 88 & 90

3.6.4 Other emergency contacts

Department of Fisheries, Exmouth – (08) 9949 2755
Police, Exmouth – (08) 9949 2444

3.7 ACCOMMODATION

Name: Potshot Hotel Resort
Murat Rd Exmouth
Ph: (08) 9949 1200
Fax: (08) 9949 1870

3.8 BUDGET

The budget breakdown is given in Table 2.

Table 2: Budget breakdown for the survey

Budget Item			CALM in kind costs ($)	CALM District costs ($)	MCB costs ($)	Total costs ($)
Travel						
Airfares	3 return airfares @ $757.24		0	0	2273	2273
Vehicle	District 4WD – 200 km @ $0.60/km		0	120	0	120
Accommodation	Exmouth – 4 nights @ $185/n		0	0	740	740
Provisions	5 days @ $150		0	0	1050	1050
Taxi fare	6 @ $40		0	0	240	240
		Sub-total	0	120	4303	4423
Staff						
K. Bancroft	7 days @ $ 295		0	0	2065	2065
A. Hill	5 days @ $ 356		0	0	1780	1780
S.Field	5 days @ $ 276		0	0	1380	1380
		Sub-total	0	0	5225	5225
Vessel & other equipment						
Exmouth District vessel	4 days @ $500		0	2000	0	2000
GPS unit (x2)	5 days @ $35 x2		700	0	0	700
Drop-down camera equipment (plus spares)	5 days @ $150		750	0	0	750
Laptop Computer	7 days @ $50/day		350	0	0	350
Freight	$500				500	500
		Sub-total	1800	2000	500	4300
Consumables						
Stationary and sundries			0	0	300	300
Video tapes	10 x DVM, 3 x VHS		0	0	280	280
Slide film	2 x Fuji Sensia 200 & processing @ $40		0	0	80	80
		Sub-total	0	0	660	660
		TOTAL	**$ 1,800**	**$ 2,120**	**$10,688**	**$ 14,608**

3.9 EQUIPMENT

Equipment was freighted to Exmouth by:

- Cape Transport 92493033 (Perth) 99491041 (Exmouth)
- Toll Ipec 9352 0400 (Perth)

3.9.1 Marine Conservation Branch

Boating

- 5.4m inflatable rubber boat with rigid hull and trailer

Video camera

- 10 x 60 min digital video tapes
- 3 x VHS tapes
- Drop down digital camera kit
- Drop down camera (spare)
- 12 Volt TV TEAC

Still photography

- Canon EOS land camera and lens
- 2 x rolls of 36 exposure slide film - Fuji Sensia
- Kit of camera spares

Information

- Marine Charts
- Field identification guides for tropical water fishes, macro-algae, seagrass, benthic invertebrates
- CALM GIS habitat maps
- Aerial photographs of coastline
- Laptop computer and accessories
- High density discs

Position fixing
- 2 x lowrence hand held GPS
- Batteries

Data recording
- Habitat data sheets
- Pencils
- Chalk
- Clapper board

3.9.2 Exmouth District

Vehicle
- 4WD vehicle (fitted with CALM VHF)

Boating
- District vessel and trailer
- Boating safety gear

Safety
- Comprehensive first aid kit
- Emergency response flow-sheet
- Emergency contact flow chart
- Patient information log
- Log sheets for accidents
- Sunscreen

Other
- Esky
- Water bottle

4 DATA MANAGEMENT

4.1 FIELD PROGRAMME REPORT

Hard copies of this Field Programme Report will be held at five locations:

1. Marine Conservation Branch, Department of Conservation and Land Management, 47 Henry St., Fremantle, Western Australia, 6160. Ph (08) 9336 0100 Fax (08) 9430 5408.

2. Woodvale Library, Science and Information Division, Department of Conservation and Land Management, Ocean Reef Rd., Woodvale, Western Australia, 6026. Ph (08) 9405 5100 Fax (08) 9306 1641.

3. Archived with CD ROM, Woodvale Library, Science and Information Division, Department of Conservation and Land Management, Ocean Reef Rd., Woodvale, Western Australia, 6026. Ph (08) 9405 5100 Fax (08) 9306 1641.

4. Exmouth District, Department of Conservation and Land Management, 20 Nimitz St., Exmouth, Western Australia, 6707. Ph (08) 9949 1676 Fax (08) 9949 1580.

5. Pilbara Region, Department of Conservation and Land Management, Mardi Rd, Karratha, Western Australia, 6714. Ph (08) 9143 1488 Fax (08) 9143 1118.

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

1. The Marine Conservation Branch server:
   Shareddata on 'Calm-frem-1'
   [T:\144-Marine Conservation Branch\Shared Data\Current_MCB_reports\MMS\mms_69/2002]

2. The Marine Conservation Branch server full backup DAT tape:
   Shareddata on 'Calm-frem-1'
   [T:\144-Marine Conservation Branch\Shared Data\Current_MCB_reports\MMS\mms_69/2002]

3. CD ROM held at Marine Conservation Branch and Woodvale Library: CD-ROM [mms_69/2002]

4.2 DATA

Collected raw data will be:

1. entered into the habitats database:
   Shareddata on 'Calm-frem-1'
   [T:\144-Marine Conservation Branch\Shared Data\Databases\Biological inventory\Habitats]

2. written into a data report and copies will be held at the same locations as the field programme report (see 4.1).

4.3 VIDEO RECORDS

Collected mini digital video (MDV) footage will be held at two locations:

1. Video masters (MDV) to be archived at the Information Management Branch, Department of Conservation and Land Management, 50 Hayman Road, Como, Western Australia.

2. MDV copies to be stored at the Marine Conservation Branch, Department of Conservation and Land Management, 47 Henry Street, Fremantle, Western Australia.

4.4 SLIDE RECORDS

All photographic slides to be stored at the Marine Conservation Branch, Department of Conservation and Land Management, 47 Henry Street, Fremantle, Western Australia. Selected slides will be entered into the MCB image library.

5 REPORT DISTRIBUTION LIST

Copies of this report will be distributed to:

- Chris Simpson, Manger, Marine Conservation Branch.
- Chris Muller, Manager, Pilbara Region.
- Jennie Cary, Manager, Exmouth District.
- All survey team members (3)

6 PUBLICITY/EDUCATION

6.1 PUBLIC RELATIONS OPPORTUNITIES

An article will be presented in the MCB newsletter, *Marine Conservation Matters.*

A media statement will not be released prior to the field trip.

6.2 EDUCATION OPPORTUNITIES

No education opportunities have been identified.

7 REFERENCES

Department of Conservation and Land Management, (in prep.). Draft procedure guideline statement safe marine operations in CALM. Marine Conservation Branch, Department of Conservation and Land Management, Perth, Western Australia. (Unpublished report).

Department of Conservation and Land Management, (1989). Parks and reserves of the Cape Range Peninsula. Part 2: Ningaloo Marine Park (State waters) Management Plan 1989-1999. Department of Conservation and Land Management. Perth, Western Australia.

Department of Conservation and Land Management, (1998). A code of practice: Safe work in CALM scientific diving. September 1998. Department of Conservation and Land Management. Perth, Western Australia. (Unpublished report)

APPENDICES

APPENDIX I: DROPDOWN VIDEO CAMERA INSTRUCTIONS

Setup

1. Connect camera power and video to VDU and power pack.
2. Ensure drop line attached to camera cable is weight bearing.
3. If required attach weight to drop line.
4. Choose power source on POWER SWITCH i.e. built in 12 Volt batteries or external 12 Volt source. It is important to have the right power switch on.
5. Turn isolator switch on.
6. Ready for operation.

Operation

1. Write site number, date and location on the clapper board.
2. Place clapper board in front of camera and record for about 5 seconds then press pause.
3. Lower the camera to the bottom and press pause to recommence recording.
4. Record 30 seconds of benthic habitat footage.
5. Fill out habitat data sheet (ensure GPS location and datum are recorded).
6. Switch video and camera power off.
7. Retrieve camera.
8. Check footage regularly to ensure correct operation.

Equipment Care

1. Don't allow twists or knots in the cable. Figure eight the cable on the deck or in a nally bin.
2. Don't step on the cable.
3. Clean and silicon grease camera connection plug daily.
4. Do not use CRC, WD40 or similar on electrical connections.
5. Don't attach weighted or other objects to camera or cable (only to dropline).
6. Beware of the boat propeller.
7. Don't allow camera to hit the side of the boat when deploying or retrieving.
8. Don't allow camera to hit or drag along the bottom.
9. Always keep remote control in a sealed plastic bag (a wet hand will destroy it).
10. 240 volt power supply is not to be used on boats. Use only 12 volt power supply
11. Disconnect power to camera when not in use.
12. Wash down camera and cable after use (ensure connections are not exposed to water).

APPENDIX II: HABITAT DATA SHEETS

MARINE CONSERVATION BRANCH

HABITAT MAPPING DATA SHEET

SITE N^{O}.	NMP	**LOCATION NAME**	
LAT	……..…..°……..’S	**LONG**	……..…..°……..’E
DGPS/GPS		**DATUM**	
DEPTH (M)		**TIDAL RANGE**	
DATE		**TIME**	
RECORDER		**OBSERVAT^{n} METHOD**	
MPRSWG	NIN	**IMCRA BIOREGION**	NMP
SUBSTRATE TYPE		**RELIEF**	
VIDEO TAPE N^{O}	MMS/NIN/NMP/….#……-……/2002 (MCB function) (IMCRA region) (MPRSWG) (DD or HH camera) (number) (MM/YYYY)		
VISUALLY DOMINANT ORGANISM			

DESCRIPTION……

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HABITAT TYPE	

SITE N^{O}.	NMP	**LOCATION NAME**	
LAT	……..…..°……..’S	**LONG**	……..…..°……..’E
DGPS/GPS		**DATUM**	
DEPTH (M)		**TIDAL RANGE**	
DATE		**TIME**	
RECORDER		**OBSERVAT^{n} METHOD**	
MPRSWG	NIN	**IMCRA BIOREGION**	NMP
SUBSTRATE TYPE		**RELIEF**	
VIDEO TAPE N^{O}	MMS/NIN/NMP/….#……-……/2002 (MCB function) (IMCRA region) (MPRSWG) (DD or HH camera) (number) (MM/YYYY)		
VISUALLY DOMINANT ORGANISM			

DESCRIPTION……

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HABITAT TYPE	