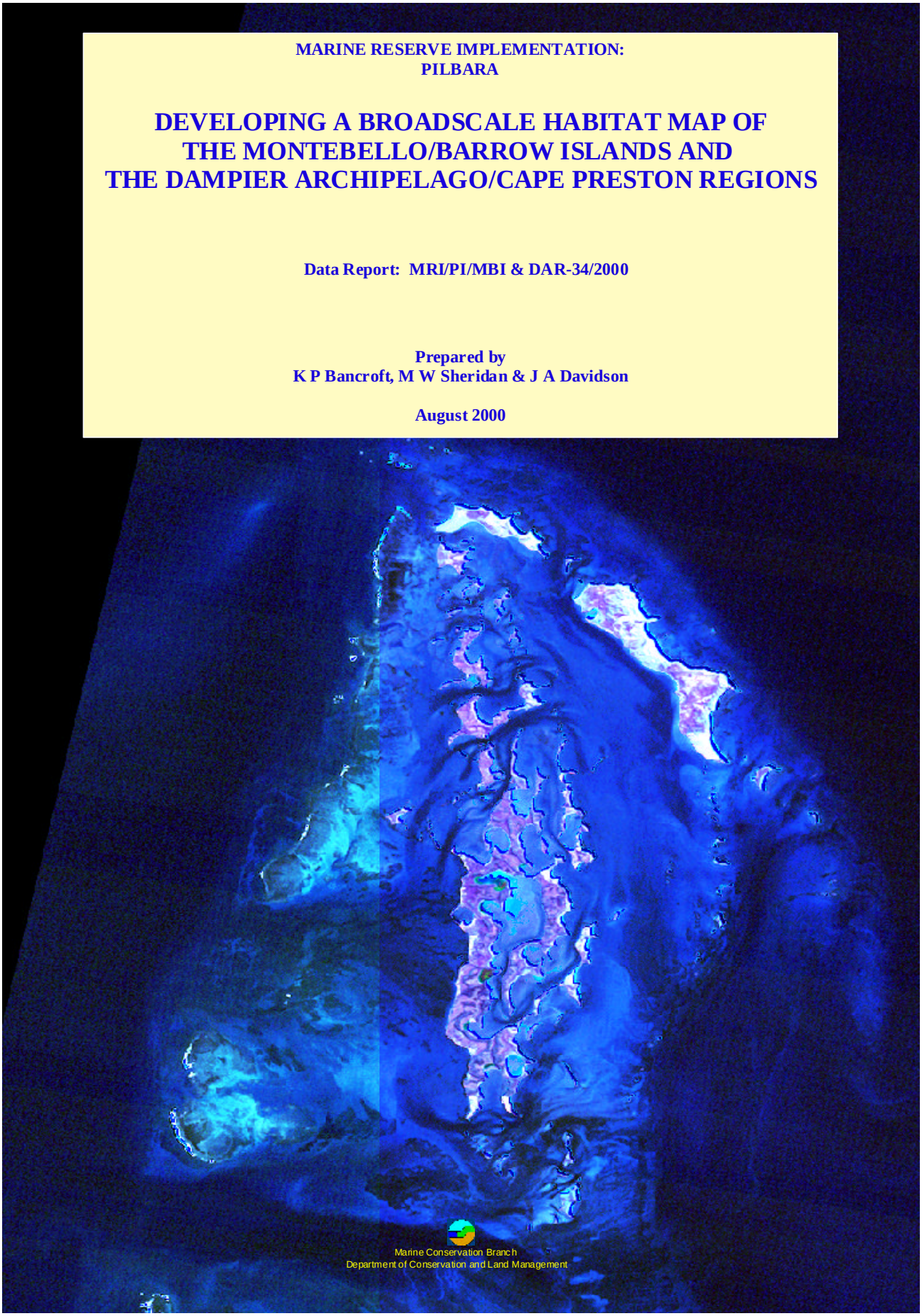
MARINE RESERVE IMPLEMENTATION:
PILBARA

DEVELOPING A BROADSCALE HABITAT MAP OF THE MONTEBELLO/BARROW ISLANDS AND THE DAMPIER ARCHIPELAGO/CAPE PRESTON REGIONS

Data Report: MRI/PI/MBI & DAR-34/2000

Prepared by
K P Bancroft, M W Sheridan & J A Davidson

August 2000



Marine Conservation Branch
Department of Conservation and Land Management

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A collaborative project between
CALM Marine Conservation Branch and the Pilbara Regional Office

A project partially funded through the Natural Heritage Trust's
Coast and Clean Seas Marine Protected Area Program
Project N^{o}: WA9701 and WA9702

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August 2000

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CALM collaboration

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- Chris Muller - Regional Manager, Pilbara Region
- Fran Stanley – Reserves Management Officer, Pilbara Region
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- Resources required for these projects including the Research Vessel *RV Bidthangara*, scientific supervision, technical assistance, logistical support and instrumentation were provided by the Department of Conservation and Land Management (approximately $330,000).

Cover. Montebello Islands (Landsat satellite image)

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SUMMARY

This report presents the results of a preliminary resource assessment field survey and a follow-up survey undertaken aboard the research vessel *RV Bidthangara*, along the northwest coast of Western Australia during 14-25 June 1999 and from the 22-25 May 2000. The surveys were carried out in the proposed Montebello/Barrow Islands and the Dampier Archipelago/Cape Preston marine conservation reserves, under the coordination of Department of Conservation and Land Management's (CALM) Marine Conservation Branch (MCB). The data collected has improved the knowledge base on the natural, cultural, social and economic resources of the West Pilbara region, which is vital for the implementation of the proposed marine reserves.

The MCB as part of the marine reserve implementation process, conducted this project in collaboration with CALM's Pilbara Region. Environment Australia, under the Natural Heritage Trust's Coast and Clean Seas Marine Protected Area Program has provided funds that partially resource the field survey. The MCB and the Pilbara Region are providing the remainder of the resources required for the project.

The objectives of the preliminary field survey were:

- to undertake ground-truthing to develop a habitat map for currently unmapped areas in the proposed reserve regions;
- to assess the accuracy of existing benthic habitat maps;
- to obtain still photographs and video footage for the public participation and management planning processes, and for future management purposes;
- to investigate the status of the reefs through an investigation of the extent of known crown-of-thorns sea-star infestations, the extent of recovery of known coral spawn death events, and an investigation of the extent of cyclone damage to the fringing coral reefs;
- to raise the community awareness of planning process, in relation to the proposed Montebello/Barrow islands and Dampier Archipelago/Cape Preston marine conservation reserves, through the media;
- to familiarize CALM's planning staff with the major marine habitats and human activities in the region;
- to identify areas of high multiple use (outer reefs, trawl grounds and potential aquaculture);
- to opportunistically consult with mariculture managers (whose leases are likely to be examined during the planning process), charter operators and the recreating public;
- to document incidental sightings of marine fauna, and;
- to record the number of users observed at selected sites throughout the region.

The major objective for the follow-up field survey was:

- to undertake further ground-truthing in the deeper waters of the Dampier Archipelago region to assist in the mapping of the major marine habitats of the proposed Dampier Archipelago/Cape Preston marine conservation reserve.

The data acquired during these surveys is important in determining and refining the major habitat types of the proposed marine reserves and the respective conservation values of these marine areas. It also contributes to the information base required for the marine reserve planning process and will also be of use for ongoing management purposes.

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1 INTRODUCTION

1.1 GENERAL BACKGROUND

This report presents the results of a preliminary field survey carried out from the 14-25 June 1999 (Bancroft, 1999) and a follow-up field survey carried out from the 22-25 May 2000. The field surveys were undertaken aboard the CALM Marine Conservation Branch (MCB) Research Vessel *RV Bidthangara*, in the waters encompassing the proposed marine conservation reserve areas of the Montebello/Barrow islands and the Dampier Archipelago/Cape Preston region, Western Australia.

In recognition of the importance of conserving the State's marine biodiversity, the Minister for the Environment established the Marine Parks and Reserves Selection Working Group (MPRSWG) in 1986. The main aim of the MPRSWG was to identify representative and unique areas of Western Australia's marine waters for consideration as part of a statewide system of marine conservation reserves under the *Conservation and Land Management (CALM) Act* 1984. The MPRSWG's report was released in June 1994 and identified over seventy such candidate areas throughout the coastal waters of Western Australia (CALM 1994). The Montebello/Barrow islands and the Dampier Archipelago/Cape Preston regions were recommended as worthy of consideration for reservation (Figure 1). In December 1997, the Western Australian Government, following advice provided by the Western Australian Marine Parks and Reserves Authority (MPRA), announced the Montebello/Barrow islands and the Dampier Archipelago/Cape Preston regions as priority areas for the establishment of marine conservation reserves under the *CALM Act*. Designation of the waters of Dampier Archipelago region as a marine conservation reserve was also recommended in the Karratha Area Development Strategy (WAPC 1998).

Under the State Government's marine and conservation strategy detailed in *New Horizons - The way ahead in marine conservation and management* released by the Western Australian Government in 1998 (WA Government, undated), there is a requirement for:

> *"Extensive assessment, community consultation and management planning before a new marine conservation reserve is established."*

An essential component of this is that:

> *"A comprehensive assessment of the area's biological and economic resources, and social values is carried out."*

In view of the high standing that the Montebello/Barrow islands and the Dampier Archipelago/Cape Preston region has in the MPRA's priority list for new marine conservation reserves, CALM applied to Environment Australia for funding to develop an accurate habitat survey of the area. Partial funding of approximately $43,000, grant number WA9702, for the Montebello/Barrow Islands project and approximately $64,000, grant number WA9701, for the Dampier Archipelago/Cape Preston Region, was obtained through Environment Australia's Natural Heritage Trust, via the Coast and Clean Seas Marine Protected Area Program. CALM also contributed further resources to the projects, valued at approximately $180,000 and $150,000 for the Montebello/Barrow Islands and Dampier Archipelago/Cape Preston projects respectively.

Although there is a large amount of information currently known on the biological resources of the proposed marine reserve area, the accuracy, and comprehensiveness of habitat maps and human usage data for the area were still inadequate. These surveys serve to address these outstanding information requirements.

1.2 OBJECTIVES

The objectives of the preliminary resource assessment field survey were:

- to undertake ground-truthing to develop a habitat map for currently unmapped areas in the proposed reserve regions;
- to assess the accuracy of existing benthic habitat maps;
- to obtain still photographs and video footage for the public participation and management planning processes, and for future management purposes;
- to investigate the status of the reefs through an investigation of the extent of known crown-of-thorns sea-star infestations, the extent of recovery of known coral spawn death events, and an investigation of the extent of cyclone damage to the fringing coral reefs.
- to raise the community awareness of planning process, in relation to the proposed Montebello/Barrow islands and Dampier Archipelago/Cape Preston marine conservation reserves, through the media;
- to familiarize CALM's planning staff with the major marine habitats and human activities in the region;
- to identify areas of high multiple use (outer reefs, trawl grounds and potential aquaculture);
- to opportunistically consult with mariculture managers (whose leases are likely to be examined during the planning process), charter operators and the recreating public;
- to document incidental sightings of marine fauna, and;
- to record the number of users observed at selected sites throughout the region.

The major objectives of the follow-up field survey was:

- to undertake further ground-truthing in the deeper waters of the Dampier Archipelago region to assist in the mapping of the major marine habitats of the proposed Dampier Archipelago/Cape Preston marine conservation reserve.

2 METHODS

2.1 STUDY AREAS

The study area for the resource assessment field surveys encompasses the proposed marine conservation reserve areas of the Montebello/Barrow islands and the Dampier Archipelago/Cape Preston region, Western Australia (Figure 1).

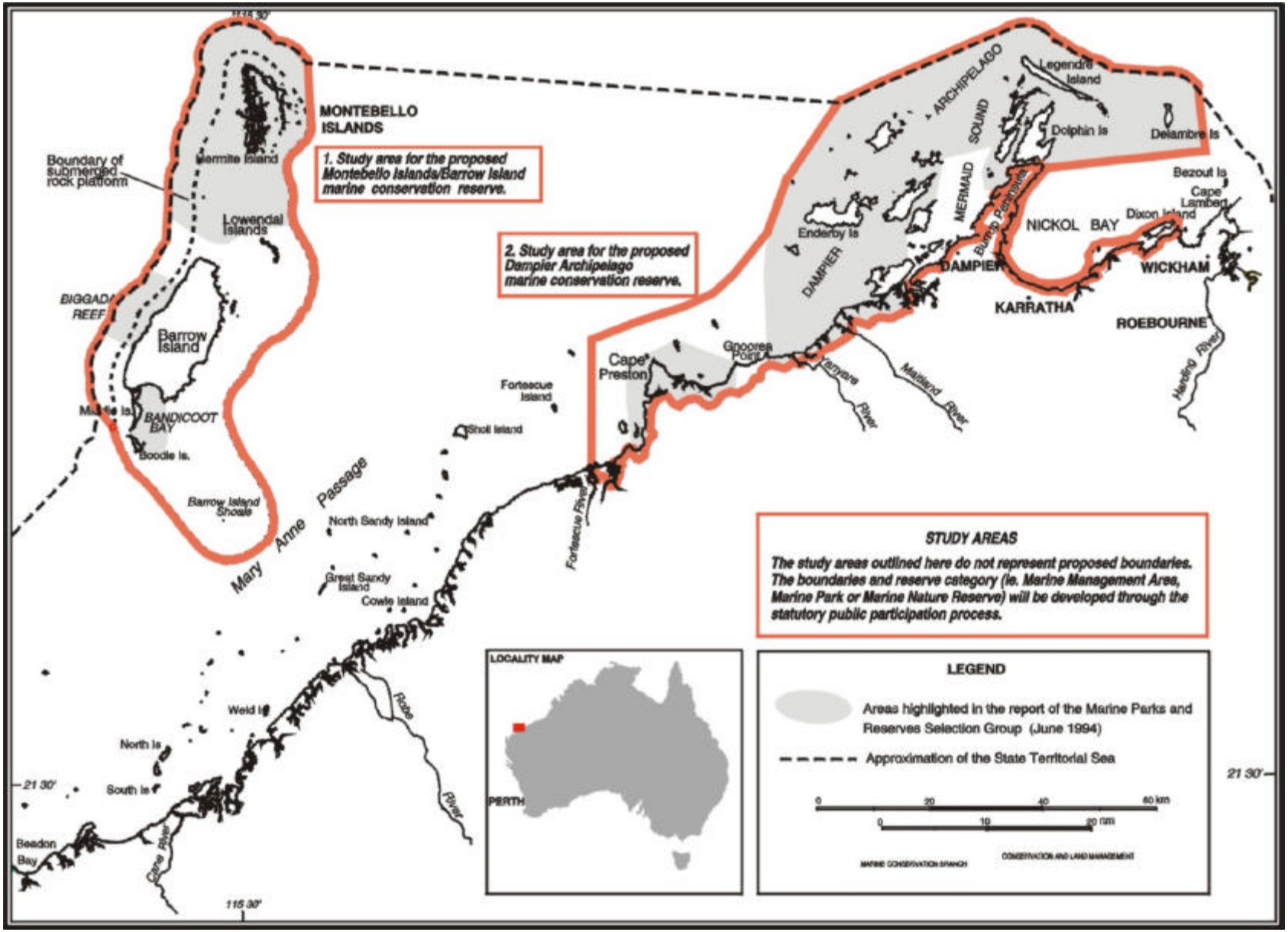


Figure 1. Study area of the proposed Montebello/Barrow islands and Dampier Archipelago/Cape Preston marine conservation reserves

2.2 SITE SELECTION

Potential sites in the Dampier Archipelago/Cape Preston and the Montebello/Barrow islands region for the preliminary field survey were determined for various reasons (Bancroft, 1999):

- the investigation of cyclone damage;
- the investigation of Crown of Thorns infestations;
- the investigation of the coral recovery from a coral spawn death;
- the habitat mapping information was deficient, and;
- to gather human usage information.

The actual habitat ground-truthing sites were selected with the consideration of weather and sea conditions, and access.

The sites in the Dampier Archipelago/Cape Preston for the follow-up survey were determined to ensure:

- the investigation of the deeper waters where habitat mapping information was incomplete. These areas included the channels between some of the islands of the Dampier Archipelago, and offshore from Sailfish reef and northwards from Cohan Island.

2.3 FIELD METHODS

Data was collected to biologically verify marine benthic habitat maps of the Dampier Archipelago/Cape Preston and the Montebello/Barrow Islands regions. This was acquired through video imagery of the major benthic community types (e.g. seagrass meadows, limestone reefs etc.) and the visually dominant flora and fauna.

Most ground-truthing sites were recorded using a manually deployed drop-down underwater camera system. The video camera was lowered over the side of the field survey vessel and 30 seconds of video imagery of the seabed was recorded at each site. At some sites, the hand held video camera was used to obtain footage.

Site number, date, time, water depth, DGPS coordinates and a description of the habitat was noted and recorded for each section of video imagery.

Underwater and above water video imagery was recorded using a Canon MV1 digital video camera.

Underwater still photography was taken using a Nikonos V camera with a Nikonos 15 mm wide-angle lens.

Above water still photography was taken using a Canon EOS camera.

2.4 HABITAT CLASSIFICATION

Habitats were classified as per the draft statewide marine benthic habitat classification scheme presented in Table 1. The classification system is being refined on an on-going basis and at a regional level, specific sub-categories need to be utilised. In the final habitat maps for the proposed Montebello/Barrow islands and Dampier Archipelago/Cape Preston marine conservation reserves there has been some restructuring of the classification scheme shown in Table 1. Subsequently, some of the habitat attribution to the data presented in this report (Appendices III, IV & VI) has been superceded.

2.5 MAPPING METHODS

The habitat map for the proposed Montebello/Barrow islands and Dampier Archipelago/Cape Preston marine conservation reserves were developed using Geographical Information Systems (GIS) software, ArcView Version 3.2 (ESRI). An outline of the method used in the mapping of the marine benthic habitats is as follows:

(a) All available existing marine habitat data were collated and an assessment was made of their usefulness for the purpose of this project.

(b) A composite map was constructed using the existing marine habitat data.

(c) The attributes to the datasets were cleaned for spelling and typing errors, and a restructure of categories was performed.

(d) Habitat classifications in existing data were reconciled and standardised to conform with the CALM draft statewide marine benthic habitat classification scheme (Appendix 1).

(e) Datasets were assessed for their spatial accuracy, spatial extent and habitat attribution. The lack of metadata associated with some of the GIS datasets made it difficult to assess its accuracy. In these cases, it was assumed that the habitat classification was correct even if the spatial accuracy was not.

(f) Adjustments to the habitat shapes (polygons) by overlaying the habitat data onto remote sensing imagery, such as Landsat TM and/or aerial and/or Digital Multi-Spectral Video (DMSV).

(g) Habitat point data collected in the field (246 sites) by the MCB, was then incorporated into the habitat map. This data assisted in classifying habitat shapes not yet classified.

(h) In areas such as the shallow (<10 m) nearshore habitats, tidal channels and the more exposed offshore reefs, where remote sensing was not able to penetrate the more turbid waters, modelling techniques based on field verification data, ecological knowledge and local knowledge, were utilised.

(i) Shoreline habitats were classified by referring to remote sensing imagery, such as Landsat TM and/or aerial and/or Digital Multi-Spectral Video (DMSV).

Further detail on the methods and data sources may be found in Bancroft and Sheridan (2000a; 2000b).

2.6 MODELLING LOGIC

The last step in the development of habitat layers for the broadscale habitat maps was to model unknown or non-attributed areas. This was achieved using a combination of field verification data collected during a field survey undertaken in August 1999 (Bancroft, 1999) and May 2000, and environmental and local knowledge to develop simple models where these habitat types may occur.

Two modelling techniques were used:

1. Linear interpolation model, and;

2. Field verified bathymetric modelling.

Further information on the modelling techniques are presented in Bancroft & Sheridan (2000b) and Bancroft & Sheridan (2000a).

2.6.1. Linear interpretation

The linear interpolation model is the simplest, where it is assumed that halfway between the two sites of known habitat types is the transition between the two habitats.

This model was used mainly in areas where interpretation of benthic habitats remote sensing and photogrammetry was difficult. Areas that were modelled include the more turbid shallow waters (silt and sand), channels, coral reef communities, lagoonal reef platforms and offshore areas.

2.6.2. Field verified bathymetric model

The field verified bathymetric model used a combination of field verified data, existing GIS layers, local knowledge and environmental parameters, such as depth, aspect and physical oceanography. This model was initially developed using field data during the August 1999 survey (Bancroft, 1999). A second field verification exercise was conducted in May 2000 (Bancroft *et al*., 2000) to collect more verified habitat data and to validate the model.

This model was mainly utilised to determine habitats and spatial extents for determining the spatial extent for:

(a) nearshore silt and sand habitats;

(b) the offshore reefs, and;

(c) the deep channels between some of the islands of the Dampier Archipelago/Cape Preston region.

Table 1. Draft habitat classification scheme

HABITAT CLASSIFICATION	TIDAL RANGE	SUBSTRATE TYPE	TROPICAL	TEMPERATE	RELIEF	MACROBIOLOGY	SUB -CATEGORIES	COMMENTS
1. Island		Sand igneous metamorphic sedimentary	✓	✓	high & low	Can be vegetated or bare		• Permanent land (>1 ha) above highest astronomical tide (HAT) • Surrounded by the sea • May have seasonal vegetation • Seabirds, terrestrial mammals & reptiles • Important as haul out or breeding/ nesting areas for marine mammals, marine reptiles and seabirds
2. Rocky shore	Intertidal Supratidal	igneous metamorphic sedimentary	✓	✓	high & low	bare		• continuous rocky shore • cliff, boulders, pavement • around HAT • typically unvegetated • "*uncomfortable to walk on*"
3. Beach	Intertidal Supratidal	Calcareous or siliceous sand	✓	✓	low	Bare Some molluscs		• continuous sand (calcareous or siliceous) • intertidal i.e. between HAT and lowest astronomical tide (LAT) • mostly unvegetated • mobile sands • "*comfortable to walk on*"
4. Salt marsh	Intertidal Supratidal	terrigenous mud or silt	✓	✓	n/a	samphire saltmarsh blue-green algal mats bare		• continuous salt marsh cover (>1 ha) • on protected or low energy coastline • often landward of mangals and estuaries • includes unvegetated coastal saline flats
5. Mangal	Intertidal	muds silts igneous or metamorphic or sedimentary rock	✓	✓	n/a	Mangroves intertidal gastropods and other invertebrates may be present		• continuous mangrove cover (>1 ha) • mud/sand/intertidal reef/shoreline reef may be present • upper intertidal

HABITAT CLASSIFICATION	TIDAL RANGE	SUBSTRATE TYPE	TROPICAL	TEMPERATE	RELIEF	MACROBIOLOGY	SUB -CATEGORIES	COMMENTS
6. Mudflat	Intertidal	terrigenous mud or silt	✓	✓	low	bare blue-green algal mats intertidal gastropods and other invertebrates may be present		• continuous mudflat • terrigenous sediments • between HAT & LAT • typically seaward of mangals
7. Sand shoal	Intertidal	sand	✓	✓	low	bare little macroalgae low diversity of infauna		• Often in offshore macrotidal areas • medium to coarse sand • highly mobile sand • between HAT & LAT
8. Shoreline reef	Intertidal	igneous metamorphic sedimentary	✓	✓	low	bare, algal turf intertidal gastropods and other invertebrates may be present		• continuous reef platform along the shoreline • may be bare or have macroalgal turf or sand patches • between HAT & LAT
9. Offshore intertidal reef	Intertidal or shallow	igneous metamorphic sedimentary	✓	✓	high/low	coralline algae, macroalgal turf, macroalgae intertidal gastropods and other invertebrates may be present		• Offshore reef • between HAT & LAT • contiguous with shoreline
10. Coral reef communities	Intertidal & subtidal	igneous metamorphic sedimentary	✓		high & low	typical coral reef communities hard coral, soft coral, sponges, bryozoans, ascidians, octocorals etc. other invertebrates supports diverse fish community	• **Coral reef communities** (**intertidal or shallow)** - intertidal or shallow, <1m lowest astronomical tide (LAT), often live coral cover is low, Covers reef crest, back reef, reef flat, shallow lagoon • **Coral reef communities (subtidal)** - subtidal, often high live coral cover , coral colonies with sand patches in lagoons Covers the upper seaward reef slope, deep lagoon, sheltered deep back reef, deep reef platform	• seaward reef slope, reef crest, reef flat, back reef and individual bommies • some sand, pavement, macroalgae or seagrass interspersed

HABITAT CLASSIFICATION	TIDAL RANGE	SUBSTRATE TYPE	TROPICAL	TEMPERATE	RELIEF	MACROBIOLOGY	SUB -CATEGORIES	COMMENTS
11. Subtidal reef	Subtidal	igneous metamorphic sedimentary	✓	✓	low	diverse algae sessile invertebrates (including sponges, soft corals, isolated hard corals, sea-whips, sea-pens)	• **Subtidal reef (high relief)** - >1 m high • **Subtidal reef (low relief)** - <1 m high ➢ *Lagoonal reef platform* - usually tropical, inshore sheltered lagoon, low levels of exposure to swell. ➢ *Seaward reef platform* – deeper water platform, similar to lagoonal reef platform however more exposed, biology may be different to lagoonal reef platform	• includes limestone pavement or low relief reef • may be covered with macroalgae or seagrass • may incorporate sand patches, rubble and scattered isolated corals
12. Macroalgae (limestone reef)	Subtidal	sedimentary	✓	✓	high & low	large fleshy macroalgae invertebrates	• **Macroalgae (limestone reef/high relief)** - >1 m high • **Macroalgae (limestone reef/low relief)** - <1 m high	• typically covered in macroalgae with diverse invertebrate life in overhangs & caves • may incorporate sand patches, rubble and scattered isolated corals
13. Macroalgae (granite reef)	Subtidal	igneous metamorphic	✓	✓	high & low	Large fleshy macroalgae invertebrates	• **Macroalgae (granite reef/high relief)** - >1 m high • **Macroalgae (granite reef/low relief)** - <1 m high	• typically covered in macroalgae with diverse invertebrate life in overhangs & caves • may incorporate sand patches, rubble and scattered isolated corals
14. Seagrass meadows	Subtidal	sand pavement	✓	✓	low	seagrasses	• **Perennial seagrass** - Perennial seagrass (dense) exposed substrate < seagrass cover Perennial seagrass (medium) exposed substrate = seagrass cover Perennial seagrass (sparse) exposed substrate > seagrass cover • **Ephemeral seagrass** - Ephemeral seagrass (dense) exposed substrate < seagrass cover Ephemeral seagrass (medium) exposed substrate = seagrass cover Ephemeral seagrass (sparse) s exposed substrate > seagrass cover	• continuous seagrass coverage (>1 ha) • ephemeral seagrass species *Halophila,* *Halodule* • perennial seagrass species *Amphibolis,* *Cymodocea,* *Enhalus,* *Heterozostera,* *Posidonia,* *Syringodium,* *Thalassia* *Thalassodendron,* *Zostera*

HABITAT CLASSIFICATION	TIDAL RANGE	SUBSTRATE TYPE	TROPICAL	TEMPERATE	RELIEF	MACROBIOLOGY	SUB -CATEGORIES	COMMENTS
15. Sand	Subtidal	Sand (generally white)	✓	✓	low	Bare may have seagrass or macroalgal patches		• little or no vegetation • may have patches of other habitat • may overlay reef platform • may have patches of seagrass or macroalgae • may have seasonal vegetation
16. Silt	Subtidal	muds silts	✓	✓	low	bare		• marine and/or terrigenous muds & silts • little or no vegetation • may have seasonal vegetation
17. Pelagic	In waters >50m	various	✓	✓	N/a	Mainly pelagic fish and invertebrates		• This category is specific to those areas that are greater than 50 metres in depth. • May have various substrates however the water column is dominant

3 RESULTS

3.1 SITE AND HABITAT DATA

3.1.1. Montebello/Barrow islands

From a total of 138 ground-truthing sites, which were surveyed in the preliminary field survey (Bancroft, 1999), 57 sites were in the Montebello/Barrow islands region (Figures 2 & 3). Site information, location, habitat classification and biological assemblage data was collected (Appendices I & II).

This data was used in conjunction with satellite and aerial imagery to produce a revised broadscale map of the major marine habitat types for the Montebello/Barrow islands region (Figure 4).

Thirteen habitat types identified in the broadscale map of the major marine benthic habitats of the proposed Montebello/Barrow islands marine conservation reserve (Figure 4):

1. Island;
2. Rocky shore;
3. Beach;
4. Mangal;
5. Mudflat;
6. Sand shoal;
7. Shoreline reef;
8. Coral reef communities (subtidal);
9. Coral reef communities (intertidal or shallow/limestone);
10. Subtidal reef (low relief);
11. Macroalgae (limestone reef);
12. Sand, and;
13. Pelagic.

These 13 habitats are described in broad terms in Bancroft and Sheridan (2000b). These descriptions relate to the habitat types on the broadscale map (1:100000) for the marine benthic habitats of the Montebello/Barrow islands marine conservation reserve.

3.1.2. Dampier Archipelago/Cape Preston

A total of 138 ground-truthing sites were surveyed in the preliminary field survey (Bancroft, 1999), 81 of these were in the Dampier Archipelago/Cape Preston region (Figures 5 & 6). In the follow-up survey, a further 166 sites were ground-truthed in the deep water channels between and offshore from some of the islands in the Dampier Archipelago region (Figure 7). Site information, location, habitat classification and biological assemblage data was collected for the preliminary (Appendices III & IV) and follow-up (Appendices V & VI) surveys.

This data was used in conjunction with satellite and aerial imagery to produce a revised broadscale map of the major marine habitat types for the Dampier Archipelago/Cape Preston region (Figure 8).

Sixteen habitat types identified in the broadscale map of the major marine benthic habitats of the proposed Dampier Archipelago/Cape Preston marine conservation reserve (Figure 8):

1. Island;
2. Rocky shore;

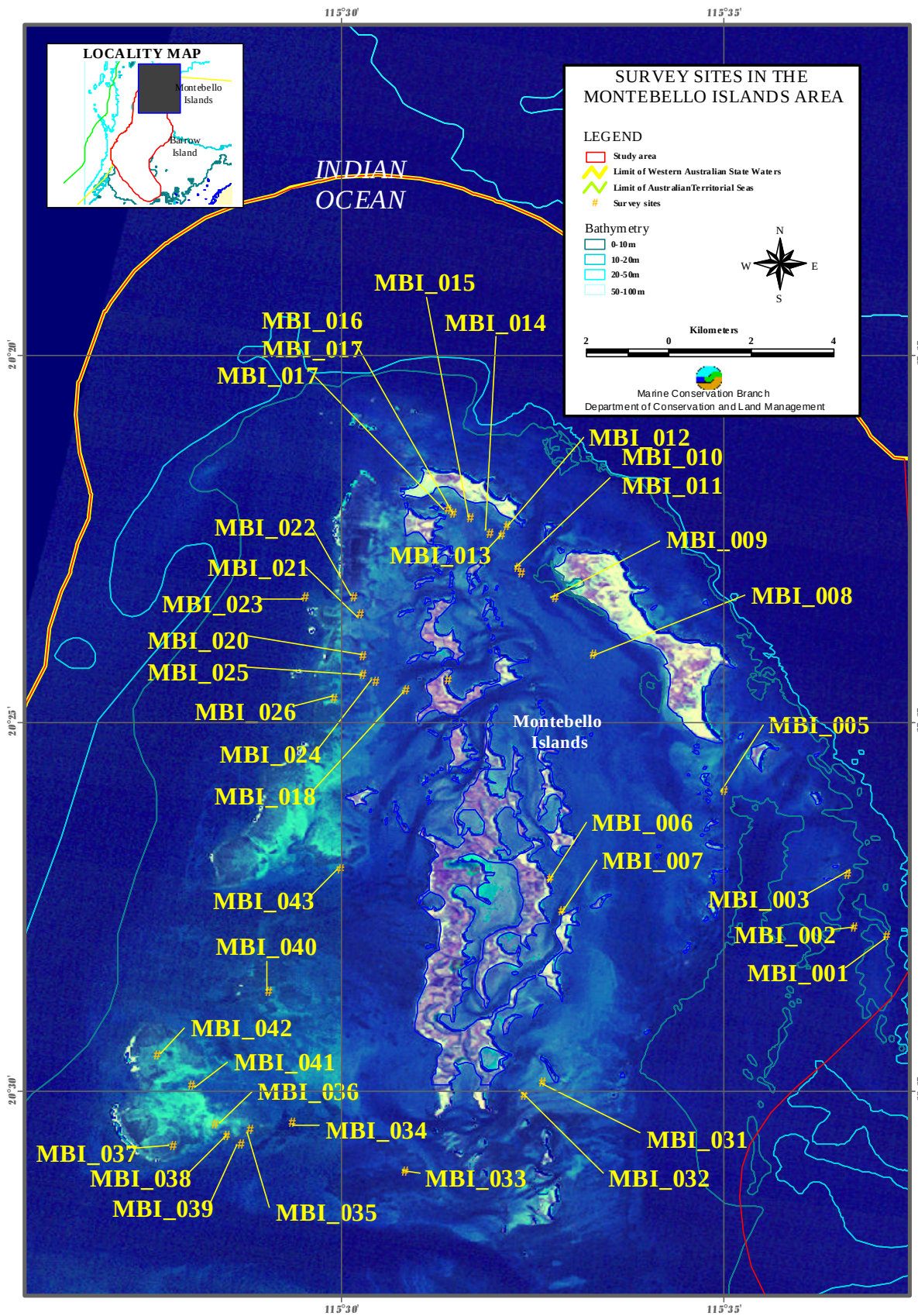


Figure 2. Survey ground-truthing sites for the Montebello Islands region in the preliminary survey.

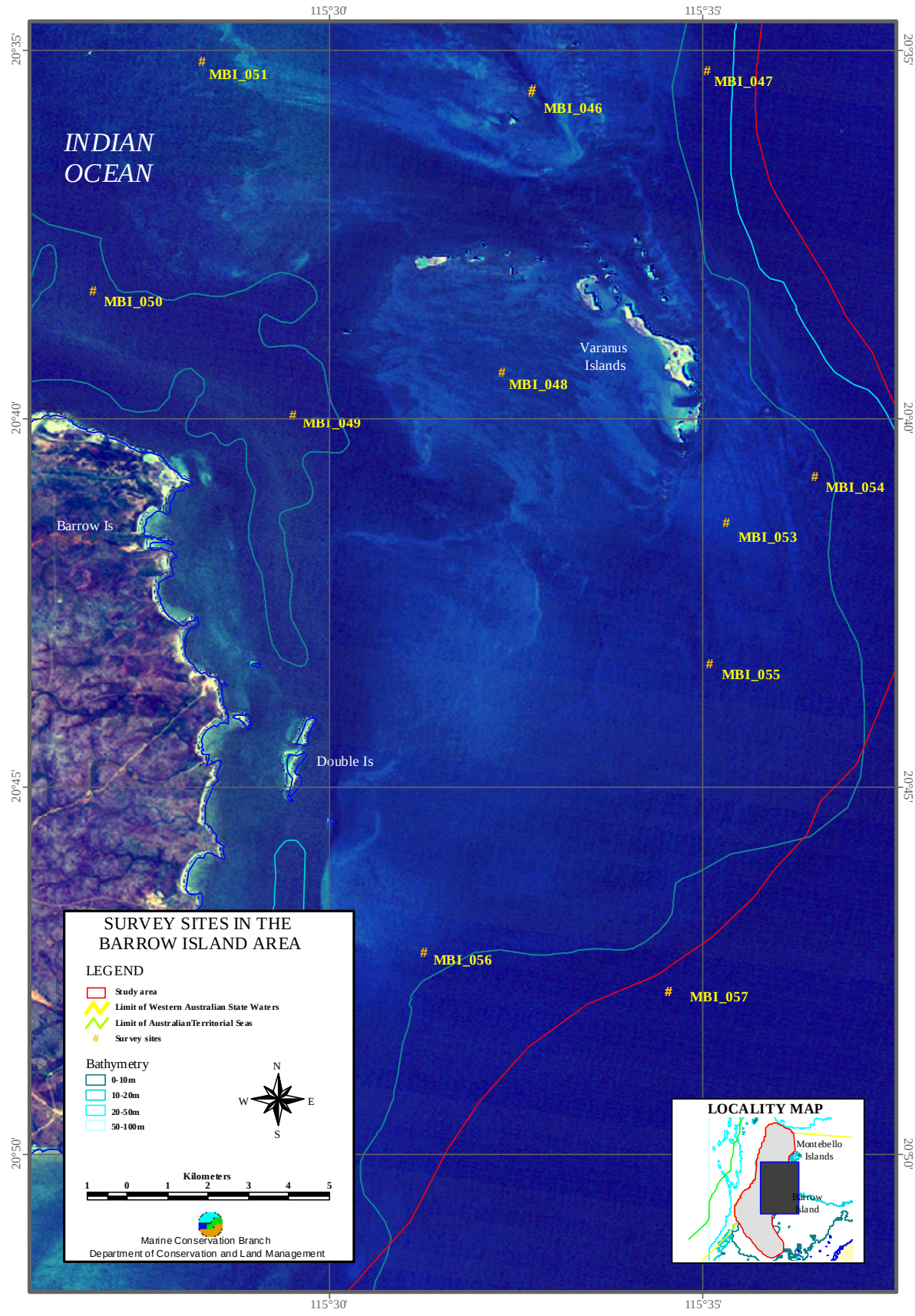
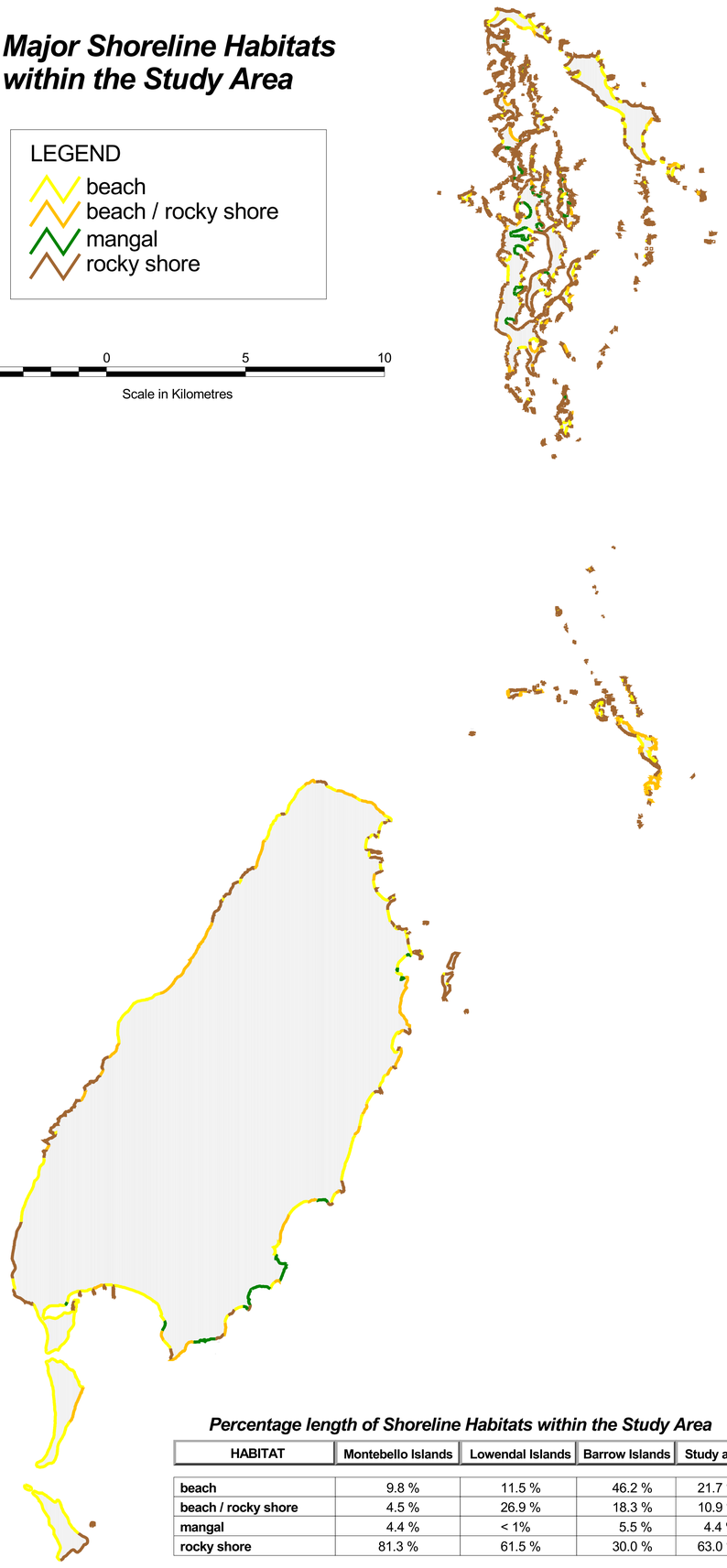


Figure 3. Survey ground-truthing sites for the Barrow Island region in the preliminary survey.

Major Shoreline Habitats within the Study Area

LEGEND
- beach
- beach / rocky shore
- mangal
- rocky shore

5 0 5 10
Scale in Kilometres



Percentage length of Shoreline Habitats within the Study Area

HABITAT	Montebello Islands	Lowendal Islands	Barrow Islands	Study area
beach	9.8 %	11.5 %	46.2 %	21.7 %
beach / rocky shore	4.5 %	26.9 %	18.3 %	10.9 %
mangal	4.4 %	< 1%	5.5 %	4.4 %
rocky shore	81.3 %	61.5 %	30.0 %	63.0 %

Major Marine Habitats of the Montebello/Barrow Islands Region

Compiled by CALM Marine Conservation Branch, August 2000

CALM
CONSERVATION & LAND MANAGEMENT

Legend and Percentage Area of Habitats within the Study Area

		% Area
	Study area for a proposed Montebello/Barrow Island's marine conservation reserve	
	Land	NA
	Beach	0.2
	Mangal	< 0.1
	Mudflat	< 0.1
	Sand shoal	0.6
	Shoreline reef	1.2
	Coral reef communities (intertidal or shallow/limestone)	2.9
	Coral reef communities (subtidal)	3.9
	Subtidal reef (low relief)	3.9
	Subtidal reef (low relief) / Sand	39.7
	Macroalgae (limestone reef)	45.2
	Sand	2.3
	Pelagic	< 0.1

Scale in Kilometres
5 0 5 10

This marine habitat map has its origins in the datasets developed by Apache Energy. Numerous subsequent marine benthic habitat surveys undertaken by the public and private sectors have provided additional information.

This map should not be used for navigational purposes.

The delineation between habitats on the map is shown by abrupt changes in habitat classification. In reality changes are more often a gradual transition from one habitat to another. As a result, the location of some habitat boundaries should be considered as approximate only.

In addition relatively limited ground-truthing data has been used in determining these habitats due to their extensive area.

For further information on data sources and methods, refer to:

Bancroft K.P. and Sheridan M.W. (2000). The major marine habitats of the proposed Montebello /Barrow Island's marine conservation reserve. Report MRI/PI/MBI-48/2000. August 2000. Marine Conservation Branch, Department of Conservation and Land Management, Fremantle, Western Australia. (Unpublished report).

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North West Island
Alpha Island
Trimouille Island
MONTEBELLO ISLANDS
Hermite Island
Ah Chong Island
Parakeelya Island
LOWENDAL ISLANDS
Varanus Island
Abutilon Island
Cape Dupuy
Surf Point
Cape Malouet
Whitlock Cove
Double Island
Flacourt Bay
Dove Point
Latitude Point
BARROW ISLAND
Cape Poivre
Town Point
Eagles Nest
Bandicoot Bay
Shark Point
South End
Stokes Point
Middle Island
Boodie Island
Pasco Island
Barrow Island
Shoals

N W E S

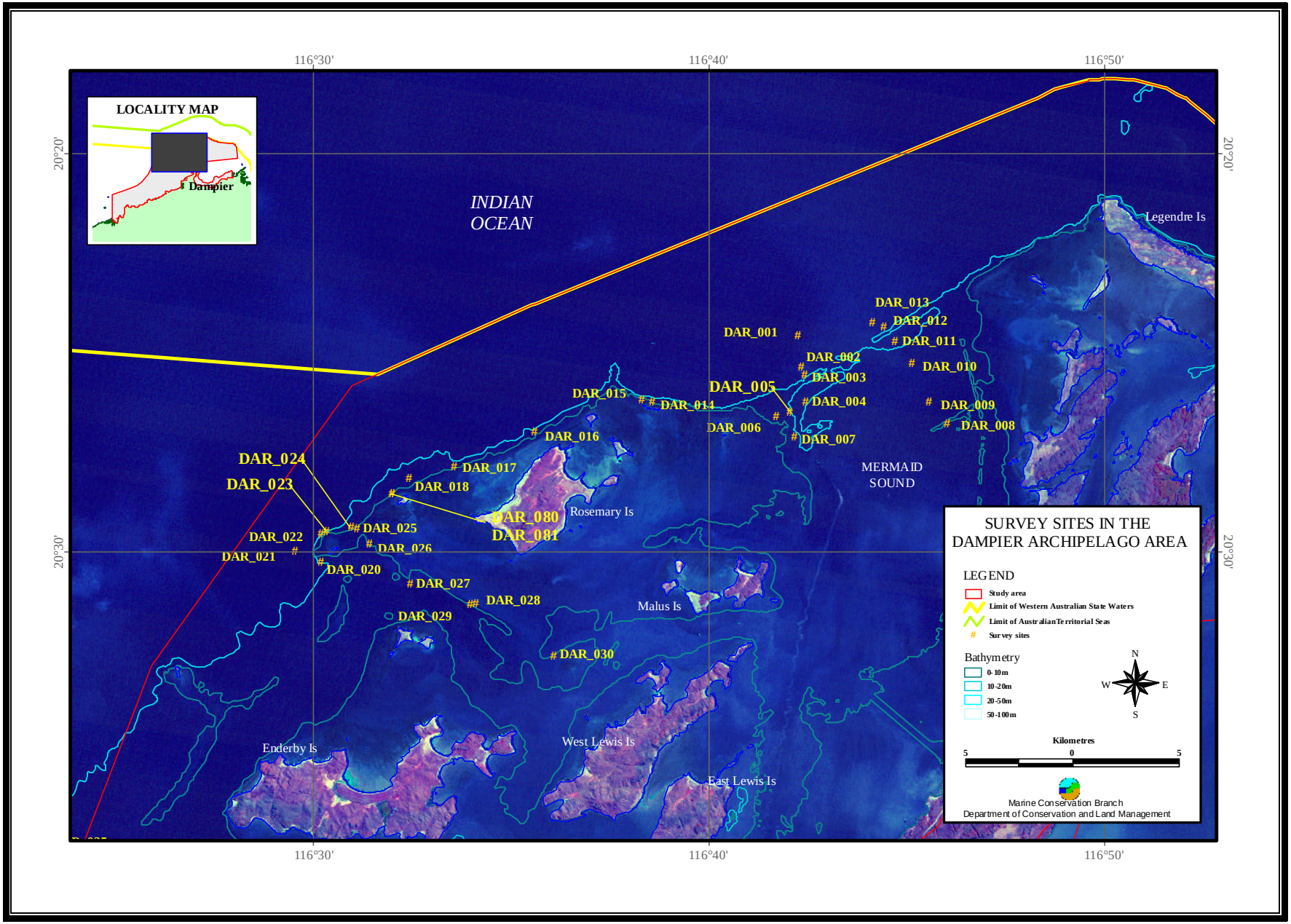


Figure 5. Survey ground-truthing sites for the Dampier Archipelago region in the preliminary survey.

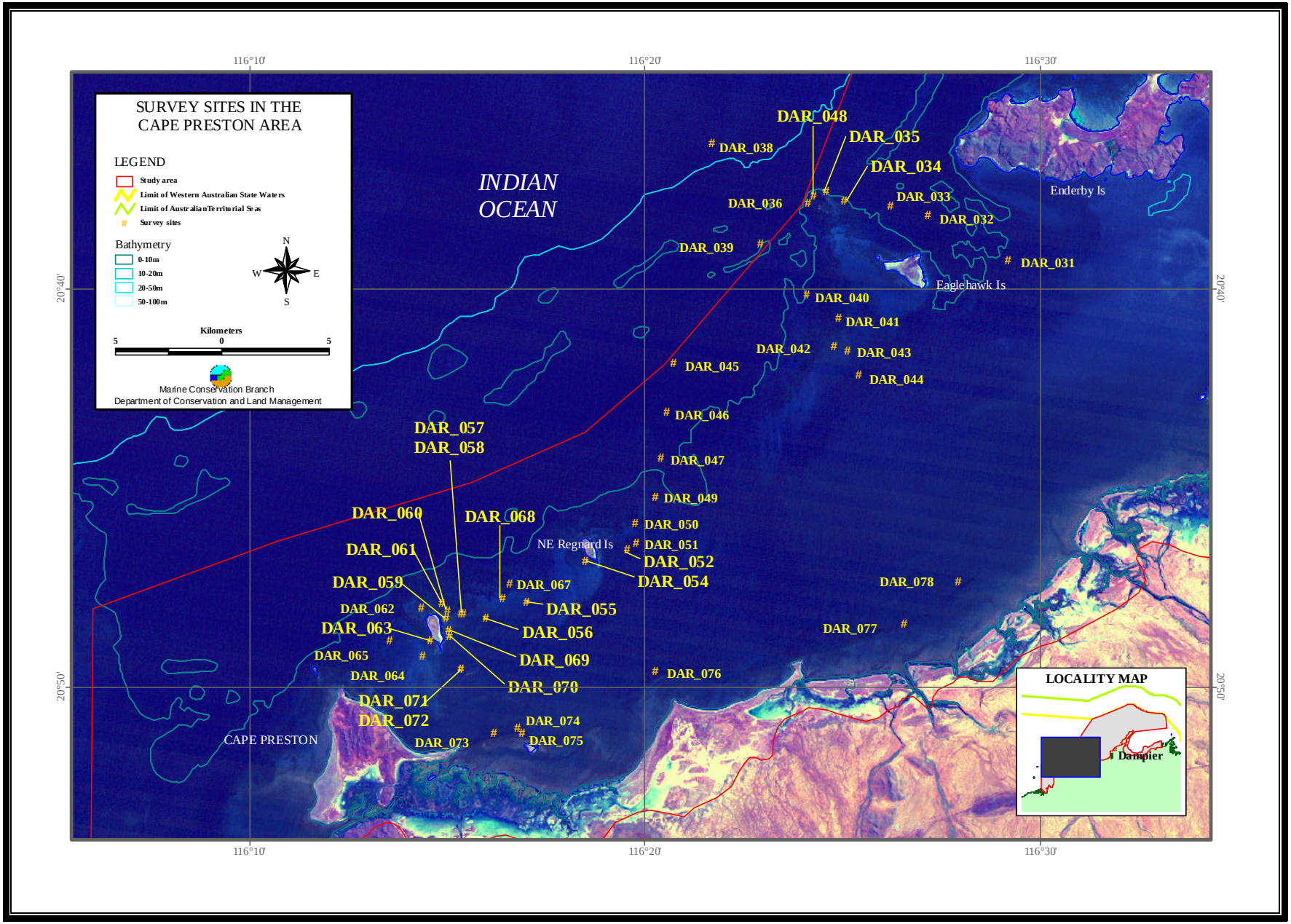


Figure 6. Survey ground-truthing sites for the Cape Preston region in the preliminary survey.

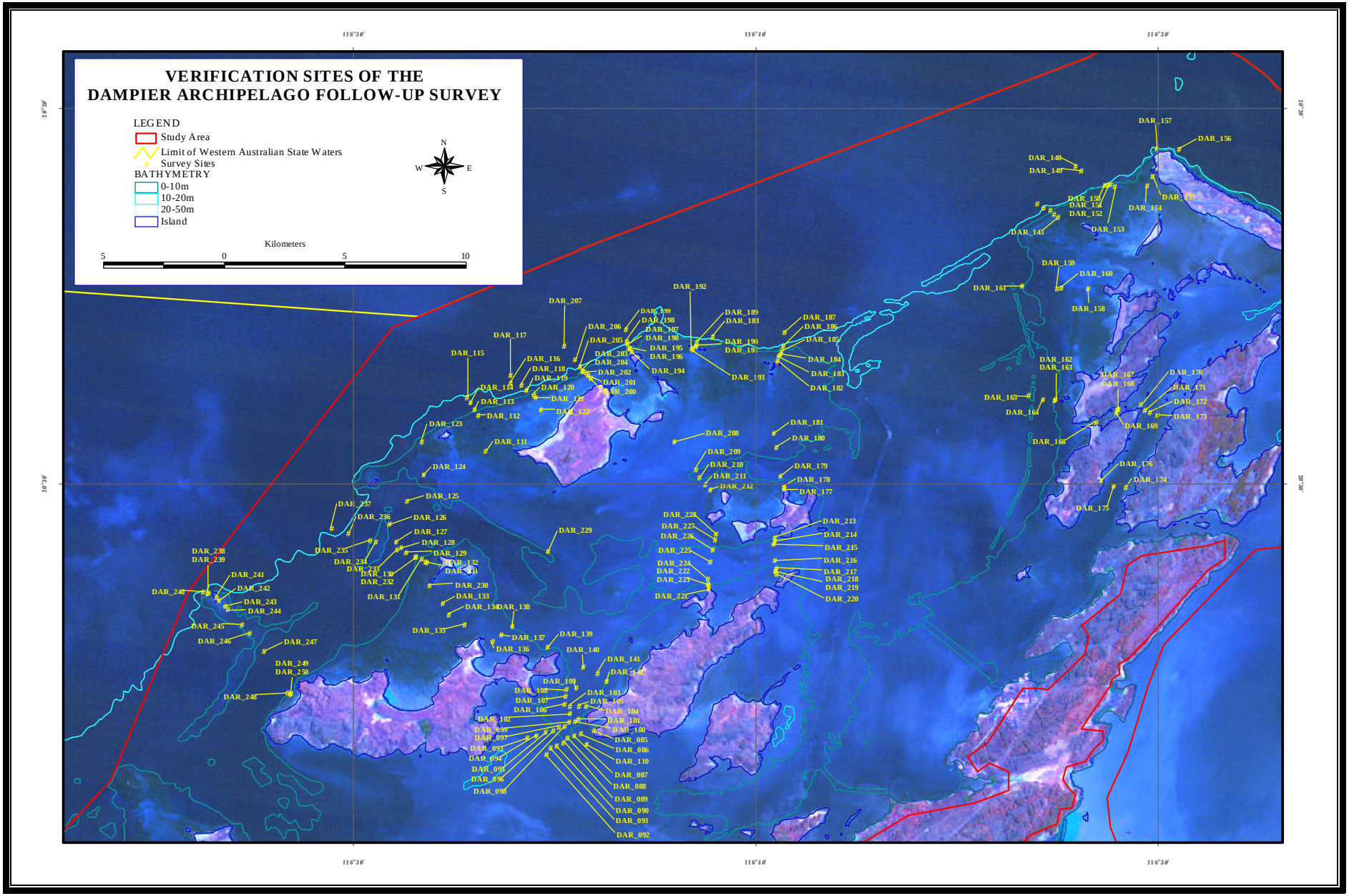
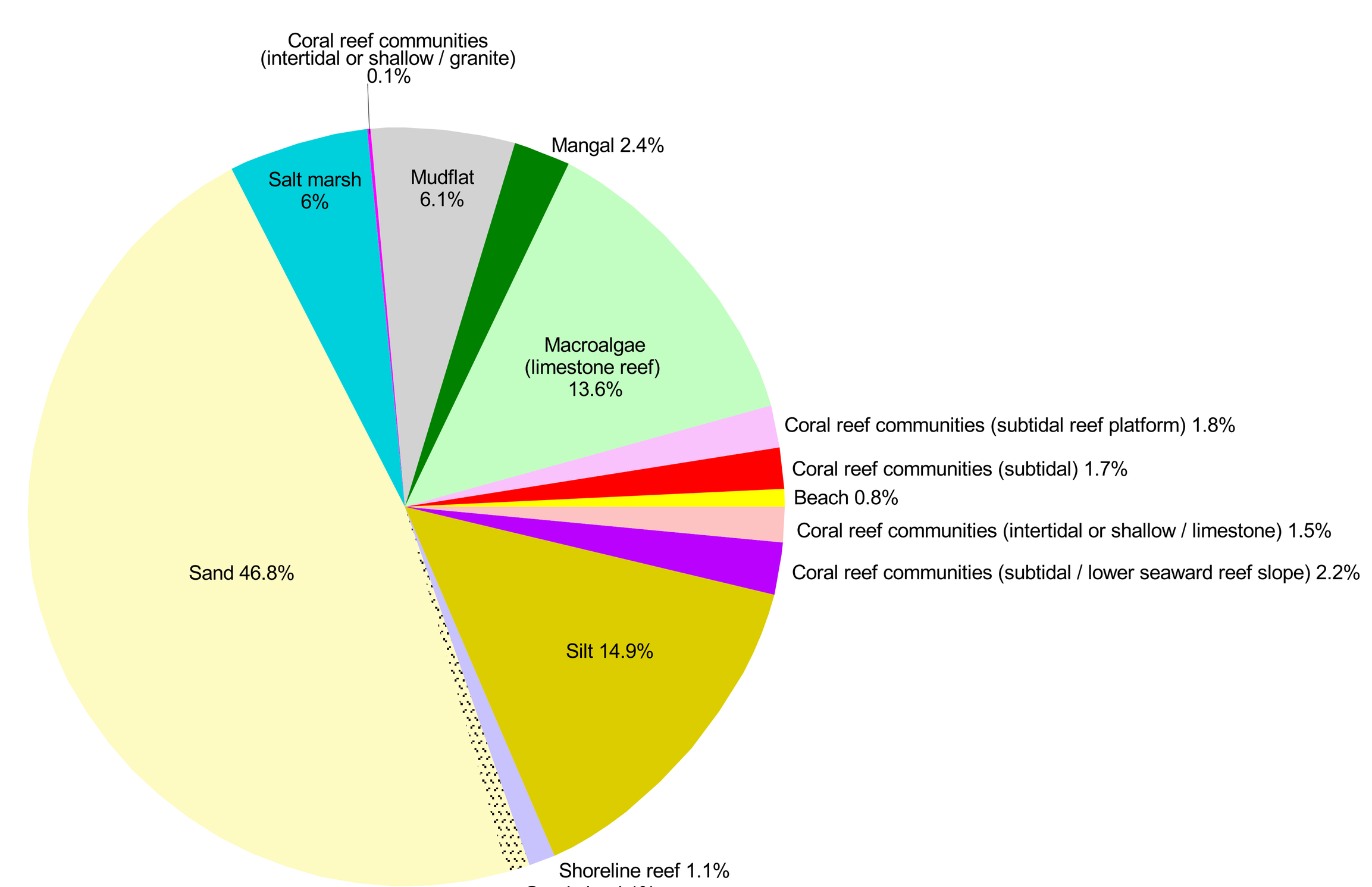


Figure 7. Survey ground-truthing sites for the Dampier Archipelago/Cape Preston region in the follow-up survey.

Major Marine Habitats of the Dampier Archipelago/Cape Preston Region

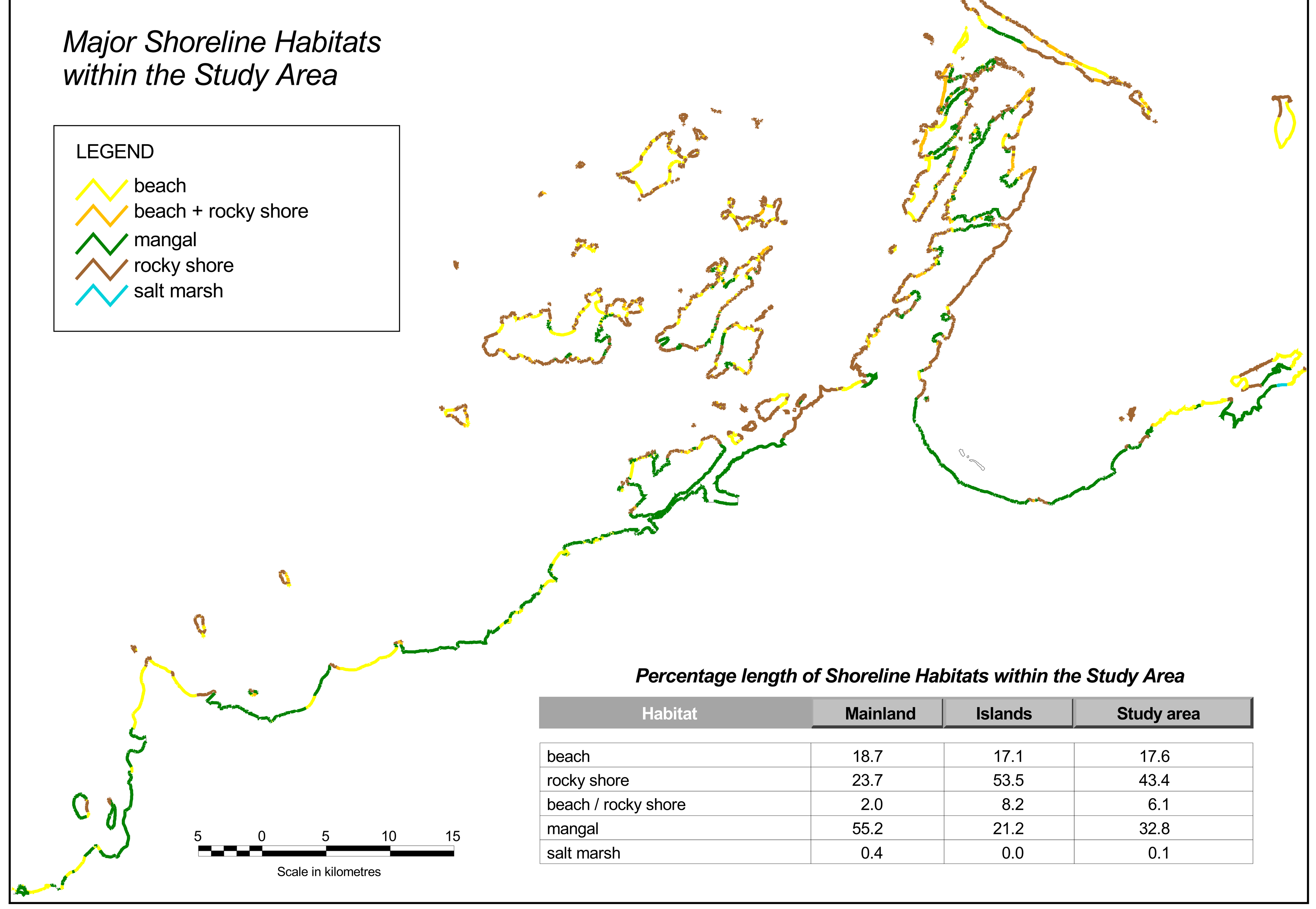
Compiled by CALM Marine Conservation Branch, August 2000

CALM
CONSERVATION & LAND MANAGEMENT



Percentage Area of Major Marine Habitats within the Study Area

Major Shoreline Habitats within the Study Area



Percentage length of Shoreline Habitats within the Study Area

Habitat	Mainland	Islands	Study area
beach	18.7	17.1	17.6
rocky shore	23.7	53.5	43.4
beach / rocky shore	2.0	8.2	6.1
mangal	55.2	21.2	32.8
salt marsh	0.4	0.0	0.1

This map should not be used for navigational purposes.
This marine habitat map has its origins in the dataset developed from the Western Australian Department for Conservation, Environment and Heritage Dampier Archipelago Marine Study of 1981-1985. Numerous subsequent marine habitat surveys undertaken by the public and private sectors have provided additional information.
The delineation between habitats on the map is shown by abrupt changes in habitat classification. In reality changes are more often a gradual transition from one habitat to another. As a result, the location of some habitat boundaries should be considered as approximate only. Many of the extensive deeper subtidal (>10m depth) and the nearshore subtidal habitats are unable to be distinguished with remotely sensed information. As a result, the location of these habitat boundaries should be considered as approximate only.
In addition relatively limited ground-truthing data has been used in determining these habitats due to their extensive area.

For further information on data sources and methods, refer to:
Bancroft K.P. and Sheridan M.W. (2000). The major marine habitats of the proposed Dampier Archipelago/Cape Preston marine conservation reserve. Data Report MRI/PI/DAR-49/2000. August 2000. Marine Conservation Branch, Department of Conservation and Land Management, Fremantle, Western Australia. (Unpublished report).

D:\Projects\Pilbara\Montes_Dampier\Habmaps' habmaps_finals.apr (Dampier A0)

3. Beach;
4. Saltmarsh;
5. Mangal;
6. Mudflat;
7. Sand shoal;
8. Shoreline reef;
9. Coral reef communities (intertidal or shallow/limestone);
10. Coral reef communities (intertidal or shallow/granite);
11. Coral reef communities (subtidal);
12. Coral reef communities (subtidal/lower seaward reef slope);
13. Coral reef communities (subtidal/reef platform);
14. Macroalgae (limestone reef);
15. Sand, and;
16. Silt.

These 16 habitats are described in broad terms in Bancroft and Sheridan (2000a). These descriptions relate to the habitat types on the broadscale map (1:100000) for the marine benthic habitats of the proposed Dampier Archipelago/Cape Preston marine conservation reserve.

3.2 STILL PHOTOGRAPHY AND DIGITAL VIDEO FOOTAGE

Underwater video footage was recorded at all of the ground-truthing sites. This footage was coded by site and referred to in the habitat data. This footage provides examples of all habitat types encountered.

Underwater and above water still photography and video footage was taken whenever possible to record icon marine fauna and flora, prominent local landmarks and features.

This information has been archived in CALM's Marine Conservation Branch's video and slide libraries (*see* Section 5.3).

3.3 METADATA

The simplest definition of metadata is data about data. It describes the content, quality, currency and availability of data. Metadata is required for a range of purposes and often includes detailed information such as, data collection methods, processing history and details of content, quality, accuracy, geographic extent and contact information of data sets. This information is important so potential users of existing data can assess its suitability for other purposes.

The metadata for the broadscale maps can be found in the corresponding reports for the Montebello/Barrow Islands (Bancroft and Sheridan, 2000b) and the Dampier Archipelago/Cape Preston (Bancroft and Sheridan, 2000a).

4 CAVEATS

4.1 MONTEBELLO/BARROW ISLANDS

The marine benthic habitat map should not be used for navigational purposes.

This marine benthic habitat map has its origin in the dataset developed by Apache Energy Ltd. Numerous subsequent marine benthic habitat surveys undertaken by the public and private sectors have provided additional information.

The delineation between habitats on the map is shown by abrupt changes in habitat classification. In reality changes are more often a gradual transition from one habitat to another. As a result, the location of some habitat boundaries should be considered as approximate only.

In addition, relatively limited ground-truthing data has been used in determining these habitats due to their extensive area.

For further information on sources and methods, refer to:

Bancroft K.P. and Sheridan M.W. (2000b). The major marine habitats of the proposed Montebello/Barrow Islands marine conservation reserve. Report MRI/PI/MBI-48/2000. August 2000. Marine Conservation Branch, Department of Conservation and Land Management, Fremantle, Western Australia. (Unpublished report).

4.2 DAMPIER ARCHIPELAGO/CAPE PRESTON

The marine benthic habitat map should not be used for navigational purposes.

This marine benthic habitat map has its origin in the dataset developed by the Western Australian Department of Conservation and Environment for the Dampier Archipelago Marine Study 1981-1985. Numerous subsequent marine benthic habitat surveys undertaken by the public and private sectors have provided additional information.

The delineation between habitats on the map is shown by abrupt changes in habitat classification. In reality changes are more often a gradual transition from one habitat to another. As a result, the location of some habitat boundaries should be considered as approximate only.

Many of the extensive deeper subtidal (>10m depth) and the nearshore subtidal habitats are unable to be distinguished with remotely sensed information. As a result, the location of these habitat boundaries should be considered as approximate only.

In addition, relatively limited ground-truthing data has been used in determining these habitats due to their extensive area.

For further information on data sources and methods, refer to:

Bancroft K.P. and Sheridan M.W. (2000a). The major marine habitats of the proposed Dampier Archipelago/Cape Preston marine conservation reserve. Report MRI/PI/DAR-49/2000. August 2000. Marine Conservation Branch, Department of Conservation and Land Management, Fremantle, Western Australia. (Unpublished report).

5 DATA MANAGEMENT

5.1 DATA REPORT

Hard copies of the Data Report will be held at three locations:

1. Marine Conservation Branch, Department of Conservation and Land Management, 47 Henry St., Fremantle Western Australia, 6160. Ph. (08) 9432 5100 Fax. (08) 9430 5408.

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

3. Archives, Woodvale Library, Science and Information Division, Ocean Reef Rd., Woodvale, Western Australia, 6026. Ph. (08) 9405 5100 Fax. (08) 9306 1641.

The Marine Conservation Branch will hold digital copies of the Data Report at the following directory pathways:

1. The Marine Conservation Branch Server:
   mcb on 'StreetTalk\User Data@FREM.MCB@CALM'
   [T:\Current_MCB_reports\MRI\mri_3400]

2. MCB Server full backup DAT tape [T:\Current_MCB_reports\MRI\mri_3400]

3. CD-ROM [mri_3400]

4. MCB homepage on the Department of Conservation and Land Management Intranet CALMweb:
   http://calmweb.calm.wa.gov.au/drb/ncd/mcb/rep_pdf/mri_reps/mri_2000/mrirep00.htm#mri_3400

5.2 GIS DATA

Data presented in the form of ArcView Geographical Information System data layers will be stored digitally at the following directory pathways:

1. The Marine Conservation Branch Server:
   GIS Data@FREM.SHARED@CALM on 'StreetTalk'
   [L:\Marine_Information\Data\Production\Marine_Biology\Benthic_habitats\CALM\]

2. MCB Server full backup DAT tape:
   [L:\Marine_Information\Data\Production\Marine_Biology\Benthic_habitats\CALM\]

3. On GIS Information server:
   [H:\Marine_Information\Data\Production\Marine_Biology\Benthic_habitats\CALM\]

5.3 VIDEO RECORDS

Ten mini digital video tapes were used to record resource imagery and habitat data. Tape numbers are:

1. MRI/PI/MBI/HH#1-06/1999
2. MRI/PI/MBI/HH#2-06/1999
3. MRI/PI/DA/HH#1-06/1999
4. MRI/PI/DA/HH#2-06/1999
5. MRI/PI/DA/HH#3-06/1999
6. MRI/PI/DAR/DD#1-05/2000
7. MRI/PI/DAR/DD#2-05/2000
8. MRI/PI/DAR/DD#4-05/2000
9. MRI/PI/DAR/DD#5-05/2000
10. MRI/PI/DAR/HH#1-05/2000

Three VHS tapes were used to record resource imagery and habitat data. Tape numbers are:

1. MRI/PI/MBI/DD#1-06/1999
2. MRI/PI/DA/DD#1-06/1999
3. MRI/PI/DA/DD#2-06/1999

Video footage will be held at two locations:

1. Mini Digital Video (MDV) masters to be archived at the CALM Corporate Information Services (CIS), Como. File number: 19999F000508. CIS Box HOLD08.
2. MDV copies to be stored at CALM Marine Conservation Branch, Fremantle.

5.4 STILL PHOTOGRAPHY

All slide photographs are held at CALM's Marine Conservation Branch (MCB), Fremantle, Western Australia.

Digital images of selected slides are available on the MCB slide library database.

6 REFERENCES

Bancroft K.P (1999). Resource assessment field survey of the Montebello/Barrow Islands and the Dampier Archipelago/Cape Preston regions. Field Programme Report MRI/PI/MBI & DA-20/1999. June 1999. Marine Conservation Branch, Department of Conservation and Land Management, Fremantle, Western Australia. (Unpublished report).

Bancroft K.P. and Sheridan M.W. (2000a). The major marine habitats of the proposed Dampier Archipelago/Cape Preston marine conservation reserve. Report MRI/PI/DAR-49/2000. August 2000. Marine Conservation Branch, Department of Conservation and Land Management, Fremantle, Western Australia. (Unpublished report).

Bancroft K.P. and Sheridan M.W. (2000b). The major marine habitats of the proposed Montebello/Barrow Islands marine conservation reserve. Report MRI/PI/MBI-48/2000. August 2000. Marine Conservation Branch, Department of Conservation and Land Management, Fremantle, Western Australia. (Unpublished report).

CALM (1994). A representative marine reserve system for Western Australia. Report of the Marine Parks and Reserves Selection Working Group. Department of Conservation and Land Management. June 1994.

WA Govt. (undated). New Horizons. The way ahead in marine conservation and management. Prepared for the Western Australian Government by the Department of Conservation and Land Management.

WAPC (1998). Karratha area development strategy. Western Australian Planning Commission. April 1998. 82p.

APPENDICES

APPENDIX I. LOCATION, LATITUDE AND LONGITUDE FOR THE SURVEY SITES OF THE MONTEBELLO/BARROW ISLAND REGION.

Site No	Location	Latitude	Longitude	GPS type	Datum
MBI_001	Karangi Island	-20.4654	115.6191	DGPS	WGS84
MBI_002	Karangi Island	-20.4633	115.6121	DGPS	WGS84
MBI_003	Karangi Island	-20.4512	115.6104	DGPS	WGS84
MBI_004	Karangi Island			DGPS	WGS84
MBI_005	SE Island	-20.4324	115.5838	DGPS	WGS84
MBI_006	Stephenson Channel	-20.4521	115.5456	GPS	WGS84
MBI_007	Stephenson Channel	-20.4594	115.5483	GPS	WGS84
MBI_008	Trimouille Channel	-20.4016	115.555	DGPS	WGS84
MBI_009	Trimouille Passage	-20.3886	115.5467	DGPS	WGS84
MBI_010	Trimouille Passage	-20.3828	115.5393	DGPS	WGS84
MBI_011	Trimouille Passage	-20.3819	115.5386	DGPS	WGS84
MBI_012	Trimouille Passage	-20.3725	115.5363	DGPS	WGS84
MBI_013	Trimouille passage	-20.3743	115.535	GPS	WGS84
MBI_014	NW Island	-20.374	115.5324	GPS	WGS84
MBI_015	NW Island	-20.3707	115.5283	GPS	WGS84
MBI_016	NW Island	-20.3696	115.5245	GPS	WGS84
MBI_017	NW Island	-20.3686	115.5234	GPS	WGS84
MBI_018	Alpha Is	-20.4094	115.5141	DGPS	WGS84
MBI_019	Alpha Island	-20.4072	115.5234	DGPS	WGS84
MBI_020	Alpha Island	-20.4018	115.5049	DGPS	WGS84
MBI_021	Bluebell Island	-20.3925	115.5043	DGPS	WGS84
MBI_022	Bluebell Island	-20.3884	115.5028	DGPS	WGS84
MBI_023	Western Reef	-20.3885	115.4921	DGPS	WGS84
MBI_024	West	-20.4075	115.5075	DGPS	WGS84
MBI_025	Western Reef	-20.4061	115.5049	GPS	WGS84
MBI_026	Western Reef	-20.4115	115.4986	GPS	WGS84
MBI_027	Hermite Island	-20.4708	115.5257	Chart	WGS84
MBI_028	Hermite Island	-20.4618	115.5311	Chart	WGS84
MBI_029	Hermite Island	-20.4579	115.5363	Chart	WGS84
MBI_030	Hermite Island	-20.4493	115.5288	Chart	WGS84
MBI_031	Ivy Island	-20.4984	115.5439	DGPS	WGS84
MBI_032	Ivy Island	-20.5012	115.5399	DGPS	WGS84
MBI_033	Palmerston Point	-20.5185	115.5139	DGPS	WGS84
MBI_034	SW Reef	-20.5075	115.4893	DGPS	WGS84
MBI_035	SW Reef	-20.509	115.4801	GPS	WGS84
MBI_036	SW Reef	-20.5079	115.4726	GPS	WGS84
MBI_037	SW Reef	-20.5126	115.4634	GPS	WGS84
MBI_038	SW Reef	-20.5104	115.4751	GPS	WGS84
MBI_039	SW Reef	-20.5124	115.4782	DGPS	WGS84
MBI_040	Western Reefs	-20.4779	115.4843	DGPS	WGS84
MBI_041	SW Reef	-20.4991	115.4674	DGPS	WGS84
MBI_042	Western Reef	-20.4922	115.4599	DGPS	WGS84
MBI_043	Brooke Island	-20.4502	115.4999	DGPS	WGS84
MBI_044	Lowendal island	-20.5585	115.5689	DGPS	WGS84
MBI_045	Lowendal Islands	-20.5881	115.5844	DGPS	WGS84
MBI_046	Lowendal Island	-20.5926	115.5456	DGPS	WGS84
MBI_047	Lowendal Islands	-20.593	115.5453	DGPS	WGS84
MBI_048	Lowendal Islands	-20.6566	115.5386	DGPS	WGS84
MBI_049	Barrow Island	-20.6663	115.4919	DGPS	WGS84
MBI_050	Barrow Island	-20.6383	115.4475	DGPS	WGS84
MBI_051	Barrow Island	-20.5863	115.4718	DGPS	WGS84
MBI_052	Barrow Island	-20.5666	115.5016	DGPS	WGS84
MBI_053	Lowendal Island	-20.6905	115.5887	DGPS	WGS84
MBI_054	Lowendal Island	-20.6803	115.6083	DGPS	WGS84
MBI_055	E Barrow Island	-20.7227	115.5849	DGPS	WGS84
MBI_056	Barrow Island	-20.7879	115.5211	DGPS	WGS84
MBI_057	Barrow Island	-20.7969	115.5758	DGPS	WGS84

APPENDIX II. HABITAT CLASSIFICATION, SUBSTRATE TYPE, DEPTH, AND BIOLOGICAL ASSEMBLAGE FOR THE SURVEY SITES OF THE MONTEBELLO/BARROW ISLANDS REGION.

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No	Date	GPS type	Datum
MBI_001	Karangi Island	Sand	Coarse sand	-20.4654	115.6191	-19.5	Contoured sandbanks up to 0.5metres in height, with a rippled surface and scoured banks.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	19/06/99	DGPS	WGS84
MBI_002	Karangi Island	Macroalgae (limestone reef/low relief)	Pavement/ rubble	-20.4633	115.6121	-12.6	Lots of tunicates =2metres squared. Macroalgae stalks, possibly Sargassum. Turf algae also present.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	19/06/99	DGPS	WGS84
MBI_003	Karangi Island	Subtidal reef (low relief)	Limestone	-20.4512	115.6104	-8.8	Little live coral, fine algal turf and some macroalgae.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	19/06/99	DGPS	WGS84
MBI_004	Karangi Island	Macroalgae (limestone reef/low relief)	Sand			-6.1	Macroalgal meadow on sand substrate. Algae cover is approximately 70%, mainly Sargassum.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	19/06/99	DGPS	WGS84
MBI_005	SE Island	Coral reef communities (subtidal)	Sand/ pavement	-20.4324	115.5838	-6	Diverse corals on bommies. Crown of Thorns present and lots of Diadema urchins present. Plenty of fish (Drummer, giant Trevally, Tusk fish, White tip Reef shark and a bronzie).	KBA	Hand-held video	MRI/PI/MBI/HH#1_06/1999	19/06/99	DGPS	WGS84
MBI_006	Stephenson Channel	Macroalgae (limestone reef/low relief)	Sand with some rubble	-20.4521	115.5456	-2.5	30-40% macroalgal cover. Sponges (fans and massives), some corals (Hard Turbinaria) and some soft corals. Stems were also present.	AHI	Hand-held video	MRI/PI/MBI/HH#2_06/1999	20/06/99	GPS	WGS84
MBI_007	Stephenson Channel	Macroalgae (limestone reef/low relief)	Sand	-20.4594	115.5483	-2	50% macroalgal cover, stems, sponges and hard and soft corals.	AHI	Hand-held video	MRI/PI/MBI/HH#2_06/1999	20/06/99	GPS	WGS84
MBI_008	Trimouille Channel	Macroalgae (limestone reef/low relief)	Limestone Pavement	-20.4016	115.555	-2.8	Coral bumps on sand and pavement. Macroalgae cover 30-50%. Some rubble. Sand on pavement.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	20/06/99	DGPS	WGS84
MBI_009	Trimouille Passage	Sand	Sand	-20.3886	115.5467	-11.4	Shell grit and coarse sand. 10% cover of macroalgal stems.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	20/06/99	DGPS	WGS84
MBI_010	Trimouille Passage	Coral reef communities (subtidal)	Coral rubble/ bommies	-20.3828	115.5393	-6.5	Coral bommie with 50% live coral cover (Acropora, Porites, soft corals). Quite expansive. Surrounded by low profile reef approximately 0.5 to 1metre with 20% live biota.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	20/06/99	DGPS	WGS84
MBI_011	Trimouille Passage	Coral reef communities (subtidal)	Pavement and sand	-20.3819	115.5386	-5	Coral bommie >50% live cover, surrounded by rubble and low reef. Low reef with 10% live cover interspersed with sand. Possibly on pavement.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	20/06/99	DGPS	WGS84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No	Date	GPS type	Datum
MBI_012	Trimouille Passage	Macroalgae (limestone reef/low relief)	Coral rubble and sand	-20.3725	115.5363		Algal stems. Coral rubble on coarse sand. "Black area" off NW Reef.	AHI	Hand-held video	MRI/PI/MBI/HH#2_06/1999	20/06/99	DGPS	WGS84
MBI_013	Trimouille passage	Sand	Sand	-20.3743	115.535	-3	Manta tow. Sand rippled. Finishing Lat. -20.3736 Long 115.5328. Depth -3 to -8 metres.	KBA	Manta tow		20/06/99	GPS	WGS84
MBI_014	NW Island	Coral reef communities (subtidal)	Sand and rubble	-20.374	115.5324	-2	Manta tow with a finishing Lat. of -20.3719 and Long 115.5283. Depth was -2 to - 3 metres. Sand and some burrows. Dominated by macroalgae (40%). Some rubble, Turbinaria and Sargassum. Intermittent hard and soft coral, small and some digitate.	KBA	Manta tow		20/06/99	GPS	WGS84
MBI_015	NW Island	Coral reef communities (subtidal)	Sand and rubble	-20.3707	115.5283	-2	Manta tow, finishing at Lat. -20.3695 and Long 115.5269. Depth range -2 to -3 metres. Initially coral and then dominated by macroalgae (Turbinaria 40% and 1 metre high). Substrate was sand and rubble with some hard corals also scattered (<1%).	KBA	Manta tow		20/06/99	GPS	WGS84
MBI_016	NW Island	Coral reef communities (subtidal)	Pavement/ rubble	-20.3696	115.5245	-1.5	Manta Tow - finishing Lat.: -20.3685 and Long: 115.5255, depth range of 1.5 to 2 metres. At -1.5m high coral community (digitate, Montipora) with 20% live coral cover. Turf algae was present on the dead coral rubble and hard substrate.	KBA	Manta tow		20/06/99	GPS	WGS84
MBI_017	NW Island	Coral reef communities (subtidal)	Hard	-20.3686	115.5234	-2.4	Next to Blue Hole. 50% live coral cover (Acropora). Rubble on lower edge. Bommies. Lots of fish life.	KBA	Hand-held video	MRI/PI/MBI/HH#2_06/1999	20/06/99	GPS	WGS84
MBI_018	Alpha Is	Macroalgae (limestone reef/low relief)	Sand	-20.4094	115.5141	-3.1	Mono specific algal meadow, could be Sargassum, on medium to coarse sand substrate.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	20/06/99	DGPS	WGS84
MBI_019	Alpha Island	Coral reef communities (subtidal)	Pavement rubble	-20.4072	115.5234	-5.6	Corymbose corals 30-50% coral community. Surrounded by coral rubble with some macroalgae and some sand.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	20/06/99	DGPS	WGS84
MBI_020	Alpha Island	Coral reef communities (subtidal)	Hard reef	-20.4018	115.5049	-2	Plate corals, staghorn, corymbose, Montipora making 70% cover. Some areas quite damaged.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	20/06/99	DGPS	WGS84
MBI_021	Bluebell Island	Sand	Sand	-20.3925	115.5043	-9.5	Blue Hole south of channel. Infauna present, medium to coarse sand.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	20/06/99	DGPS	WGS84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No	Date	GPS type	Datum
MBI_022	Bluebell Island	Coral reef communities (subtidal)	Hard rubble and sand	-20.3884	115.5028	-9.2	Channel edge. Coral rubble and sand patches.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	20/06/99	DGPS	WGS84
MBI_023	Western Reef	Coral reef communities (subtidal)	Coral and Pavement	-20.3885	115.4921	-10	depths ranged from 8.1m to 20.8m as moved from the reef platform down a rubble slope to the sand bottom. Soft corals and sea whips were observed.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	20/06/99	DGPS	WGS84
MBI_024	West	Macroalgae (limestone reef/low relief)	Pavement and rubble	-20.4075	115.5075	-4	20% macroalgal cover on a rubble and limestone pavement.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	20/06/99	DGPS	WGS84
MBI_025	Western Reef	Macroalgae (limestone reef/low relief)	Sand	-20.4061	115.5049	-3	Manta Tow. Finishing at Lat.: 20.4107 Long: 115.5042 with a depth range of 2 to 4 metres. Rippled sand with 30% macroalgal cover.	KBA	Manta tow		20/06/99	GPS	WGS84
MBI_026	Western Reef	Macroalgae (limestone reef/low relief)	Sand	-20.4115	115.4986	-3	Manta Tow finishing at Lat.: -20.4094 and Long: 115.4995 with a depth range of 2 to 4 metres. 2x seagrass. Rippled sand and rubble. 25% macroalgal cover with sparse seagrass.	KBA	Manta tow		20/06/99	GPS	WGS84
MBI_027	Hermite Island	Mangal	Fine sand and mud	-20.4708	115.5257	-0.75	Site on aerial 5094. Rhizophora stands about 2.5m high. Very dense. Avicennia along the western inshore edge.	SOS	Direct		21/06/99	Chart	WGS84
MBI_028	Hermite Island	Sand	Sand	-20.4618	115.5311	-1	Site on aerial 5094. No live cover evident	SOS	Direct		21/06/99	Chart	WGS84
MBI_029	Hermite Island	Sand	Sand	-20.4579	115.5364	-1	Site3 on aerial 5094. Dark cover of flat structureless algae on sand.	SOS	Direct		21/06/99	Chart	WGS84
MBI_030	Hermite Island	Mangal	Fine sand and shell debris	-20.4493	115.5289	-0.75	Site 4 on aerial 5094. Dense Rhizophora and Bruguieria with some Avicennia to a height of 2.5m.	SOS	Direct		21/06/99	Chart	WGS84
MBI_031	Ivy Island	Sand	Sand (coarse)	-20.4984	115.5439	-3.4	Coarse sand with <5% macroalgae cover and <1% seagrass cover.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	22/06/99	DGPS	WGS84
MBI_032	Ivy Island	Macroalgae (limestone reef/low relief)	Sand/rubble	-20.5012	115.5399	-1.5	20% macroalgal cover on rubble, sand and shell grit.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	22/06/99	DGPS	WGS84
MBI_033	Palmerston Point	Macroalgae (limestone reef/low relief)	Sand/ rubble/ pavement	-20.5185	115.5139	-5	Sand/rubble/pavement. 40% macroalgae cover (Sargassum) with the occasional coral lump.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	22/06/99	DGPS	WGS84
MBI_034	SW Reef	Macroalgae (limestone reef/low relief)	Sand/ pavement	-20.5075	115.4893	-6.5	40-60% Macroalgae cover on sand/pavement.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	22/06/99	DGPS	WGS84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No	Date	GPS type	Datum
MBI_035	SW Reef	Coral reef communities (subtidal)	Reef	-20.509	115.4801	-2	Manta Tow finishing at Lat.: -20.5081 Long: 115.4741. From the start point to the Platform there was 60% coral cover (Porites, staghorns) and soft corals in the last quarter of the tow. High diversity with a relief of 2.5m in places.	KBA	Manta tow		22/06/99	GPS	WGS84
MBI_036	SW Reef	Sand	Rubble	-20.5079	115.4726	-2	Manta tow finishing at Lat.: -20.5122 and Long: 115.4643. Coral rubble and some macroalgae on sand.	KBA	Manta tow		22/06/99	GPS	WGS84
MBI_037	SW Reef	Coral reef communities (intertidal or shallow)	Reef	-20.5126	115.4634	-2	Manta Tow from above Lat./Long to Lat.: -20.5127 Long: 115.4620 and then on to Lat.: -20.5124 Long: 115.4637. Plate Acropora and some other species making up coverage of 60% live.	KBA	Manta tow		22/06/99	GPS	WGS84
MBI_038	SW Reef	Coral reef communities (intertidal or shallow)	Reef and rubble	-20.5104	115.4751	-3	Depth ranged from 0.75m to 6m. Acropora plate corals were on top (60% cover). On the slope was high coral diversity. Some Drupella were seen.	SOS	Direct		22/06/99	GPS	WGS84
MBI_039	SW Reef	Sand	Coarse and with rubble and rocks	-20.5124	115.4782	-9.7	Isolated coral colonies, both hard and soft (<1% live cover). Mainly sand in-between.	SOS	Drop down video	MRI/PI/MBI/DD#1_06/1999	22/06/99	DGPS	WGS84
MBI_040	Western Reefs	Macroalgae (limestone reef/low relief)	Sand/rubble	-20.4779	115.4843	-4.5	20-30% Macroalgal cover on a sand/rubble/pavement.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	22/06/99	DGPS	WGS84
MBI_041	SW Reef	Coral reef communities (subtidal)	Sand	-20.4991	115.4674	-4	Depth ranged from 2 to 7.7metres. Millepora, branching dominant, but overall diversity of hard and soft corals was quite high. Extensive rubble and only about 10-15% of live coral cover on the top of the outcrop but up to 20% live cover on the slopes.	SOS	Hand-held video	MRI/PI/MBI/HH#2_06/1999	22/06/99	DGPS	WGS84
MBI_042	Western Reef	Coral reef communities (intertidal or shallow)	Reef/rubble	-20.4922	115.4599	-2	Corymbose Acropora <10% cover. Rubble and large patches of dead coral. Soft corals present.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	22/06/99	DGPS	WGS84
MBI_043	Brooke Island	Macroalgae (limestone reef/low relief)	Rubble/sand	-20.4502	115.4999	-2.7	60% Macroalgae (<5% Halophila) on pavement, rubble and sand.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	22/06/99	DGPS	WGS84
MBI_044	Lowendal island	Macroalgae (limestone reef/low relief)	Limestone rubble and sand	-20.5585	115.5689	-4	Limestone rubble pavement with 10-20% sand cover and 10-20 % Macroalgal cover.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	23/06/99	DGPS	WGS84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No	Date	GPS type	Datum
MBI_045	Lowendal Islands	Sand	Sand	-20.5881	115.5844	-20.4	Coarse rippled sand	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	23/06/999	DGPS	WGS84
MBI_046	Lowendal Island	Sand	Limestone rubble	-20.5926	115.5456	-14.2	Coarse sand and rubble with <5% macroalgae.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	23/06/99	DGPS	WGS84
MBI_047	Lowendal Islands	Coral reef communities (subtidal)	Coral reef/rubble	-20.593	115.5453	-2.8	Plate Acropora and Porites (5%). High profile reef up to 2m. Rubble and boulders on what could be pavement.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	23/06/99	DGPS	WGS84
MBI_048	Lowendal Islands	Subtidal reef (low relief)	pavement/ rubble/sand	-20.6566	115.5386	-3.3	5% cover of Macroalgae. Rubble, sand and pavement. Some soft corals and tunicates seen.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	23/06/99	DGPS	WGS84
MBI_049	Barrow Island	Macroalgae (limestone reef/low relief)	Pavement and rubble	-20.6663	115.4919	-13.8	Short algal turf on rubble and pavement. Some macroalgae (<1%) and a little bit of sand.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	23/06/99	DGPS	WGS84
MBI_050	Barrow Island	Subtidal reef (low relief)	Pavement/ rubble	-20.6383	115.4475	-18.7	<5% macroalgae cover. Sponges and isolated soft corals, short algal turf and sea stars.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	23/06/99	DGPS	WGS84
MBI_051	Barrow Island	Macroalgae (limestone reef/low relief)	Sand/ rubble/ pavement	-20.5863	115.4718	-4.9	<1% Halimeda, 15% Macroalgae. Sand on pavement and rubble.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	23/06/99	DGPS	WGS84
MBI_052	Barrow Island	Macroalgae (limestone reef/low relief)	Sand/ pavement	-20.5666	115.5016	-5	Isolated sponges and 20-30%cover of Macroalgae, Sargassum. Some rubble and pavement.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	23/06/99	DGPS	WGS84
MBI_053	Lowendal Island	Macroalgae (limestone reef/low relief)	Coarse sand/rubble	-20.6905	115.5887	-7.3	20% macroalgae, coarse sand and rubble. Pavement	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	23/06/99	DGPS	WGS84
MBI_054	Lowendal Island	Coral reef communities (subtidal)	Rubble/ pavement and bommies	-20.6803	115.6083	-6.8	Rubble/pavement and coarse sand. Isolated corals. <5% Macroalgae to about 300mm in height. Low profile reef 0.5metres.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	23/06/99	DGPS	WGS84
MBI_055	E Barrow Island	Macroalgae (limestone reef/low relief)	Pavement/ rubble/sand	-20.7227	115.5849	-9	Macroalgae <20%, up to 1m in height. Rubble/sand/pavement. Some tunicates, very patchy substrate.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	23/06/99	DGPS	WGS84
MBI_056	Barrow Island	Coral reef communities (subtidal)	Coral/rubble	-20.7879	115.5211	-6	5-10% live coral cover. Coral rubble, possibly some pavement and some isolated soft corals.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	24/06/99	DGPS	WGS84
MBI_057	Barrow Island	Sand	Coarse sand	-20.7969	115.5758	-18.4	Coarse sand.	KBA	Drop down video	MRI/PI/MBI/DD#1_06/1999	24/06/99	DGPS	WGS84

APPENDIX III. LOCATION, LATITUDE AND LONGITUDE FOR THE SURVEY SITES OF THE DAMPIER ARCHIPELAGO/CAPE PRESTON REGION.

Site No	Location	Latitude	Longitude	GPS type	Datum
DAR_001	Mermaid Sound	-20.40982	116.7042	DGPS	WGS84
DAR_002	W Mermaid Sound	-20.4227	116.7056	DGPS	WGS84
DAR_003	W Mermaid Sound	-20.4259	116.707	DGPS	WGS84
DAR_004	W Mermaid Sound	-20.4373	116.7074	DGPS	WGS84
DAR_005	W Mermaid Sound	-20.4417	116.7006	DGPS	WGS84
DAR_006	W Mermaid Sound	-20.4436	116.6953	DGPS	WGS84
DAR_007	W Mermaid Sound	-20.4524	116.7027	DGPS	WGS84
DAR_008	E Mermaid Sound	-20.4465	116.767	DGPS	WGS84
DAR_009	E Mermaid Sound	-20.4373	116.7595	DGPS	WGS84
DAR_010	E Mermaid Sound	-20.4213	116.7522	DGPS	WGS84
DAR_011	E Mermaid Sound	-20.4121	116.7452	DGPS	WGS84
DAR_012	E Mermaid Sound	-20.4061	116.7404	DGPS	WGS84
DAR_013	E Mermaid Sound	-20.4041	116.7358	DGPS	WGS84
DAR_014	E Nelson Island	-20.4375	116.6429	DGPS	WGS84
DAR_015	Nelson Rocks	-20.4365	116.6384	DGPS	WGS84
DAR_016	E Sailfish Reef	-20.45	116.5929	DGPS	WGS84
DAR_017	Sailfish Reef	-20.4647	116.5593	DGPS	WGS84
DAR_018	Sailfish Reef	-20.4696	116.5404	DGPS	WGS84
DAR_019	Sailfish Reef			DGPS	WGS84
DAR_020	Roly Rocks	-20.5049	116.5032	DGPS	WGS84
DAR_021	Roly Rocks	-20.5001	116.4922	DGPS	WGS84
DAR_022	Roly Rocks	-20.493	116.503	DGPS	WGS84
DAR_023	Roly Rocks	-20.4919	116.5055	DGPS	WGS84
DAR_024	Roly Rocks	-20.4901	116.5158	DGPS	WGS84
DAR_025	Goodwyn Channel	-20.4902	116.5182	DGPS	WGS84
DAR_026	Goodwyn Channel	-20.4969	116.5237	DGPS	WGS84
DAR_027	Goodwyn Channel	-20.5136	116.5406	DGPS	WGS84
DAR_028	Goodwyn channel	-20.5218	116.5682	DGPS	WGS84
DAR_029	Goodwyn channel	-20.5225	116.566	DGPS	WGS84
DAR_030	Goodwyn channel	-20.5437	116.6012	DGPS	WGS84
DAR_031	Mermaid Strait	-20.6553	116.4865	DGPS	WGS84
DAR_032	Mermaid Strait	-20.6364	116.4529	DGPS	WGS84
DAR_033	Mermaid Strait	-20.6323	116.4372	DGPS	WGS84
DAR_034	Mermaid Strait	-20.6302	116.4176	DGPS	WGS84
DAR_035	NW reef	-20.6262	116.4098	DGPS	WGS84
DAR_036	NW Reef	-20.6311	116.4023	DGPS	WGS84
DAR_038	NW Reef	-20.6064	116.362	DGPS	WGS84
DAR_039	NW Reefs	-20.648	116.3824	DGPS	WGS84
DAR_040	NW Reefs	-20.6697	116.4018	DGPS	WGS84
DAR_041	NW Reefs	-20.6791	116.4152	DGPS	WGS84
DAR_042	Victoria rocks	-20.6912	116.4134	DGPS	WGS84
DAR_043	Victoria Rocks	-20.7031	116.4236	DGPS	WGS84
DAR_044	Victoria Rocks	-20.6931	116.4191	DGPS	WGS84
DAR_045	Outer Regnard Bay	-20.6981	116.3457	DGPS	WGS84
DAR_046	Outer Regnard Bay	-20.7189	116.3428	DGPS	WGS84
DAR_047	Outer Regnard Bay	-20.7379	116.3405	DGPS	WGS84
DAR_048	Cod bank	-20.628	116.4046	DGPS	WGS84
DAR_049	NE Regnard	-20.7542	116.3379	DGPS	WGS84
DAR_050	NE Regnard Island	-20.7653	116.3295	DGPS	WGS84
DAR_051	NE Regnard Island	-20.7736	116.3301	DGPS	WGS84
DAR_052	NE Regnard Island	-20.7761	116.3261	DGPS	WGS84
DAR_053	NE Regnard Island	-20.7852	116.3124	Chart	WGS84
DAR_054	NE Regnard Island	-20.7809	116.3086	GPS	WGS84
DAR_055	SW Regnard	-20.7983	116.2837	DGPS	WGS84
DAR_056	SW Regnard	-20.805	116.2664	DGPS	WGS84
DAR_057	SW Regnard	-20.8031	116.2572	DGPS	WGS84
DAR_058	SW Regnard	-20.8029	116.2563	GPS	WGS84

Site No	Location	Latitude	Longitude	GPS type	Datum
DAR_059	SW Regnard	-20.805	116.25	GPS	WGS84
DAR_060	SW Regnard	-20.8014	116.24825	GPS	WGS84
DAR_061	SW Regnard	-20.7987	116.2482	GPS	WGS84
DAR_062	SW Regnard	-20.8004	116.2396	GPS	WGS84
DAR_063	SW Regnard	-20.8144	116.2434	GPS	WGS84
DAR_064	SW Regnard	-20.8208	116.24	DGPS	WGS84
DAR_065	SW Regnard	-20.8143	116.226	DGPS	WGS84
DAR_066	SW Regnard	-20.7929	116.2692	Chart	WGS84
DAR_067	SW Regnard	-20.7908	116.2764	DGPS	WGS84
DAR_068	SE Regnard	-20.7966	116.2735	DGPS	WGS84
DAR_069	SE Regnard	-20.8101	116.2508	DGPS	WGS84
DAR_070	SW Regnard	-20.8123	116.2514	DGPS	WGS84
DAR_071	SW Regnard	-20.8265	116.2563	DGPS	WGS84
DAR_072	Regnard Bay	-20.8265	116.2562	DGPS	WGS84
DAR_073	Regnard Bay	-20.8532	116.2699	DGPS	WGS84
DAR_074	Regnard Bay	-20.8511	116.2799	DGPS	WGS84
DAR_075	Regnard Bay	-20.8528	116.2816	DGPS	WGS84
DAR_076	Regnard Bay	-20.8272	116.3381	DGPS	WGS84
DAR_077	Nth Regnard Bay	-20.8073	116.4427	DGPS	WGS84
DAR_078	N Regnard Bay	-20.7895	116.4657	DGPS	WGS84
DAR_079	Sth Enderby Island	-20.6088	116.5301	Chart	WGS84
DAR_080	NW Kendrew Island	-20.4762	116.5333	DGPS	WGS84
DAR_081	Kendrew Island	-20.4762	116.5333	DGPS	WGS84

APPENDIX IV. HABITAT CLASSIFICATION, SUBSTRATE TYPE, DEPTH AND BIOLOGICAL ASSEMBLAGE FOR THE SURVEY SITES OF THE DAMPIER ARCHIPELAGO/CAPE PRESTON REGION.

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No	Date	GPS type	Datum
DAR_001	Mermaid Sound	Sand	Sand	-20.40982	116.7042	-30.4	Bare coarse sand, shell grit, 2x small hard corals	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_002	W Mermaid Sound	Sand	Sand	-20.4227	116.7056	-21.6	Sea whips, sponges and octocorals.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_003	W Mermaid Sound	Sand	Sand	-20.4259	116.707	-28	Bare sand/ sediment and some shell grit.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_004	W Mermaid Sound	Sand	Sand	-20.4373	116.7074	-24.6	Bare coarse sand with shell grit.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_005	W Mermaid Sound	Sand	Sand	-20.4417	116.7006	-25.7	Bare medium to coarse sand with shell grit.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_006	W Mermaid Sound	Sand	Sand	-20.4436	116.6953	-19.8	Sponges, octocorals, sea whips, miscellaneous filter feeder community.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_007	W Mermaid Sound	Sand	Sand	-20.4524	116.7027	-22.9	Some sea whips, very coarse sand, shell grit and algal turf.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_008	E Mermaid Sound	Sand	Sand	-20.4465	116.767	-15.4	Shell grit, macrophyto benthos.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_009	E Mermaid Sound	Sand	Sand	-20.4373	116.7595	-18.9	Medium to coarse sand. Rippled with coarse sand on top of the ripples and medium sand in the trough of the ripple.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_010	E Mermaid Sound	Sand	Sand	-20.4213	116.7522	-19.5	Sponges, sea whips, algal tufts (some reds and browns), some octocorals and possibly bryozoans.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_011	E Mermaid Sound	Sand	Sand	-20.4121	116.7452	-25.9	Very stirred up, low visibility. Shell grit with grain size undetermined.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_012	E Mermaid Sound	Sand	Sand	-20.4061	116.7404	-26	Sponges, sea whips, some octocorals.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_013	E Mermaid Sound	Sand	Sand	-20.4041	116.7358	-29.5	Fine to medium soft sediment. Bioturbation obvious. Bare.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_014	E Nelson Island	Subtidal reef (low relief)	Limestone	-20.4375	116.6429	-15.8	Sponges, seawhips, small plate corals, soft corals, some algal turf and some sea anemones.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_015	Nelson Rocks	Coral reef communities (subtidal)	Limestone	-20.4365	116.6384	-15.4	Plate corals, some Romose, Urchins, soft corals, sponges and some sea whips.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No	Date	GPS type	Datum
DAR_016	E Sailfish Reef	Sand	Coarse sand/pebbles/ small boulders	-20.45	116.5929	-22.2	Ripples, small boulders with algal turf on them, sponges and octocorals.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_017	Sailfish Reef	Coral reef communities (subtidal)	Hard	-20.4647	116.5593	-17.6	Corals/ soft corals, digitate corals, a few sponges and octocorals.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_018	Sailfish Reef	Sand	Soft sediment	-20.4696	116.5404	-20.3	Scattered small boulders, algal turf, medium sediment, medium sand with shell grit.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_019	Sailfish Reef	Subtidal reef (high relief)	Hard boulders			-20	Algal turf covered boulders with occasional coral (some encrusting)	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_020	Roly Rocks	Sand	Medium/coarse sand	-20.5049	116.5032	-24.4	Bare sand with some shell grit.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_021	Roly Rocks	Sand	Coarse sand	-20.5001	116.4922	-28.6	Coarse sand, shell grit, bare.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_022	Roly Rocks	Sand	Medium/coarse sand/pebbles	-20.493	116.503	-23.7	Medium/coarse sand, small pebbles and shell grit with some crustose coralline algae.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_023	Roly Rocks	Subtidal reef (high relief)	Hard	-20.4919	116.5055	-13.3	Soft corals (Sinularia sp.), boulders, bommies and large pebbles.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_024	Roly Rocks	Macroalgae (limestone reef/low relief)	Pavement (limestone)	-20.4901	116.5158	-12.4	Sea whips, octocorals, sponges, soft corals and algal tufts.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_025	Goodwyn Channel	Macroalgae (limestone reef/low relief)	Pavement	-20.4902	116.5182	-10.4	Soft corals, octocorals, sea whips, Halimeda sp., sponges, some hard corals, mixed invertebrate community and some algal turf.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_026	Goodwyn Channel	Sand	Coarse sand	-20.4969	116.5237	-13.7	Macroalgal tufts, grit and coarse sand.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_027	Goodwyn Channel	Sand	Medium sediment	-20.5136	116.5406	-19.4	Medium to fine sediment, shell grit and algal tufts.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_028	Goodwyn channel	Sand	Medium sediment	-20.5218	116.5682	-5.3	Rippled sand, with medium to coarse sediment and shell grit.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_029	Goodwyn channel	Sand	Medium/coarse sand	-20.5225	116.566	-12.5	Rippled sand, medium/coarse in texture and some shell grit.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_030	Goodwyn channel	Sand	Medium/coarse sand	-20.5437	116.6012	-9.2	Macrophyto benthos and shell grit.	KBA	Drop down video	MRI/PI/DA/DD#1_06/1999	15/06/99	DGPS	WGS84
DAR_031	Mermaid Strait	Sand	Medium sediment	-20.6553	116.4865	-13.1	Bare medium grain sand and some shell grit.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_032	Mermaid Strait	Macroalgae (limestone reef/low relief)	Medium/coarse sediment	-20.6364	116.4529	-16.8	Medium to coarse sediment, sea whips, sponges, octocorals, anemones and soft corals.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No	Date	GPS type	Datum
DAR_033	Mermaid Strait	Macroalgae (limestone reef/low relief)	Medium sediment	-20.6323	116.4372	-17	Sea whips, octocorals, sponges and soft corals.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_034	Mermaid Strait	Macroalgae (limestone reef/low relief)	Pavement	-20.6302	116.4176	-5.7	Macroalgae (Sargassum), soft corals, sponges, intermittent hard corals. Coverage is 25%Macroalgae and 30-40% turf algae.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_035	NW reef	Subtidal reef (low relief)	Pavement	-20.6262	116.4098	-13.7	Soft corals, sparse hard corals, ascidians with sand patches. Soft coral cover is <5% and in small colonies.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_036	NW Reef	Macroalgae (limestone reef/low relief)	Pavement	-20.6311	116.4023	-6.7	Algal dominated, mostly flat brown algae.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_038	NW Reef	Sand	Medium/coarse sediment	-20.6064	116.362	-27.3	Sponges, tunicates, sea whips and soft coral that made up <5% coverage.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_039	NW Reefs	Sand	Soft sediment	-20.648	116.3824	-15.7	Soft corals, octocorals, chrinoids, sponges, Padina sp. and sea whips, all making <5% coverage.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_040	NW Reefs	Sand	Coarse sand	-20.6697	116.4018	-14.6	Rippled coarse sand with a little shell grit.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_041	NW Reefs	Subtidal reef (low relief)	Hard pavement	-20.6791	116.4152	-6.5	Sparse sponges, soft corals and hard corals all less than 5% coverage. Some encrusting sponges making 20-30% of the cover.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_042	Victoria rocks	Macroalgae (limestone reef/low relief)	Sand	-20.6912	116.4134	-4.7	20-30% Sargassum cover, with medium/ coarse sand substrate. Occasional hard corals and bioturbation.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_043	Victoria Rocks	Sand	Fine sediment	-20.7031	116.4236	-11.8	Crab holes or volutes? Lots of bioturbation of sediment of fine to medium coarseness.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_044	Victoria Rocks	Macroalgae (granite reef/low relief)	Hard boulders	-20.6931	116.4191	-4.5	50% Padina sp. cover and 5% Sargassum cover. Boulders are covered with macroalgae.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_045	Outer Regnard Bay	Sand	Fine to medium sand	-20.6981	116.3457	-16.6	Bare sand.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_046	Outer Regnard Bay	Sand	Medium/coarse sand	-20.7189	116.3428	-14.9	Shell grit, a few sponges, seawhips and octocorals.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_047	Outer Regnard Bay	Sand	Medium sediment	-20.7379	116.3405	-14.4	<1% cover of sponges, soft corals, hard corals, sea whips, sea fans. Shell grit.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No	Date	GPS type	Datum
DAR_048	Cod bank	Subtidal reef (low relief)	Soft/medium sediment	-20.628	116.4046	-12	<10% cover of soft corals, sea whips, hard corals, sea fans and sponges. Padina was present along with a couple of sea stars.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_049	NE Regnard	Macroalgae (limestone reef/low relief)	Medium sediment	-20.7542	116.3379	-7.7	25% macroalgal cover with some algal turf, soft corals also present. Some hard substrates were also seen with mainly medium to coarse sand. There was also <1% hard coral cover.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_050	NE Regnard Island	Macroalgae (limestone reef/low relief)	Medium sediment and shell grit	-20.7653	116.3295	-7.2	<5% cover of sponges, soft corals, sea whips and hard corals. 50% cover was made of Padina, Sargassum and brown algae. Shell grit was also visible.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_051	NE Regnard Island	Sand	Medium to coarse sand	-20.7736	116.3301	-9.7	Coarse sand with shell grit	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_052	NE Regnard Island	Sand	Soft to medium sediment	-20.7761	116.3261	-8	Some shell grit and bioturbation.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	DGPS	WGS84
DAR_053	NE Regnard Island	Sand	Coarse sand	-20.7857	116.3124	-5.8	Shell grit.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	Chart	WGS84
DAR_054	NE Regnard Island	Sand	Coarse sand	-20.7809	116.3086	-2.7	Rippled sand and shell grit with sparse Halophila.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	16/06/99	GPS	WGS84
DAR_055	SW Regnard	Sand	Medium to coarse sand	-20.7983	116.2837	-4.5	Possibly a microphyto benthos. Rippled sand.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_056	SW Regnard	Sand	Coarse sand and shell grit	-20.805	116.2664	-4.4	Bare sand.	SOS	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_057	SW Regnard	Sand	Coarse sand	-20.8031	116.2572	-2.3	Bare sand.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_058	SW Regnard	Macroalgae (limestone reef/low relief)	Coarse sand	-20.8029	116.2563	-4	Macroalgae, predominantly Padina sp.	SOS	Hand-held video	MRI/PI/DA/HH#1_06/1999	17/06/99	GPS	WGS84
DAR_059	SW Regnard	Macroalgae (limestone reef/low relief)	Sand	-20.805	116.25	-3	10% Macroalgal cover.	SOS	Hand-held video	MRI/PI/DA/HH#1_06/1999	17/06/99	GPS	WGS84
DAR_060	SW Regnard	Macroalgae (limestone reef/low relief)	Sand	-20.8014	116.24825	-2.5	Macroalgae, predominantly Padina sp., making about 30% cover over the sand.	SOS	Hand-held video	MRI/PI/DA/HH#1_06/1999	17/06/99	GPS	WGS84
DAR_061	SW Regnard	Macroalgae (limestone reef/low relief)	Coarse sand and rubble	-20.7987	116.2482	-4	70% brown digitate/strap macroalgae cover, with a height of about 20cm.	SOS	Hand-held video	MRI/PI/DA/HH#1_06/1999	17/06/99	GPS	WGS84
DAR_062	SW Regnard	Macroalgae (limestone reef/low relief)	Sand and rubble	-20.8004	116.2396	-5	60% cover of Padina with tufts of Sargassum also present, with occasional small corals	SOS	Hand-held video	MRI/PI/DA/HH#1_06/1999	17/06/99	GPS	WGS84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No	Date	GPS type	Datum
DAR_063	SW Regnard	Macroalgae (limestone reef/low relief)	Pavement	-20.8144	116.2434	-2	50% macroalgae cover over the substrate, which is silt covered pavement with rubble in crevices.	SOS	Hand-held video	MRI/PI/DA/HH#1_06/1999	17/06/99	GPS	WGS84
DAR_064	SW Regnard	Sand	Rippled coarse sand	-20.8208	116.24	-3.3	No biota evident	SOS	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_065	SW Regnard	Coral reef communities (subtidal)	Pavement	-20.8143	116.226	-5.6	Hard coral (live and rubble), soft corals and sponges making a total live biota of 5% on a pavement substrate.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_066	SW Regnard	Coral reef communities (subtidal)	Hard coral reef	-20.7929	116.2692	-9.6	Rubble between 60% coral structure, some live corals (<5%), some algae (Padina), mainly small colonies.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	Chart	WGS84
DAR_067	SW Regnard	Subtidal reef (low relief)	Mixed hard and soft pavement with <5% rubble	-20.7908	116.2764	-7.2	10% Live cover of hard corals (small Turbinaria) and sponges. Some sponges branch up to 70cm high, are digitate and ridged. Small tufts of macroalgae were also present.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_068	SE Regnard	Macroalgae (limestone reef/low relief)	Hard pavement and rubble	-20.7966	116.2735	-5.3	Macroalgal cover is >40% (Padina, Sargassum and brown algae), on pavement and rubble, with some hard and soft corals and sponges.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_069	SE Regnard	Coral reef communities (subtidal)	Boulders clumped with sand and rubble in between.	-20.8101	116.2508	-3.3	Massive corals up to 1 metre in diameter. Mainly Favites Platygyra. Coral cover about 10%.	SOS	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_070	SW Regnard	Coral reef communities (subtidal)	Live and dead coral and sand	-20.8123	116.2514	-4	Approximately 50% live coral cover, mainly massives Favites Platygyra and other Favites. Also Lobophyllia (15%) and Echinopora. Some Acropora but only small. Diverse fish life.	KBA	Hand-held video	MRI/PI/DA/HH#1_06/1999	17/06/99	DGPS	WGS84
DAR_071	SW Regnard	Sand	Coarse sand	-20.8265	116.2563	-7	Infauna present, otherwise bare sand.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_072	Regnard Bay	Coral reef communities (subtidal)	Hard	-20.8265	116.2562	-6.7	Porites coral bommie 2 metres in height. Good live coral cover.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_073	Regnard Bay	Sand	Sand	-20.8532	116.2699	-5.6	Scattered hard coral (plates/foliose and massives). Sponges also present.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_074	Regnard Bay	Sand	Sand (medium to coarse)	-20.8511	116.2799	-5.9	Lots of shell grit, some coral lumps scattered throughout.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_075	Regnard Bay	Coral reef communities (subtidal)	Sand/coral rubble and pavement	-20.8528	116.2816	-4.2	Some live Acropora. Plenty of dead corals.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No	Date	GPS type	Datum
DAR_076	Regnard Bay	Macroalgae (limestone reef/low relief)	Medium sediment/ rubble	-20.8272	116.3381	-5.6	Macroalgae, sponges, coral lumps on some rubble and medium grained sediment.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_077	Nth Regnard Bay	Macroalgae (limestone reef/low relief)	Medium to coarse sand	-20.8073	116.4427	-4.2	Tall Sargassum approximately 1m in height on coarse to medium sand.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_078	N Regnard Bay	Sand	Sand	-20.7895	116.4657	-7.9	Rippled sand of medium grain sized with sparse Halophila. Macroalgae was sparse <1%.	KBA	Drop down video	MRI/PI/DA/DD#2_06/1999	17/06/99	DGPS	WGS84
DAR_079	Sth Enderby Island	Mangal	Coarse sand and shell material	-20.6088	116.5301	-2	Rhizophora stands about 4-5metres high. Dense forest on either side of channel.	SOS	Direct		18/06/99	Chart	WGS84
DAR_080	NW Kendrew Island	Coral reef communities (subtidal)	Hard(80%) and soft(20%) relief	-20.4762	116.5333		30% hard and soft coral cover. Mostly massives and encrusting.	SOS	Direct		18/06/99	DGPS	WGS84
DAR_081	Kendrew Island	Coral reef communities (subtidal)	80%hard, 20% sand 2.5 m relief	-20.4762	116.5333	-4	Live and dead coral. 20% live hard and soft corals (massives and digitate). 1 Crown of Thorns seen.	SOS	Direct		18/06/99	DGPS	WGS84

APPENDIX V. LOCATION, LATITUDE AND LONGITUDE FOR THE SURVEY SITES OF THE DAMPIER ARCHIPELAGO/CAPE PRESTON REGION FOLLOW-UP SURVEY.

Site No	Location	Latitude	Longitude	GPS type	Datum
DAR_085	W Lewis Island	-20.60983	116.5996	GPS	AGD84
DAR_086	W Lewis Island	-20.61093	116.5942	GPS	AGD84
DAR_087	W Lewis Island	-20.61205	116.59129	GPS	AGD84
DAR_088	W Lewis Island	-20.61308	116.58853	GPS	AGD84
DAR_089	W Lewis Island	-20.61494	116.58661	GPS	AGD84
DAR_090	W Lewis Island	-20.61633	116.58413	GPS	AGD84
DAR_091	W Lewis Island	-20.61752	116.5815	GPS	AGD84
DAR_092	W Lewis Island	-20.62008	116.57973	GPS	AGD84
DAR_093	W Lewis Island	-20.61304	116.57198	GPS	AGD84
DAR_094	W Lewis Island	-20.61177	116.575537	GPS	AGD84
DAR_095	W Lewis Island	-20.61051	116.5794	GPS	AGD84
DAR_096	W Lewis Island	-20.60972	116.5826	GPS	AGD84
DAR_097	W Lewis Island	-20.60813	116.585	GPS	AGD84
DAR_098	W Lewis Island	-20.60772	116.58742	GPS	AGD84
DAR_099	W Lewis Island	-20.60607	116.58935	GPS	AGD84
DAR_100	W Lewis Island	-20.60568	116.59169	GPS	AGD84
DAR_101	W Lewis Island	-20.6047	116.59292	GPS	AGD84
DAR_102	W Lewis Island	-20.60218	116.58943	GPS	AGD84
DAR_103	W Lewis Island	-20.59859	116.58947	GPS	AGD84
DAR_104	W Lewis Island	-20.59896	116.59626	GPS	AGD84
DAR_105	W Lewis Island	-20.59873	116.59321	GPS	AGD84
DAR_106	W Lewis Island	-20.59801	116.5874	GPS	AGD84
DAR_107	W Lewis Island	-20.59459	116.58794	GPS	AGD84
DAR_108	W Lewis Island	-20.59157	116.58799	GPS	AGD84
DAR_109	W Lewis Island	-20.59095	116.59215	GPS	AGD84
DAR_110	Rosemary Island	-20.61575	116.59656	GPS	AGD84
DAR_111	Rosemary Island	-20.48543	116.55468	GPS	AGD84
DAR_112	Rosemary Island	-20.46943	116.55146	GPS	AGD84
DAR_113	Rosemary Island	-20.46717	116.54997	GPS	AGD84
DAR_114	Rosemary Island	-20.46406	116.54835	GPS	AGD84
DAR_115	Rosemary Island	-20.4617	116.54706	GPS	AGD84
DAR_116	Rosemary Island	-20.45522	116.56487	GPS	AGD84
DAR_117	Rosemary Island	-20.45198	116.56487	GPS	AGD84
DAR_118	Rosemary Island	-20.45641	116.56955	GPS	AGD84
DAR_119	Rosemary Island	-20.4586	116.57161	GPS	AGD84
DAR_120	Rosemary Island	-20.46068	116.5745	GPS	AGD84
DAR_121	Rosemary Island	-20.46152	116.57522	GPS	AGD84
DAR_122	Rosemary Island	-20.46722	116.57731	GPS	AGD84
DAR_123	Kendrew Island	-20.48114	116.52817	GPS	AGD84
DAR_124	Kendrew Island	-20.4958	116.5289	GPS	AGD84
DAR_125	Kendrew Island	-20.50748	116.52214	GPS	AGD84
DAR_126	Goodwyn Island	-20.51807	116.5147	GPS	AGD84
DAR_127	Goodwyn Island	-20.52615	116.51737	GPS	AGD84
DAR_128	Goodwyn Island	-20.52852	116.51942	GPS	AGD84
DAR_129	Goodwyn Island	-20.53042	116.52169	GPS	AGD84
DAR_130	Goodwyn Island	-20.53256	116.52568	GPS	AGD84
DAR_131	Goodwyn Island	-20.53364	116.5281	GPS	AGD84
DAR_132	Goodwyn Island	-20.53487	116.53031	GPS	AGD84
DAR_133	Goodwyn Island	-20.55354	116.53684	GPS	AGD84
DAR_134	Goodwyn Island	-20.55816	116.53923	GPS	AGD84
DAR_135	Goodwyn Island	-20.5626	116.54586	GPS	AGD84
DAR_136	Enderby Island	-20.57002	116.5577	GPS	AGD84
DAR_137	Enderby Island	-20.56708	116.56111	GPS	AGD84
DAR_138	Enderby Island	-20.56358	116.56551	GPS	AGD84
DAR_139	Enderby Island	-20.57255	116.58013	GPS	AGD84
DAR_140	Enderby Island	-20.58153	116.59504	GPS	AGD84
DAR_141	W Lewis Island	-20.58415	116.60092	GPS	AGD84
DAR_142	W Lewis Island	-20.58766	116.60467	GPS	AGD84
DAR_143	Cohan Island	-20.3816	116.79172	GPS	AGD84
DAR_144	Cohan Island	-20.3784	116.78887	GPS	AGD84

Site No	Location	Latitude	Longitude	GPS type	Datum
DAR_145	Cohan Island	-20.38	116.7902	GPS	AGD84
DAR_146	Cohan Island	-20.37747	116.78589	GPS	AGD84
DAR_147	Cohan Island	-20.37562	116.78304	GPS	AGD84
DAR_148	Cohan Island	-20.35889	116.79919	GPS	AGD84
DAR_149	Cohan Island	-20.36091	116.8014	GPS	AGD84
DAR_150	Cohan Island	-20.36736	116.81143	GPS	AGD84
DAR_151	Cohan Island	-20.36734	116.81272	GPS	AGD84
DAR_152	Cohan Island	-20.367	116.8136	GPS	AGD84
DAR_153	Cohan Island	-20.36803	116.8154	GPS	AGD84
DAR_154	Legendre Island (S)	-20.36759	116.82883	GPS	AGD84
DAR_155	Legendre Island	-20.36336	116.83092	GPS	AGD84
DAR_156	Legendre Island (NW)	-20.35145	116.84209	GPS	AGD84
DAR_157	Legendre Island (NW)	-20.35114	116.83275	GPS	AGD84
DAR_158	Gidley Island	-20.41348	116.80427	GPS	AGD84
DAR_159	Gidley Island	-20.41339	116.79147	GPS	AGD84
DAR_160	Gidley Island	-20.41311	116.7933	GPS	AGD84
DAR_161	Gidley Island	-20.41215	116.77702	GPS	AGD84
DAR_162	Gidley Island	-20.46276	116.79087	GPS	AGD84
DAR_163	Gidley Island	-20.46308	116.79032	GPS	AGD84
DAR_164	Gidley Island	-20.46277	116.78568	GPS	AGD84
DAR_165	Gidley Island	-20.46082	116.77973	GPS	AGD84
DAR_166	Shark Passage	-20.47253	116.8077	GPS	AGD84
DAR_167	Shark Passage	-20.46663	116.81653	GPS	AGD84
DAR_168	Shark Passage	-20.46712	116.8167	GPS	AGD84
DAR_169	Shark Passage	-20.46842	116.8162	GPS	AGD84
DAR_170	Flying Foam Passage	-20.46481	116.8263	GPS	AGD84
DAR_171	Flying Foam Passage	-20.46729	116.82782	GPS	AGD84
DAR_172	Flying Foam Passage	-20.4685	116.8301	GPS	AGD84
DAR_173	Flying Foam Passage	-20.46969	116.83293	GPS	AGD84
DAR_174	Flying Foam Passage	-20.50163	116.82005	GPS	AGD84
DAR_175	Flying Foam Passage	-20.50118	116.8152	GPS	AGD84
DAR_176	Flying Foam Passage	-20.4985	116.81	GPS	AGD84
DAR_177	Malus Island	-20.50255	116.67858	GPS	AGD84
DAR_178	Malus Island	-20.50159	116.6783	GPS	AGD84
DAR_179	Malus Island	-20.49662	116.67672	GPS	AGD84
DAR_180	Malus Island	-20.48369	116.67517	GPS	AGD84
DAR_181	Malus Island	-20.4775	116.67418	GPS	AGD84
DAR_182	Nelson Rocks	-20.44562	116.67542	GPS	AGD84
DAR_183	Nelson Rocks	-20.44318	116.67612	GPS	AGD84
DAR_184	Nelson Rocks	-20.44249	116.6768	GPS	AGD84
DAR_185	Nelson Rocks	-20.44136	116.67729	GPS	AGD84
DAR_186	Nelson Rocks	-20.43917	116.67777	GPS	AGD84
DAR_187	Nelson Rocks	-20.4328	116.67847	GPS	AGD84
DAR_188	Millar Rocks	-20.4346	116.64893	GPS	AGD84
DAR_189	Millar Rocks	-20.43692	116.64231	GPS	AGD84
DAR_190	Millar Rocks	-20.4384	116.64174	GPS	AGD84
DAR_191	Millar Rocks	-20.43892	116.64171	GPS	AGD84
DAR_192	Millar Rocks	-20.43988	116.64	GPS	AGD84
DAR_193	Millar Rocks	-20.44042	116.64032	GPS	AGD84
DAR_194	Brigadier Island	-20.44164	116.6152	GPS	AGD84
DAR_195	Brigadier Island	-20.44018	116.61454	GPS	AGD84
DAR_196	Brigadier Island	-20.43968	116.61416	GPS	AGD84
DAR_197	Brigadier Island	-20.43791	116.61349	GPS	AGD84
DAR_198	Brigadier Island	-20.43695	116.61309	GPS	AGD84
DAR_199	Brigadier Island	-20.43143	116.61284	GPS	AGD84
DAR_200	Rosemary Island	-20.45339	116.59828	GPS	AGD84
DAR_201	Rosemary Island	-20.45186	116.5972	GPS	AGD84
DAR_202	Rosemary Island	-20.45091	116.59632	GPS	AGD84
DAR_203	Rosemary Island	-20.44998	116.59515	GPS	AGD84
DAR_204	Rosemary Island	-20.44965	116.59475	GPS	AGD84
DAR_205	Rosemary Island	-20.44811	116.59383	GPS	AGD84
DAR_206	Rosemary Island	-20.44492	116.59151	GPS	AGD84
DAR_207	Rosemary Island	-20.43869	116.58695	GPS	AGD84
DAR_208	Elphick Knob	-20.48133	116.63283	GPS	AGD84

Site No	Location	Latitude	Longitude	GPS type	Datum
DAR_209	Elphick Knob	-20.49371	116.64169	GPS	AGD84
DAR_210	Elphick Knob	-20.49719	116.64322	GPS	AGD84
DAR_211	Malus Islands	-20.5002	116.6455	GPS	AGD84
DAR_212	Malus Islands	-20.50273	116.64765	GPS	AGD84
DAR_213	Whalers Bay	-20.52386	116.67443	GPS	AGD84
DAR_214	Malus Island	-20.52557	116.67428	GPS	AGD84
DAR_215	Malus Island	-20.52676	116.67391	GPS	AGD84
DAR_216	Malus Island	-20.53405	116.67427	GPS	AGD84
DAR_217	W Lewis Island (N)	-20.53772	116.67498	GPS	AGD84
DAR_218	W Lewis Island (N)	-20.53839	116.6748	GPS	AGD84
DAR_219	W Lewis Island (N)	-20.53877	116.67465	GPS	AGD84
DAR_220	W Lewis Island (N)	-20.54016	116.6751	GPS	AGD84
DAR_221	Karratha Bay	-20.54694	116.64712	GPS	AGD84
DAR_222	Karratha Bay	-20.54545	116.64689	GPS	AGD84
DAR_223	Karratha Bay	-20.54462	116.64681	GPS	AGD84
DAR_224	Karratha Bay	-20.54213	116.64659	GPS	AGD84
DAR_225	Malus Island	-20.53462	116.64757	GPS	AGD84
DAR_226	Malus Island	-20.5296	116.64869	GPS	AGD84
DAR_227	Malus Island	-20.52489	116.64965	GPS	AGD84
DAR_228	Malus Island	-20.52266	116.65025	GPS	AGD84
DAR_229	Middle of channel	-20.53024	116.5806	GPS	AGD84
DAR_230	Goodwyn Island	-20.545	116.53123	GPS	AGD84
DAR_231	Goodwyn Island	-20.5345	116.5296	GPS	AGD84
DAR_232	Goodwyn Island	-20.53254	116.52558	GPS	AGD84
DAR_233	Goodwyn Island	-20.52945	116.51782	GPS	AGD84
DAR_234	Goodwyn Island	-20.52617	116.509	GPS	AGD84
DAR_235	Goodwyn Island	-20.52538	116.50669	GPS	AGD84
DAR_236	Goodwyn Island	-20.52226	116.49767	GPS	AGD84
DAR_237	Goodwyn Island	-20.5199	116.4907	GPS	AGD84
DAR_238	Bare Rock	-20.54888	116.43977	GPS	AGD84
DAR_239	Bare Rock	-20.54873	116.43919	GPS	AGD84
DAR_240	Bare Rock	-20.54812	116.43748	GPS	AGD84
DAR_241	Bare Rock	-20.55077	116.44293	GPS	AGD84
DAR_242	Bare Rock	-20.55209	116.444	GPS	AGD84
DAR_243	Bare Rock	-20.55458	116.44668	GPS	AGD84
DAR_244	Bare Rock	-20.55594	116.44789	GPS	AGD84
DAR_245	Bare Rock	-20.56277	116.45368	GPS	AGD84
DAR_246	Bare Rock	-20.56645	116.45681	GPS	AGD84
DAR_247	Bare Rock	-20.57445	116.46286	GPS	AGD84
DAR_248	Bare Rock	-20.59288	116.47256	GPS	AGD84
DAR_249	Enderby Island	-20.59321	116.4739	GPS	AGD84
DAR_250	Enderby Island	-20.59364	116.47374	GPS	AGD84

APPENDIX VI. HABITAT CLASSIFICATION, SUBSTRATE TYPE, DEPTH AND BIOLOGICAL ASSEMBLAGE FOR THE SURVEY SITES OF THE DAMPIER ARCHIPELAGO/CAPE PRESTON REGION FOLLOW-UP SURVEY

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No.	Date	GPS type	Datum
DAR_085	W Lewis Island	Sand	Sand	-20.60983	116.5996	-3.5	Bare sand some algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_086	W Lewis Island	Sand	Sand	-20.61093	116.5942	-10	Bare Sand	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_087	W Lewis Island	Sand	Sand	-20.61205	116.59129	-12.8	Bare sand	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_088	W Lewis Island	Sand	Sand	-20.61308	116.58853	-13.8	Bare sand, shell grit with lots of dead bivalve shells.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_089	W Lewis Island	Sand	Sand	-20.61494	116.58661	-13.5	Bare sand with lots of bivalves.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_090	W Lewis Island	Sand	Sand/Silt	-20.61633	116.58413	-13.5	Bare sand or silt substrate (more silty than other sites).	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_091	W Lewis Island	Silt	Sand/Silt	-20.61752	116.5815	-12.5	Bare Sand/Silt.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	22/05/00	GPS	AGD84
DAR_092	W Lewis Island	Silt	Sand	-20.62008	116.57973	-12.5	Silty sand with some bioturbation.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	22/05/00	GPS	AGD84
DAR_093	W Lewis Island	Silt	Sand	-20.61304	116.57198	-12.6	Bare silty sand.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_094	W Lewis Island	Silt	Sand	-20.61177	116.575537	-12.6	Bare sand/silt.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_095	W Lewis Island	Silt	Sand	-20.61051	116.5794	-13.6	Bare sand some shell grit.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_096	W Lewis Island	Sand	Sand	-20.60972	116.5826	-14.8	Low relief sand with some sponges and other filterfeeders.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_097	W Lewis Island	Filter feeder community	Limestone	-20.60813	116.585	-14.8	Low relief pavement with some sponges and sea whips.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_098	W Lewis Island	Filter feeder community	Limestone	-20.60772	116.58742	-12.5	Low relief pavement with filter feeder community of some sponges and mainly algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_099	W Lewis Island	Filter feeder community	Limestone	-20.60607	116.58935	-15	Filter feeder community of some sponges and algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_100	W Lewis Island	Filter feeder community	Limestone	-20.60568	116.59169	-14	Filter feeder community of some sponges and algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_101	W Lewis Island	Filter feeder community	Limestone	-20.6047	116.59292	-15	Filter feeder community of sponges.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_102	W Lewis Island	Filter feeder community	Limestone	-20.60218	116.58943	-15	Low relief pavement with octocorals and gorgonians.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No.	Date	GPS type	Datum
DAR_103	W Lewis Island	Filter feeder community	Limestone	-20.59859	116.58947	-16.2	Filter feeder community with sponges, sea whips and algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_104	W Lewis Island	Sand	Sand	-20.59896	116.59626	-16.6	Bare.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_105	W Lewis Island	Filter feeder community	Limestone	-20.59873	116.59321	-16.3	Low relief pavement with algal turf and very little sea whips.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_106	W Lewis Island	Filter feeder community	Limestone	-20.59801	116.5874	-16.1	Low relief pavement with sponges, sea whips and Gorgonians.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_107	W Lewis Island	Filter feeder community	Limestone	-20.59459	116.58794	-16	Low relief pavement with sponges, sea whips, soft corals and Gorgonians.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_108	W Lewis Island	Filter feeder community	Limestone	-20.59157	116.58799	-15.9	Low relief pavement with sparse invertebrates, some sponges and algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_109	W Lewis Island	Filter feeder community	Limestone	-20.59095	116.59215	-15.9	Low relief pavement with very sparse invertebrate cover and some algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#1_05/2000	22/05/00	GPS	AGD84
DAR_110	Rosemary Island	Macroalgae (limestone reef/low relief)	Limestone	-20.61575	116.59656	-7.5	Low relief limestone pavement with sand covered with macroalgal turf (med).	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_111	Rosemary Island	Filter feeder community	Limestone	-20.48543	116.55468	-4.5	Low relief pavement with soft corals and turf macroalgae including Padina.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_112	Rosemary Island	Filter feeder community	Limestone	-20.46943	116.55146	-12	Low relief pavement with filter feeding communities of sponges, sea whips and isolated hard corals.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_113	Rosemary Island	Sand	Sand	-20.46717	116.54997	-21	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_114	Rosemary Island	Subtidal reef (low relief)	Limestone	-20.46406	116.54835	-24.5	Low relief pavement bare with some algae and sparse invertebrates.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_115	Rosemary Island	Subtidal reef (low relief)	Limestone	-20.4617	116.54706	-30	Bare pavement with some algal turf and some sponges.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_116	Rosemary Island	Sand	Sand	-20.45522	116.56487	-31.5	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_117	Rosemary Island	Sand	Sand	-20.45198	116.56487	-35	Bare sand with lots of infauna holes.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_118	Rosemary Island	Sand	Sand	-20.45641	116.56955	-28	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_119	Rosemary Island	Subtidal reef (low relief)	Limestone	-20.4586	116.57161	-24	Bare pavement with silt/sand and sparse algae <10% cover.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_120	Rosemary Island	Filter feeder community	Limestone	-20.46068	116.5745	-15	Soft corals some sponges and isolated hard coral on low relief pavement.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_121	Rosemary Island	Coral reef communities (subtidal)	Limestone	-20.46152	116.57522	-10	High relief pavement with soft and hard coral, there seems to be some dead coral - could be breaker zone.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_122	Rosemary Island	Macroalgae (limestone reef/low relief)	Limestone	-20.46722	116.57731	-4.5	Low relief pavement with medium macroalgae cover, some soft coral and Sargassum sp.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No.	Date	GPS type	Datum
DAR_123	Kendrew Island	Coral reef communities (subtidal)	Limestone	-20.48114	116.52817	-10.5	Pavement and some medium relief pavement with algal turf cover and some soft corals (Sinularia).	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_124	Kendrew Island	Filter feeder community	Limestone	-20.4958	116.5289	-15	Low relief pavement with filter feeders, soft corals, sponges and sparse sea whips. Looks sandy but pavement underneath.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_125	Kendrew Island	Sand	Sand	-20.50748	116.52214	-20	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_126	Goodwyn Island	Sand	Sand	-20.51807	116.5147	-17	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_127	Goodwyn Island	Sand	Sand	-20.52615	116.51737	-17	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_128	Goodwyn Island	Sand	Sand	-20.52852	116.51942	-17	Bare sand of shell grit, some rubble and algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_129	Goodwyn Island	Sand	Sand	-20.53042	116.52169	-16	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_130	Goodwyn Island	Filter feeder community	Limestone	-20.53256	116.52568	-16	Low relief pavement with sponges, Gorgonians and soft corals.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_131	Goodwyn Island	Sand	Sand	-20.53364	116.5281	-13.7	Bare sand and some rubble.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_132	Goodwyn Island	Coral reef communities (subtidal)	Limestone	-20.53487	116.53031	-13.7	Low relief pavement with coral community of small and soft corals.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_133	Goodwyn Island	Sand	Sand	-20.55354	116.53684	-13	Bare some frigid corals maybe dead.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_134	Goodwyn Island	Sand	Sand	-20.55816	116.53923	-10	Bare sand with some rubble and microphytobenthos.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_135	Goodwyn Island	Sand	Sand	-20.5626	116.54586	-10	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_136	Enderby Island	Sand	Sand	-20.57002	116.5577	-10.5	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_137	Enderby Island	Sand	Sand	-20.56708	116.56111	-12	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_138	Enderby Island	Sand	Sand	-20.56358	116.56551	-15.5	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_139	Enderby Island	Sand	Sand	-20.57255	116.58013	-15	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_140	Enderby Island	Sand	Sand	-20.58153	116.59504	-18	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_141	W Lewis Island	Sand	Sand	-20.58415	116.60092	-16	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84
DAR_142	W Lewis Island	Sand	Sand	-20.58766	116.60467	-13.5	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#2_05/2000	23/05/00	GPS	AGD84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No.	Date	GPS type	Datum
DAR_143	Cohan Island	Coral reef communities (subtidal)	Limestone	-20.3816	116.79172	-4.55	Low relief pavement with algal turf and some hard coral and rubble.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_144	Cohan Island	Sand	Sand	-20.3784	116.78887	-21	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_145	Cohan Island	Coral reef communities (subtidal)	Limestone	-20.38	116.7902	-5	High relief limestone with coral community only small corals and some algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_146	Cohan Island	Sand	Sand	-20.37747	116.78589	-30	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_147	Cohan Island	Sand	Sand	-20.37562	116.78304	-30	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_148	Cohan Island	Sand	Sand	-20.35889	116.79919	-33	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_149	Cohan Island	Sand	Sand	-20.36091	116.8014	-32	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_150	Cohan Island	Filter feeder community	Limestone	-20.36736	116.81143	-21	Bare low relief pavement with algal mat and some sea whips.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_151	Cohan Island	Filter feeder community	Limestone	-20.36734	116.81272	-14	Low relief pavement with some sea whips, Gorgonians, sponges and hard coral but mainly bare.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_152	Cohan Island	Coral reef communities (subtidal)	Limestone	-20.367	116.8136	-10	High relief limestone with soft corals, Corymbose corals and sea urchins.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_153	Cohan Island	Subtidal reef (low relief)	Limestone	-20.36803	116.8154		Low relief pavement mainly bare with some corals.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_154	Legendre Island (S)	Coral reef communities (subtidal)	Limestone	-20.36759	116.82883	-3.5	Low relief pavement with macroalgae and rubble and algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_155	Legendre Island	Macroalgae (limestone reef/low relief)	Limestone	-20.36336	116.83092	-2.5	Low relief pavement with medium macroalgae cover and some rubble, sponges and soft corals.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_156	Legendre Island (NW)	Sand	Sand	-20.35145	116.84209	-35	Bare sand with shell grit.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_157	Legendre Island (NW)	Filter feeder community	Limestone	-20.35114	116.83275	-25	Low relief pavement with invertebrates including sea whips, sponges and Gorgonians. "sponge garden".	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_158	Gidley Island	Macroalgae (limestone reef/low relief)	Limestone	-20.41348	116.80427	-4	Low relief pavement with macroalgae and some rubble.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_159	Gidley Island	Sand	Sand	-20.41339	116.79147	-10	Bare fine sand.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_160	Gidley Island	Sand	Sand	-20.41311	116.7933	-6.5	Bare fine sand.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No.	Date	GPS type	Datum
DAR_161	Gidley Island	Sand	Sand	-20.41215	116.77702		Bare fine sand.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_162	Gidley Island	Coral reef communities (subtidal)	Limestone	-20.46276	116.79087	-9	Low to medium relief limestone with corals, hard corals of <10% cover, rubble, pavement, sponges and Gorgonians.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_163	Gidley Island	Subtidal reef (High relief)	Granite	-20.46308	116.79032	-13	Boulders and pavement with some hard coral (<10%) and some other invertebrates.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_164	Gidley Island	Sand	Sand	-20.46277	116.78568	-15	Low relief fine sand with some invertebrates.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_165	Gidley Island	Subtidal reef (High relief)	Granite	-20.46082	116.77973	-13	High relief granite boulders with algal turf and sparse plate corals, dolomite boulders and gas pipeline used.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_166	Shark Passage	Coral reef communities (subtidal)	Limestone	-20.47253	116.8077	-2.2	High relief limestone pavement with coral reef communities.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_167	Shark Passage	Macroalgae (limestone reef/low relief)	Limestone	-20.46663	116.81653	-2	Low relief limestone pavement with dense Sargassum and sand, pavement and shell grit.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_168	Shark Passage	Macroalgae (limestone reef/low relief)	Limestone	-20.46712	116.8167	-2	Low relief limestone pavement with Sargassum and bare pavement and sand.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_169	Shark Passage	Macroalgae (limestone reef/low relief)	Limestone	-20.46842	116.8162	-2	Some isolated hard corals and sparse macroalgae on pavement and rubble.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_170	Flying Foam Passage	Macroalgae (limestone reef/low relief)	Limestone	-20.46481	116.8263	-3	Low relief pavement with macroalgae (sparse) and some sponges.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_171	Flying Foam Passage	Filter feeder community	Limestone	-20.46729	116.82782	-8.4	Low relief pavement with some sponges and Gorgonians.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_172	Flying Foam Passage	Filter feeder community	Limestone	-20.4685	116.8301	-11.6	Low relief pavement with sparse macroalgae and some filter feeders.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_173	Flying Foam Passage	Coral reef communities (subtidal)	Limestone	-20.46969	116.83293	-2.5	High relief limestone with coral community.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_174	Flying Foam Passage	Macroalgae (limestone reef/low relief)	Limestone	-20.50163	116.82005	-2.5	Low relief limestone pavement with sparse macroalgal cover.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_175	Flying Foam Passage	Filter feeder community	Limestone	-20.50118	116.8152	-10	Low relief limestone pavement with macroalgae, hard corals, sponges and soft corals.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_176	Flying Foam Passage	Coral reef communities (subtidal)	Limestone	-20.4985	116.81	-2.6	Low relief pavement with coral communities, some rubble and algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#3_05/2000	24/05/00	GPS	AGD84
DAR_177	Malus Island	Coral reef communities (subtidal)	Limestone	-20.50255	116.67858	-6	High relief limestone with coral communities.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_178	Malus Island	Sand	Sand	-20.50159	116.6783	-12	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No.	Date	GPS type	Datum
DAR_179	Malus Island	Silt	Sand	-20.49662	116.67672	-13	Silty sand.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_180	Malus Island	Sand	Sand	-20.48369	116.67517	-10.9	Bare sand and shell grit.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_181	Malus Island	Sand	Sand	-20.4775	116.67418	-9.6	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_182	Nelson Rocks	Macroalgae (limestone reef/low relief)	Limestone	-20.44562	116.67542		Low relief limestone with some corals, but mainly bare with algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_183	Nelson Rocks	Coral reef communities (subtidal)	Limestone	-20.44318	116.67612	-9.5	Soft corals on bare limestone reef.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_184	Nelson Rocks	Filter feeder community	Limestone	-20.44249	116.6768	-15	Low relief limestone with mainly sea whips and some sponges.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_185	Nelson Rocks	Filter feeder community	Limestone	-20.44136	116.67729	-20	Sponges and Gorgonians on low relief limestone pavement, known as 'sponge garden'.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_186	Nelson Rocks	Sand	Sand	-20.43917	116.67777	-25	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_187	Nelson Rocks	Sand	Sand	-20.4328	116.67847	-30.5	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_188	Millar Rocks	Sand	Sand	-20.4346	116.64893	-31	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_189	Millar Rocks	Sand	Sand	-20.43692	116.64231	-25	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_190	Millar Rocks	Filter feeder community	Limestone	-20.4384	116.64174	-20	Low relief limestone with some sponges, sea whips and algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_191	Millar Rocks	Filter feeder community	Limestone	-20.43892	116.64171	-15	Low relief limestone with filter feeders. Seawhips, soft coral and hard corals.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_192	Millar Rocks	Filter feeder community		-20.43988	116.64	-10	Low relief limestone with soft corals, Gorgonians and some hard corals.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_193	Millar Rocks	Coral reef communities (subtidal)	Limestone	-20.44042	116.64032	-6.4	High relief limestone with coral community, rubble zone in deeper section.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_194	Brigadier Island	Coral reef communities (subtidal)	Limestone	-20.44164	116.6152	-5	High relief limestone with soft corals and rubble.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_195	Brigadier Island	Coral reef communities (subtidal)		-20.44018	116.61454	-10	High relief limestone with soft corals and isolated hard corals.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_196	Brigadier Island	Subtidal reef (low relief)	Limestone	-20.43968	116.61416	-15	Sparse soft corals, algal turf and bare limestone pavement of low to medium relief.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_197	Brigadier Island	Filter feeder community	Limestone	-20.43791	116.61349	-20	Sponges, seawhips and soft corals on low relief limestone. 'Sponge garden'.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No.	Date	GPS type	Datum
DAR_198	Brigadier Island	Filter feeder community	Limestone	-20.43695	116.61309	-25	Gorgonians, sponges, seawhips and low relief limestone pavement.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_199	Brigadier Island	Sand	Sand	-20.43143	116.61284	-3	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_200	Rosemary Island	Coral reef communities (subtidal)		-20.45339	116.59828	-2	Bare rubble zone, wave impact area.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_201	Rosemary Island	Coral reef communities (subtidal)	Limestone	-20.45186	116.5972	-5.5	Soft corals and rubble on high relief limestone reef.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_202	Rosemary Island	Subtidal reef (low relief)	Limestone	-20.45091	116.59632	-12	Bare reef pavement.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_203	Rosemary Island	Filter feeder community	Limestone	-20.44998	116.59515	-15	Soft corals, sea urchins, isolated hard coral and Gorgonians on low relief limestone.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_204	Rosemary Island	Filter feeder community	Limestone	-20.44965	116.59475	-20	Mainly soft corals and filter feeders on low relief limestone.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_205	Rosemary Island	Subtidal reef (low relief)	Limestone	-20.44811	116.59383	-25	Some soft corals but mainly bare limestone.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_206	Rosemary Island	Silt	Sand	-20.44492	116.59151	-30	Bare silty sand some bioturbation.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_207	Rosemary Island	Sand	Sand	-20.43869	116.58695	-35	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_208	Elphick Knob	Sand	Sand	-20.48133	116.63283	-5	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_209	Elphick Knob	Sand	Sand	-20.49371	116.64169	-6	Bare sand with shell grit.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_210	Elphick Knob	Filter feeder community	Limestone	-20.49719	116.64322	-14.2	Seawhips, Gorgonians and some sponges on low relief limestone.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_211	Malus Islands	Sand	Sand	-20.5002	116.6455	-10	Bare sand.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_212	Malus Islands	Macroalgae (limestone reef/low relief)	Limestone	-20.50273	116.64765	-5.5	Bare, some sparse macroalgae and invertebrates on silt covered pavement.	KBA	Drop down video	MRI/PI/DAR/DD#4_05/2000	25/05/00	GPS	AGD84
DAR_213	Whalers Bay	Coral reef communities (subtidal)	Limestone	-20.52386	116.67443	-5	Coral reef community of mainly hard coral on high relief limestone.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_214	Malus Island	Silt	Sand	-20.52557	116.67428		Bare sand, fine with some shell grit.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_215	Malus Island	Silt	Sand	-20.52676	116.67391	-15	Fine silty sand.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_216	Malus Island	Filter feeder community	Limestone	-20.53405	116.67427	-20	Seawhips, sponges and soft corals, described as platforms covered with sediment and filter feeding communities.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No.	Date	GPS type	Datum
DAR_217	W Lewis Island (N)	Silt	Sand	-20.53772	116.67498	-15	Bare silty sand.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_218	W Lewis Island (N)	Silt	Sand	-20.53839	116.6748	-10	Bare silty sand.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_219	W Lewis Island (N)	Coral reef communities (subtidal)	Limestone	-20.53877	116.67465	-5	Low coral cover (<5%) and coral rubble on low relief limestone.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_220	W Lewis Island (N)	Coral reef communities (subtidal)	Limestone	-20.54016	116.6751	-3.5	Coral rubble on low relief limestone.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_221	Karratha Bay	Coral reef communities (subtidal)	Limestone	-20.54694	116.64712	-5	Arborescent and Corymbose corals (dense) on high relief limestone.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_222	Karratha Bay	Filter feeder community	Limestone	-20.54545	116.64689	-10	Sponges, seawhips, soft corals and Gorgonians on sediment covered limestone pavement.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_223	Karratha Bay	Filter feeder community	Limestone	-20.54462	116.64681	-16	Sponges and soft corals on low relief limestone.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_224	Karratha Bay	Silt	Sand	-20.54213	116.64659	-20	Bare silty sand.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_225	Malus Island	Silt	Sand	-20.53462	116.64757	-17	Bare silty sand.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_226	Malus Island	Silt	Sand	-20.5296	116.64869	-15	Bare silty sand.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_227	Malus Island	Silt	Sand	-20.52489	116.64965	-10	Bare silty sand	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_228	Malus Island	Silt	Sand	-20.52266	116.65025	-6	Bare silty sand.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_229	Middle of channel	Sand	Sand	-20.53024	116.5806	-8	Bare sand with shell grit.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_230	Goodwyn Island	Coral reef communities (subtidal)	Limestone	-20.545	116.53123	-5	Soft corals, Corymbose, Tabulate and a few Arborescent forms of coral.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_231	Goodwyn Island	Subtidal reef (low relief)	Limestone	-20.5345	116.5296	-10	Bare limestone with some corals (<5%), few soft coral.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_232	Goodwyn Island	Filter feeder community	Limestone	-20.53254	116.52558	-15	"Sponge garden" on low relief limestone.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_233	Goodwyn Island	Sand	Sand	-20.52945	116.51782	-18	Bare sand with some shell grit.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_234	Goodwyn Island	Coral reef communities (subtidal)	Limestone	-20.52617	116.509	-7	Rubble, sponges, soft corals, isolated hard coral and algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_235	Goodwyn Island	Filter feeder community	Limestone	-20.52538	116.50669	-17	Sponges and other filter feeders on low relief pavement, 'sponge garden'.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84

Site No	Location	Habitat type	Substrate	Latitude	Longitude	Depth	Biological assemblage	Recorder	Observation	Video tape No.	Date	GPS type	Datum
DAR_236	Goodwyn Island	Sand	Sand	-20.52226	116.49767	-20	Bare sand and some shell grit.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_237	Goodwyn Island	Sand	Sand	-20.5199	116.4907	-25	Bare sand	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_238	Bare Rock	Coral reef communities (subtidal)	Granite	-20.54888	116.43977	-14	Granite boulders with coral communities (Sparse).	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_239	Bare Rock	Subtidal reef (low relief)	Limestone	-20.54873	116.43919	-22	Bare pavement and rubble and small boulders.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_240	Bare Rock	Sand	Sand	-20.54812	116.43748	-30	Bare sand and some shell grit.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_241	Bare Rock	Coral reef communities (subtidal)	Limestone	-20.55077	116.44293	-2.5	High relief limestone and boulders with medium (50%) coral community cover.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_242	Bare Rock	Coral reef communities (subtidal)	Limestone	-20.55209	116.444	-4	Bare with sparse coral cover on high relief limestone/boulders.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_243	Bare Rock	Coral reef communities (subtidal)	Limestone	-20.55458	116.44668	-10	Bare limestone with rubble and old Porites bommies.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_244	Bare Rock	Sand	Sand	-20.55594	116.44789	-15	Bare sand and some shell grit.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_245	Bare Rock	Subtidal reef (High relief)	Granite	-20.56277	116.45368	-13	Low relief granite bare boulder field.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_246	Bare Rock	Filter feeder community	Limestone	-20.56645	116.45681	-6	Low relief limestone with sponges, seawhips, soft corals, and Gorgonians, 'sponge gardens'.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_247	Bare Rock	Sand	Sand	-20.57445	116.46286	-16	Bare sand with shell grit.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_248	Bare Rock	Sand	Sand	-20.59288	116.47256	-13.5	Bare sand with some algal turf.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_249	Enderby Island	Coral reef communities (subtidal)	Limestone	-20.59321	116.4739	-10	Soft corals on high relief limestone/boulders.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84
DAR_250	Enderby Island	Coral reef communities (subtidal)	Limestone	-20.59364	116.47374	-2.3	High relief limestone with corals on boulder field.	KBA	Drop down video	MRI/PI/DAR/DD#5_05/2000	25/05/00	GPS	AGD84