

**CSIRO Marine Laboratories  
Report 219**

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**A Checklist of Megabenthos Recorded  
in the Gulf of Carpentaria, November–  
December 1990**

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**B. G. Long  
I. R. Poiner**



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**A Checklist of Megabenthos Recorded  
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**B. G. Long  
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## Summary

The megabenthos of the Gulf of Carpentaria was surveyed during November and December 1990. Over 840 species from 150 families were collected by beam-trawling a systematic grid of 107 stations.

Most taxa were in the phyla Crustacea (26%) and Mollusca (23%), followed by Echinodermata (17%), Porifera (12%), Coelenterata (7%). Minor phyla, seagrass and algae comprised the remaining 9%. Most taxa were rare: half (410) of the 846 species were collected at two or fewer stations and 35% (296) were collected at single stations. Ten of the 14 species that were 'common' in the gulf (occurred at > 50% of the stations) are also widely distributed throughout the Indo-West Pacific but occurred in low abundances in the gulf. The sand dollar, *Laganum* sp. 1 was both widely distributed in the gulf (43 stations) and abundant (20,949 individuals).

Most species were scavengers/ carnivores (345) or suspension-feeders (331), with fewer deposit-feeders (121) or herbivores (37). Half (45%) of the scavengers/ carnivores species were decapods. A third (28%) of the suspension-feeding taxa were sponges. Although there were fewer deposit-feeding taxa, they made up 1090 t (64%) of the 1704 t collected.

The absolute mean biomass was 15.92 kg/station (s.e. = 5.2) and abundance was 4,453 individuals/ station (s.e. = 2,154). There were 59.8 species/station on average (s.e. = 5.8). Nearly all taxa (95%) were small (< 100 g). Two thirds (60%) of the taxa were mobile. Two spatangoid heart urchins accounted for 59% of the biomass but were collected at only 9 stations. Similarly, two Flabellid corals that accounted for nearly half (47%) of the total abundance (476,518) were collected at only 10 stations.

Community structure and distribution patterns were analysed by numerical classification techniques. These indicated 2 main station groups and 11 species groups, based on megabenthos presence or absence. The first station group was in the muddy sediments of the central and western gulf. The second station group was in the coarser sediments along the east and south-eastern margins of the gulf. The 11 species groups were divisible into species mainly found in the muddier sediments of the central/western gulf, species mostly found in the coarser sediments of the eastern and south-eastern gulf, species found throughout the gulf and highly localised suites of species.

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## Introduction

The Gulf of Carpentaria is a large, rectangular (approximately  $3.7 \times 10^5 \text{ km}^2$ ) and shallow ( $< 70 \text{ m}$ ) tropical embayment between  $11^\circ \text{ S}$  and  $17.5^\circ \text{ S}$ , and  $136^\circ \text{ E}$  and  $142^\circ \text{ E}$  (Fig. 1). The physical environment of this northern Australian gulf has recently been described by Somers and Long (1994).

CSIRO Division of Fisheries sampled the fish and benthos of the Gulf of Carpentaria during a cruise in November and December 1990 on the 66 m FRV *Southern Surveyor*. The objectives of the cruise were to describe quantitatively the species composition and distribution of the fish fauna, and to describe both the megabenthos and infauna communities. The infauna communities have been described by Long *et al.* (1994) and the fish communities by Blaber *et al.* (1994). The relationship between infauna and sediment pigments was described by Burford *et al.* (1994). This report provides new data on the abundance, biomass and feeding types of the megabenthos. The data are analysed and interpreted further in Long *et al.* (in prep.).

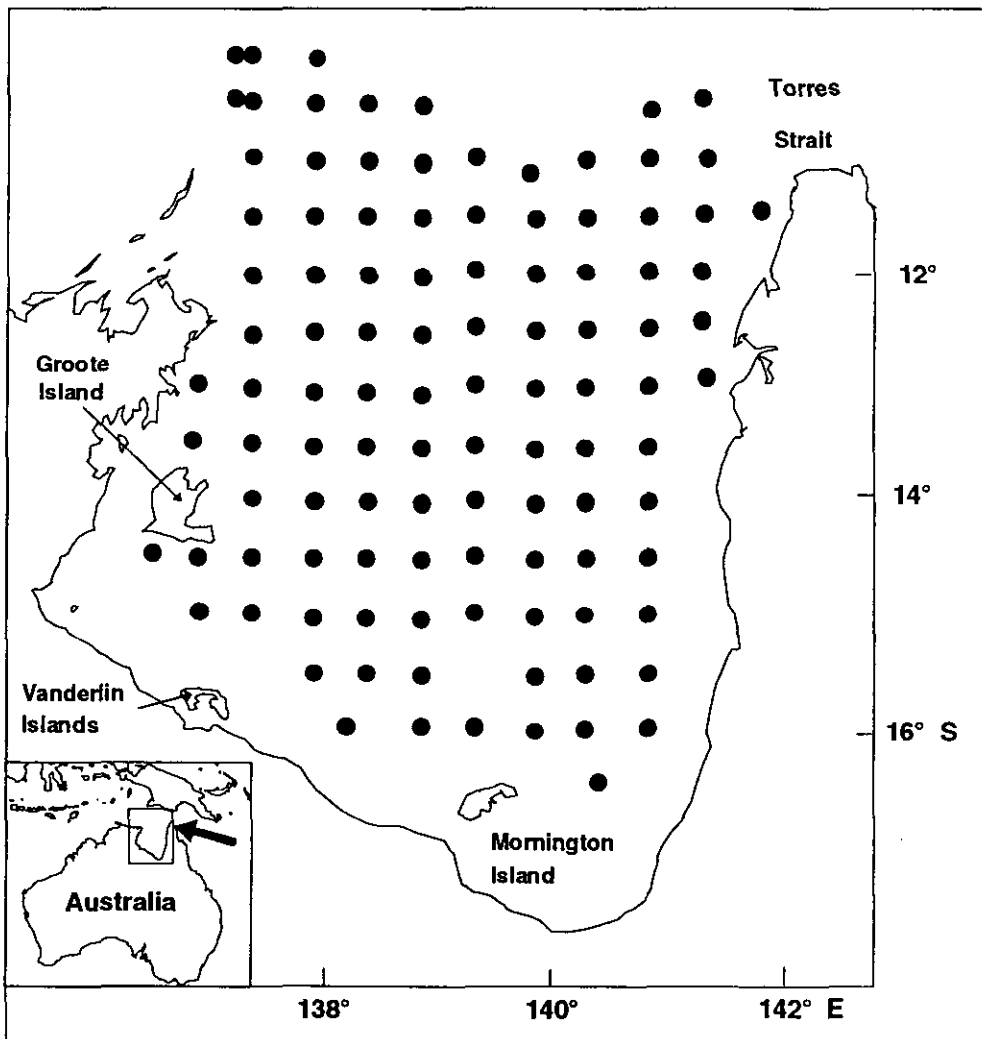


Figure 1. Gulf of Carpentaria and the sampling stations.

## Materials and Methods

### *Field sampling*

The Gulf of Carpentaria was divided into a 6 x 6 n.mile grid and from this, a systematic grid of 107 sample units, 30 n.miles apart were selected for sampling (Fig. 1). A station was randomly selected from within each 6 x 6 n.mile sample unit. The position of each station was fixed with the global positioning system.

The 107 stations were sampled between November and December 1990 by towing a 3.0 m wide by 1.2 m high, 30 mm mesh net beam trawl for 15 min at 6 km/h from the stern of the ship. One beam trawl haul was taken at each station. The large (> 1 kg) sessile megabenthos, mainly sponges, were removed from the sample, sorted into categories, counted and weighed (to the nearest 100 g) and a subsample was frozen for later identification. The remaining megabenthos was sorted on board into family taxa and frozen for transport to the laboratory. If the dredge was full, the complete sample was weighed and a subsample (approximately 20 kg) was processed as above.

The sediment grain size analysis, based on McLoughlin and Young's (1985) method gave three grain sizes: mud (< 63  $\mu\text{m}$ ), sand (63  $\mu\text{m}$  - 2 mm) and gravel (> 2 mm). Sediments were described as mud (> 80% mud), sand (0 - 20% mud), sandy mud (20 - 50% mud), and muddy sand (80 - 80% mud).

### *Species Identification*

Samples were identified to species or putative taxon by taxonomic specialists at the Queensland Museum, where the samples have been lodged.

At each station sampled, the individuals in each species group were counted, weighed as a group to the nearest gram and placed into feeding guilds — herbivores, deposit-feeders, scavengers and carnivores, and suspension-feeders — by consulting Fauchald and Jumars (1979) for polychaetes, Short and Potter (1987) for molluscs, and Barnes (1974) for the remaining phyla.

Species were also placed into one of three size classes: large (> 1 kg), medium (1 - 0.1 kg) or small (< 100 g); and two mobility classes: sessile or mobile.

## Results and Discussion

### *Checklist of Species*

A total of 846 species from 150 families were recorded, and are listed by phylum in the checklist in this report. The Crustacea were the most diverse (223 species), followed by Mollusca (194), Echinodermata (144), Porifera (104), Coelenterata (63), Annelida (48), Chordata (35) and Bryozoa (28). Seaweeds and seagrasses, Nemertea, Sipuncula and Echiura made up the remaining 16 putative species.

The gulf had high species richness but low average biomass (15.9 kg/trawl). Most taxa (95%) consisted of small (<100 g) individuals. One half (48%) of the taxa were found at two or fewer stations and 35% were collected at only one station. Less than 1% of the taxa occurred at more than 50% of the stations. Two spatangoid heart urchins accounted for 59% of the biomass but were sampled at only 9 stations.

### *Distribution of megabenthos in the Gulf*

Both the biomass and abundance of megabenthos were patchily distributed in the gulf (Fig. 2a & b). However, the number of species/trawl was highest along the east and south-eastern margins of the gulf (Fig. 2c). Deposit-feeders were most abundant in the central gulf, while suspension-feeders were most abundant in the eastern and south-eastern gulf (Fig. 2d & e). Carnivores were more evenly distributed throughout the gulf (Fig. 2f). Sponges reached highest biomass along the eastern and south-eastern margins of the gulf (Fig. 2g). Crustaceans were highest in the east and southern gulf but were also collected throughout the gulf (Fig. 2h).

### *Megabenthos communities*

There were two main megabenthos communities in the Gulf of Carpentaria, which were divided into 11 station subgroups (Long *et al.* 1994). The first main station group was in shallow (< 45 m), coarser sediments (< 35% mud) along the east and south-eastern margins of the gulf. The second main station group was in the muddier sediments (> 60% mud) of the central and western gulf in waters deeper than 45 m. Suspension-feeders dominated the coarser sediments and deposit-feeders the muddier sediments.

The species in the gulf were divisible into 11 species groups (Long *et al.* in prep.). A two-way table of species presence or absence at stations was used to assist in the interpretation of species and station groups (Table 1).

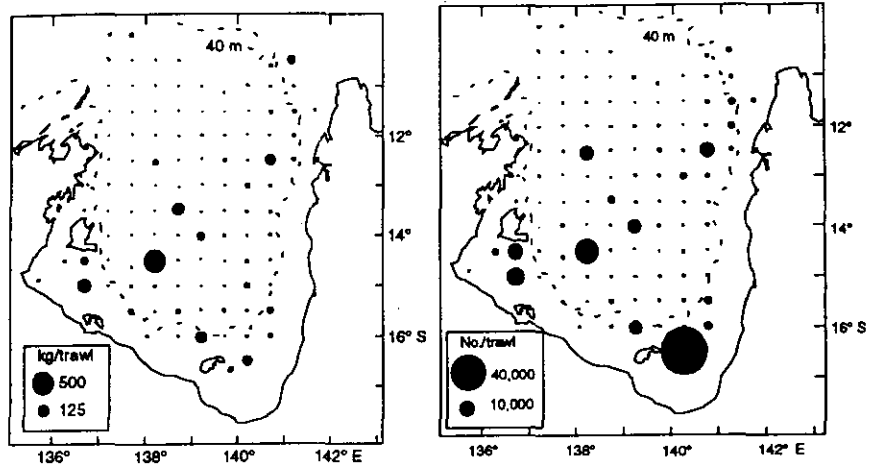


Figure 2 (a) Biomass of megabenthos (kg / trawl). (b). Abundance of megabenthos (number / trawl)

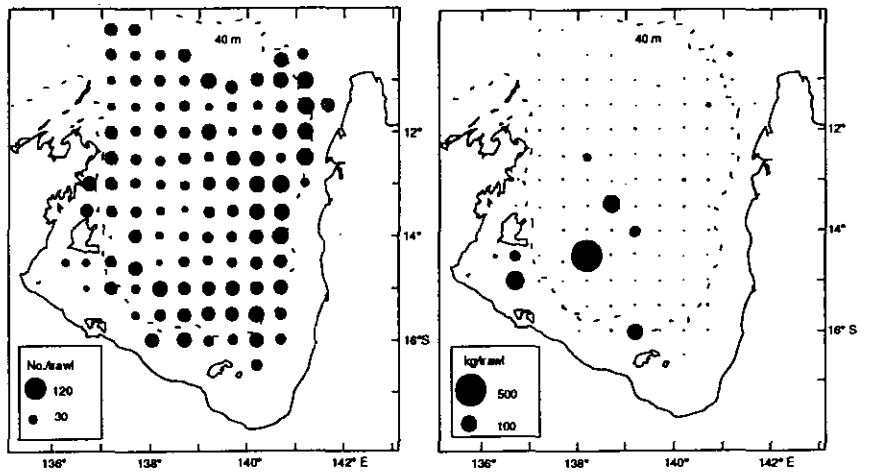


Figure 2 (c) Number of species / trawl). (d). Number of deposit-feeders / trawl

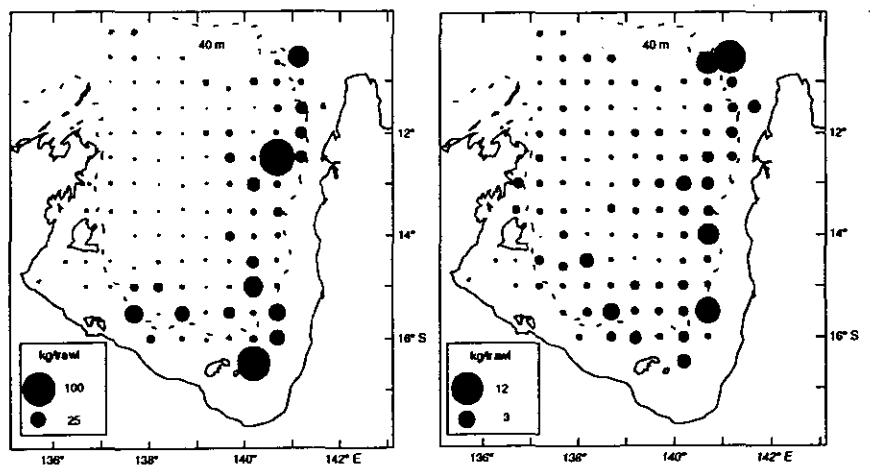


Figure 2 (e) Number of suspension-feeders / trawl). (f). Number of carnivores and scavengers / trawl



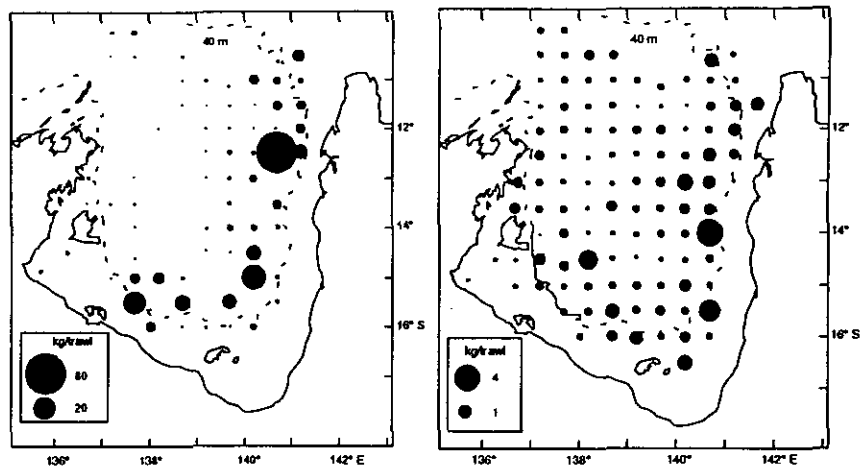


Figure 2.(g). Sponge biomass / trawl, and (h). Crustacean biomass / trawl

## Acknowledgments

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Table 1. Two-way table of species groups by station groups based on the classification of megabenthos species presence, ■, or absence, ·, data from beam trawls of the Gulf of Carpentaria. Refer to Long *et al.* (in prep.) for details of the methods used for classifying of the data.

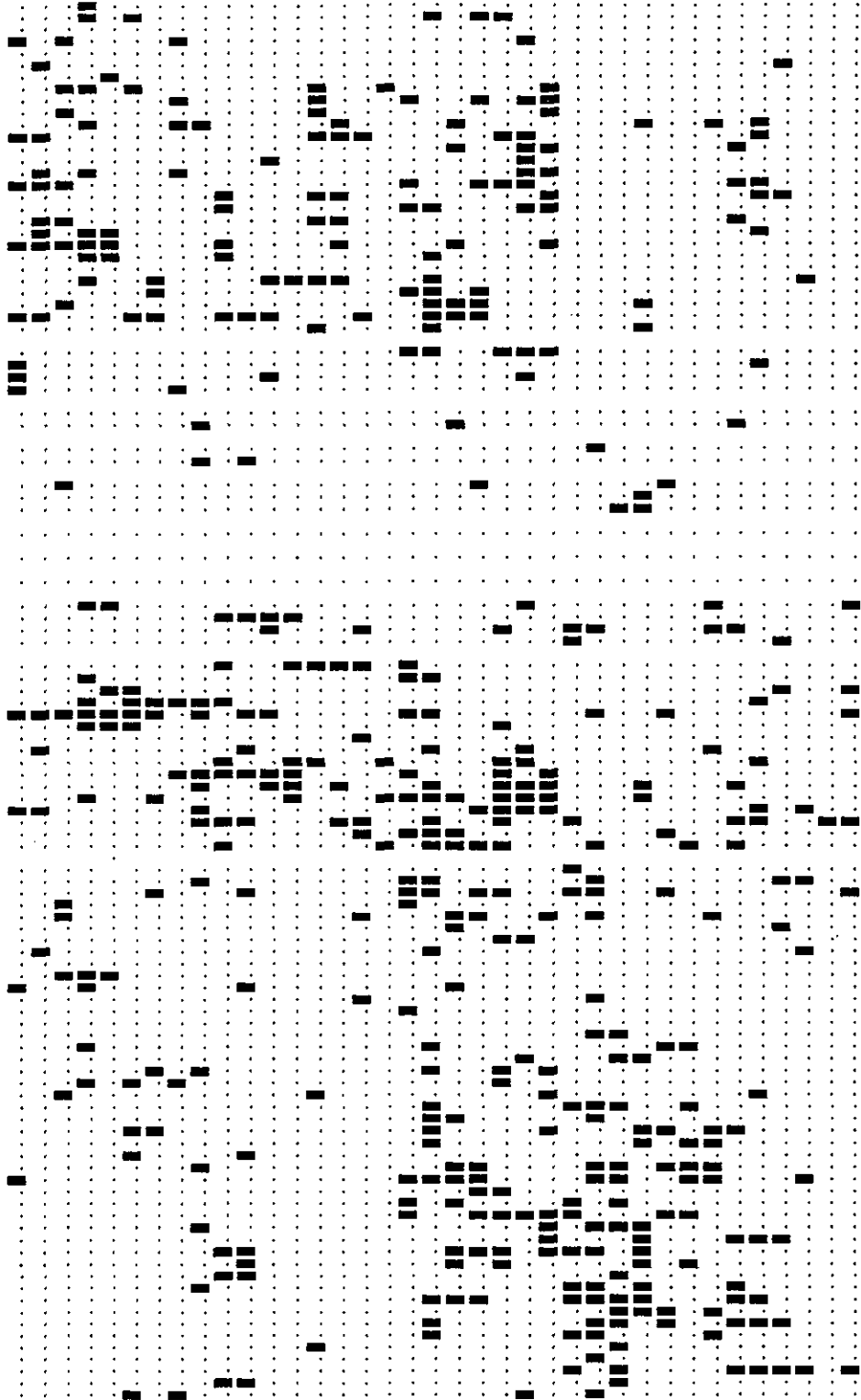
Station Group A Station Group B

	Station Group A				Station Group B							
	Subgroup 1		Subgroup 2		3	4	—	10	11	Subgroup 11		
<i>Spatangoida</i> sp. 4	■	·	·	·	·	·	·	·	·	·	·	·
<i>Harpisquilla</i> <i>harpax</i>	·	·	·	·	·	·	·	·	·	·	·	·
<i>Mareita planulata</i>	·	·	·	·	·	·	·	·	·	·	·	·
Porifera sp. 20	·	·	·	·	·	·	·	·	·	·	·	·
<i>Filigrana</i> sp.	·	·	·	·	·	·	·	·	·	·	·	·
Porifera sp. 12	·	·	·	·	·	·	·	·	·	·	·	·
Asteroidea sp. 18	·	·	·	·	·	·	·	·	·	·	·	·
Crinoidea sp. 8	·	·	·	·	·	·	·	·	·	·	·	·
<i>Spatangoida</i> sp. 5	·	·	·	·	·	·	·	·	·	·	·	·
Porifera sp. 36	·	·	·	·	·	·	·	·	·	·	·	·
Asciadiacea sp. 4	·	·	·	·	·	·	·	·	·	·	·	·
Asciadiacea sp. 12	·	·	·	·	·	·	·	·	·	·	·	·
<i>Tubastrea</i> sp.	·	·	·	·	·	·	·	·	·	·	·	·
Porifera sp. 45	·	·	·	·	·	·	·	·	·	·	·	·
<i>Sphaenopus</i> sp. 2	·	·	·	·	·	·	·	·	·	·	·	·
<i>Metapenaeopsis</i> sp.	·	·	·	·	·	·	·	·	·	·	·	·
Porifera sp. 41	·	·	·	·	·	·	·	·	·	·	·	·
Alcyonacea sp. 12	·	·	·	·	·	·	·	·	·	·	·	·
Porifera sp. 32	·	·	·	·	·	·	·	·	·	·	·	·
Porifera sp. 31	·	·	·	·	·	·	·	·	·	·	·	·
Porifera sp. 33	·	·	·	·	·	·	·	·	·	·	·	·
Hydroidea sp. 13	·	·	·	·	·	·	·	·	·	·	·	·
<i>Acaudina</i> sp. 4	·	·	·	·	·	·	·	·	·	·	·	·
<i>Portunus rubromarginatus</i>	·	·	·	·	·	·	·	·	·	·	·	·
Asteroidea sp. 16	·	·	·	·	·	·	·	·	·	·	·	·
<i>Ascidia sydneyensis</i>	·	·	·	·	·	·	·	·	·	·	·	·
Asciadiacea sp. 9	·	·	·	·	·	·	·	·	·	·	·	·
<i>Minnivola</i> sp. nov	·	·	·	·	·	·	·	·	·	·	·	·
Asteroidea sp. 17	·	·	·	·	·	·	·	·	·	·	·	·
<i>Tellina donaciformis</i>	·	·	·	·	·	·	·	·	·	·	·	·

Station Group A Station Group B

subgroup 1 subgroup 2 3 4 — 10 subgroup 11

- Marella ovata*
- Pseudomicippe* sp.
- Chaetodiadema granulatum*
- Porifera sp. 18
- Porifera sp. 46
- Porifera sp. 22
- Asciacea sp. 3
- Alyonacea sp. 7
- Hydroida sp. 11
- Bryozoan sp. 9
- Porifera sp. 15
- Bryozoan sp. 9a
- Sphaeropus* sp. 1
- Theris orientalis*
- Didemnidae sp. 2
- Porifera sp. 8
- Porifera sp. 1
- Pyura sacciformis*
- Asciacea sp. 1
- Pinna muricata*
- Gemmula hastula*
- Pariphiolus marianne*
- Pennatulacea sp. 1
- Melaxinia vitrea*
- Acaudina* sp. 3
- Onuphidae sp. 3
- Solenocera australiana*
- Charobis miles*
- Rhinobrisus* sp.
- Spatangoida sp. 2 ss
- Acaudina* sp. 1
- Crinoidea sp. 4
- Crinoidea sp. 11
- Crinoidea sp. 3
- Crinoidea sp. 10
- Alyonacea sp. 6
- Porifera sp. 2



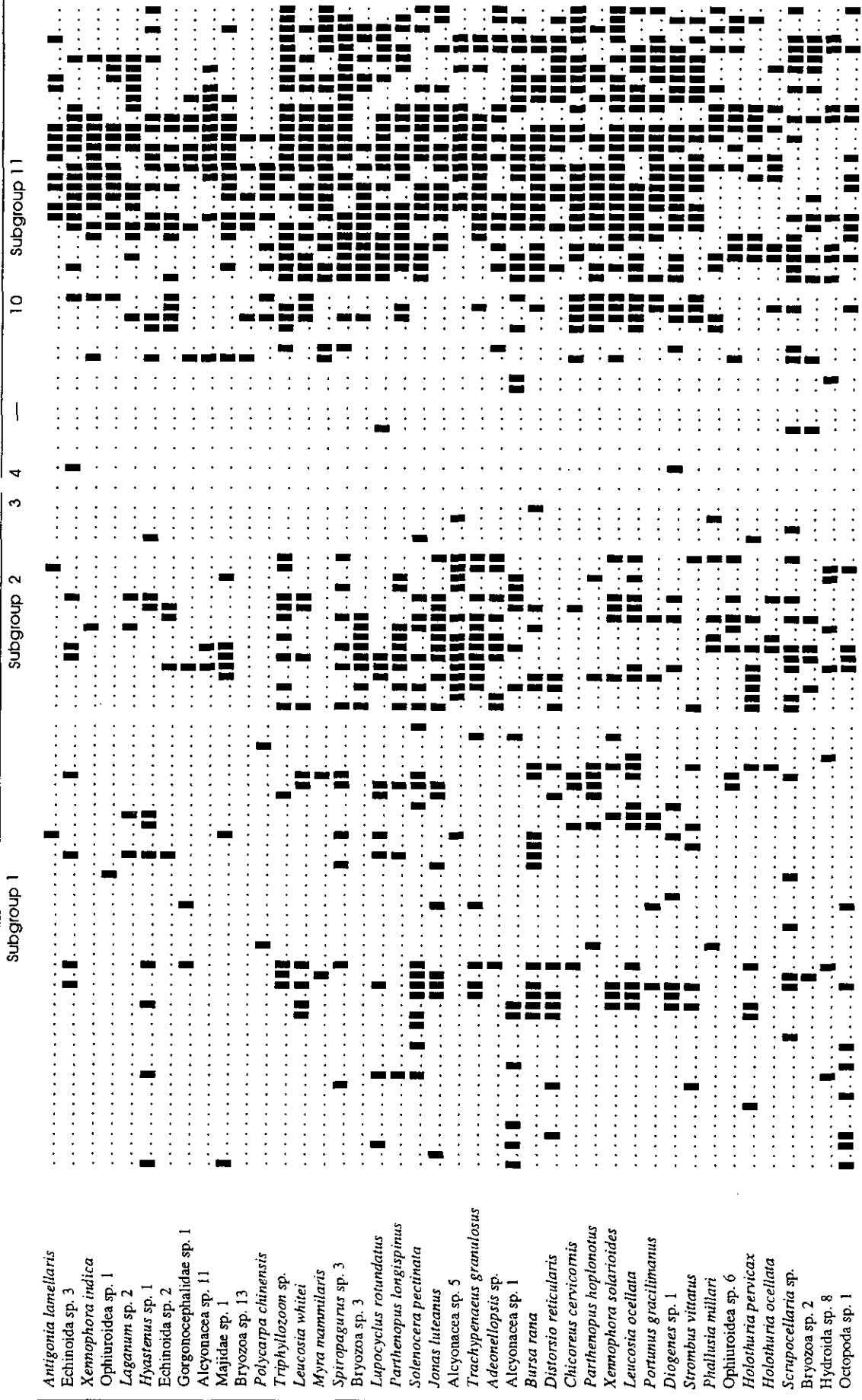
Station Group B

Station Group A

	Subgroup 1	Subgroup 2	3	4	—	10	Subgroup 11
3	Asteroidea sp. 4						
	Bryozoan sp. 16						
	Crinoidea sp. 7						
4	Ponifera sp. 82						
	Aleyonacea sp. 18						
5	Ponifera sp. 94						
	Ponifera sp. 95						
	Ponifera sp. 7						
6	Didemnidae sp. 3						
	Ponifera sp. 14						
	<i>Charybdis feriatius</i>						
	Gorgonacea sp. 5						
	<i>Majidae</i> sp. 2						
	<i>Oratosquilla woodmasoni</i>						
	Bryozoan sp. 12						
	Ponifera sp. 25						
	Ponifera sp. 23						
7	Ponifera sp. 29						
	Ponifera sp. 55						
	Bryozoa sp. 8						
	<i>Circe scripta</i>						
	Bryozoa sp. 20						
	Aleyonacea sp. 19						
	<i>Laganum</i> sp. 3						
	Ponifera sp. 58						
	<i>Hypodistoma deerratum</i>						
	<i>Stellaster equestris</i>						
	<i>Luidia maculata</i>						
	Bryozoa sp. 11						
	<i>Portunus granulatus</i>						
	<i>Metrodora subulata</i>						
	Bryozoa sp. 10						
	<i>Sphaenopus marsupialis</i>						
	<i>Fiabellum</i> sp.						

Station Group B

Station Group A



Station Group B

Station Group A

	Subgroup 1				Subgroup 2				Subgroup 11				
	1	2	3	4	1	2	3	4	1	2	3	4	
<i>Fiabellum</i> sp. 3	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Fiabellum</i> sp. 2	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Porifera</i> sp. 11	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Porifera</i> sp. 80	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Alyconacea</i> sp. 2	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Philine</i> sp. 1	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Porifera</i> sp. 10	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Porifera</i> sp. 3	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Porifera</i> sp. 28	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Porifera</i> sp. 30	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Porifera</i> sp. 2	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Porifera</i> sp. 9	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Porifera</i> sp. 39	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Abaltistes stellaris</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Porifera</i> sp. 43	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Porifera</i> sp. 37	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Spatangoida</i> sp. 7	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Pentacta anceps</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Dendostreaa folium</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Mailleus albus</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Haustellum multiplicatum</i>	■	■	■	■	■	■	■	■	■	■	■	■	■

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<i>Laganum</i> sp. 1	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Asteroida</i> sp. 1	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Cullellus cullellus</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Ceratoplax</i> sp. 2	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Arcania septemspinosa</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Dosinia nira</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Corbula scaphoides</i>	■	■	■	■	■	■	■	■	■	■	■	■	■

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<i>Corbula macgillivrayi</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Liagore rubromaculata</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Calappa terraereginae</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Veprecardium multipinosum</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Alyconacea</i> sp. 4	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Metapenaeopsis palmenis</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Carcinoplax purpurea</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Bassina calophylla</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Myra biconica</i>	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Ophiuroidea</i> sp. 8	■	■	■	■	■	■	■	■	■	■	■	■	■

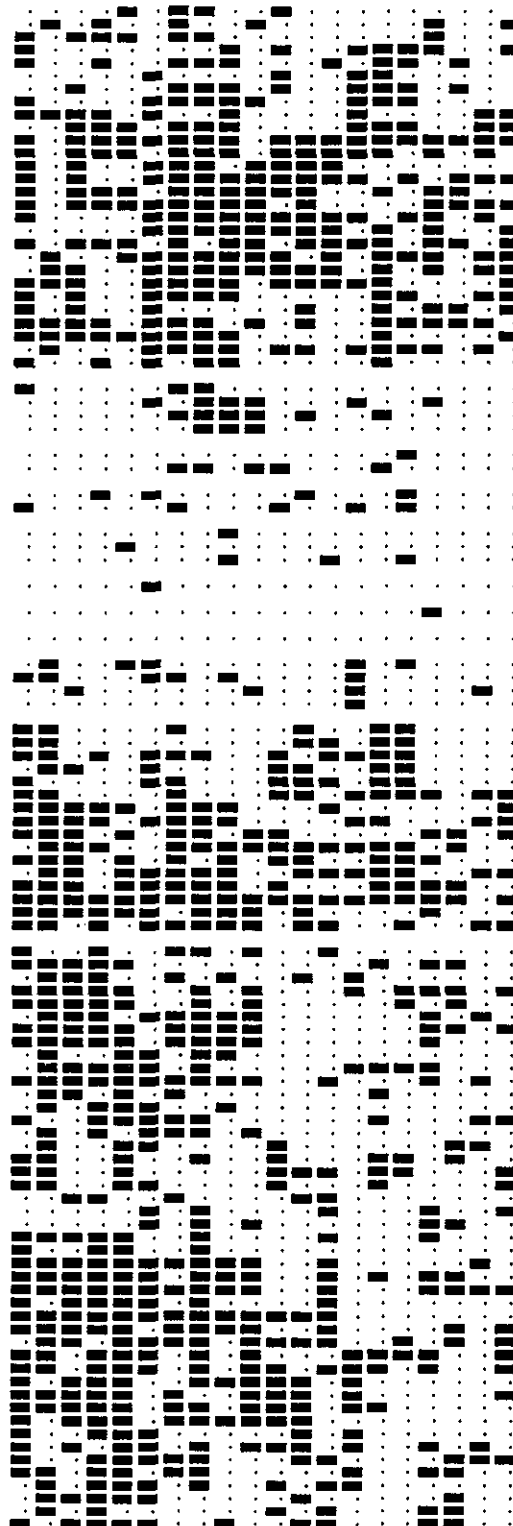
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Station Group A

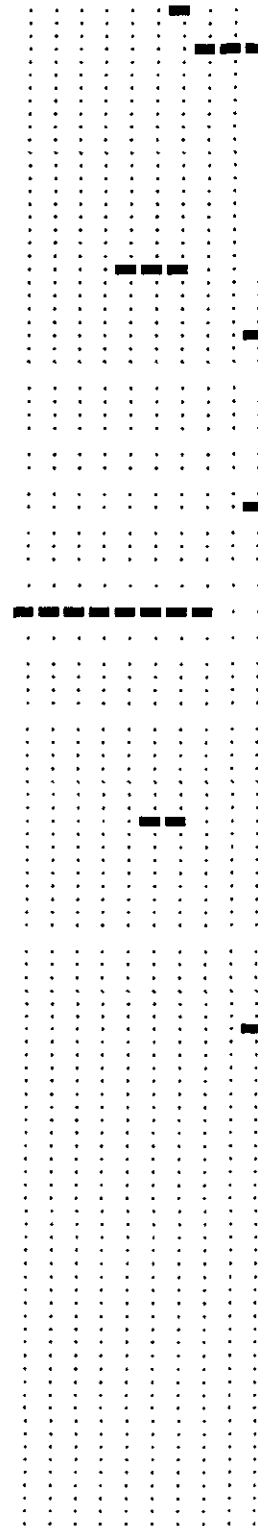
Station Group B

Subgroup 1      Subgroup 2      3      4      —      10      Subgroup 11

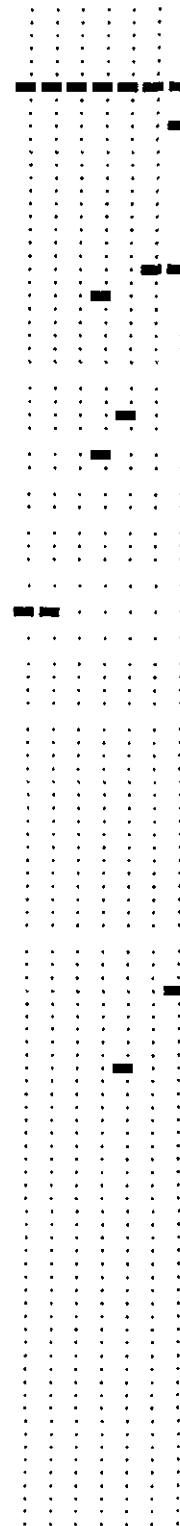
*Arcania novemspinosa*  
*Ceratopanax* sp. 1  
*Oratosquilla inornata*  
*Portunus spinipes*  
*Charybdis truncata*  
*Amusium pleuronectes*  
*Phalangites australiensis*  
*Parthenopus longimanus*  
*Dorippe frascione*  
*Portunus* sp. 1  
*Retiflustra cornea*  
*Crinoidea* sp. 1  
*Palicidae* sp. 2  
*Amathia* sp.  
*Hydroida* sp. 5  
*Hydroida* sp. 4  
*Sepia* sp. 1  
*Aphrodita* sp. 1  
*Astropecten granulatus*  
*Murex acanthostephes*



*Pinctada sugillata*  
*Holothuria scabra*  
*Porifera* sp. 64  
*Porifera* sp. 60  
*Caulerpa racemosa*  
*Caulerpa mexicana*  
*Halophila spinulosa*  
*Stichopus horrens*  
*Bohadschia marmorata*  
*Teuthoidea* sp. 1



*Asteroidea* sp. 13  
*Spondylus victorinae*  
*Porifera* sp. 92  
*Pseudocolochirus axiologus*  
*Ophiuroidea* sp. 5  
*Asteroidea* sp. 15  
*Penaeus esculentus*



## Checklist of Megabenthos from Gulf of Carpentaria

**A** = Abundance / trawl (number)

**B** = Biomass / trawl (kg)

**N** = Number of sites where collected

**F** = Feeding mode

- Su = suspension-feeder
- Ca = carnivore or scavenger
- De = deposit-feeder
- He = herbivore

**S** = size

- S = small (< 100 g)
- M = medium (100 g – 1 kg)
- L = large (> 1 kg)

**M** = Mobility

- Mo = mobile
- Se = sessile
- X = unknown

Class	Order	Family	Species	A	B	N
Seaweeds						
	Chlorophyceae		sp. 1	X	X	X
	Siphonales	Caulerpanceae	<i>Caulerpa brachypus</i>	X	X	X
			<i>Caulerpa lentifera</i>	X	X	X
			<i>Caulerpa mexicana</i>	X	X	X
			<i>Caulerpa racemosa</i>	X	X	X
			<i>Caulerpa</i> sp.	X	X	X
		Codiaceae	<i>Halimeda discoidea</i>	X	X	X
		Udoteaceae	<i>Udotea</i> sp. 1	X	X	X
	Phaeophyceae		sp. 1	X	X	X
	Fucales	Sargassaceae	<i>Sargassum</i> sp. 1	X	X	X
Seagrasses						
	Monocotyledoneae	Helobiae	Hydrocharitaceae			
			<i>Halophila ovalis</i>	X	X	X
			<i>Halophila spinulosa</i>	X	X	X



## Porifera

sp. 1	33	1.79	4	Su	S	Se
sp. 2	128	2.44	12	Su	S	Se
sp. 3	241	2.78	10	Su	S	Se
sp. 4	1	0.01	1	Su	S	Se
sp. 5	7	0.06	3	Su	S	Se
sp. 6	1	0.01	1	Su	S	Se
sp. 7	17	0.60	3	Su	L	Se
sp. 8	82	0.56	9	Su	M	Se
sp. 9	215	1.58	13	Su	S	Se
sp. 10	398	41.72	13	Su	L	Se
sp. 11	99	16.13	4	Su	M	Se
sp. 12	36	0.64	31	Su	S	Se
sp. 13	6	0.08	1	Su	S	Se
sp. 14	21	1.10	2	Su	S	Se
sp. 15	54	0.25	14	Su	S	Se
sp. 16	7	0.03	4	Su	S	Se
sp. 17	17	0.12	5	Su	S	Se
sp. 18	4174	4.62	19	Su	S	Se
sp. 19	1	0.02	1	Su	S	Se
sp. 20	70	0.71	8	Su	S	Se
sp. 21	9	0.39	4	Su	S	Se
sp. 22	97	2.31	11	Su	M	Se
sp. 23	37	0.61	3	Su	S	Se
sp. 24	21	0.20	1	Su	S	Se
sp. 25	21	0.79	1	Su	M	Se
sp. 26	2	0.03	1	Su	S	Se
sp. 27	24	0.11	6	Su	S	Se
sp. 28	51	3.13	4	Su	M	Se
sp. 29	8027	71.17	10	Su	M	Se
sp. 30	40	1.68	5	Su	M	Se
sp. 31	161	1.42	2	Su	M	Se
sp. 32	103	7.10	4	Su	L	Se
sp. 33	33	4.08	3	Su	L	Se
sp. 34	12	0.26	3	Su	S	Se
sp. 35	5	0.27	1	Su	S	Se
sp. 36	101	12.36	7	Su	L	Se
sp. 37	88	5.4	8	Su	M	Se
sp. 39	7856	19.67	6	Su	S	Se
sp. 40	1	0.06	1	Su	S	Se
sp. 41	31	1.05	3	Su	S	Se
sp. 42	2	0.01	1	Su	S	Se
sp. 43	8	0.48	3	Su	M	Se
sp. 44	2	0.08	1	Su	S	Se
sp. 45	12	0.47	2	Su	M	Se
sp. 46	148	0.97	9	Su	S	Se
sp. 47	8	0.16	5	Su	S	Se
sp. 48	2	0.01	1	Su	S	Se
sp. 49	11	0.08	2	Su	S	Se
sp. 50	15	0.35	5	Su	S	Se
sp. 51	1	0.08	1	Su	S	Se
sp. 52	1	0.02	1	Su	S	Se

	A	B	N	F	S	M
sp. 53	2	0.01	1	Su	S	Se
sp. 54	1	0.01	1	Su	S	Se
sp. 55	263	6.58	7	Su	S	Se
sp. 56	1	0.17	1	Su	S	Se
sp. 57	3	0.35	2	Su	M	Se
sp. 58	37	0.57	4	Su	S	Se
sp. 59	7	0.31	1	Su	S	Se
sp. 60	7	1.30	1	Su	S	Se
sp. 61	7	0.03	1	Su	S	Se
sp. 62	7	0.12	1	Su	S	Se
sp. 63	7	0.12	1	Su	S	Se
sp. 64	147	2.72	1	Su	S	Se
sp. 65	9	0.19	2	Su	S	Se
sp. 66	7	0.06	1	Su	S	Se
sp. 67	7	0.03	1	Su	S	Se
sp. 68	15	0.06	1	Su	S	Se
sp. 69	16	0.17	2	Su	M	Se
sp. 70	9	0.18	2	Su	S	Se
sp. 71	106	0.30	5	Su	S	Se
sp. 72	1	0.01	1	Su	S	Se
sp. 73	1	0.01	1	Su	S	Se
sp. 74	1	0.01	1	Su	S	Se
sp. 75	3	0.01	1	Su	S	Se
sp. 76	6	0.09	1	Su	S	Se
sp. 77	6	0.12	1	Su	S	Se
sp. 78	12	0.08	1	Su	S	Se
sp. 79	12	0.06	2	Su	S	Se
sp. 80	54	1.89	1	Su	S	Se
sp. 81	1	0.03	1	Su	S	Se
sp. 82	10	0.50	1	Su	S	Se
sp. 83	70	0.35	1	Su	S	Se
sp. 84	9	0.16	2	Su	S	Se
sp. 85	10	0.18	3	Su	S	Se
sp. 86	1	0.04	1	Su	M	Se
sp. 87	4	0.06	2	Su	S	Se
sp. 88	1	0.01	1	Su	S	Se
sp. 89	2	0.01	1	Su	S	Se
sp. 90	2	0.15	2	Su	S	Se
sp. 91	3	0.16	2	Su	S	Se
sp. 92	1	0.41	1	Su	M	Se
sp. 93	1	0.14	1	Su	S	Se
sp. 94	3	1.65	1	Su	S	Se
sp. 95	2	1.57	1	Su	S	Se
sp. 96	2	0.08	1	Su	S	Se
sp. 97	5	0.04	1	Su	S	Se
sp. 98	1	0.04	1	Su	S	Se
sp. 99	10	1.78	1	Su	S	Se
Calcareo						
sp. 1	15	0.08	1	Su	S	Se
sp. 2	17	0.04	6	Su	S	Se
sp. 3	1	0.01	1	Su	S	Se

## Coelenterata

## Hydrozoa

## Hydrozoa

## Hydrozoa

sp. 2	1	0.01	1	Su	S	Se
sp. 3	24	0.04	4	Su	S	Se
sp. 4	766	2.10	36	Su	S	Se
sp. 5a	23	0.03	3	Su	S	Se
sp. 5b	2804	1.59	45	Su	S	Se
sp. 6	276	0.39	24	Su	S	Se
sp. 7	142	0.31	18	Su	S	Se
sp. 8	1185	1.50	17	Su	S	Se
sp. 9	58	0.38	7	Su	S	Se
sp. 10	31	0.39	6	Su	S	Se
sp. 11	159	0.10	14	Su	S	Se
sp. 12	99	0.07	9	Su	S	Se
sp. 13	585	0.62	8	Su	S	Se
sp. 14	578	0.10	3	Su	S	Se
sp. 15	101	0.14	5	Su	S	Se
sp. 16	4	0.01	1	Su	S	Se
sp. 17	1	0.01	1	Su	S	Se
sp. 18	1	0.01	1	Su	S	Se

## Anthozoa

## Pennatulacea

sp. 1	83	1.19	20	Su	M	Se
sp. 2	14	0.09	8	Su	S	Se
sp. 3	11	0.14	6	Su	S	Se
sp. 4	13	0.23	7	Su	S	Se
sp. 5	12	0.10	7	Su	S	Se
sp. 6	24	0.04	6	Su	S	Se
sp. 7	6	0.05	6	Su	S	Se
sp. 8	3	0.09	3	Su	S	Se
sp. 9	1	0.03	1	Su	S	Se

## Gorgonacea

sp. 1	2	0.01	1	Su	S	Se
sp. 2	12	0.06	5	Su	S	Se
sp. 3	63	0.08	9	Su	S	Se
sp. 4	2	0.01	1	Su	S	Se
sp. 5	66	0.17	3	Su	S	Se
sp. 6	4	0.02	3	Su	S	Se
sp. 7	8	0.01	1	Su	S	Se

## Alcyonacea

sp. 1	581	3.07	38	Su	S	Se
sp. 2	35	0.20	12	Su	S	Se
sp. 3	6	0.14	4	Su	S	Se
sp. 4	991	13.32	63	Su	S	Se
sp. 5	500	2.55	27	Su	S	Se
sp. 6	3	0.05	2	Su	S	Se
sp. 7	33	2.00	10	Su	M	Se
sp. 8	56	0.30	10	Su	S	Se
sp. 9	33	0.32	4	Su	S	Se
sp. 10	42	0.24	4	Su	S	Se
sp. 11	159	0.74	15	Su	S	Se
sp. 12	7	0.58	1	Su	S	Se

	A	B	N	F	S	M
sp. 13	27	0.20	4	Su	S	Se
sp. 14	8	0.40	4	Su	S	Se
sp. 15	26	0.11	4	Su	S	Se
sp. 16	74	0.35	6	Su	S	Se
sp. 17	3	0.06	1	Su	S	Se
sp. 18	6	0.46	1	Su	M	Se
sp. 19	12	0.09	5	Su	S	Se
Zoantharia						
Actiniaria						
sp. 1	1	0.12	1	Su	S	Se
sp. 2	3	0.02	2	Su	S	Se
Zoanthiniaria						
Zoanthidae						
<i>Sphaenopus marsupialis</i>	6947	32.50	15	Su	S	Se
<i>Sphaenopus</i> sp. 1	141	0.46	7	Su	S	Se
<i>Sphaenopus</i> sp. 2	146	1.15	6	Su	S	Se
unidentified	19	0.24	2	Su	S	Se
Scleractinia						
<i>Tubastrea</i> sp.	81	0.81	2	Su	M	Se
Flabellidae						
<i>Flabellum</i> sp.	423	1.86	20	Su	S	Se
sp. 2	98768	37.09	9	Su	S	Se
sp. 3	123428	49.36	1	Su	S	Se
Nemertea						
sp. 1	2	0.02	2	Ca	S	Mo
sp. 2	4	0.02	3	Ca	S	Mo
Sipuncula						
<i>Sipunculus</i> sp.	15	0.08	3	De	S	Se
Echiura						
<i>Echiuroid</i> sp.	23	0.23	1	De	S	Se
Annelida						
Polychaeta						
Spionida						
Chaetopteridae						
sp. 1	1	0.01	1	Su	S	Se
sp. 2	1	0.01	1	Su	S	Se
Capitellida						
Maldanidae						
sp. 1	2	0.01	2	De	S	Se
sp. 2	1	0.01	1	De	S	Se
sp. 3	2	0.01	2	De	S	Se
Phyllodocida						
sp. 1	5	0.03	3	Ca	S	Mo
sp. 2	5	0.03	3	Ca	S	Mo
sp. 3	1	0.01	1	Ca	S	Mo
sp. 4	1	0.01	1	Ca	S	Mo
sp. 5	2	0.01	2	Ca	S	Mo
sp. 6	1	0.01	1	Ca	S	Mo
sp. 7	1	0.01	1	Ca	S	Mo
sp. 8	13	0.07	7	Ca	S	Se

	A	B	N	F	S	M
Aphroditidae						
<i>Aphrodita</i> sp. 1	81	0.01	8	Ca	S	Mo
<i>Aphrodita</i> sp. 2	96	0.01	4	Ca	S	Mo
unidentified	1	0.01	2	Ca	S	Mo
Polynoidae						
sp. 1	15	0.01	1	Ca	S	Mo
Nephtyidae						
<i>Nephtys</i> sp. 1	1	0.01	1	Ca	S	Mo
Amphinomida						
Amphinomidae						
<i>Chloëia flava</i>	5	0.17	3	Ca	S	Mo
sp. 1	4	0.03	1	Ca	S	Mo
Eunicida						
Onuphidae						
sp. 1	2	0.01	1	Ca	S	Se
sp. 2	20	0.04	4	Ca	S	Se
sp. 3	1211	0.18	21	Ca	S	Se
sp. 4	891	0.19	13	Ca	S	Mo
Eunicidae						
<i>Eunice</i> cf. <i>indica</i>	205	0.14	11	Ca	S	Mo
<i>Marphysa</i> sp. 1	3	0.20	2	Ca	S	Mo
<i>Marphysa</i> sp. 2	1	0.01	1	Ca	S	Mo
sp. 1	1	0.01	1	Ca	S	Mo
sp. 2	2	0.01	1	Ca	S	Mo
Lumbrineridae						
sp. 1	2	0.01	1	Ca	S	Mo
sp. 3	1	0.01	1	Ca	S	Mo
Flabelligerida						
Flabelligeridae						
sp. 1	1	0.01	1	De	S	Se
unidentified	4	0.02	3	De	S	Se
Terebellida						
Terebellidae						
<i>Pista</i> sp.	1	0.01	1	De	S	Se
sp. 1	6	0.03	4	De	S	Se
sp. 2	2	0.01	1	De	S	Se
sp. 3	3	0.02	3	De	S	Se
sp. 4	2	0.01	1	De	S	Se
Pectinariidae						
<i>Pectinaria</i> sp.	1	0.01	1	De	S	Se
Sabellida						
Sabellidae						
sp. 1	5	0.03	3	Su	S	Se
sp. 2	2	0.01	1	Su	S	Se
sp. 3	1	0.01	1	Su	S	Se
sp. 4	89	0.09	2	Su	S	Se
sp. 5	2	0.01	2	Su	S	Se
Serpulidae						
<i>Filograna</i> sp.	76	0.38	6	Su	S	Se
sp. 1	203	0.17	10	Su	S	Se
sp. 2	6	0.02	2	Su	S	Se
sp. 3	2	0.01	1	Su	S	Se

## Crustacea

## Cirripeda

*Lepas* sp. 20 0.01 1 Su S Se

## Malacostraca

## Stomatopoda

## Squillidae

*Anchisquilla fasciata* 13 0.09 9 Ca S Mo

*Carinosquilla multicarinata* 2 0.01 1 Ca S Mo

*Clorida chlorida* 5 0.04 3 Ca S Mo

*Clorida granti* 10 0.05 5 Ca S Mo

*Clorida latreillei* 42 0.13 21 Ca S Mo

*Clorida malaccensis* 16 0.04 8 Ca S Mo

*Clorida microphthalma* 5 0.03 4 Ca S Mo

*Clorida miersi* 12 0.03 6 Ca S Mo

*Dictyosquilla foveolata* 12 0.12 8 Ca S Mo

*Harpiosquilla annandalei* 14 0.20 10 Ca S Mo

*Harpiosquilla harpax* 6 0.42 2 Ca S Mo

*Lophosquilla costata* 20 0.07 10 Ca S Mo

*Oratosquilla anomala* 1 0.03 1 Ca S Mo

*Oratosquilla inornata* 1600 0.87 54 Ca S Mo

*Oratosquilla woodmasoni* 21 0.42 5 Ca S Mo

*Squilloides* sp. 1 14 0.06 8 Ca S Mo

*Meiosquilla* sp. 1 2 0.01 2 Ca S Mo

## Odontodactylidae

*Coronidopsis bicuspis* 15 0.06 11 Ca S Mo

*Lysiosquilla acanthocarpus* 2 0.01 1 Ca S Mo

*Odontodactylus cultrifer* 8 0.11 4 Ca S Mo

*Gonodactylus* sp. 1 1 0.01 1 Ca S Mo

## Isopoda

sp. 1 2 0.01 2 Ca S Mo

sp. 2 1 0.01 1 Ca S Mo

## Decapoda

## Alpheidae

sp. 1 7 0.03 5 Ca S Mo

sp. 3 26 0.08 7 Ca S Mo

sp. 4 3 0.02 3 Ca S Mo

sp. 5 12 0.04 6 Ca S Mo

sp. 6 1 0.01 1 Ca S Mo

sp. 7 2 0.01 1 Ca S Mo

sp. 8 4 0.02 3 Ca S Mo

sp. 9 1 0.01 1 Ca S Mo

unidentified 5 0.06 1 Ca S Mo

## Penaeidae

*Atypopenaeus stenodactylus* 103 0.18 15 Ca S Mo

*Metapenaeopsis crassissima* 7 0.01 1 Ca S Mo

*Metapenaeopsis lamellata* 2 0.01 1 Ca S Mo

*Metapenaeopsis novaeguineae* 1 0.01 1 Ca S Mo

*Metapenaeopsis palmensis* 1081 3.83 71 Ca S Mo

*Metapenaeus endeavouri* 8 0.14 3 Ca S Mo

*Metapenaeus ensis* 2 0.09 1 Ca S Mo

*Parapenaeus longipes* 24 0.08 7 Ca S Mo

*Penaeus esculentus* 12 0.41 4 Ca S Mo

	A	B	N	F	S	M
<i>Penaeus semisulcatus</i>	3	0.08	2	Ca	S	Mo
<i>Trachypenaeus anchoralis</i>	134	0.40	21	Ca	S	Mo
<i>Trachypenaeus curvirostris</i>	16	0.07	2	Ca	S	Mo
<i>Trachypenaeus granulatus</i>	317	2.18	33	Ca	S	Mo
<i>Metapenaeopsis</i> sp.	36	0.62	2	Ca	S	Mo
<i>Trachypenaeus</i> sp. 1	11	0.10	3	Ca	S	Mo
<i>Trachypenaeus</i> sp. 2	6	0.02	1	Ca	S	Mo
<b>Solenoceridae</b>						
<i>Solenocera australiana</i>	113	0.58	15	Ca	S	Mo
<i>Solenocera pectinata</i>	205	0.65	36	Ca	S	Mo
<b>Sicyonidae</b>						
<i>Sicyonia cristata</i>	85	0.29	27	Ca	S	Mo
<i>Sicyonia</i> sp.	1	0.01	1	Ca	S	Mo
<b>Dromiidae</b>						
<i>Conchoecetes artifisciosus</i>	106	0.26	10	Ca	S	Mo
<i>Dromia dehaani</i>	1	0.07	1	Ca	S	Mo
<i>Dromidiopsis australiensis</i>	1	0.01	1	Ca	S	Mo
<b>Dorippidae</b>						
<i>Dorippe frascone</i>	163	0.91	51	Ca	S	Mo
<i>Paradorippe australiensis</i>	22	0.07	11	Ca	S	Mo
<b>Leucosidae</b>						
<i>Arcania gracilipes</i>	3	0.02	2	Ca	S	Mo
<i>Arcania novemspinosa</i>	283	1.04	65	Ca	S	Mo
<i>Arcania pulcheria</i>	6	0.03	2	Ca	S	Mo
<i>Arcania septemspinosa</i>	280	0.47	53	Ca	S	Mo
<i>Ebalia lambriformis</i>	56	0.10	14	Ca	S	Mo
<i>Iphiculus spongiosus</i>	26	0.11	16	Ca	S	Mo
<i>Ixa inermis</i>	22	0.13	14	Ca	S	Mo
<i>Ixoides cornutus</i>	14	0.11	11	Ca	S	Mo
<i>Leucosia anatum</i>	16	0.05	6	Ca	S	Mo
<i>Leucosia ocellata</i>	229	0.81	40	Ca	S	Mo
<i>Leucosia whitei</i>	197	0.62	32	Ca	S	Mo
<i>Myrodes eudactylus</i>	52	0.33	15	Ca	S	Mo
<i>Myra biconica</i>	517	1.69	79	Ca	S	Mo
<i>Myra elegans</i>	11	0.03	6	Ca	S	Mo
<i>Myra mammilaris</i>	209	0.68	27	Ca	S	Mo
<i>Oreophorus moram</i>	4	0.03	4	Ca	S	Mo
<i>Oreophorus reticulatus</i>	4	0.04	4	Ca	S	Mo
<i>Pariphiculus marianne</i>	51	0.30	21	Ca	S	Mo
<i>Oreophorus</i> sp.	2	0.01	2	Ca	S	Mo
<i>Ebalia</i> sp. 2	24	0.07	11	Ca	S	Mo
<i>Ebalia</i> sp. 3	1	0.01	1	Ca	S	Mo
<i>Leucosia</i> sp. 1	38	0.08	16	Ca	S	Mo
<i>Leucosia</i> sp. 2	17	0.05	3	Ca	S	Mo
<i>Leucosia</i> sp. 3	41	0.21	3	Ca	S	Mo
<b>Calappidae</b>						
<i>Calappa gallus</i>	31	0.13	12	Ca	S	Mo
<i>Calappa terraereginae</i>	113	0.85	43	Ca	S	Mo
<i>Matuta inermis</i>	10	0.11	1	Ca	S	Mo

	A	B	N	F	S	M
<i>Calappa</i> sp.	1	0.01	1	Ca	S	Mo
Majidae						
<i>Camposcia retusa</i>	7	0.03	2	Ca	S	Mo
<i>Hyastenus cambelli</i>	26	0.27	3	Ca	S	Mo
<i>Hyastenus diacanthus</i>	14	0.05	5	Ca	S	Mo
<i>Micippa excavata</i>	23	0.10	11	Ca	S	Mo
<i>Phalangipes australiensis</i>	707	1.19	61	Ca	S	Mo
<i>Thaconophrys longispinus</i>	2	0.01	2	Ca	S	Mo
<i>Micippa</i> sp.	6	0.03	1	Ca	S	Mo
<i>Pseudomicippe</i> sp.	62	1.09	12	Ca	S	Mo
<i>Oncinopus</i> sp.	5	0.02	3	Ca	S	Mo
<i>Hyastenus</i> sp. 1	126	0.79	24	Ca	S	Mo
<i>Hyastenus</i> sp. 2	6	0.04	3	Ca	S	Mo
<i>Hyastenus</i> sp. 3	6	0.03	1	Ca	S	Mo
<i>Hyastenus</i> sp. 4	5	0.31	4	Ca	S	Mo
<i>Majidae</i> sp. 1	100	0.17	23	Ca	S	Mo
<i>Majidae</i> sp. 2	8	0.02	3	Ca	S	Mo
<i>Majidae</i> sp. 3	6	0.03	1	Ca	S	Mo
Parthenopidae						
<i>Daldorfia investigatoris</i>	12	0.03	1	Ca	S	Mo
<i>Parthenopes harpax</i>	32	0.30	2	Ca	S	Mo
<i>Parthenopes hoplonotus</i>	127	0.46	28	Ca	S	Mo
<i>Parthenopes longimanus</i>	354	1.15	69	Ca	S	Mo
<i>Parthenopes longispinus</i>	174	0.55	33	Ca	S	Mo
<i>Parthenopes nodosus</i>	18	0.07	3	Ca	S	Mo
<i>Parthenope</i> sp.	1	0.01	1	Ca	S	Mo
<i>Heterocrypta</i> sp.	15	0.06	10	Ca	S	Mo
<i>Cryptopodia</i> sp. 1	48	0.23	18	Ca	S	Mo
<i>Cryptopodia</i> sp. 2	42	0.16	17	Ca	S	Mo
Portunidae						
<i>Charybdis feriatus</i>	9	0.66	3	Ca	S	Mo
<i>Charybdis truncata</i>	246	1.33	56	Ca	S	Mo
<i>Charybdis miles</i>	63	1.03	17	Ca	S	Mo
<i>Libystes edwardsii</i>	26	0.09	16	Ca	S	Mo
<i>Lisocarcinus polyboides</i>	2	0.01	1	Ca	S	Mo
<i>Lupocyclus rotundatus</i>	142	0.64	31	Ca	S	Mo
<i>Lupocyclus tugelae</i>	96	0.32	28	Ca	S	Mo
<i>Podophthalmus vigil</i>	26	0.19	9	Ca	S	Mo
<i>Portunus acerbiterminalis</i>	78	0.12	15	Ca	S	Mo
<i>Portunus gracilimanus</i>	214	1.57	28	Ca	S	Mo
<i>Portunus granulatus</i>	110	0.33	14	Ca	S	Mo
<i>Portunus pelagicus</i>	1	0.16	1	Ca	M	Mo
<i>Portunus rubromarginatus</i>	86	0.50	8	Ca	S	Mo
<i>Portunus rugosus</i>	74	0.25	8	Ca	S	Mo
<i>Portunus sanguinolentus</i>	1	0.29	1	Ca	S	Mo
<i>Portunus spinipes</i>	296	0.43	56	Ca	S	Mo
<i>Thalamita sexlobata</i>	14	0.04	5	Ca	S	Mo
<i>Thalamita sima</i>	54	0.36	26	Ca	S	Mo
<i>Portunus</i> sp.	93	0.27	44	Ca	S	Mo
<i>Thalamita</i> sp. 1	3	0.01	1	Ca	S	Mo
<i>Thalamita</i> sp. 2	4	0.02	3	Ca	S	Mo



	A	B	N	F	S	M
Xanthidae						
<i>Banareia inconspicua</i>	1	0.01	1	Ca	S	Mo
<i>Demania cultripes</i>	2	0.02	2	Ca	S	Mo
<i>Galene bispinosa</i>	12	0.21	7	Ca	S	Mo
<i>Halimede ochthodes</i>	11	0.06	2	Ca	S	Mo
<i>Hypocolpus punctatus</i>	2	0.01	1	Ca	S	Mo
<i>Liagore rubromaculata</i>	78	0.64	35	Ca	S	Mo
<i>Demania</i> sp.	3	0.02	3	Ca	S	Mo
<i>Actaea</i> sp.	29	0.06	8	Ca	S	Mo
<i>Banareia</i> sp.	2	0.01	1	Ca	S	Mo
<i>Chlorodiella</i> sp.	4	0.01	1	Ca	S	Mo
<i>Neoxanthops</i> sp.	2	0.02	1	Ca	S	Mo
<i>Liomera</i> sp.	10	0.02	3	Ca	S	Mo
<i>Atergatopsis</i> sp. 1	3	0.02	1	Ca	S	Mo
<i>Atergatopsis</i> sp. 2	1	0.02	1	Ca	S	Mo
Corystidae						
<i>Jonas luteanus</i>	117	0.56	34	Ca	S	Mo
Paguridae						
<i>Dardanus hessii</i>	141	0.34	40	Ca	S	Mo
<i>Dardanus imbricatus</i>	76	0.26	7	Ca	S	Mo
<i>Trizopagurus strigatus</i>	21	0.05	4	Ca	S	Mo
<i>Pagurus</i> sp.	15	0.05	7	Ca	S	Mo
<i>Diogenes</i> sp. 1	225	0.41	33	Ca	S	Mo
<i>Diogenes</i> sp. 2	13	0.04	2	Ca	S	Mo
<i>Diogenes</i> sp. 3	6	0.01	1	Ca	S	Mo
<i>Diogenes</i> sp. 4	1	0.01	1	Ca	S	Mo
<i>Spiropagurus</i> sp. 1	102	0.30	28	Ca	S	Mo
<i>Spiropagurus</i> sp. 2	242	0.40	38	Ca	S	Mo
<i>Dardanus</i> sp. 1	14	0.05	7	Ca	S	Mo
<i>Dardanus</i> sp. nov.	100	0.25	7	Ca	S	Mo
sp. 1	5	0.03	3	Ca	S	Mo
Porcellanidae						
<i>Porcellanella triloba</i>	2	0.01	2	Ca	S	Mo
<i>Polyonyx</i> sp.	9	0.03	3	Ca	S	Mo
sp. 1	6	0.02	3	Ca	S	Mo
sp. 2	8	0.03	5	Ca	S	Mo
sp. 3	29	0.02	4	Ca	S	Mo
sp. 4	4	0.02	4	Ca	S	Mo
sp. 5	11	0.03	6	Ca	S	Mo
sp. 6	1	0.01	1	Ca	S	Mo
sp. 7	4	0.02	3	Ca	S	Mo
sp. 8	2	0.01	1	Ca	S	Mo
Galatheididae						
<i>Galathea</i> sp.	1	0.01	1	Ca	S	Mo
sp. 1	11	0.03	4	Ca	S	Mo
sp. 2	3	0.02	3	Ca	S	Mo
sp. 3	4	0.02	4	Ca	S	Mo
Scyllaridae						
<i>Scyllarus hannii</i>	123	0.39	38	Ca	S	Mo
<i>Scyllarus rugosus</i>	63	0.27	16	Ca	S	Mo
<i>Thenus orientalis</i>	24	1.26	12	Ca	M	Mo
<i>Scyllarus</i> sp. 1	2	0.01	1	Ca	S	Mo

	A	B	N	F	S	M
<i>Scyllarus</i> sp. 2	4	0.02	1	Ca	S	Mo
<i>Scyllarus</i> sp. 3	2	0.01	1	Ca	S	Mo
Gonoplacidae						
<i>Carcinoplax purpurea</i>	259	0.67	63	Ca	S	Mo
<i>Eucrate dorsalis</i>	4	0.02	4	Ca	S	Mo
<i>Ommatocarcinus macgillivrayi</i>	56	0.24	22	Ca	S	Mo
<i>Typhlocarcinops</i> sp.	1	0.01	1	Ca	S	Mo
<i>Goneplax</i> sp.	1	0.01	1	Ca	S	Mo
<i>Eucrate</i> sp. 1	31	0.11	17	Ca	S	Mo
<i>Eucrate</i> sp. 2	1	0.01	1	Ca	S	Mo
Pilumnidae						
<i>Actumnus dorsipes</i>	58	0.22	15	Ca	S	Mo
<i>Actumnus pugilator</i>	30	0.15	2	Ca	S	Mo
<i>Bathypilumnus nigrispinifer</i>	2	0.01	2	Ca	S	Mo
<i>Bathypilumnus pugilator</i>	105	0.34	21	Ca	S	Mo
<i>Lophopilumnus globosus</i>	8	0.36	3	Ca	S	Mo
<i>Pilumnus semilanatus</i>	27	0.22	7	Ca	S	Mo
<i>Lophopilumnus</i> sp.	1	0.01	1	Ca	S	Mo
<i>Pilumnus</i> sp. 1	160	0.35	28	Ca	S	Mo
<i>Pilumnus</i> sp. 2	15	0.01	2	Ca	S	Mo
<i>Pilumnus</i> sp. 3	6	0.05	3	Ca	S	Mo
<i>Ceratoplax</i> sp. 1	374	1.07	57	Ca	S	Mo
<i>Ceratoplax</i> sp. 2	270	0.52	49	Ca	S	Mo
<i>Ceratoplax</i> sp. 3	53	0.19	24	Ca	S	Mo
<i>Ceratoplax</i> sp. 4	6	0.02	3	Ca	S	Mo
<i>Ceratoplax</i> sp. 5	7	0.02	3	Ca	S	Mo
<i>Ceratoplax</i> sp. 6	1	0.01	1	Ca	S	Mo
<i>Ceratoplax</i> sp. 7	1	0.01	1	Ca	S	Mo
Thalassinidae						
<i>Callianassa</i> sp.	2	0.02	2	De	S	Mo
<i>Thalassinia</i> sp. 1	10	0.05	4	De	S	Mo
<i>Thalassinia</i> sp. 2	1	0.01	1	De	S	Mo
Upogebiidae						
<i>Upogebia</i> sp. 1	13	0.02	2	De	S	Mo
<i>Upogebia</i> sp. 2	3	0.01	1	De	S	Mo
<i>Upogebia</i> sp. 3	10	0.03	3	De	S	Mo
Stenopodidae						
<i>Stenopus hispidus</i>	15	0.05	5	Ca	S	Mo
Crangonidae						
<i>Crangon</i> sp. 1	11	0.03	6	Ca	S	Mo
<i>Crangon</i> sp. 2	2	0.02	2	Ca	S	Mo
Eumonidae						
<i>Harovia</i> sp.	8	0.03	3	Ca	S	Mo
<i>Zebra</i> sp.	1	0.01	1	Ca	S	Mo
Palicidae						
<i>Palicus</i> sp.	1	0.01	1	Ca	S	Mo
sp. 1	23	0.07	12	Ca	S	Mo
sp. 2	250	0.47	38	Ca	S	Mo
sp. 3	13	0.05	9	Ca	S	Mo
sp. 4	23	0.08	8	Ca	S	Mo
sp. 5	1	0.01	1	Ca	S	Mo
sp. 6	3	0.02	2	Ca	S	Mo

## Mollusca

## Gastropoda

## Archaeogastropoda

## Trochidae

<i>Calliostoma monile</i>	4	0.01	1	He	S	Mo
<i>Echelus atratus</i>	83	0.21	7	He	S	Mo
<i>Monilea callifera</i>	2	0.01	1	He	S	Mo
<i>Thalotia</i> sp. 1	2	0.02	2	He	S	Mo
<i>Thalotia</i> sp. 2	1	0.01	1	He	S	Mo

## Mesogastropoda

## Strombidae

<i>Strombus erythrinus</i>	16	0.03	1	He	S	Mo
<i>Strombus vittatus</i>	373	1.46	27	He	S	Mo
<i>Terebellum terebellum</i>	33	0.06	8	He	S	Mo
<i>Strombus</i> sp.	1	0.01	1	He	S	Mo

## Ovulidae

<i>Phenacovolva rosea</i>	4	0.01	2	Ca	S	Mo
<i>Prionovula pudica</i>	2	0.01	1	Ca	S	Mo
<i>Volva volva</i>	33	0.27	8	Ca	S	Mo

## Cypraeidae

<i>Cypraea erosa</i>	1	0.01	1	He	S	Mo
<i>Cypraea miliaris</i>	2	0.01	1	He	S	Mo
<i>Cypraea vitellus</i>	1	0.01	1	He	S	Mo
<i>Cypraea walkeri</i>	6	0.03	5	He	S	Mo

## Turritellidae

sp. 1	2	0.01	1	Ca	S	Mo
sp. 2	51	0.06	1	Ca	S	Mo

## Muricidae

<i>Pterynotus alatus</i>	3	0.03	3	Ca	S	Mo
<i>Turritella terebra</i>	56	0.14	18	Ca	S	Mo

## Cymatiidae

<i>Distorsio reticularis</i>	170	0.65	27	Ca	S	Mo
<i>Gyrineum jacundum</i>	12	0.06	3	Ca	S	Mo

## Naticidae

<i>Natica solida</i>	1	0.01	1	Ca	S	Mo
<i>Natica vitellus</i>	5	0.04	4	Ca	S	Mo
<i>Polinices powisianus</i>	1	0.01	1	Ca	S	Mo
<i>Sinum haliotoideum</i>	1	0.01	1	Ca	S	Mo

## Bursidae

<i>Bursa rana</i>	375	1.23	37	Ca	S	Mo
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## Xenophoridae

<i>Xenophora exuta</i>	39	0.09	11	De	S	Mo
<i>Xenophora indica</i>	86	0.50	16	De	S	Mo
<i>Xenophora solaroides</i>	1142	1.16	38	De	S	Mo

## Ficidae

<i>Ficus subintermedius</i>	108	0.36	20	Ca	S	Mo
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## Cassidae

<i>Phalium bisulcatum</i>	33	0.16	15	Ca	S	Mo
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## Epitoniidae

<i>Epitonium pallasii</i>	10	0.06	1	Ca	S	Mo
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	A	B	N	F	S	M
<i>Cirsostrema</i> sp.	1	0.01	1	Ca	S	Mo
Eulimidae						
<i>Balcis martinii</i>	2	0.01	2	Ca	S	Mo
Cerithiidae						
<i>Rhinoclavis articulata</i>	10	0.03	1	Ca	S	Mo
Lamellariidae						
<i>Lamellaria</i> sp.	2	0.01	1	Ca	S	Mo
Neogastropoda						
Conidae						
<i>Conus aculeiformis</i>	4	0.02	4	Ca	S	Mo
<i>Conus acutangulus</i>	1	0.01	1	Ca	S	Mo
<i>Conus adami</i>	2	0.01	2	Ca	S	Mo
<i>Conus lizardensis</i>	23	0.12	18	Ca	S	Mo
<i>Conus suturatus</i>	1	0.01	1	Ca	S	Mo
<i>Conus tessulatus</i>	6	0.01	1	Ca	S	Mo
Volutidae						
<i>Amoria damoni</i>	1	0.01	1	Ca	S	Mo
<i>Cymbiola cymbiola</i>	5	0.07	2	Ca	S	Mo
unidentified	3	0.01	1	Ca	S	Mo
Turridae						
<i>Gemmula hastula</i>	37	0.10	17	Ca	S	Mo
<i>Gemmula murrayi</i>	9	0.03	4	Ca	S	Mo
<i>Lophiotoma acuta</i>	2	0.01	2	Ca	S	Mo
<i>Lophiotoma indica</i>	17	0.07	6	Ca	S	Mo
<i>Turris crispa</i>	4	0.04	3	Ca	S	Mo
<i>Clavis</i> sp.	4	0.02	3	Ca	S	Mo
<i>Inquisitor</i> sp. 1	34	0.16	3	Ca	S	Mo
<i>Inquisitor</i> sp. 2	5	0.02	3	Ca	S	Mo
<i>Inquisitor</i> sp. 3	1	0.01	1	Ca	S	Mo
Muricidae						
<i>Chicoreus cervicornis</i>	655	1.14	31	Ca	S	Mo
<i>Cronia contracta</i>	22	0.07	2	Ca	S	Mo
<i>Haustellum multiplicatum</i>	22	0.08	9	Ca	S	Mo
<i>Murex acanthostephes</i>	94	0.42	35	Ca	S	Mo
<i>Murex pecten</i>	4	0.07	2	Ca	S	Mo
<i>Murex macgillivrayi</i>	11	0.03	3	Ca	S	Mo
<i>Thais echinata</i>	1	0.01	1	Ca	S	Mo
<i>Murex</i> sp.	7	0.05	3	Ca	S	Mo
Mitridae						
<i>Cancilla interlirata</i>	2	0.01	2	Ca	S	Mo
<i>Cancilla praestantissima</i>	1	0.01	1	Ca	S	Mo
<i>Neocancilla clathrus</i>	1	0.01	1	Ca	S	Mo
Olividae						
<i>Ancilla cingulata</i>	7	0.04	2	Ca	S	Mo
<i>Ancilla</i> sp.	1	0.01	1	Ca	S	Mo
Nassariidae						
<i>Nassarius algidus</i>	2	0.01	2	Ca	S	Mo
<i>Nassarius conoidalis</i>	123	0.31	15	Ca	S	Mo
<i>Nassarius crematus</i>	2	0.01	1	Ca	S	Mo

	A	B	N	F	S	M
Terebridae						
<i>Terebra lima</i>	3	0.02	2	Ca	S	Mo
<i>Terebra triseriata</i>	28	0.07	10	Ca	S	Mo
<i>Terebra turrita</i>	7	0.04	6	Ca	S	Mo
Costellariidae						
<i>Vexillum obeliscus</i>	1	0.01	1	Ca	S	Mo
Vasidae						
<i>Tudivasum spinosum</i>	35	0.10	12	Ca	S	Mo
Buccinidae						
<i>Phos senticosus</i>	21	0.09	7	Ca	S	Mo
Harpidae						
<i>Harpa articularis</i>	3	0.06	3	Ca	S	Mo
Cancellariidae						
<i>Cancellaria</i> sp.	1	0.01	1	Ca	S	Mo
<i>Cancellarius melanostoma</i>	1	0.01	1	Ca	S	Mo
Fasciolariidae						
<i>Latirus paetelianus</i>	5	0.01	1	Ca	S	Mo
Coralliophilidae						
<i>Laxatenia fimbriata</i>	3	0.01	2	Ca	S	Mo
Melongenidae						
<i>Syrinx aruanus</i>	1	0.01	1	Ca	S	Mo
Cephalaspidea						
Philinidae						
<i>Philine</i> sp. 1	81	0.12	11	Ca	S	Mo
<i>Philine</i> sp. 2	1	0.01	1	Ca	S	Mo
Nudibranchia						
<i>Doriopsilla</i> sp.	2	0.02	2	He	S	Mo
sp. 1	1	0.01	1	He	S	Mo
sp. 2	6	0.03	4	He	S	Mo
sp. 3	1	0.01	1	He	S	Mo
sp. 4	1	0.01	1	He	S	Mo
sp. 5	4	0.03	3	He	S	Mo
sp. 6	1	0.01	1	He	S	Mo
sp. 7	1	0.01	1	He	S	Mo
sp. 8	1	0.01	1	He	S	Mo
sp. 9	1	0.01	1	He	S	Mo
sp. 10	6	0.03	1	He	S	Mo
sp. 11	1	0.01	1	He	S	Mo
sp. 12	3	0.12	1	He	S	Mo
Chromodorididae						
<i>Ceratosoma cornigerum</i>	4	0.04	3	He	S	Mo
Aegiridae						
<i>Notodoris gardineri</i>	12	0.12	1	He	S	Mo
Bivalvia						
Veneroida						
Veneridae						
<i>Antigona chemnitzii</i>	1	0.02	1	Su	S	Se
<i>Antigonia lamellaris</i>	31	0.70	13	Su	S	Se
<i>Bassina calophylla</i>	339	1.53	75	Su	S	Se
<i>Circe scripta</i>	77	0.75	7	Su	S	Se
<i>Dosinia amina</i>	1	0.01	1	Su	S	Se
<i>Dosinia juvinalis</i>	15	0.08	4	Su	S	Se

	A	B	N	F	S	M
<i>Dosinia mira</i>	216	1.74	40	Su	S	Se
<i>Globovenus embrithes</i>	5	0.07	1	Su	S	Se
<i>Paphia exarata</i>	39	0.21	11	Su	S	Se
<i>Paphia semirugata</i>	26	0.13	14	Su	S	Se
<i>Paphia undulata</i>	21	0.06	7	Su	S	Se
<i>Placamen tiara</i>	37	0.13	4	Su	S	Se
<i>Pitar</i> sp. nov	5	0.03	5	Su	S	Se
Semelidae						
<i>Semele amabilis</i>	21	0.26	14	Su	S	Se
<i>Semele exarata</i>	4	0.02	4	Su	S	Se
<i>Leptomya</i> sp.	1	0.01	1	Su	S	Se
Solenidae						
<i>Solen fonesi</i>	3	0.02	3	Su	S	Se
Tellinidae						
<i>Macoma candida</i>	2	0.03	2	De	S	Se
<i>Tellina arafurensis</i>	4	0.01	2	De	S	Se
<i>Tellina donaciformis</i>	2	0.01	2	De	S	Se
<i>Tellina pretium</i>	4	0.02	3	De	S	Se
<i>Tellina pulcherrima</i>	1	0.01	1	De	S	Se
<i>Tellina</i> sp. nov	5	0.01	1	De	S	Se
<i>Tellina valtonis</i>	1	0.01	1	De	S	Se
Cultellidae						
<i>Cultellus cultellus</i>	264	0.69	50	Su	S	Se
Cardiidae						
<i>Cardium dampierensis</i>	48	0.24	8	Su	S	Se
<i>Ctenocardia virgo</i>	88	0.19	8	Su	S	Se
<i>Fragum retusum</i>	6	0.01	1	Su	S	Se
<i>Fulvia australe</i>	16	0.05	8	Su	S	Se
<i>Plagiocardium setosum</i>	1	0.01	1	Su	S	Se
<i>Vepricardium multispinosum</i>	171	0.81	47	Su	S	Se
<i>Gari anomala</i>	1	0.01	1	Su	S	Se
<i>Gari maculosa</i>	1	0.01	1	Su	S	Se
<i>Gari</i> sp. nov. 1	1	0.01	1	Su	S	Se
<i>Gari</i> sp. nov. 2	5	0.02	4	Su	S	Se
<i>Fulvia</i> sp. nov. 1	4	0.04	3	Su	S	Se
Solecurtidae						
<i>Azorinus minutus</i>	8	0.03	6	Su	S	Se
Mactridae						
<i>Mactrinula dolabrata</i>	3	0.01	1	Su	S	Se
Arcoida						
Arcidae						
<i>Anadara granosa</i>	33	0.12	8	Su	S	Se
<i>Anadara rotundicostata</i>	27	0.12	4	Su	S	Se
<i>Arca navicularis</i>	35	0.16	2	Su	S	Se
<i>Barbatia velata</i>	5	0.03	5	Su	S	Se
<i>Cucullaea labiata</i>	30	0.24	12	Su	S	Se
<i>Trisidos semitorta</i>	22	0.28	8	Su	S	Se
sp. 1	1	0.01	1	Su	S	Se
Glycymerididae						
<i>Melaxinia vitrea</i>	59	0.49	21	Su	S	Se
Limopsidae						
<i>Limopsis</i> sp.	6	0.03	5	Su	S	Se

	A	B	N	F	S	M
Pterioida						
Pteriidae						
<i>Pinctada sugillata</i>	1668	26.12	1	Su	S	Se
<i>Pteria levitata</i>	9	0.03	3	Su	S	Se
<i>Pteria zebra</i>	1846	0.21	3	Su	S	Se
<i>Pteria</i> sp. nov.	2	0.01	2	Su	S	Se
Malleidae						
<i>Malleus albus</i>	36	1.81	14	Su	M	S
<i>Malleus malleus</i>	12	0.20	1	Su	S	Se
Pinnidae						
<i>Pinna incurva</i>	1	0.01	1	Su	S	Se
<i>Pinna muricata</i>	43	0.11	19	Su	S	Se
Mytiloidea						
Mytilidae						
<i>Lithophaga malaccana</i>	2	0.01	1	Su	S	Se
<i>Modiolus elongata</i>	9	0.10	5	Su	S	Se
<i>Modiolus metcalfei</i>	1	0.01	1	Su	S	Se
<i>Modiolus proclivis</i>	15	0.04	8	Su	S	Se
Nuculoidea						
Nuculidae						
<i>Ennucula superba</i>	56	0.25	13	De	S	Se
<i>Nucula cumingii</i>	5	0.02	4	De	S	Se
Nucularidae						
<i>Yoldia lata</i>	17	0.05	10	De	S	Se
Myoidea						
Corbulidae						
<i>Corbula macgillivrayi</i>	141	0.70	40	Su	S	Se
<i>Corbula scaphoides</i>	148	0.53	32	Su	S	Se
Laternulidae						
<i>Laternula recta</i>	15	0.05	8	Su	S	Se
Cuspidariidae						
<i>Cuspidaria</i> sp.	2	0.01	2	Su	S	Se
Clavagellidae						
<i>Brechites</i> sp.	1	0.01	1	Su	S	Se
Ostreoida						
Ostreidae						
<i>Crassostrea echinata</i>	7	0.07	2	Su	S	Se
<i>Dendostreaa folium</i>	100	2.13	10	Su	S	Se
<i>Lopha</i> sp.	2	0.09	1	Su	S	Se
Pectinidae						
<i>Annachlamys flabellata</i>	33	0.19	8	Su	S	Se
<i>Decatopecten strangei</i>	6	0.03	3	Su	S	Se
<i>Mimachlamys scabricostata</i>	71	0.21	28	Su	S	Se
<i>Minnivola isomeres</i>	21	0.07	12	Su	S	Se
<i>Minnivola</i> sp. nov.	6	0.03	4	Su	S	Se
Propeamussiidae						
<i>Amusium pleuronectes</i>	556	3.83	57	Su	S	Se
Spondylidae						
<i>Spondylus victoriae</i>	28	1.31	2	Su	S	Se
<i>Spondylus wrightianus</i>	24	0.23	10	Su	S	Se

	A	B	N	F	S	M
Plicatulidae						
<i>Plicatula australis</i>	9	0.07	6	Su	S	Se
<i>Plicatula essingtonensis</i>	4	0.02	2	Su	S	Se
Hippuritoida						
Chamidae						
<i>Chama fibula</i>	5	0.03	2	Su	S	Se
Limoida						
Limidae						
<i>Limaria fragilis</i>	7	0.03	4	Su	S	Se
Scaphopoda						
Dentaliida						
Dentaliidae						
<i>Dentalium annulosum</i>	23	0.07	12	De	S	Se
<i>Dentalium octangulatum</i>	6	0.03	5	De	S	Se
Cephalopoda						
Sepioidea						
<i>Sepia</i> sp. 1	101	3.05	41	Ca	M	Mo
<i>Sepia</i> sp. 2	7	0.12	5	Ca	M	Mo
<i>Sepia</i> sp. 3	6	0.07	3	Ca	S	Mo
<i>Sepia</i> sp. 4	1	0.01	1	Ca	S	Mo
Teuthoidea						
sp. 1	203	0.42	4	Ca	S	Mo
sp. 2	11	0.05	3	Ca	S	Mo
Octopoda						
sp. 1	61	1.97	24	Ca	S	Mo
sp. 2	3	0.02	2	Ca	S	Mo
sp. 3	1	0.05	1	Ca	S	Mo
sp. 4	1	0.02	1	Ca	S	Mo
Bryozoa						
<i>Retiflustria cornea</i>	3134	4.96	41	Su	S	Se
<i>Triphyllozoon</i> sp.	1189	5.28	42	Su	S	Se
<i>Adeonellopsis</i> sp.	399	1.22	25	Su	S	Se
<i>Scrupocellaria</i> sp.	703	2.17	34	Su	S	Se
<i>Amathia</i> sp.	2091	4.56	38	Su	S	Se
sp. 1	249	1.84	19	Su	S	Se
sp. 2	411	1.11	27	Su	S	Se
sp. 3	143	0.25	6	Su	S	Se
sp. 4	97	0.51	8	Su	S	Se
sp. 5	533	2.63	15	Su	S	Se
sp. 6	394	0.55	9	Su	S	Se
sp. 7	141	0.85	10	Su	S	Se
sp. 8	333	0.37	8	Su	S	Se
sp. 9	45	0.04	2	Su	S	Se
sp. 10	29	0.30	8	Su	S	Se
sp. 11	11	0.23	1	Su	S	Se
sp. 12	22	0.04	5	Su	S	Se
sp. 13	29	0.60	1	Su	S	Se
sp. 14	71	0.15	5	Su	S	Se
sp. 15	12	0.07	2	Su	S	Se
sp. 16	6	0.02	3	Su	S	Se
sp. 17	176	0.85	11	Su	S	Se
sp. 18	2	0.01	1	Su	S	Se



	A	B	N	F	S	M
sp. 19	26	0.08	1	Su	S	Se
sp. 20	5	0.01	1	Su	S	Se
sp. 21	5	0.10	4	Su	S	Se
sp. 22	17	0.03	1	Su	S	Se
sp. 23	1	0.05	1	Su	S	Se
Echinodermata						
Crinoidea						
sp. 1	939	4.24	41	Su	S	Mo
sp. 2	2	0.01	1	Su	S	Mo
sp. 3	46	0.26	10	Su	S	Mo
sp. 4	30	0.18	15	Su	S	Mo
sp. 5	11	0.15	7	Su	S	Mo
sp. 6	1	0.01	1	Su	S	Mo
sp. 7	68	0.60	3	Su	S	Mo
sp. 8	1	0.01	1	Su	S	Mo
sp. 9	3	0.02	3	Su	S	Mo
sp. 10	10	0.69	6	Su	S	Mo
sp. 11	135	0.94	15	Su	S	Mo
sp. 12	3	0.02	2	Su	S	Mo
sp. 13	2	0.04	2	Su	S	Mo
sp. 14	5	0.35	1	Su	S	Mo
sp. 15	2	0.15	2	Su	S	Mo
sp. 16	8	0.23	6	Su	S	Mo
sp. 17	2	0.02	2	Su	S	Mo
sp. 18	1	0.09	1	Su	S	Mo
sp. 19	19	0.26	2	Su	S	Mo
sp. 20	6	0.03	2	Su	S	Mo
sp. 21	2	0.04	2	Su	S	Mo
Asteroidea						
sp. 1	100	0.28	31	Ca	S	Mo
sp. 4	29	2.10	1	Ca	S	Mo
sp. 5	1	0.01	1	Ca	S	Mo
sp. 6	2	0.04	1	Ca	S	Mo
sp. 8	2	0.01	2	Ca	S	Mo
sp. 10	2	0.07	1	Ca	S	Mo
sp. 11	2	0.01	1	Ca	S	Mo
sp. 12	8	0.03	3	Ca	S	Mo
sp. 13	38	12.11	2	Ca	S	Mo
sp. 14	1	0.04	1	Ca	S	Mo
sp. 15	5	3.44	2	Ca	L	Mo
sp. 16	5	1.45	2	Ca	S	Mo
sp. 17	5	0.02	3	Ca	S	Mo
sp. 18	2	0.46	1	Ca	S	Mo
sp. 19	4	0.18	1	Ca	M	Mo
Valvatida						
Goniasteridae						
<i>Iconaster longimanus</i>	34	0.28	2	Ca	S	Mo
<i>Stellaster equestris</i>	221	0.76	11	Ca	S	Mo
Platyasterida						
Luidiidae						
<i>Luidia hardwicki</i>	2	0.04	1	Ca	S	Mo
<i>Luidia maculata</i>	18	0.25	5	Ca	M	Mo

Paxillosida							
Asteroplectinidae							
<i>Astropecten granulatus</i>	107	1.14	25	Ca	S	Mo	
<i>Astropecten polyacanthus</i>	33	0.11	6	Ca	S	Mo	
<i>Astropecten</i> sp. 1	115	0.24	27	Ca	S	Mo	
<i>Astropecten</i> sp. 4	70	0.17	9	Ca	S	Mo	
Spinulosida							
Metrodiridae							
<i>Metrodira subulata</i>	69	0.96	14	Ca	S	Mo	
Pterasteridae							
<i>Euretaster insignis</i>	13	0.25	5	Ca	S	Mo	
Echinoidea							
Spatangoida							
<i>Brissopsis</i> sp.	4	0.02	2	De	S	Mo	
<i>Rhinobrissus</i> sp.	24	1.23	10	De	M	Mo	
sp. 2	88	0.70	8	De	S	Mo	
sp. 4	74188	674.44	4	De	S	Mo	
sp. 5	54	0.90	2	De	S	Mo	
sp. 6	6	0.10	2	De	S	Mo	
sp. 7	102	1.61	8	De	S	Mo	
sp. 8	5	0.21	3	De	S	Mo	
sp. 10	4	0.04	2	De	S	Mo	
sp. 11	3	0.08	2	De	S	Mo	
Spatangidae							
<i>Maretia ovata</i>	7247	18.54	12	De	S	Mo	
<i>Maretia planulata</i>	64596	333.74	5	De	S	Mo	
Echinoida							
<i>Prionocidaris</i> sp. 1	4	0.15	3	He	S	Mo	
<i>Prionocidaris</i> sp. 2	5	0.05	1	He	S	Mo	
sp. 1	10	0.02	2	He	S	Mo	
sp. 2	200	0.62	17	He	S	Mo	
sp. 3	239	2.67	23	He	S	Mo	
sp. 4	28	0.04	2	He	S	Mo	
sp. 5	8	0.03	4	He	S	Mo	
sp. 6	11	0.29	2	He	S	Mo	
Diadematoida							
Diadematidae							
<i>Chaetodiadema granulatum</i>	44	3.65	13	He	M	Mo	
Clypeasteroida							
Laganidae							
<i>Laganum</i> sp. 1	20949	32.07	43	De	S	Mo	
<i>Laganum</i> sp. 2	418	0.63	20	De	S	Mo	
<i>Laganum</i> sp. 3	42	0.68	10	De	S	Mo	
Holothurioida							
sp. 1	19	0.12	5	De	S	Mo	
sp. 2	17	0.15	7	De	S	Mo	
sp. 3	33	0.28	5	De	S	Mo	
sp. 5	8	0.06	4	De	S	Mo	
sp. 6	4	0.04	3	De	S	Mo	
sp. 7	24	0.34	6	De	S	Mo	
sp. 8	5	0.07	2	De	S	Mo	
sp. 9	1	0.01	1	De	S	Mo	

	A	B	N	F	S	M
sp. 10	1	0.01	1	De	S	Mo
sp. 11	3	0.01	1	De	S	Mo
sp. 12	17	0.26	5	De	S	Mo
sp. 13	4	0.02	2	De	S	Mo
sp. 15	5	0.02	3	De	S	Mo
sp. 16	1	0.01	1	De	S	Mo
sp. 17	15	0.11	5	De	S	Mo
sp. 18	2	0.04	1	De	S	Mo
sp. 19	3	0.02	2	De	S	Mo
sp. 20	2	0.01	2	De	S	Mo
sp. 21	3	0.02	1	De	S	Mo
sp. 23	1	0.04	1	De	S	Mo
sp. 24	2	0.02	2	De	S	Mo
sp. 25	10	0.08	5	De	S	Mo
sp. 26	3	0.01	1	De	S	Mo
sp. 27	1	0.01	1	De	S	Mo
sp. 28	1	0.01	1	De	S	Mo
sp. 29	7	0.02	2	De	S	Mo
sp. 31	2	0.01	1	De	S	Mo
sp. 32	2	0.01	1	De	S	Mo
sp. 33	7	0.02	1	De	S	Mo
sp. 34	1	0.01	1	De	S	Mo
sp. 35	1	0.01	1	De	S	Mo
Dendrochirotida						
Cucumariidae						
<i>Leptopentacta grisea</i>	22	0.22	7	De	S	Mo
<i>Pentacta anceps</i>	59	1.19	8	De	S	Mo
<i>Pseudocolochirus axiologus</i>	7	2.84	3	De	L	Mo
Aspidochirotida						
Holothuriidae						
<i>Bohadschia marmorata</i>	5	0.04	1	De	L	Mo
<i>Holothuria ocellata</i>	31	1.59	13	De	L	Mo
<i>Holothuria pervicax</i>	91	3.99	23	De	M	Mo
<i>Holothuria scabra</i>	6	7.49	1	De	M	Mo
Stichopodidae						
<i>Stichopus horrens</i>	11	2.26	2	De	M	Mo
Molpadida						
Caudinidae						
<i>Acaudina</i> sp. 1	31	0.75	11	De	S	Mo
<i>Acaudina</i> sp. 2	8	0.32	6	De	M	Mo
<i>Acaudina</i> sp. 3	50	2.87	13	De	M	Mo
<i>Acaudina</i> sp. 4	19	0.78	8	De	S	Mo
unidentified	3	0.15	1	De	X	Mo
Ophiuroidea						
<i>Amphioplus</i> sp.	64	0.04	8	De	S	Mo
sp. 1	339	0.57	14	De	S	Mo
sp. 2	98	0.37	19	De	S	Mo
sp. 3	207	0.35	42	De	S	Mo
sp. 4	1	0.01	1	De	S	Mo
sp. 5	260	0.47	3	De	S	Mo
sp. 6	75	0.26	19	De	S	Mo
sp. 7	5	0.02	3	De	S	Mo

	A	B	N	F	S	M
sp. 8	1040	0.48	61	De	S	Mo
sp. 9	42	0.10	18	De	S	Mo
sp. 10	12	0.06	10	De	S	Mo
sp. 11	19	0.05	9	De	S	Mo
sp. 12	9	0.04	8	De	S	Mo
sp. 13	1	0.01	1	De	S	Mo
sp. 14	2	0.01	1	De	S	Mo
sp. 15	13	0.06	2	De	S	Mo
sp. 16	4	0.01	1	De	S	Mo
sp. 18	1	0.01	1	De	S	Mo
sp. 19	57	0.14	8	De	S	Mo
sp. 20	1	0.01	1	De	S	Mo
sp. 21	1	0.01	1	De	S	Mo
sp. 22	1	0.01	1	De	S	Mo
sp. 23	1	0.01	1	De	S	Mo
sp. 24	1	0.01	1	De	S	Mo
sp. 27	1	0.01	1	De	S	Mo
sp. 28	1	0.01	1	De	S	Mo
sp. 29	3	0.02	3	De	S	Mo
sp. 30	1	0.01	1	De	S	Mo
Phrynophiurida						
Gorgonocephalidae						
sp. 1	19	0.75	11	De	S	Mo
sp. 2	2	0.05	2	De	S	Mo
Chordata						
Ascidiacea						
sp. 1	281	0.77	30	Su	S	Se
sp. 2	46	0.16	2	Su	S	Se
sp. 3	36	0.09	9	Su	S	Se
sp. 4	25	0.14	9	Su	S	Se
sp. 5	21	0.09	1	Su	S	Se
sp. 6	2	0.01	1	Su	S	Se
sp. 7	1	0.01	1	Su	S	Se
sp. 8	2	0.01	2	Su	S	Se
sp. 9	7	0.13	4	Su	S	Se
sp. 10	21	0.21	1	Su	S	Se
sp. 11	2	0.05	1	Su	S	Se
sp. 12	5	0.86	1	Su	S	Se
sp. 13	4	0.02	2	Su	S	Se
sp. 14	21	0.09	1	Su	S	Se
sp. 15	7	0.05	1	Su	S	Se
Enterogona						
Polyclinidae						
<i>Polyclinum</i> sp.	11	0.31	4	Su	M	Se
Ascidiidae						
<i>Ascidia sydneyensis</i>	10	0.47	3	Su	S	Se
<i>Phallusia millari</i>	497	12.22	19	Su	S	Se
Holozoidae						
<i>Hypodistoma deerratum</i>	58	4.55	9	Su	S	Se

	A	B	N	F	S	M
Didemnidae						
sp. 1	36	0.21	7	Su	S	Se
sp. 2	49	0.46	9	Su	S	Se
sp. 3	3	2.11	1	Su	S	Se
sp. 4	1	0.01	1	Su	S	Se
sp. 5	2	0.08	1	Su	S	Se
sp. 6	27	0.31	2	Su	S	Se
sp. 7	1	0.01	1	Su	S	Se
sp. 8	2	0.02	1	Su	S	Se
sp. 9	1	0.22	1	Su	S	Se
Pleurogona						
Styelidae						
<i>Polycarpa chinensis</i>	399	0.48	12	Su	S	Se
<i>Polycarpa</i> sp.	1	0.13	1	Su	S	Se
Pyuridae						
<i>Halocynthia hispida</i>	1	0.01	1	Su	S	Se
<i>Hartmeyeria formosa</i>	396	0.21	2	Su	S	Se
<i>Pyura obesa</i>	2	0.03	1	Su	S	Se
<i>Pyura sacciformis</i>	124	6.08	18	Su	S	Se
<i>Pyura</i> sp.	10	0.10	2	Su	S	Se

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