Performance Assessment of the Benthic Protection Zone of the Great Australian Bight Marine Park: Epifauna

Final report to the South Australian Department for Environment and Heritage and the Commonwealth Department of the Environment, Water, Heritage and the Arts

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EXECUTIVE SUMMARY

1. In 2002, SARDI Aquatic Sciences undertook the first quantitative survey of the epibenthic communities of the Great Australian Bight Benthic Protection Zone (GABBPZ). This report describes follow-up research conducted during 2006 to support the development of a 20-year performance assessment program for the benthic assemblages of GABBPZ.

2. Quantitative estimates of change in epibenthic species richness and biomass were obtained by re-sampling (in October 2006) the same 40 stations (located inside and immediately adjacent to the BPZ) that had first been sampled during SARDI's 2002 survey.

3. Samples of epifauna were collected using a 1 m wide epibenthic sled that was towed across the seabed for 500 m at each site.

4. A total of 661 kg of living benthos belonging to 735 species was collected over the course of the two surveys (2002, 2006). Sessile suspension feeding organisms (primarily poriferans, ascidians and bryozoans) dominated samples and collectively comprised over 98% of the biomass and 85% of the species collected. The most common free living organisms were echinoderms and molluscs, which collectively comprised only 2% of the biomass and 12% of the species collected.

5. Analysis of variance showed that epibenthic biomass and diversity was higher inside, rather than outside, the BPZ boundary, but it remains uncertain if these differences are a function of reserve protection. Analysis of variance also showed that species diversity and biomass declined between 2002 and 2006, however this decline is believed to be an artefact of differential sled sampling efficiencies between surveys.

6. Community analyses confirmed the presence of similar benthic assemblages inside and outside the BPZ. The same analyses also confirm marked shifts in species representation between the two survey years (2002, 2006).

7. Epifaunal community structure changed progressively with depth, and a strong and consistent gradient in faunal composition was observed inside and outside the BPZ in both survey years. The largest shift in community composition occurred between the inner (0-65 m) and mid-shelf (65-200 m) and was largely due to a significant decline in species numbers and biomass with depth.

8. Due to their extremely patchy distributions it was not possible to test for reserve and year-related differences in the populations of individual species. Most species (54%) had restricted distributions and were found at fewer than 3% of sampling sites. This finding suggests that a high proportion of the fauna residing in and around the BPZ has not yet been sampled. Rarefaction modelling predicts that more than 300 additional species will be added following one additional survey.

9. The efficacy of underwater video for non-destructive monitoring of benthos was examined by comparing faunal composition and density estimates for video and sled tows at multiple sites (7) inside the BPZ (49-156 m depth).

10. Key limitations for the towed video system included an inability to operate effectively in low visibility and resolve species identities. A major advantage for video over sled sampling was a superior sampling efficiency in areas of high topographic relief.

11. Underwater video footage revealed levels of detail previously unknown from the sled collections. Most notably, it showed that emergent epibenthos covers only a small fraction (<10%) of the seabed inside the BPZ. The remaining bedforms (>90%) on the shelf are composed of bare, unconsolidated, sand.

12. The towed underwater video system employed in this study was successful in measuring cross-shelf gradients in faunal density and diversity previously recognised from other more intensive surveys. It is therefore suggested that video may have some strong practical application in the non-destructive monitoring of epibenthos in the BPZ.

13. This epibenthic study is the first of its kind to examine the effects of marine reserve protection on the benthic communities of Australia's southern continental shelf. With no baseline data available prior to the establishment of the BPZ, this study relies on an evaluation of the variation in community structure inside and outside the reserve over time. Re-sampling the same 40 stations surveyed during 2002 and 2006, needs to occur if reserve-related changes in macrobenthos are to be determined.

14. A sustained commitment to data collection is necessary if the recovery of benthos in the BPZ from past trawling impacts is to be quantified. Determining the size and duration of any recovery in the BPZ will inform our understanding of ecological resilience in the GAB, and should provide information critical to the sustainable exploitation of seabed resources in the GAB.

15. Future studies to support performance assessment of the BPZ should not simply be confined to monitoring changes at 40 sites established on the continental shelf. Almost half of the BPZ lies beyond the shelf-break (200 - 5,000 m depth), and remains unsurveyed for benthos. It is unclear if this area represents and preserves the benthic habitats and assemblages of the continental slope. Future surveys in the BPZ therefore need to be extended beyond the shelf break.

16. Quantitative sampling of benthos in the deep-water reaches of the BPZ presents a significant challenge, and would only be possible with the aid of a large, ocean-going, research vessel (e.g. RV *Southern Surveyor*).

17. Significant advances in underwater remote sensing technologies have been made over the last decade and should, where practical, be incorporated into future research programs for the BPZ. Research time for the Integrated Marine Observing System (IMOS) Autonomous Underwater Vehicle (AUV) *Sirius* has been secured, and the AUV's performance will be evaluated during trials to quantify trawling impacts on the upper slope (300 - 500 m depth) of the BPZ during 2008/09. Other techniques, such as multi-beam sonar, offer considerable potential as a tool for characterising and monitoring benthic habitats, and should be considered in any future surveys of the BPZ.

1 INTRODUCTION

1.1 Overview

During 2002, SARDI Aquatic Sciences conducted a study of the benthic habitats of the Great Australian Bight Benthic Protection Zone (GABBPZ) and adjacent Commonwealth Waters. The objectives of this study were to: (1) identify and describe the distribution of the region's soft sediment epifauna, (2) determine the environmental factors that might be associated with patterns in epifaunal distribution, (3) assess the suitability of the BPZ in representing regional biodiversity, and (4) outline a rationale and approach for future performance assessment. Results from this research (Ward *et al*., 2003a, 2006) showed that the study area supported one of the world's most diverse soft-sediment ecosystems, with almost 800 macro-invertebrate species being recorded. The research also found that patterns in species richness and biomass were related to depth and sediment structure, and that the benthic assemblages of the GABBPZ were typical, and representative, of those occurring elsewhere on the eastern GAB shelf. On the basis of these and other findings, Ward *et al*. (2003a, 2006) proposed a survey strategy to support a 20-year performance assessment program for the benthic habitats of the GABBPZ. A key component of this proposal was the periodic (3-5 year interval) re-sampling of 40 stations inside and outside the BPZ, and the numerical analysis of changes in the composition of the benthic fauna over time. This report details the results of such analyses following repeat sampling of the benthos during 2006. Additionally, this report presents results and key findings from supplementary research aimed at developing robust, non-destructive, benthic monitoring and habitat mapping tools.

1.2 Regional Geomorphology

The crescent-shaped shelf of the Great Australian Bight is a dominant bathymetric feature of the southern margin of the Australian continent (Figure 1). This immense, relatively flat, submarine plain extends some 1300 km from Cape Pasley (WA) to Cape Catastrophe (SA), and covers an area of almost 200,000 km^2. The shelf is about 260 km wide near the Head of the Bight, but becomes progressively narrower with increasing distance to the east and west, and is approximately 80 km wide at either end. James *et al* (2001) divided the GAB shelf into a shoreward inner shelf (<50 m depth), a vast middle shelf (50 - 120 m depth), and an outer shelf that extends to the shelf break (150 - 160 m depth).

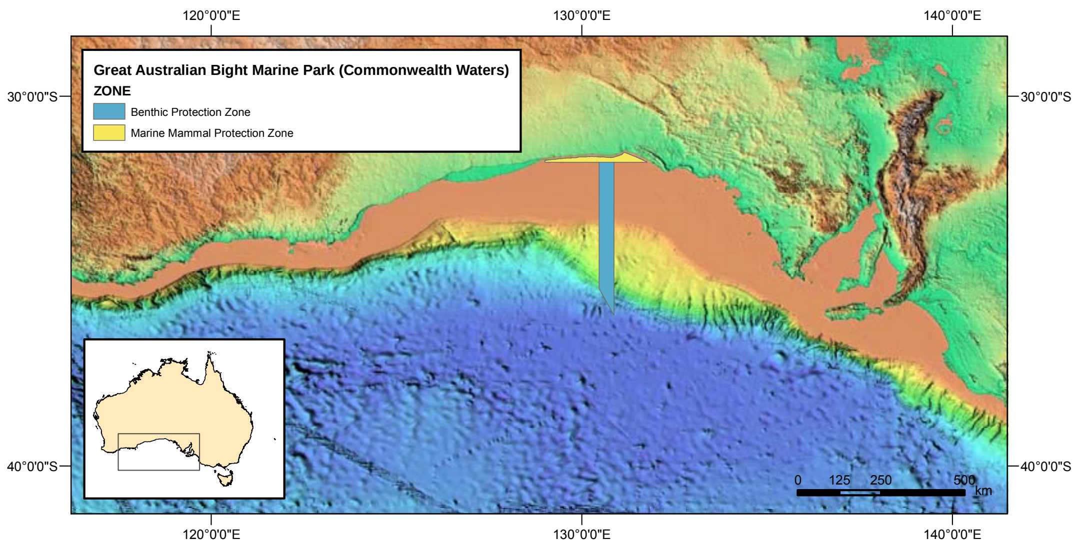

Figure 1. False-colour bathymetric image of the Great Australian Bight showing the wide continental shelf (brown fill; <200 m depth) and continental slope (yellow fill; 200-4500 m depth) surrounding the Benthic Protection Zone.

The portion of southern Australia bordering the Great Australian Bight is characterised by low annual rainfall. There are no major rivers in the region and thus the supply of terrigenous sediments to the marine realm is low. As a result, the shelf bedforms of the Great Australian Bight are largely biogenic and form part of the world's largest expanses of temperate carbonate sediments (Connolly and Von Der Borch, 1967; Wass *et al*., 1969). The modern sediments of the shelf are principally composed of fragments of bryozoa, molluscs, foraminifera and coralline algae with minor amounts of sponge, crustacean and echinoderm fragments (Connolly and Von Der Borch, 1967; Wass, *et al*., 1969; Gostin *et al*., 1988). The inner shelf supports abundant calcareous macrophytes, and is an area of active sediment production and accumulation. The huge middle shelf is an area of sediment erosion and winnowing, while the outer shelf is a region of sedimentary deposition and variable sediment production (James *et al*., 2001). As a result, the sediments are generally coarse-grained and gravelly inshore but become progressively finer and muddier with increasing depth and distance offshore (Connolly and Von Der Borch, 1967).

Patterns of sedimentation on the shelf of the Great Australian Bight are closely linked to the area's modern oceanography. The northwest area of the shelf supports the highest average water temperatures in the Bight and is one of the most prolific sites for rhodolith growth (James *et al*., 2001). These warm nutrient-depleted waters drift eastwards across the shelf and suppress sediment production on the central and eastern mid-shelf. This arrested production is countered further to the east, off the western Eyre Peninsula, by summer upwelling, which promotes prolific bryozoan growth and sediment production. Upwelling is also thought to play an important role in promoting localised growth of bryozoan communities across the outer shelf, except in the central region. Here, year-round downwelling contributes to off-shelf fine sediment transport and carbonate mud deposition (James *et al.*, 2001).

1.3 Regional Biodiversity

Because of its remote location, the marine ecosystems of the Great Australian Bight have received considerably less research attention than other areas of temperate Australia. Despite this, it is increasingly apparent that the waters spanning the GAB support a rich diversity of organisms, which in some instances is unparalleled both in Australia and overseas (Edyvane, 1999; Ward *et al.*, 2006).

The waters of the GAB are located at the centre of the Flindersian Biogeographic Province, first described by Knox (1963). This region extends across the entire southern coast of the continent and is characterised by a marine benthic flora and fauna with warm to cool-temperate affinities. Within this Flindersian Province over 1,000 species of macroalgae, 22 species of seagrass, 600 species of fish, 110 species of echinoderm and 189 species of ascidian have been recorded (Wilson and Allen, 1987; Womersley, 1990; Shepherd, 1991: cited in Edyvane, 1999). Much of this fauna has not been recorded outside the region, and approximately 85% of fish species, 95% of molluscs and 90% of echinoderms are thought to be endemic (Poore, 1995). The relatively high levels of biodiversity and apparent endemism for southern Australian waters have been attributed to a range of physical factors. These factors include the continent's long period of geological isolation (> 65 million years), the unusually large width of the continental shelf, and the characteristically low nutrient status of Australia's southern coastal waters (Poore, 1995).

Studies of the regional marine benthic flora and fauna have largely concentrated on shallow nearshore environments, and in particular have considered the taxonomy and general distribution of invertebrates (Shepherd and Thomas, 1982, 1989; Shepherd and Davies, 1997) algae (Womersley, 1984, 1987, 1994, 1996, 1998, 2003) and seagrasses (Shepherd and Womersley, 1971, 1976, 1981). By comparison, very little is known about the organisms that inhabit the seafloor offshore. Indeed, few systematic surveys of benthic fauna have been undertaken in shelf and slope waters anywhere in Australia (Poore, 1995).

Important advances in our understanding of the benthic biodiversity of the eastern Great Australian Bight were made during 2002, when the first quantitative epibenthic survey of the region was undertaken (Ward *et al*., 2003a, 2006). This study involved sampling of epifauna throughout the eastern shelf (Figure 2), and was primarily aimed at assessing the effectiveness of the Great Australian Bight Benthic Protection Zone in representing regional biodiversity. A total of 798 species were collected during the survey, including 360 species of sponge, 138 ascidians and 93 bryozoans (many of which were new to science). Following comparisons with other similar studies elsewhere, it was concluded that the eastern shelf of the Great Australian Bight supports one of the world's most diverse soft-sediment ecosystems.

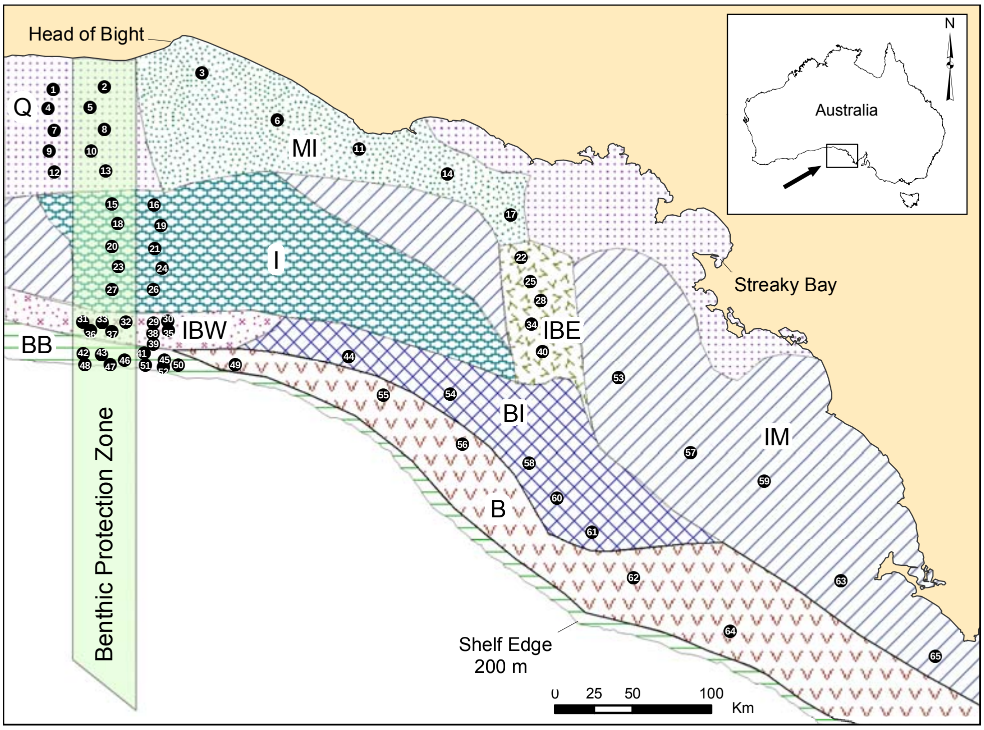

Figure 2. Location of study area, sedimentary facies (adapted from James *et al*., 2001) and Benthic Protection Zone of the Great Australian Bight Marine Park. Closed circles indicate locations of sites sampled for epibenthos during the 2002 pilot survey. Numeric codes denoting nine sedimentary facies are as follows: B, Bryozoan; BB, Branching Bryozoan; BI, Bryozoan Intraclast; I, Intraclast; IBE, Intraclast Bryozoan East; IBW, Intraclast Bryozoan West; IM, Intraclast Mollusc; MI, Mollusc Intraclast; Q, Quartzose Skeletal.

The same epibenthic survey has also provided novel insight into patterns of faunal distributions on the shelf and their relationships to environmental factors. The study has shown that species richness and biomass generally declines with increasing depth and distance offshore. Large total biomasses and high numbers of species characterise the inner shelf waters off the western Eyre Peninsula (an area of seasonal upwelling and enhanced primary productivity) and inshore waters at the Head of the Bight (a region of year-round elevated water temperatures). By comparison, relatively fewer species and individuals are represented on the outer shelf. This broad-scale environmental gradient is interrupted by regional variations in oceanography that modify the sedimentary characteristics and the associated bottom fauna. As a result, marked differences are evident in the types of species inhabiting different sedimentary facies on the shelf (Ward *et al*., 2006).

Suspension-feeding organisms dominate the eastern shelf of the Great Australian Bight, but also appear to be conspicuous components of the epifauna elsewhere on the shelf. Some of the earliest evidence for this comes from the 1962 voyages of HMAS *Gascoyne*, on which grab samples and photographs of the seafloor were collected across southern Australia at depths of about 75, 150 and 300 m (Anonymous, 1967). These collections have indicated a shelf fauna dominated by sponges, with bryozoans flourishing between 90 and 210 m depth (Conolly and Von der Borch, 1967; Wass *et al*., 1969). More recent sampling along the southern and southwestern shelfs has highlighted the dominance of filter-feeding organisms, and particularly their importance in generating the carbonate sediments that blanket the seafloor of the shelf and slope (James *et al*., 1999, 2001).

No published studies are available on the composition or distribution of benthic biota beyond the shelf-break in the Great Australian Bight. The biodiversity of the slope fauna can therefore only be inferred from studies elsewhere. The most regionally relevant comparison is a study of the crustacean isopod fauna from between 200 and 3150 m depth off the southeastern continental slope (Poore *et al*., 1994). In this study, a total 359 species belonging to 36 families were identified, of which only 10% had been previously described. The results of this survey support the observation that species diversity at this temperate latitude is higher than at similar latitudes in the Northern Hemisphere. As the slope waters of the Great Australian Bight span similar latitudes to those sampled by Poore and his co-workers, a rich fauna may be suggested for the region.

1.4 The Great Australian Bight Marine Park

The Benthic Protection Zone (BPZ) of the Great Australian Bight Marine Park (GABMP) was proclaimed in 1998 to preserve a representative sample of benthic flora and fauna and sediments (DEH, 2005). The BPZ consists of a 20 nautical-mile-wide strip orientated north to south and extending from three nautical miles from the coast to the edge of Australia's EEZ, 200 nautical miles offshore (Figure 2). Within this zone, the benthic assemblages are protected from demersal trawling and other potentially destructive human activities.

The Great Australian Bight supports several economically important Commonwealth fisheries. Most operate in the eastern Bight and are unlikely to affect the communities and species of the GABMP directly. However, the Commonwealth GAB Trawl Fishery, and to a lesser extent the Southern Bluefin Tuna Fishery and Gillnet Hook and Trap Fishery, have historically operated in the areas that are now part of the GABMP. Other significant human activities in the area include petroleum exploration and commercial shipping (Mcleay *et al*., 2003).

The GABMP is presently one of fourteen temperate Commonwealth Marine Protected Areas (MPAs) in Australia. These MPAs form part of an integrated strategy for marine conservation and management through the National Representative System of Marine Protected Areas (NRSMPA). Conservation of marine biological diversity is the overarching goal of the strategy; however, the effectiveness of the MPAs in delivering this objective requires ongoing assessment. The Australian Government is presently developing a strategy for implementing a coordinated research and monitoring program for these marine parks that will include the identification of performance indicators (Heyward, 2005). Under the current GABMP management plan (DEH, 2005), three performance indicators have been identified. These include (1) spatial and temporal variations in benthic community structure inside *vs.* outside the park; (2) number of nationally listed exotic benthic species and the extent of colonisation; and (3) number of human infringements in the BPZ.

1.5 Performance assessment of the BPZ

Assessment of the effectiveness of marine protected areas in preserving benthic assemblages should ideally involve a "Before and After, Control and Impact" approach (Underwood, 1994), where the "impact" is defined as the management action that limits anthropogenic activities within the experimental or managed site, in this case the BPZ. This approach cannot be taken for performance assessment of the BPZ, as no data are available on the structure of the benthic assemblages of the BPZ prior to the establishment of the GABMP. In the absence of this "before impact" data, performance assessment of the BPZ must necessarily involve (1) comparison of benthic assemblages inside the BPZ with those in adjacent areas; (2) measurement of changes over time in the benthic assemblages within the BPZ; and (3) most importantly, measurement of the difference in the changes in the benthic assemblages that occur over time at sites located inside and outside the BPZ (i.e. the time*location interaction effect).

In their 2002 survey of the eastern GAB, Ward *et al.* (2003a, 2006) sampled and compared epibenthos from 40 stations located inside and immediately outside the BPZ (Figure 2). By undertaking this comparison they effectively completed the first stage of a performance assessment of the type described above. To provide a basis for measuring both changes in the benthic assemblages within the BPZ over time and the difference between temporal changes that occur inside and outside the BPZ, future surveys need to re-sample the same stations sampled during 2002 using the same sampling method (i.e. the epibenthic sled). Follow-up surveys that are conducted to assist performance assessment of the BPZ should also include several other elements. In particular, these surveys should include targeted sampling of sedimentary infauna, as the 2002 sled survey utilized a large (5 cm) mesh cod-end, and would have failed to collect the smaller fauna represented at each study site. The surveys should also employ non-destructive sampling tools (i.e. video and hydro-acoustics) that have the potential to quantify temporal change in the benthos and replace the sled as future monitoring tools.

1.6 Rationale and Objectives

In October 2006, SARDI Aquatic Sciences conducted a survey of the benthic communities of the GAB from the RV *Ngerin*. This survey complemented a pilot study undertaken in the GAB during 2002, and was aimed at supporting the development of a performance assessment system for the BPZ. The objectives of the study were: (1) to quantify spatial and temporal variations in epibenthos inside and immediately outside the BPZ; (2) to determine the efficacy of underwater video for non-destructive sampling of benthos; (3) to assess the suitability of the BPZ in representing regional infaunal biodiversity; and (4) to assess the predictive capabilities of acoustic measures for mapping sedimentary biodiversity. The first two survey objectives are specifically dealt with in this report, while the later two objectives are examined in a companion report (Currie *et al*., 2007).

2 METHODS

2.1 Epifauna

Quantitative measures of change in epibenthic species richness and biomass were obtained by re-sampling (in October 2006) the same 40 stations (located inside and immediately adjacent to the BPZ) that had first been sampled during SARDI's 2002 survey. These stations were stratified among four sedimentary facies recognised for the region (James *et al*., 2001; Figure 2), and further arranged so that 20 stations were represented both inside and outside the BPZ.

Samples of the epifauna at each site were collected using a benthic sled (Figure 3). This was towed across the seafloor at each site for 500 m, with the start and end points of each tow defined using a differential GPS (accurate <3 m in 99% of fixes). Because the sled employed in the 2002 pilot survey was unavailable, a second sled was employed during the 2006 survey. This sled followed the CSIRO-SEBS design (Lewis, 1999) and was similar in size to the 2002 sled (0.6 x 1.0 x 2.0 m), and fitted with an identical 50 mm mesh bag. However, as the sides of the new sled were constructed from solid steel-plate, rather than weld-mesh, the newer sled was considerably heavier (160 kg vs. 50 kg).

Figure 3. Epibenthic sled used to collect sessile organisms from 40 sampling sites inside and immediately outside the BPZ during October 2006.

Both sleds were designed to target large sedentary and slow-motile organisms living on or near the sediment surface. The large mesh-size employed meant that most small organisms present (<1 cm length) passed through the mesh and were not collected in this study. The entire contents of each sled shot were bagged and frozen aboard the research vessel. Data recorded at each site included date, time, location (latitude and longitude) and depth (Appendix 1).

Sled samples were later sorted and identified to species or putative taxon. A rapid assessment approach was undertaken; epi-bionts and specimens less than 1 cm long were not considered. All dead bryozoans, broken shells, and rocks were discarded. The remaining biological material was weighed, and unitary animals (including molluscs, echinoderms and crustaceans) were counted. Molluscs, ascidians and polychaete worms were initially fixed in a 10% formaldehyde solution and later transferred to 75% ethanol; all other taxa were solely preserved in 75% ethanol. Voucher specimens were lodged at the South Australian Museum, Adelaide.

Two-way fixed factor analysis of variance (ANOVA) was used to test for differences in species diversity both between the reserve and non-reserve sites and between the two survey years. Similar tests were also applied to examine reserve and year-related differences in the epibenthic biomass. As most taxa were found at low and variable densities, it was not possible to test for spatial and temporal differences in the biomass of individual species. Species were therefore aggregated at each site. Prior to all analyses, homogeneity of variance was examined using Levene's test and heterogeneity removed where necessary by log10(n+1) and 1/(n+1) transformations. Power analyses were also undertaken to determine the statistical power associated with each test. For the purposes of these analyses, the probability of committing a Type I error was set at 5% ($\alpha = 0.05$).

Year and site-related differences in epibenthic community structure were also examined using Bray-Curtis dissimilarity measures (Bray & Curtis, 1957). This dissimilarity measure was chosen because it is not affected by joint absences, and it has consistently performed well in preserving 'ecological distance' in a variety of simulations on different types of data (Field *et al*., 1982; Faith *et al*., 1987). Single square root transformations were applied to the data before calculating the Bray-Curtis dissimilarity measures. These transformations were made to prevent abundant species from influencing the Bray-Curtis dissimilarity measures excessively (Clarke and Green, 1988; Clarke, 1993). Spatial patterns in dissimilarity were mapped using non-metric multi-dimensional scaling (MDS), and year and site-related differences tested using the ANOSIM routine of Clarke & Gorley (2001). The SIMPER routine of Clarke & Gorley (2001) was subsequently used to identify those species contributing most to observed differences.

2.2 Underwater video

A towed camera system was employed to collect quantitative imagery of the seafloor in the BPZ, and to evaluate the efficacy of underwater video for monitoring benthos (Figure 4). This system consisted of a heavy steel frame with internal mounts to support and protect an underwater video housing and camera. An independent lighting source (2 x 250w High Intensity Discharge lamps) was attached to the frame to provide illumination at depth, and to enable video deployments at night. Additionally, two laser lights were also mounted on the frame to calibrate the field of view.

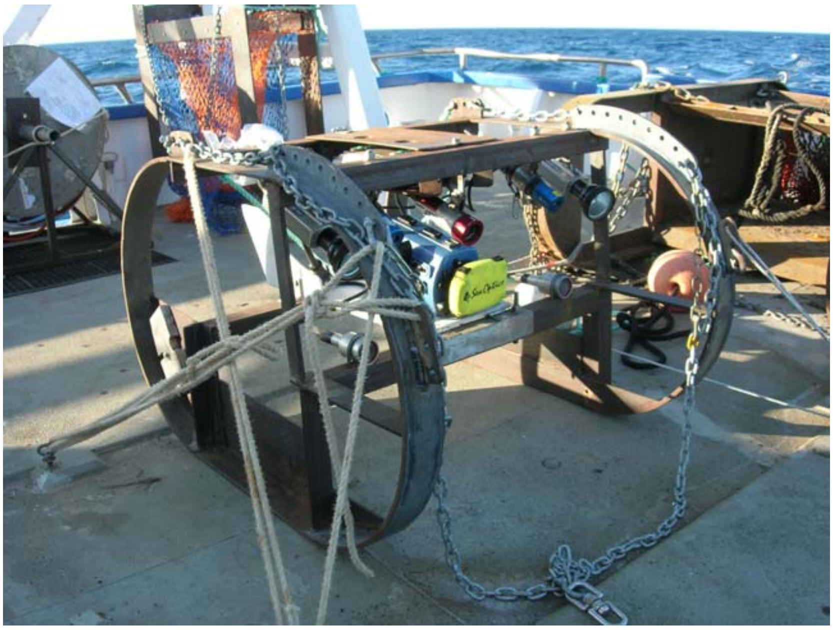

Figure 4. Underwater camera system used to quantify epibenthos and seafloor topography at 11 sampling sites inside the BPZ during October 2006.

Comparative video recordings of the seafloor were collected from 11 sites inside the BPZ immediately prior to sled sampling. These sites were selected to provide representative imagery of the benthos at a wide range of depths (49-156 m) across the shelf. The camera system was towed for a length of 500 m in each deployment along the same path as the epibenthic sled. It should be noted that differences in warp-length and tide between the video and sled tows meant that it was unlikely that the exact same strip of seafloor was sampled by both instruments.

Quantitative estimates of benthic composition and density were obtained from video recordings using a point intercept method (Osborne & Oxley, 1997). This was accomplished by reviewing the video footage from each site and determining the total time at which different classes of benthos were targeted by a fixed laser pointer recorded in the video's field-of-view. Due to limitations in the camera resolution, only one abiotic class (sand) and five faunal classes (Porifera (i.e. sponges), Ascidiacea (i.e. sea squirts), Bryozoa (i.e. lace corals), Hydrozoa (i.e. hydroids) and Anthozoa (i.e. soft corals/sea fans)) could be confidently discriminated in the video recordings. The percentage cover of each benthic class was simply estimated from the relative time occupied by each group during each video tow.

The efficacy of video for monitoring benthic communities in the BPZ was examined by comparing faunal composition and density estimates from video and sled tows at the same location. To facilitate these comparisons, sled shot data were aggregated into the same five biotic groupings identified from the video analyses (i.e. Porifera, Ascidiacea, Bryozoa, Hydrozoa and Anthozoa). Differences in community structure between the sled and video were examined using non-metric MDS ordinations of Bray-Curtis dissimilarity measures. Levels of correspondence between the video and sled ordinations were subsequently tested using the RELATE routine of Clarke & Gorley (2001).

3 RESULTS

3.1 Epifauna

3.1.1 Faunal composition

A total of 661 kg of living benthos was collected from the 40 stations surveyed during 2002 and 2006. Poriferans were the dominant taxa in terms of biomass and accounted for >65% (431.2 kg) of the total faunal weight (Figure 5a). Ascidians and bryozoans were also relatively well represented, and comprised approximately 27% (175.7 kg) and 5% (33.8 kg) of the total biomass sampled, respectively. Other taxa collected, including echinoderms, molluscs, cnidarians, annelids, crustaceans, brachiopods, nemerteans and sipunculids, each comprised <2% (8.6 kg) of the total biomass sampled.

A total of 735 different species were identified during this study (Appendix 2-4). Of these species, over 87% (643) could not be confidently matched with reference material and are apparently undescribed. Poriferans were the best represented taxa, accounting for more than 38% (284) of the total species collected (Figure 5b). Ascidians, bryozoans, cnidarians, echinoderms, molluscs and crustaceans were also well represented, and accounted for 19% (139), 14% (100), 9% (63), 6% (46), 6% (46) and 5% (40) of the total species richness, respectively. Most other taxa collected, including annelids, brachiopods, nemerteans and sipunculids were relatively less diverse and represented by fewer than 3% (15) of the total species collected. It should be noted, however, that some of these less diverse taxa were probably under-sampled, as they were smaller than the mesh size used on the sled.

Poriferans and bryozoans were the most widely distributed taxa and occurred at 100% (40) and 98% (39) of the sampling sites, respectively (Figure 5c). Most other taxa collected, including ascidians, echinoderms, molluscs, cnidarians, crustaceans and annelids, were also widely distributed, and found at more than 50% (20) of the sampling sites. Brachiopods, nemerteans and sipunculids had much more restricted distributions and were encountered at less than 8% (3) of all sites sampled.

Suspension-feeding organisms (primarily poriferans, ascidians and bryozoans) dominated the epibenthic assemblages sampled, and accounted for more than 98% (651.1 kg) of the total biomass and 85% (625) of the total species richness. All other feeding guilds (scavengers, predators, deposit-feeders and grazers) were rare by comparison, and individually comprised less than 1% (4.6 kg) of the total biomass and 10% (70) of the total species collected.

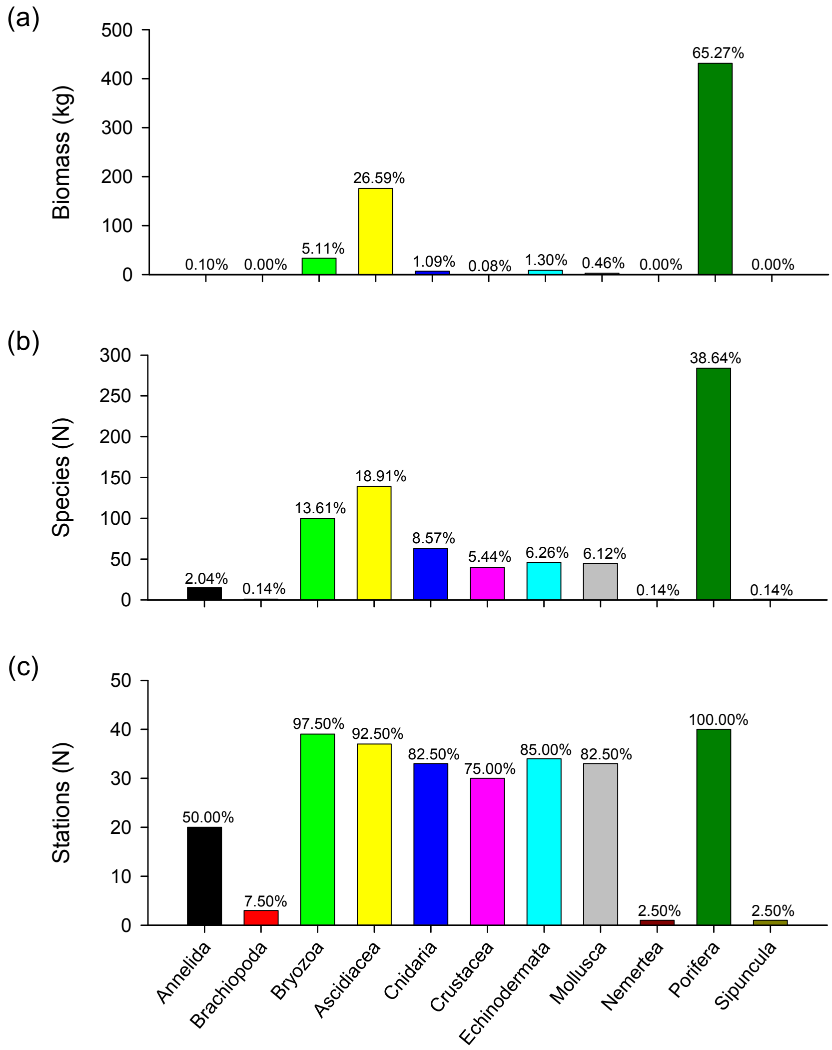

Figure 5. Total (a) wet weight and (b) number of species of each major phylum collected during surveys, and (c) the total number of sites (out of 40) at which specimens belonging to each major phylum were collected. Values for each variable are shown as percentages above each bar.

3.1.2 Spatial and temporal variations in species richness and biomass

The effects of reserve protection and year of sampling on epifaunal richness and biomass are summarised in Table 1. This ANOVA table confirms that standing-stock and diversity differ significantly ($p < 0.05$) across the reserve boundary and, additionally, between survey periods. Bar graphs (Figure 6) confirm the magnitude and direction of these changes. These plots show that biomass and diversity are consistently higher inside the reserve, rather than outside the reserve. The same graphs also indicate that species diversity and biomass has declined between 2002 and 2006. On average, epibenthic biomass and species richness were 341% and 64% higher (respectively) inside, rather than outside, the BPZ boundary. Biomass and richness were also 28% and 111% higher (respectively) during 2002 than in 2006.

Table 1. Results of two-way ANOVA's on differences in epifaunal biomass and species richness during two surveys (Year) inside and outside the Benthic Protection Zone (Reserve)

Dependent	Source	df	MS	F	*P*	Power (α = .05)
Biomass	Reserve	1	9.184	8.146	**0.006**	0.805
	Year	1	12.460	11.052	**0.001**	0.907
	Reserve* Year	1	0.004	0.004	0.950	0.050
	Error	76	1.127			
Richness	Reserve	1	2431.013	7.955	**0.006**	0.795
	Year	1	5265.013	17.229	< **0.000**	0.984
	Reserve* Year	1	154.012	0.504	0.480	0.108
	Error	76	305.597			

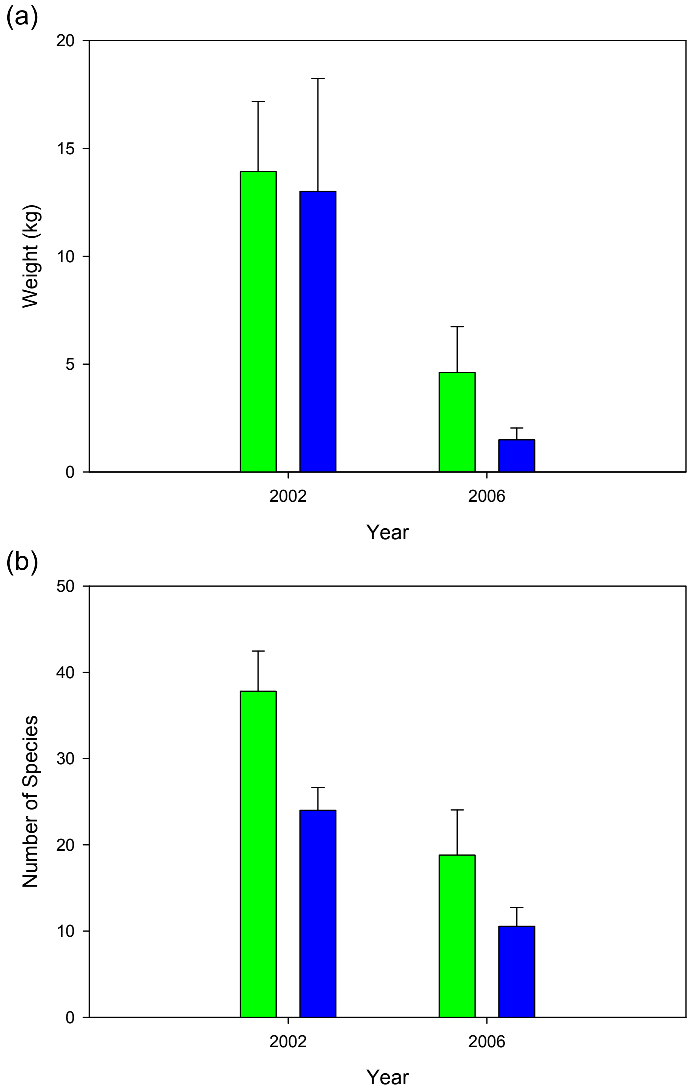

Figure 6. Mean (a) biomass and (b) species richness of epifauna collected in 20 replicate 500 m^2 sled tows inside (green filled bars) and outside (blue filled bars) the Benthic Protection Zone during 2002 and 2006. Error bars indicate the SE of mean.

3.1.3 Spatial and temporal variations in community structure

The MDS ordination (Figure 7) maps spatial and temporal differences in the composition of benthos collected at each site (20 inside + 20 outside BPZ) during each independent survey (2002, 2006). Data from two sled shots (site 1 from 2002, and site 39 from 2006) were excluded from this ordination as they did not contain species that were present at any other site. The stress coefficient of 0.14 indicates that the ordination is not unduly distorted and is a good representation of the input dissimilarities in two-dimensions (Clarke, 1993).

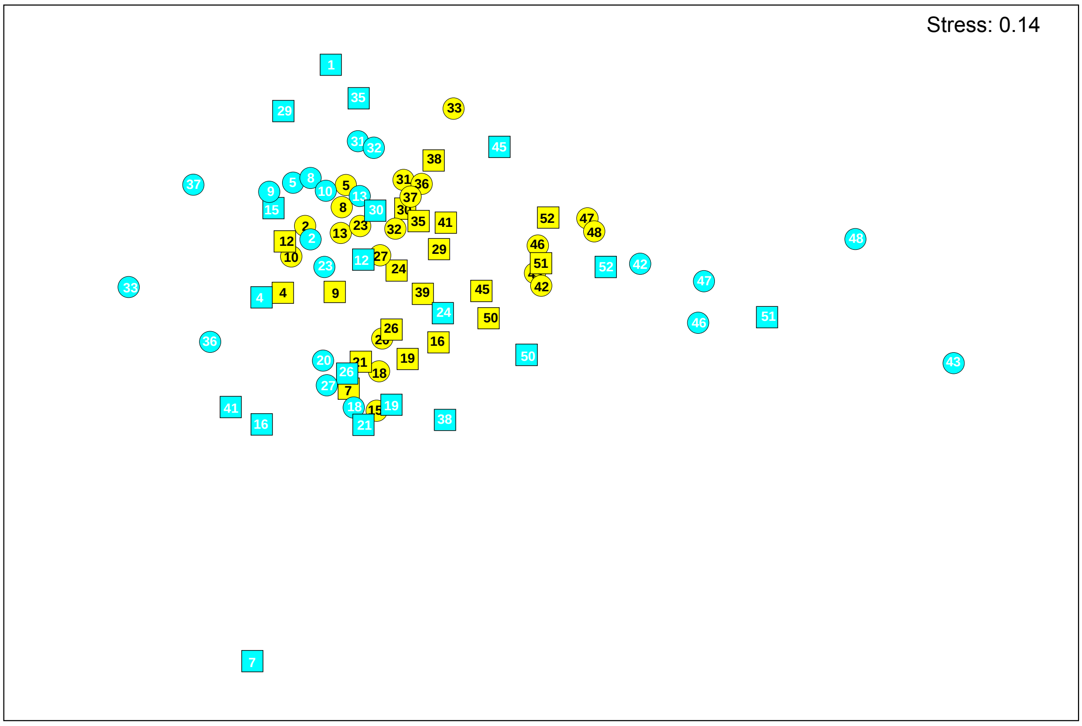

Figure 7. Non-metric MDS ordination of the epibenthic community structure sampled at 20 sites (numerals) inside (squares) and outside (circles) the BPZ during 2002 (yellow fill) and 2006 (blue fill).

As samples from inside and outside the BPZ intergrade throughout the MDS (Figure 7) and do not form cohesive groupings, there is no clear evidence for a difference in benthic community structure across the BPZ boundary line. There is, however, some evidence for a difference in community structure between the two surveys. Notably, those sites sampled during 2002 form a tight grouping at the centre of the ordination, while those sites sampled during 2006 are widely scattered around this grouping. This pattern suggests that, while there is a high similarity between the assemblages sampled in each survey, the community structure is much more spatially variable during 2006 than in 2002.

Analysis of similarity tests provide a more formal assessment of spatial and temporal differences in epifaunal assemblage structure (Figure 8). These histograms display the permutation distribution of the ANOSIM test statistic, together with the observed global *R* value (vertical line). Because the observed *R* statistic falls within the main body of the reserve distribution (Figure 8a), there is no evidence for a reserve-related difference in community structure. In contrast, the observed *R* statistic lies well to the right of the upper tail of the year distribution (Figure 8b), and implies that there is a significant ($p<0.001$) difference in community structure between the two surveys.

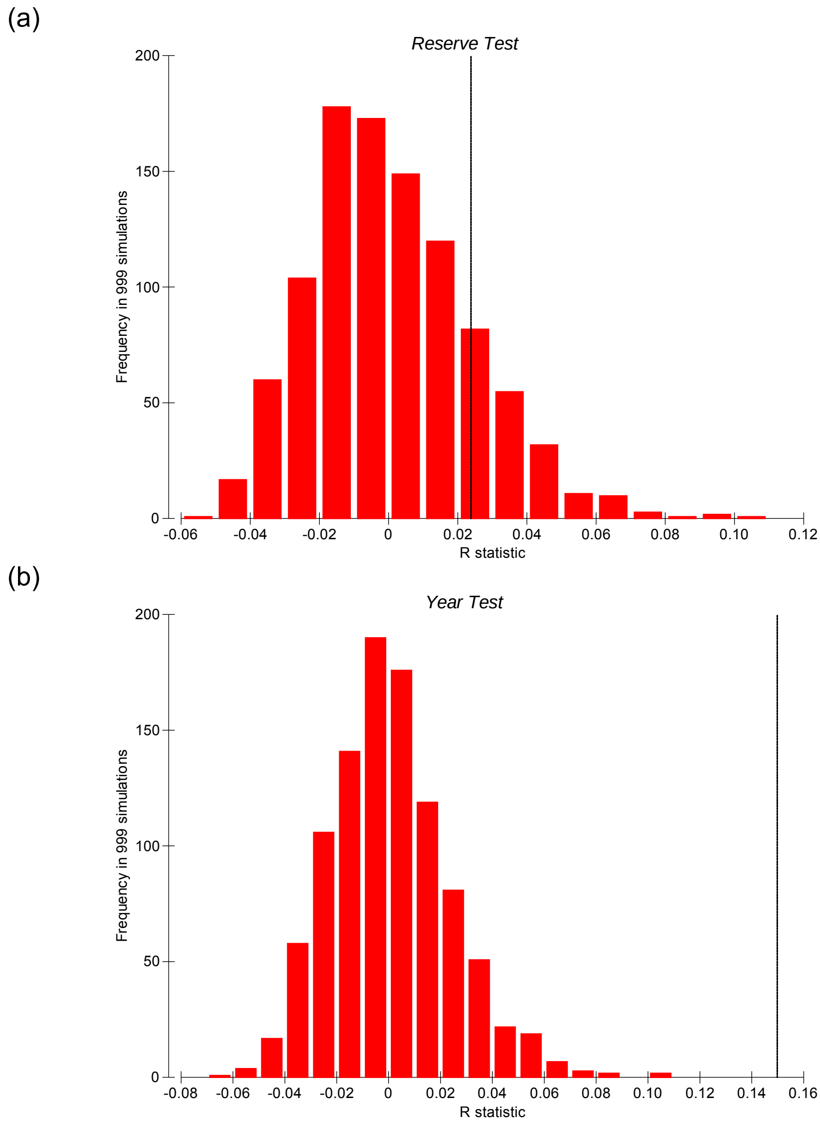

Figure 8. Simulated distribution of the test statistic *R* under the null hypothesis of a) no reserve differences, and b) no year differences. The observed *R* statistic is shown as a solid vertical line (*R* Reserve = 0.024; *R* Year = 0.15).

Similarity percentage (SIMPER) analyses were employed to identify those species that contributed most to similarities within and differences between the two survey periods (2002 and 2006). These analyses demonstrate that temporal differences in community structure are primarily the result of a small number of taxa (Table 2). Notably, 28 species (i.e. 4% of the entire species compliment = 735 spp.) account for over half of the total dissimilarity between surveys. One of these species (the massive sponge *Spheciospongia papillosa*), individually contributes over 12% to community differences between surveys, due to its much reduced biomass in the 2006 survey. By comparison, all other species individually contribute less than 4% to observed temporal differences.

Variations in the distribution and biomass of species common to both surveys play an important role in discriminating the two surveys, and account for 42.8% of overall dissimilarity. However, a large proportion of the dissimilarity between surveys (56.2%) is also due to the presence of different suites of species. Of the 735 species identified from both surveys, 432 species were recorded exclusively during 2002. A further 167 species were only encountered during 2006, while the remaining 136 species co-occurred during both surveys.

The average Bray-Curtis similarity between all sample sites during the 2002 survey (2.9) is made up mainly of contributions from just 3 species: *Spheciospongia papillosa* (33.9%), *Cribrochalina* sp (49) (14.1%), and *Lunularia capulus* (6.1%). Due to their consistently high biomasses at a large number of sites, these three species can be described as typifying the epifaunal communities during the 2002 survey. These same three species were also found at consistently high biomasses at several sites during the 2006 survey, and consequently characterised the epifaunal communities during this period. In addition, 3 other species made contributions in excess of 5% to the within-survey similarity during 2006, and were recognised as typifying the epifaunal communities during 2006: Ascidian (14) (13.8%), Poecilosclerid sp. (189) (11.5%), and *Adeona* sp (8.7%).

Table 2. Mean biomass (kg per 500 m^2) of epifaunal species collected during two survey periods (2002, 2006). Species listed were identified from SIMPER analysis as contributing up to 50% of the dissimilarity between surveys. Species indicative of each survey (contributing ≥ 5% to the total similarity within a survey) are highlighted in bold.

Phylum	Species	Mean Biomass		Av. Diss	S.D.	Contrib. (%)	Cum. (%)
		2002	2006				
Porifera	*Spheciospongia papillosa*	**2.36**	**0.90**	12.51	0.53	12.72	12.72
Porifera	Poecilosclerid sp. (189)	0.06	**1.37**	3.72	0.35	3.79	16.50
Porifera	*Cribrochalina* sp. (49)	**0.08**	**0.02**	3.53	0.36	3.58	20.09
Ascidiacea	Ascidian (14)		**0.07**	2.50	0.22	2.54	22.63
Porifera	Soft beige sandy sponge	0.16		2.06	0.19	2.09	24.72
Ascidiacea	Ascidian (89)	0.03	0.18	1.72	0.29	1.75	26.47
Ascidiacea	Orange sandy ascidian	0.14		1.72	0.31	1.75	28.22
Porifera	Cream bumpy sponge	0.12		1.57	0.15	1.60	29.82
Bryozoa	*Lunularia capulus*	**0.01**	**< 0.01**	1.53	0.24	1.55	31.37
Bryozoa	*Adeona* sp.	0.12	**0.08**	1.48	0.41	1.50	32.87
Porifera	Brown foliose sponge 3	0.06		1.43	0.14	1.45	34.32
Porifera	Potato sponge	0.03		1.34	0.24	1.36	35.69
Porifera	*Ircinia* sp.		0.06	1.17	0.14	1.19	36.87
Ascidiacea	Ascidian	0.01	< 0.01	1.09	0.16	1.11	37.98
Porifera	Crunchy sponge	0.27		1.01	0.22	1.03	39.01
Ascidiacea	Grey sandy ascidian	0.17		1.01	0.21	1.02	40.03
Ascidiacea	Ascidian (393)		0.13	0.98	0.21	0.99	41.03
Porifera	White gelatinous sponge 2	0.01		0.97	0.13	0.99	42.01
Ascidiacea	*Aplidium* sp.		0.11	0.95	0.15	0.96	42.98
Porifera	Crunchy brown sponge	0.17		0.94	0.21	0.95	43.93
Porifera	*Cliona celata*	0.18		0.83	0.15	0.84	44.77
Ascidiacea	*Aplidium petrosum*	0.19		0.83	0.18	0.84	45.61
Ascidiacea	Brown pancake ascidian 1	0.01		0.82	0.22	0.84	46.45
Ascidiacea	*Ritterella* sp.(410)	< 0.01	0.56	0.80	0.16	0.82	47.27
Porifera	*Spheciospongia purpurea*	0.06	0.02	0.80	0.15	0.81	48.08
Ascidiacea	Orange didemnid 1	0.03		0.77	0.15	0.78	48.86
Ascidiacea	Sandy button ascidian	0.02		0.76	0.18	0.77	49.63
Porifera	*Chondropsis* sp. (178)	0.02	0.18	0.75	0.25	0.77	50.40

3.1.4 Environmental influences

When water depths are superimposed on the initial MDS ordination (detailed above), a distinct site pattern is evident (Figure 9). Except for a few outliers, most symbols denoting four depth strata form discrete and cohesive groupings. Sites comprising the deepest strata (120-200 m) invariably plot towards the right hand side of the ordination. In contrast, symbols classifying stations located in the 100-120 m, 65-100 m, and <65 m depth range, plot progressively further towards the left of the ordination. Remarkably, this pattern is preserved, regardless of the year of sampling or the sites position relative to the BPZ. It is worth adding here, that the depth intervals used in the classification also correspond directly to four sedimentary facies previously described for the region (<65 m = Quartzose Skeletal, 65-100 m = Intraclast, 100-120 m = Intraclast Bryozoan West, 120-200 m = Branching Bryozoan; Figure 2).

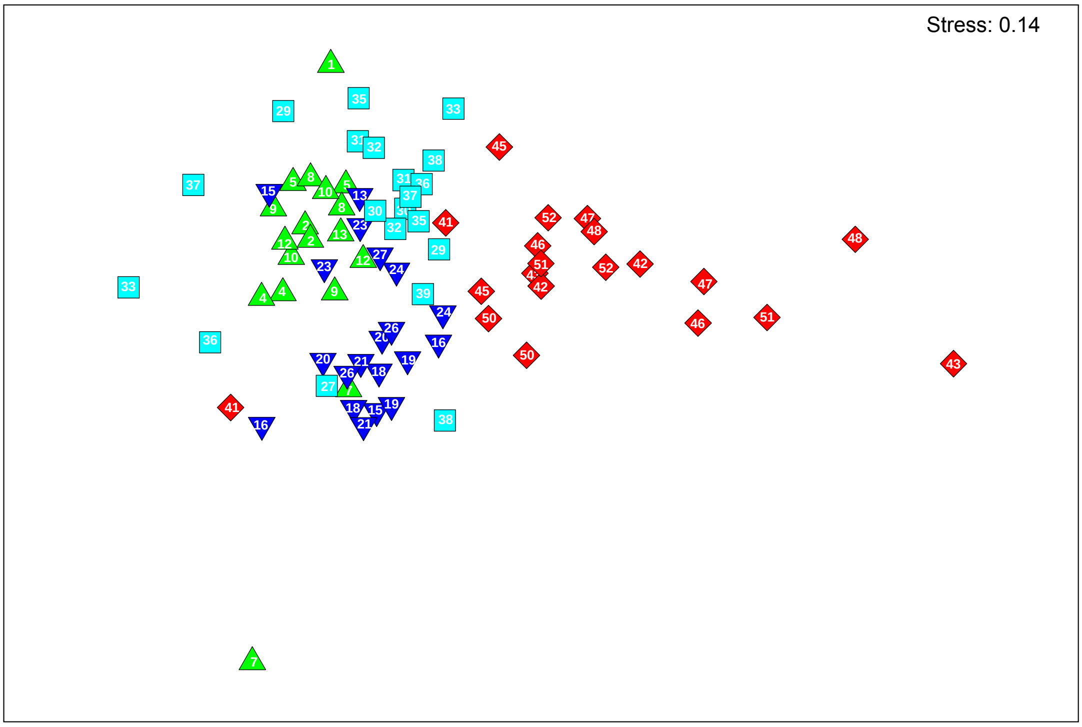

Figure 9. Non-metric MDS ordination of the epibenthic community structure sampled at 20 sites inside and outside the BPZ during 2002 and 2006. Four depth strata are represented in the ordination by different coloured symbols (green triangles = <65 m, dark-blue triangles = 65-100 m, light-blue squares = 100-120 m, red diamonds = 120-200 m).

Cross-shelf differences in species richness, biomass and diversity provide only limited explanations for apparent depth-related trends in community structure (Figure 10). These plots show that species richness, biomass and diversity are all significantly higher in shallow waters (<65 m depth), than in deeper waters (65-200 m depth). However, no significant variations in species richness or diversity are apparent in depth strata located deeper that 65 m.

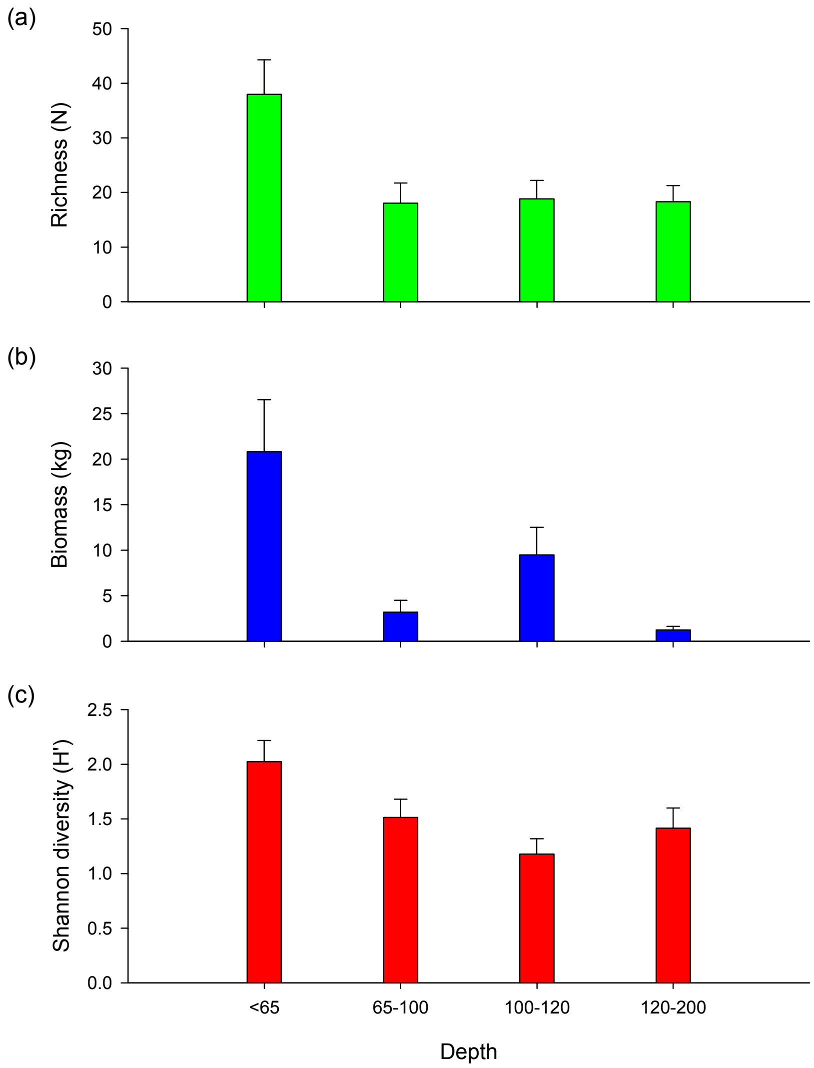

Figure 10. Mean (a) richness, (b) biomass, and (c) diversity of epibenthos at four depth strata identified from MDS ordination of community data. Mean estimates and standard error bars are based on replicate 500 m sled tows (n = 18 at <65, n = 20 at all other strata).

Similarity percentage (SIMPER) analyses show that most of the cross-shelf differences in community structure are due to the presence of different suites of species at different depth strata (Table 3). In these analyses, 35 species account for half of the total dissimilarity between depths. Of these 35 species, 17 (49%) were unique, and only encountered in one of the four depth strata surveyed. A further 7 species (20%) occurred in two depth strata, while the remainder (11 species; 31%) were found in three or more depth strata.

Species characterising each depth strata were identified from the same SIMPER analysis (Table 3). In this classification, the shallowest depth stratum (<65 m) was typified by two locally abundant sponges (Poecilosclerid sp. (189), *Chondropsis* (sp 2)), and one Ascidian (Ascidian (89)). Two bryozoan species (*Lunularia capulus* and *Lunularia repanda*) were recognised as the most influential taxa in the next depth zone (65-100 m), on account of their relatively high frequency of occurrence (50% of sites). A single sponge species (*Spheciospongia papillosa*) characterised sites located in the 100-120 m depth stratum, due to its disproportionately high biomass. The deepest stratum (120-200 m), was characterised by two species (*Cribrochalina* sp. (49) and Ascidian (14)) found exclusively at this depth range.

Table 3. Mean biomass (kg per 500m^2) of epifaunal species collected from four depth strata during two survey periods (2002, 2006). Species listed were identified from SIMPER analysis as contributing up to 50% of the dissimilarity between depths. Species indicative of each depth (contributing ≥ 5% to the total similarity within a depth strata) are highlighted in bold.

Phylum	Species	Station			
		<65 m	65-100 m	100-120 m	120-200 m
Porifera	*Spheciospongia papillosa*	1.29	0.21	**5.17**	
Porifera	Poecilosclerid sp. (189)	**2.93**	0.22		
Ascidiacea	*Ritterella* sp. (410)	1.24		<0.01	
Ascidiacea	Ascidian (217)	0.73	<0.01		
Porifera	Amorphous conulose sponge	0.72			<0.01
Ascidiacea	*Pyura spinifera*	0.66			
Porifera	Crunchy sponge	0.60			
Porifera	Chondropsis (sp 2)	**0.59**			
Ascidiacea	Sandy 'liver' ascidian	0.32	0.05	0.11	
Bryozoa	*Adeona* sp.	0.30	0.02	0.10	0.01
Ascidiacea	Ascidian (89)	**0.09**	0.30	0.04	
Ascidiacea	*Aplidium petrosum*	0.42			
Porifera	*Chondropsis* sp. (178)	0.17	0.24		
Porifera	Crunchy brown sponge	0.37			
Porifera	*Cliona celata*		0.35		
Porifera	Soft beige sandy sponge	0.23	0.11		
Porifera	Dictyoceratid sp. (182)	0.31			
Ascidiacea	Ascidian (393)	0.17	0.08	0.03	
Ascidiacea	Orange sandy ascidian		0.04	0.22	0.01
Porifera	Orange sandy sponge 2		0.04	0.22	0.01
Porifera	Cream bumpy sponge			0.25	
Ascidiacea	*Aplidium* sp.			0.23	
Porifera	*Cribrochalina* sp. (49)				**0.20**
Porifera	*Spheciospongia purpurea*	<0.01		0.12	0.04
Ascidiacea	Ascidian (14)				**0.15**
Porifera	Brown foliose sponge 3		0.12		
Porifera	Dictyoceratid sp. (446)	0.11	0.01		
Porifera	*Ircinia* sp.				0.12
Ascidiacea	Didemnid sp. (307)	0.11			
Porifera	Potato sponge				0.07
Bryozoa	*Orthoscuticella* sp (206)	0.03	0.03	<0.01	
Porifera	Dictyoceratid sp. (90)	0.03			
Bryozoa	*Lunularia capulus*	<0.01	**0.03**	<0.01	
Porifera	Demosponge sp. (260)	0.01			
Bryozoa	*Lunularia repanda*	<0.01	**<0.01**	<0.01	

3.1.5 Adequacy of sampling

Because of their limited distributions, it was not possible to test for reserve and year-related differences in the populations of individual species. Over half (54%) of the species collected during both surveys (395/735) only occurred at one site (1/40). A further 44% of species (324/735) were present at between 2 and 10 sites, while the remaining 2% of species (16/735) were encountered at between 10 and 21 of the 40 sites surveyed. This extremely patchy distribution suggests that a large proportion of the benthic fauna residing in and around the BPZ may not have been sampled. In an effort to assess the degree to which this survey may have under-sampled biodiversity, the species accumulation rate for successive sled tows was examined.

The more samples that are taken in any biological survey, the more species will be recorded. As additional samples are taken, additional species accumulate at a decreasing frequency until an asymptote is approached, where essentially all the species in all of the habitats have been collected. In the BPZ, the observed cumulative species curve begins to level-off after ~50 sled tows (Figure 11). At this point ~680 species have been collected. As less than 60 new species are encountered in the next 30 sled tows, it appears that the curve is reaching an asymptote, indicating that most species have been sampled. This assumption is misleading, as the order that samples are added to the species-accumulation curve affects the shape of the curve produced. In both the 2002 and 2006 surveys, the more diverse inshore stations were sampled first and the less diverse offshore stations sampled last. As a consequence the species accumulation plot has large steps in richness over the first 10 tows in each survey (i.e. 1-10 and 40-50; Figure 11).

A randomisation procedure was employed to provide a more robust estimate of diversity, and to provide a parametric model for predicting the number of species likely to be encountered following more intensive levels of sampling. Because the resulting rarefaction curve (Figure 11) is steeply inclined and shows no evidence of reaching an asymptote, it appears that much of the benthic epifauna biodiversity residing in and around the BPZ has yet to be sampled.

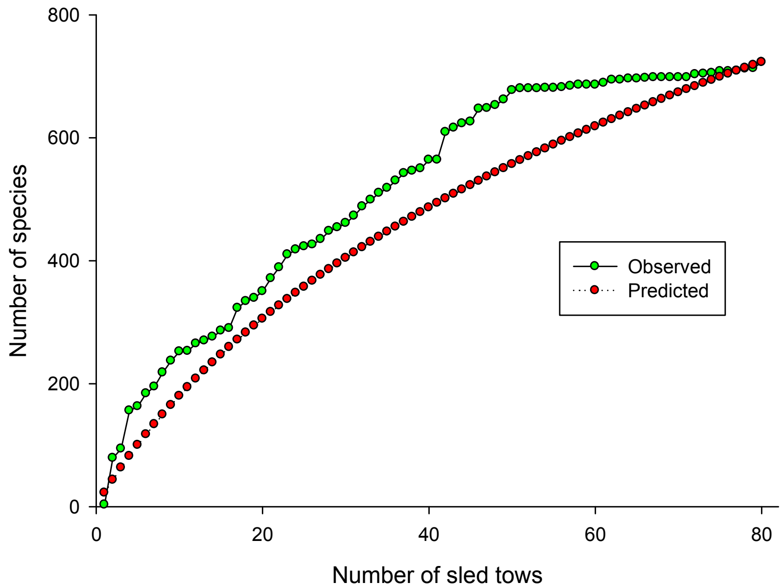

Figure 11. Cumulative species curves for 80 sled tow samples taken inside and outside the BPZ during 2002 and 2006. Green-filled circles denote the number of species observed as samples are successively pooled in their original sampling order. Red-filled circles represent the predicted mean number of species from the randomised re-ordering of samples (n = 999 permutations).

By extrapolating the species curve using the polynomial model (Equation 1) we estimate that one additional survey (40 sled shots at the same survey sites) will result in 340 additional species. As a consequence, our epifaunal reference collection for the BPZ is expected to reach some 1075 species.

$$S = 0.0009n^3 - 0.1813n^2 + 17.623n + 16.403 \qquad \text{Equation 1}$$

where

S = number of species predicted, and
n = number of sled tows

3.2 Underwater video

3.2.1 Topography and habitat structure

Video tows were undertaken at 11 sites inside the BPZ during this survey, however, poor underwater visibility prevented any reliable interpretation of recordings from four sites. As a result, the analyses presented here are drawn from just seven sites spanning the continental shelf (5, 8, 20, 27, 33, 37, 42; Figure 12).

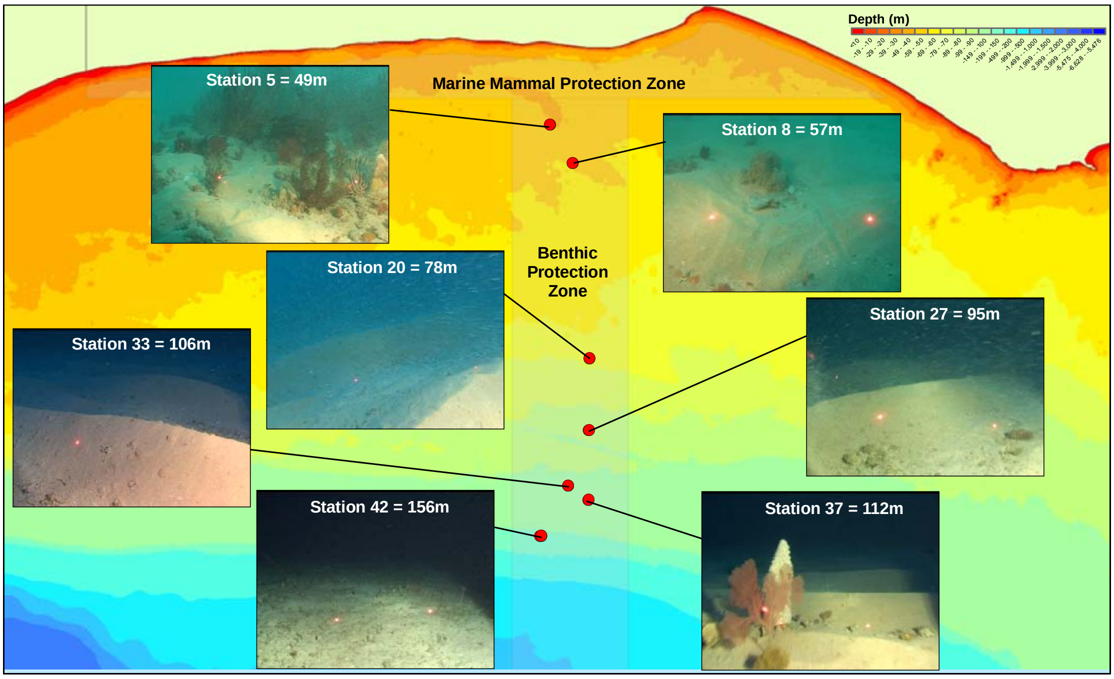

Figure 12. Still images of the seafloor taken from video recordings at seven sampling sites inside the BPZ.

Marked depth-related differences in bottom topography were evident from video inspections inside the BPZ. The seafloor at selected sites on the inner-shelf (49-57 m depth) was typically composed of hard-packed, winnowed sand, swept into irregular, sharp-crested, ripples (wavelength = 0-20 cm; amplitude = 0-5 cm). These sands were mainly bare, but dense patches of epifauna (chiefly sponges and ascidians) were sporadically encountered here, each stretching for more than 10 m. By comparison, high-relief sand dunes (wavelength = 60-100 cm; amplitude = 20-30 cm) characterised the bedforms further offshore (78-112 m depth). These dunes were evidently reworked by prevailing south-westerly swells, and were characteristically sinuous-crested, with peaks composed of fine sediments and troughs comprising mainly of coarse abraded shell fragments. Epibenthic growth was sparse in this area of the shelf, with small isolated clusters of sponges, ascidians and hydroids observed almost exclusively in the dune troughs. The seafloor in the outer-shelf (156 m depth) of the BPZ was flat and muddy and clearly outwith the direct influence of ground swell waves. The sediment surface here is peppered with small pits and depressions (presumably formed by burrowing organisms), and is covered by a thin but uniform growth of small (< 5 cm) filter-feeding organisms (mainly hydroids and bryozoans).

3.2.2 Epifaunal classification

Due to the unique morphology of some organisms observed on video, and their coincidental capture in sled tows, it was sometimes possible to resolve their identity at the lowest taxonomic level (i.e. species). However, this was not generally possible because of the high level of structural similarity between different species in the same phylum (e.g. sponges). In this study, only one abiotic class (sand) and five faunal classes (Porifera (i.e. sponges), Ascidiacea (i.e. sea squirts), Bryozoa (i.e. lace corals), Hydrozoa (i.e. hydroids) and Anthozoa (i.e. soft corals/sea fans)) could be confidently distinguished in the video recordings, and are the basis of our classification scheme (Figure 13).

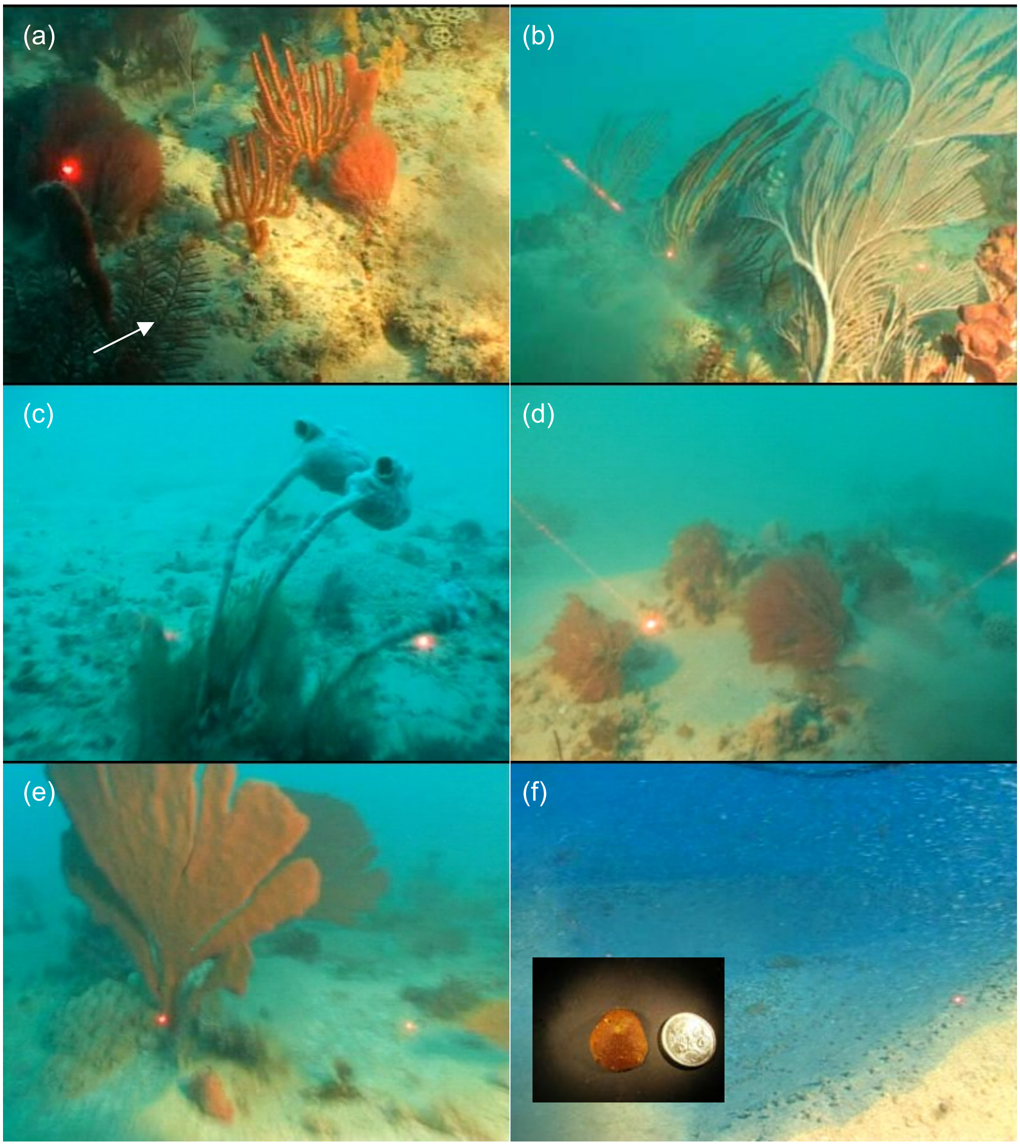

Figure 13. Still images of seafloor inside the BPZ showing six benthic groupings used to classify habitats: (a) Hydroid - Plumularid sp., (b) Anthozoa - Isidid sp., (c) Ascidiacea - *Pyura spinifera*, (d) Bryozoa - *Orthoscuticella* spp., (e) Porifera - *Antho (Isopenectya) chartacea*, (f) Sand - dunes with small bryozoan discs *Lunularia* spp. scattered on the surface (inset *L. capulus*). Laser light spots on images are 50 cm apart.

Vast expanses of bare sand dominated the bedforms inside the BPZ, and comprise between 93% and 99% of the seafloor cover at each survey site (Figure 14). The remaining areas of seafloor at each survey site support sporadic patches of emergent benthos (up to 80 cm in height). This benthos varies considerably in composition and relative abundance between sites. The two inshore sites (5 and 8) support the most diverse and dense faunal coverages. By comparison, site 20 on the mid-shelf supports virtually no epifauna, while sites further offshore (27, 33, 37, 42) support locally distinct faunal assemblages at typically low densities.

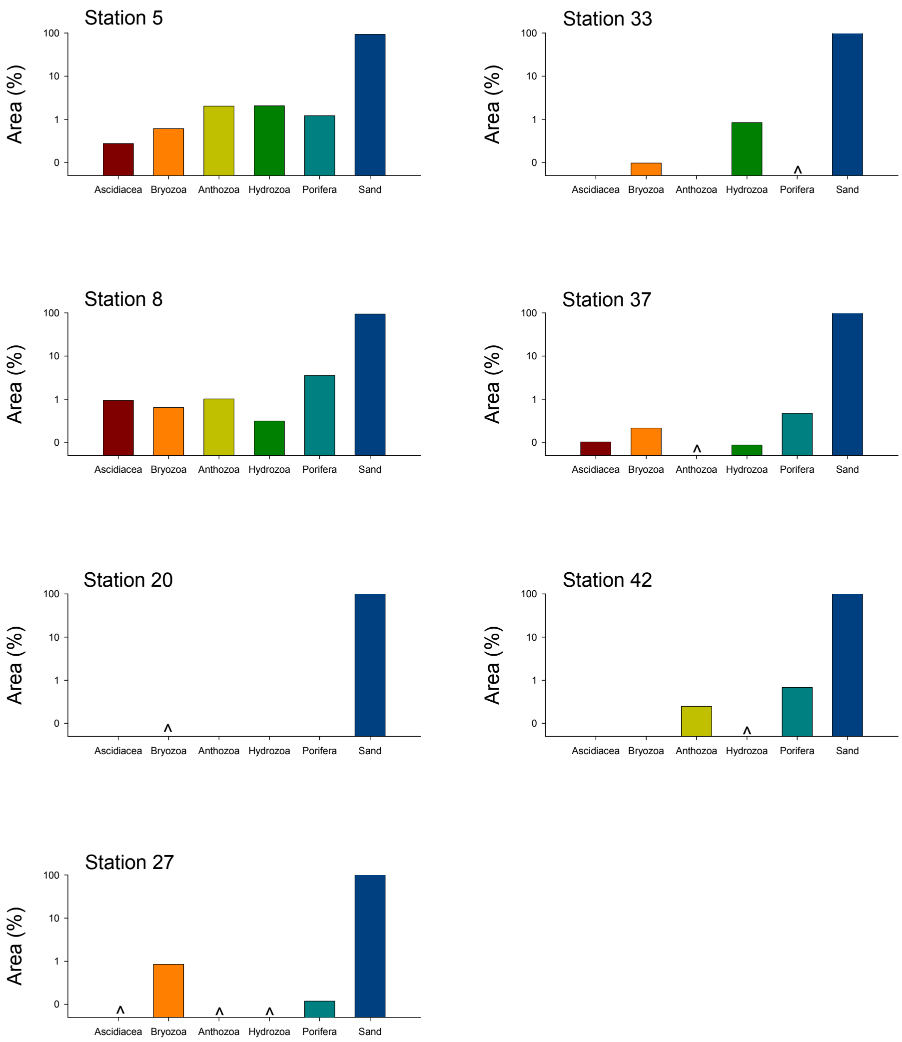

Figure 14. Plots showing the relative proportions of five epifaunal taxa and bare sand covering the seafloor along seven video transects (500 m length) located inside the GAB Benthic Protections Zone. Faunal coverages that are too small to be clearly displayed on the plots are marked ^.

A small number of distinctive organisms were observed to characterise different regions of the BPZ. For example, large isolated stands of stalked ascidians (*Pyura spinifera*) and gorgonian hydroids (Plumularid sp.) were a recurrent feature of the benthos at the two shallowest sites (5 and 8), but these taxa were rarely observed elsewhere on the shelf. In contrast, small discs of the bryozoan (*Lunularia* spp.) typified the benthos at the deeper mid-shelf sites (20, 27 and 33). Further offshore, the bushy red bryozoan (*Orthoscuticella* spp.) was the most distinctive organism observed at site 37. In comparison, the deepest site (42) was characterised by isolated stands of the stalked poriferan (*Cribrochalina* sp.).

3.2.3 Video vs. sled comparison

The non-metric MDS ordination (Figure 15a) maps spatial differences in faunal composition determined from video recordings at the seven survey sites. The very low stress value (0.01) indicates that the ordination is an excellent representation of the input dissimilarities in two dimensions, and suggests that there is a low probability of misinterpretation (Clarke, 1993). Five discrete site groupings are apparent in this ordination. As the two shallow inshore sites (5 and 8) plot closest to one-another, it is evident that these sites possess the most similar faunas. Sites 27 and 37 in the mid-shelf region of the BPZ also plot close to one-another, and indicate that the faunas of these two stations have much in common. By comparison, all other sites surveyed (42, 33, 20) plot separately on the ordination. This pattern suggests that their respective faunas have little in common. Notably, site 20 plots in isolation at the far left-hand side of the ordination, on account of its extremely low faunal coverage, and lack of similarity with all other sites.

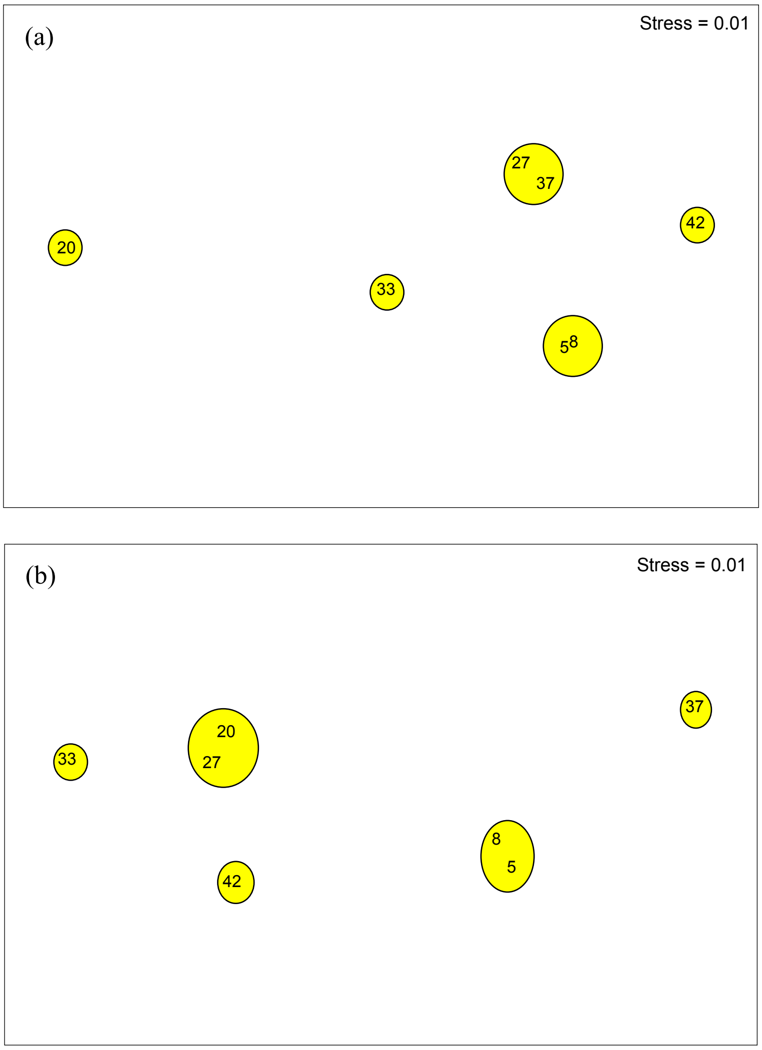

Figure 15. Non-metric Multidimensional Scaling (MDS) ordinations of epifaunal composition in a) video, and b) sled shots, at seven sampling stations (numerals) inside the GABBPZ. Group-average clustering at the 50% similarity level (yellow filled circles) has been superimposed on the ordinations.

To ensure valid comparisons between video and sled tows at the same location, the sled shot data had to be aggregated into the same five biotic groupings identified from the video analyses (i.e. Porifera, Ascidiacea, Bryozoa, Hydrozoa and Anthozoa). As a consequence of this aggregation process, nine taxonomic classes differentiated during the sled tows had to be excluded (Table 4). The MDS ordination constructed from the aggregate sled data is presented in Figure 15b. Like the video ordination (Figure 15a), the sled ordination (Figure 15b) has low stress and is therefore a good representation of the input dissimilarities. Furthermore, consistent with the video ordination, five site groupings are represented at the 50% similarity level. Once again, the two inshore sampling sites (5 and 8) have most in common and plot closest to one-another. However, unlike the video ordination, the next two most closely allied sites are 20 and 27. All other sites sampled by the sled (33, 37, 42) plot in isolation on the ordination, as they have low faunal similarity.

Table 4. Weight of all epifaunal taxa collected from seven sled sampling sites located inside the GAB Benthic Protection Zone. Grey filled cells denote the five taxonomic groups that could be reliably identified from video tows and included in MDS analyses.

Taxa	Station							Total Weight (kg)
	5	8	20	27	33	37	42	
Anthozoa	0.002	0.004						0.006
Articulata			0.001					0.001
Ascidiacea	37.921	3.269				0.494		41.684
Asteroidea	0.022	0.050						0.072
Bivalvia	0.026	0.208						0.234
Bryozoa	0.057	1.282	0.351	0.058	0.002		0.013	1.763
Crinoidea	0.010							0.010
Echinoidea							0.001	0.001
Holothuroidea		0.062						0.062
Hydrozoa	0.451	0.121		0.001				0.573
Malacostraca	0.013		0.001				0.001	0.015
Ophiuroidea		0.001						0.001
Polychaeta		0.007						0.007
Porifera	24.687	74.741		0.002			0.317	99.746
Total Weight (kg)	63.188	79.745	0.353	0.061	0.002	0.494	0.332	144.175

The level of correspondence between the video and sled MDS's was assessed by calculating a Spearman rank correlation coefficient (ρ) between all the elements of their respective similarity matrices. The observed coefficient was subsequently compared with 999 simulated values in a permutation test. Under the null hypothesis that there is no relationship between the two similarity matrices, ρ will be approximately zero. The results of the permutation test are presented as a histogram in Figure 16. As the observed correlation coefficient (ρ = -0.11) is located near the mode of the null distribution there is clearly no evidence of any structural relationship between the video and sled data.

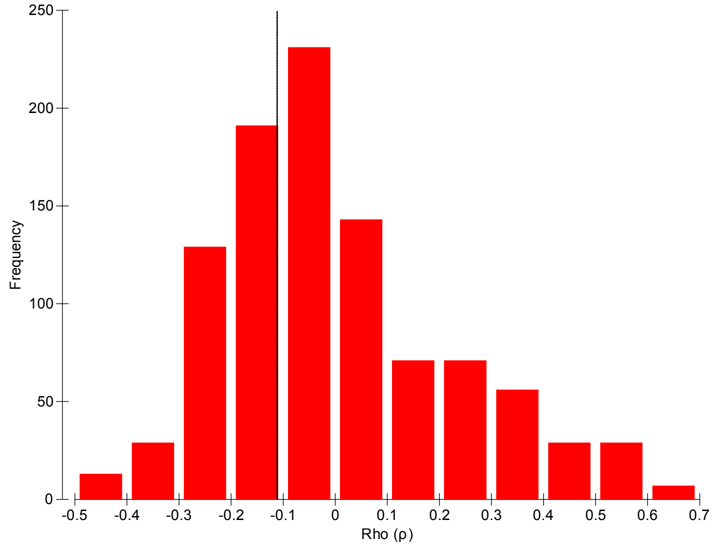

Figure 16. Simulated distribution of the test statistic (ρ) with 999 permutations. The observed correlation coefficient (ρ = -0.11) is denoted by a solid vertical line. The significance level of the sample statistic p = 0.66.

4 DISCUSSION

4.1 Spatial and temporal variability in epifauna

Results from this study have shown that epifaunal diversity and biomass varies markedly across the reserve boundary and between surveys. Presently there is little empirical evidence to confirm whether observed differences in epifaunal composition between the BPZ and adjacent non-reserve areas are due to the prohibition of human impacts within the reserve. Similarly, it is not clear if observed declines in faunal diversity and biomass between surveys are real, or are simply a function of the different sled designs employed during the two surveys. This ambiguity of conclusions emphasises the need for an adequate time series of monitoring to better define the extent of changes and identify their causes.

4.2 Sled sampling efficiency

Although there is a large volume of literature devoted to the study of marine soft-sediment communities, quantitative studies of benthic macro-epifauna have received relatively little attention. This is principally because many large epibenthic organisms occur in widely dispersed aggregations that cannot be effectively sampled by conventional grabbing techniques (Holme and McIntyre, 1971). Most grab samplers collect only a small area of the seafloor (~0.1 m^2) and do not give quantitative estimates of the abundances of low-density macro-epibenthic species, even when large numbers of replicate samples are taken (Thouzeau *et al*., 1991).

Several techniques have been employed to sample macro-epifauna on soft sediments including trawling (Basford *et al*., 1990; Kaiser *et al*., 1994; Jennings *et al*., 1999) and dredging (Reise and Bartsch, 1990; Thouzeau *et al*., 1991). However, few of these methods can be considered strictly quantitative. The sampling efficiency of trawls and dredges, for example, is greatly influenced by variations in the composition and topography of the seafloor (Jean and Hily, 1994; Currie and Parry, 1999). Furthermore, sample size is difficult to determine for trawls and dredge gear, and even harder to replicate, because vessel speed and length of tow are not easily controlled. Diver-based sled sampling techniques (e.g. Cohen *et al*., 2000) can arguably provide much more precise estimates of epifaunal abundance and biomass. Unfortunately, this technique has limited practical application in the GABMP, because of the extreme range of depths that have to be surveyed (i.e. 0 - 5,000 m).

Despite their limitations, epibenthic sleds are presently the best available option for cost-effective sampling of benthos in the GABMP. These sleds are relatively cheap and simple to fabricate, and can be deployed and towed with reliable accuracy over the full range of depths represented inside the park. Moreover, because sleds physically collect biological material, accurate identification of species and faunal biodiversity is facilitated. Once the taxonomy of the benthic assemblages of the GABMP becomes better known, it is likely that sled sampling will be replaced by less-destructive sampling methods (e.g. video imagery). In the meantime, it is important that efforts are made to reduce sampling variability so that long-term trends in benthos can be assessed with confidence. In the most recent survey, we have attempted to improve the comparability of sled samples by ensuring a consistent tow length. Spatial and temporal comparisons of sled data may be further improved by utilising transponders that provide more accurate positional information on the passage of the sled tow over the seafloor.

4.3 Conservation significance

It is hard to assess the conservation status of epifaunal species because only a small proportion of the global fauna has been described and very little is known about their distributions (Snelgrove, 1999). In Australia, most of our taxonomic understanding stems from shallow coastal waters near the large population centres of the eastern seaboard (Ponder *et al*., 2002). By comparison, most other parts of the Australian marine environment are poorly sampled for epifauna, especially the continental shelf and slope. In this study, less than

13% (92/735) of the taxa collected could be confidently identified to the level of species, and it appears that a large proportion of the fauna residing in and around the GABMP is undescribed. Presently, no epibenthic species are listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) as threatened, endangered or rare. All epifauna are protected from human impacts within the BPZ, however these organisms have no level of protection elsewhere in the GAB.

4.4 Biodiversity and endemism

Many of the marine species that inhabit the temperate waters of southern Australia are characterised by short larval periods and localised dispersal. For these reasons, it has been proposed that there is a high tendency for local and regional rarity and endemism in temperate waters, with species distributions characterised by small isolated, localised populations (Edyvane, 1999). We found little evidence to support this proposition in our surveys of the GABMP. Most taxa that could be reliably identified to species (and for which there were distributional data available) were found to be widespread in southern Australian waters. Indeed, 92% (85/92) of these species had minimum ranges that extended from the southwest of Western Australia to Victoria and beyond (DEWR, 2007; CAAB, 2007). It seems, therefore, that the epifauna of the GABMP is not particularly unusual, but rather ubiquitous components of the Flindersian biogeographical province first described by Knox (1963). Unfortunately, we cannot comment on the relative rarity and distributions of many (87%) epifauna collected, because their identities have either yet to be verified, or because no data have been published on their distribution. Voucher material for each taxon collected in this study (Appendix 2-4) has been lodged in the South Australian Museum, and should prove useful in future bio-regionalisation assessments once the identities are accurately verified.

4.5 Efficacy of underwater video for non-destructive sampling

This study has highlighted several shortcomings in the application of video as a tool for monitoring benthic communities in the BPZ. Most notably, poor underwater visibility severely restricted our ability to identify organisms on the seabed or resolve topographic features. During this survey, we were unable to quantify fauna at over one-third (4/11) of the survey sites in the BPZ due to low visibility. In all cases, these sites were situated in relatively shallow waters inshore, and were turbid as a result of sediment re-suspension forced by the direct action of ground-swell waves. While undertaking surveys during calmer weather conditions could probably have improved the success rate for video recordings of the seafloor, it is clear from the remote nature of the site, and long travel time to survey stations, that effective sampling during periods of good visibility is not a reliable proposition.

Surface sea conditions also had a major influence on the quality of our video recordings, even at sites where the underwater visibility was initially good. This was due to the fact that the camera was tethered by a fixed tow cable, and was therefore directly influenced by the pitch and roll of the tow vessel. In rough weather conditions, it was not generally possible to maintain a constant tow speed for the video sled, and in these conditions the sled was typically moved in an erratic ‘stop-start’ motion across the seafloor. As a result of this action, sediments were frequently disturbed by the tow cable and the visibility reduced. Similar reductions in visibility were also produced by impacts caused by abrupt changes in the bottom topography. Both of these problems can be eliminated in more advanced underwater video systems, where the video travels above the seabed, not on it, and a weight between the ship and the sled decouples the ships movement preventing the ‘stop-start’ action (Barker *et al*., 2001).

Another major weakness of the video monitoring technique was the inability to identify organisms to a low taxonomic level. At best, only a few conspicuous fauna were recognised to genus or species (e.g. *Adeona* spp., *Lunularia* spp., *Pyura spinifera*). By comparison, most organisms encountered could not be confidently identified below the level of Order. Small organisms (<5 cm) were also hard to distinguish in the recordings, and many motile organisms were probably missed by the video after burrowing into the sediment as the sled approached (especially as the underwater lighting system provided illumination well beyond the front of the camera's field of view). Accurate measures of benthic coverage were also hampered in this study by the need to employ an oblique angle of camera vision. In tows through dense stands of sessile epifauna, those organisms situated at the edge at the community were preferentially recorded, as they would typically bend over, and obscure the biota behind them during the passage of the sled.

Despite the many limitations for using video in monitoring in the BPZ, our underwater footage revealed some levels of detail previously unknown from the sled collections. For example, prior to undertaking the video tows we had no clear understanding of how benthic epifauna are distributed over relatively small spatial scales (500 m) on the shelf. But following this study, we now know that emergent epibenthos cover only a small fraction of the seabed of the shelf inside the BPZ. Indeed, our present best estimates suggest that over 90% of the seafloor in the shelf waters of the BPZ is composed of bare, unconsolidated sand. Furthermore, it is now evident that epibenthos on the shelf have an extremely haphazard distribution, and may occur in isolated clumps sometimes hundreds of metres apart, or in dense stands over 10 m in width.

Although most of the shelf is composed of sand, it is important to clarify that this substrate is not devoid of life, and in-fact supports an extraordinary diversity of infaunal organisms (Currie *et al.*, 2007). It is also important to recognise that the sediment grains themselves are wholly biogenic, and composed of fragments of both dead and living organisms. The importance of bryozoans in the production of sediments was reinforced by our video surveys. Live (brown-coloured) bryozoan discs *Lunularia* spp., were observed at extremely high densities (>1000/m^2) at several sites (20, 27, 33) on the mid-shelf. However, this same bryozoan was only rarely collected in sled shots at the same sites. This disparity in bryozoan density serves to highlight an important advantage of video sampling over sled sampling. Notably, sled sampling efficiency is low where the topographic relief is high (as it is in the mid-shelf of the BPZ). Video cameras have some capacity to record the fauna covering both the peaks and troughs of an undulating seafloor, whereas sleds often fail to collect epibenthos from depressions and dislodge some deeply anchored fauna (Cohen *et al.*, 2000). As many epifaunal organisms in the mid-shelf (including *Lunularia* spp.) were observed preferentially in troughs between adjacent sand dunes, it is quite possible that their populations were not sampled effectively by sleds during this study.

Differences in the efficiency of the sled and video explain, to a large degree, the lack of community correspondence between the two sampling techniques. Another more obvious explanation for the dissimilarity in results lies in the fact that the video and sled tows were run independently. Because of this, it is unlikely that the sled and video covered exactly the same strip of seafloor, and therefore measured precisely the same benthos. Despite these discrepancies, it is notable that both techniques identified a strong and consistent environmental gradient across the BPZ. In particular, both sampling methods recognised that epifaunal density and diversity were highest on the inner shelf, lower on the outer shelf and lowest on the mid-shelf. This distributional pattern has been previously identified for large areas of the GAB shelf, using much more comprehensive datasets than that examined in this video-sled comparison (see Ward *et al.*, 2006 and Currie *et al.*, 2007). The ability of our low-intensity video sampling to detect this faunal gradient is therefore highly encouraging, as it suggests that video may have some strong practical application in the non-destructive monitoring of epibenthos in the BPZ.

4.6 20-year performance assessment program

Natural temporal changes to marine ecosystems are essentially unpredictable because of undocumented natural cycles of long or unknown periodicity (Gray and Christie, 1983). These cyclical changes and random between-year variation make long-term anthropogenic changes in benthic communities difficult to detect. Unfortunately data are often inadequate to determine whether any particular ecological change is, in fact, directional rather than an unusual random fluctuation or part of a cyclical change. In recent years, recognition of these problems has led researchers to develop more statistically robust environmental monitoring designs (Green, 1979; Bernstein and Zalinski, 1983; Stewart-Oaten *et al*., 1986; Underwood, 1991; Underwood, 1994; Keough and Mapstone, 1995, Glasby, 1997). Central to all designs is the need for an adequate time-series of monitoring to better define the extent of change and to identify their causes.

Long-term monitoring programs are essential for defining protracted trends of environmental rehabilitation or climactic change. Unfortunately, few studies worldwide have considered continuous long-term (>5 years) changes in soft sediment communities (Austen e*t al*., 1991; Josefson *et al*., 1993; Kröncke *et al*., 1998; Tunberg and Nelson, 1998, Dippner and Ikauniece, 2001), and only a handful have specifically dealt with changes due to marine reserve protection (e.g. Murawski *et al*., 2000). This lack of information on long-term benthic change prevails, in part, because of the high expense associated with collecting, sorting, and identifying benthic samples. Such cost constraints invariably lead to compromise over the intensity, distribution, frequency and longevity of a sampling program. Long-term datasets with high spatial and temporal replication are therefore rarely available.

This epibenthic study is the first to examine the effects of marine reserve protection on the benthic communities of Australia's southern continental shelf. With no baseline data on community composition available prior to the establishment of GAB reserve, this study, by necessity, relies on an evaluation of the variation in community structure inside and outside the reserve over time. Re-sampling the same 40 stations surveyed during 2002 and 2006, needs to occur if reserve-related changes in macrobenthos are to be determined. Unfortunately, no data are available to inform the selection of an appropriate temporal scale for future monitoring.

Demersal trawling has occurred in the GAB since 1912, when the first exploratory fishing was conducted from the FRV Endeavour (Caton, 2002). Since then most available areas of the shelf between 120 and 250 m depth have probably been trawled, but with varying intensities. More sporadically, many slope and deepwater areas have also been fished. Prior to the establishment of the BPZ in 1998, 14% of trawling effort by GAB Trawl Fishery vessels was conducted in areas that are now within the GABMP (Ward et al., 2003b). The cumulative effects of nearly 100 years of trawling on the benthic communities of the GAB are impossible to determine. However, the prohibition of bottom trawling in the BPZ provides an opportunity to determine more confidently the possible contribution of trawling to long-term changes.

A number of reviews highlight the fact that trawls modify benthic habitats and fauna (Dayton *et al*., 1995; Jennings and Kaiser, 1998; Thrush and Dayton, 2002). Due to their sedentary nature, benthic communities are particularly vulnerable to direct damage by fishing gear that is dragged across the seafloor. Where trawls operate in areas with large amounts of epifauna it is clear that they will dislodge or uproot much of this biota (Hutchings, 1990). However, the magnitude and persistence of trawling impacts will depend on the history and intensity of the fishing, as well as the vulnerability of the benthic communities themselves. Sponges, bryozoans and ascidians are particularly vulnerable to trawling impacts because they protrude from the seafloor. More importantly, because these biota are often long-lived and slow to recruit, it may take years or even decades for these to re-establish following trawling. In the BPZ, studies to assess the recovery of benthos from trawling impacts should ideally be run for the longevity of the longest-lived component species. Unfortunately, this too is unknown.

A sustained commitment to data collection is necessary to determine the appropriate time scales for assessing the recovery of benthos in the BPZ. Fortunately, determining the size and duration of any recovery in the BPZ will inform our understanding of ecological resilience in the GAB. This, in turn, should provide fishers, fisheries and resource managers with critical information needed to underpin future adaptive management strategies for both the GABMP and the GAB trawl fishery.

4.7 Future research

4.7.1 AUV

The development of non-destructive tools for monitoring benthic communities in the BPZ is a highly desirable research objective, and one that is wholly consistent with the overarching management aims for minimising human disturbance of the seafloor in the GABMP. Unfortunately, as detailed above, the most attractive non-destructive solution presently available (i.e. underwater video), has several practical limitations (e.g. visibility, taxonomic discrimination). Many of these problems are not insurmountable, and may be addressed using more sophisticated remote sensing systems, such as the Integrated Marine Observing System (IMOS) Autonomous Underwater Vehicle (AUV) known as *Sirius* (Figure 17).

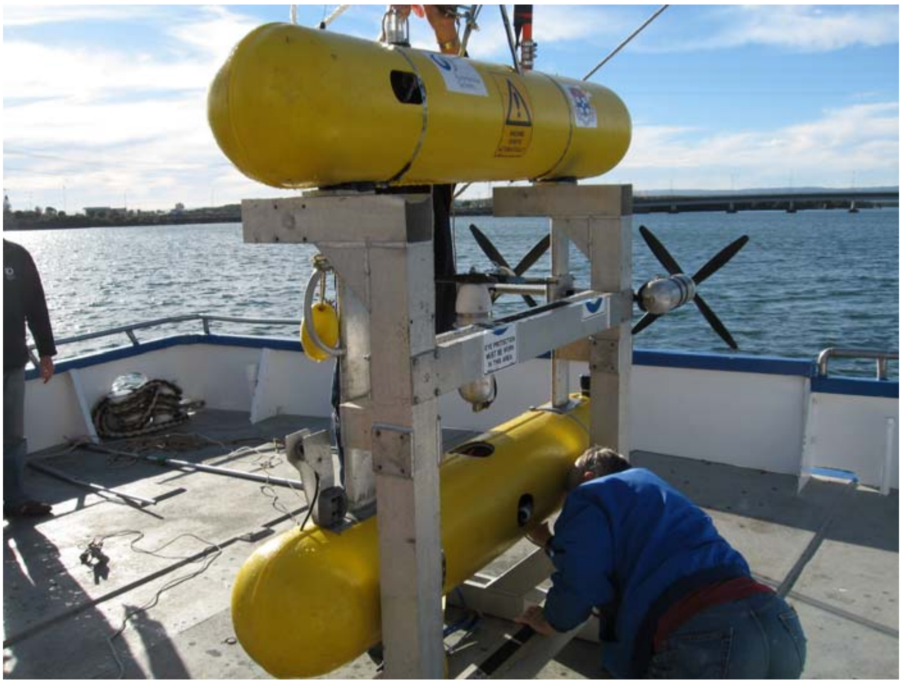

Figure 17. The Integrated Marine Observing System (IMOS) Autonomous Underwater Vehicle (AUV) being prepared for a test deployment from the RV *Ngerin* during July 2008.

Sirius is equipped with stereo cameras and sonar and has a capacity to record high-resolution benthic imagery (even in low visibility) at depths of up to 700 m. More importantly the AUV has a capacity to accurately geo-reference mosaics of the seafloor and return to the same location during subsequent deployments. This means that changes in the biomass and diversity of individual patches of epifauna can potentially be tracked over time. This experimental AUV is partly funded by the Integrated Marine Observing System (IMOS) initiative, and is currently available as a national facility to support marine research projects throughout Australia. Research time for this platform has been secured for 2008/09, and will be used to assess the feasibility of the AUV in gauging cumulative trawling impacts on the upper slope (300-500m depth) inside and immediately adjacent to the BPZ. In addition to providing information on the magnitude and distribution of trawling impacts, this research should provide clear guidance on the practical viability of the AUV's for non-destructive monitoring in the BPZ.

4.7.2 Swath Bathymetry

Maps defining the distribution of seafloor features and the benthic communities that colonizes them are critical to our understanding of marine ecosystems and our ability to manage human activities. Benthic maps provide a geographical basis for evaluating the quality and quantity of seabed resources. They can assist in the determination of importance, rarity and extent of habitats over local, regional, national and international scales. Furthermore, benthic maps can aid the sustainable use of seabed resources and focus future monitoring efforts.

Several habitat maps have been developed for the GAB over recent years (e.g. Hill *et al.*, 2000; Rollet *et al.*, 2001; James *et al.*, 2001; Harris *et al.*, 2005; Heap *et al.*, 2005). Unfortunately, while these maps summarise broad-scale trends in habitat distribution (i.e. 10-100 km resolution), they do not provide a context for monitoring changes in habitat over time. In order to accurately gauge any future changes in habitats, surveys need to be repeatable and have a level of statistical certainty to underpin decision making processes. In the past, most bathymetric surveys in the GAB have been conducted using single-beam echo-sounders. These instruments can provide accurate information on benthic habitat structure, but only from discrete data points along survey track lines. This limitation means that gaps in survey coverage are inevitable, particularly when the survey area is large. Because of this, single-beam surveys often fail to detect small habitat features.

Multi-beam echo-sounding is a relatively new seafloor mapping technology that offers several advantages over traditional single-beam instruments. Most notably, multi-beam systems collect bathymetric soundings across a swath of the seafloor using an array of acoustic beams. Because these sounders can acquire dense, high-resolution (<1 m), sounding data both along and between track lines, rapid and complete (100%) coverage of the seafloor is possible over relatively large areas (Figure 18). Given the extremely patchy distribution of epifauna in the BPZ, it would appear that this technique has considerable merit for characterising and monitoring benthic habitats in the BPZ.

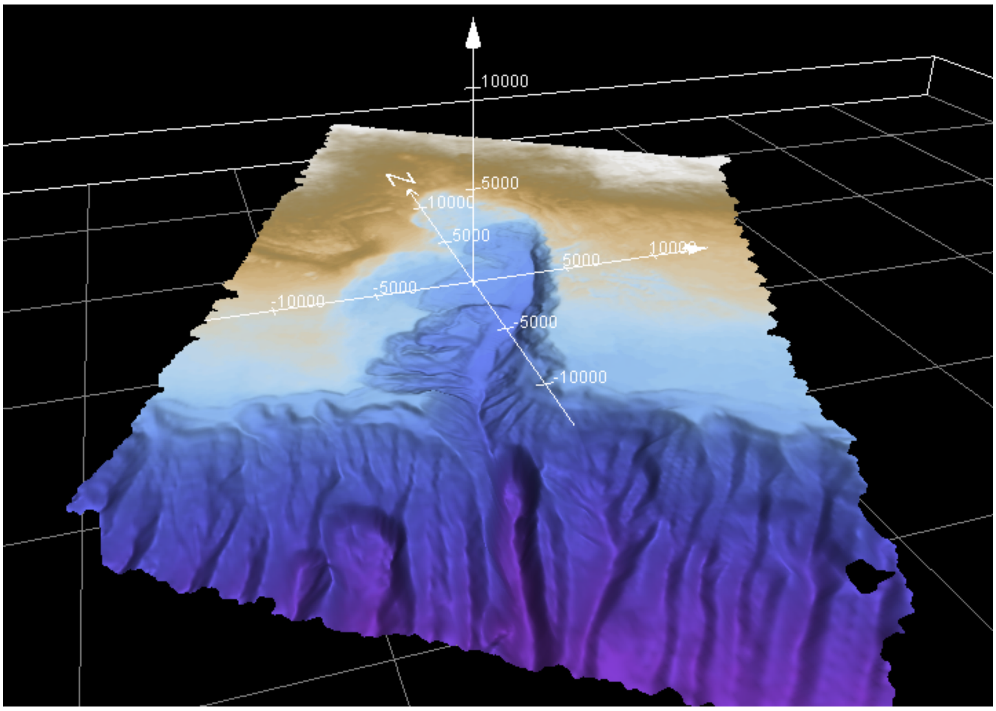

Figure 18. 3D bathymetric image of du Couedic canyon (southwest of Kangaroo Island, South Australia) generated from swath soundings collected with EM300 multi-beam during RV *Southern Surveyor* voyage SS02/2008.

A complete multi-beam survey of the BPZ would probably take several weeks, and require the use of a large ocean going vessel, such as the RV *Southern Surveyor* (which is now available for use as a national research facility). Conducting a high-resolution survey of the BPZ would be expensive, but would address current deficiencies in our knowledge of habitat extent and quality. This information is needed to support long-term management strategies for the GABMP that aim to improve the level of protection afforded to the benthic communities of the BPZ.

4.7.3 Deep-sea habitats of the BPZ

Almost half of the seafloor in the BPZ is located in waters between 200 m and 5,000 m depth, and remains un-surveyed for benthos. It is therefore unclear if the BPZ effectively represents and preserves the benthic habitats and assemblages of the continental slope. As previous research has provided evidence for reductions in biodiversity with increasing depth on the shelf (Ward *et al*., 2006, Currie *et al*., 2007), it may be predicted that the deep-water reaches of the BPZ support relatively fewer numbers of species. Unfortunately, this hypothesis cannot be tested at present.

The continental slope and deep-water reaches of the BPZ present significant sampling challenges. With minor modifications, the grab sampling reach of SARDI's research vessel *Ngerin* could be extended to 2,000 m. This would facilitate sampling access to sediments and infauna through a further quarter of the BPZ estate. However, it would not be possible to extend the deep-water sled sampling capabilities of the RV *Ngerin* without significant capital expenditure.

The absence of baseline biological data for the deep-water environments of the GABMP, highlights a broader issue for other Commonwealth marine reserves (e.g. Zeehan and Murray). Notably, there is currently little capacity in Australia to undertake benthic surveys in deep-sea environments. Support for an enhanced national capacity is particularly pressing as the federal government seeks to establish a network of representative MPAs. In the recent climate of accountability, natural resource agencies are increasingly compelled to provide clear statements on MPA outcomes, and about how they will demonstrate their effectiveness over time (Carr and Raimondi, 1999). Without increased investment in benthic research it is hard to reconcile how future reserve selections will be justified, or how conservation performance will be evaluated.

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Appendix 1. Location, date and depth of 40 epibenthic sled tows undertaken inside and immediately adjacent to the BPZ during 2006. Note that the WGS 84 datum was employed for all position fixes.

Station	Date	Start		Finish		Depth (m)
		Latitude	Longitude	Latitude	Longitude	
1	14-Oct-06	-31.76513	130.38555	-31.77028	130.38595	51
2	14-Oct-06	-31.76461	130.68328	-31.75830	130.68306	53
4	14-Oct-06	-31.87415	130.35678	-31.86973	130.35558	51
5	14-Oct-06	-31.87725	130.59746	-31.87276	130.59836	49
7	15-Oct-06	-32.01078	130.39468	-32.00980	130.38951	55
8	15-Oct-06	-32.00568	130.68025	-32.00430	130.67511	57
9	15-Oct-06	-32.12900	130.36326	-32.12865	130.35728	58
10	15-Oct-06	-32.12776	130.60463	-32.12771	130.59931	58
12	15-Oct-06	-32.25228	130.39908	-32.25236	130.40441	59
13	15-Oct-06	-32.24275	130.68526	-32.24175	130.68010	62
15	15-Oct-06	-32.43023	130.72133	-32.42958	130.71606	68
16	16-Oct-06	-32.44121	130.96290	-32.44435	130.95901	71
18	16-Oct-06	-32.54596	130.75496	-32.54736	130.74945	70
19	16-Oct-06	-32.55950	131.00713	-32.56110	131.00210	75
20	18-Oct-06	-32.67753	130.72765	-32.67780	130.73303	78
21	18-Oct-06	-32.68760	130.97083	-32.68438	130.97466	75
23	18-Oct-06	-32.79510	130.75916	-32.79543	130.76453	84
24	18-Oct-06	-32.80368	131.01138	-32.80071	131.01545	83
26	18-Oct-06	-32.92386	130.96201	-32.92045	130.96550	94
27	18-Oct-06	-32.92205	130.73390	-32.92500	130.72986	95
29	19-Oct-06	-33.11586	130.96431	-33.11941	130.96086	105
30	18-Oct-06	-33.10531	131.04730	-33.10163	131.05063	104
31	19-Oct-06	-33.10593	130.55741	-33.11165	130.55405	102
32	19-Oct-06	-33.11269	130.80479	-33.10865	130.80798	104
33	19-Oct-06	-33.12040	130.66011	-33.11440	130.65978	106
35	19-Oct-06	-33.16321	131.04870	-33.16018	131.05265	109
36	19-Oct-06	-33.16436	130.60261	-33.16071	130.60590	112
37	19-Oct-06	-33.16039	130.73336	-33.16445	130.72971	112
38	19-Oct-06	-33.18348	130.95253	-33.18690	130.94881	111
39	19-Oct-06	-33.23856	130.96613	-33.23588	130.97046	117
41	20-Oct-06	-33.28951	130.91243	-33.29401	130.91213	133
42	19-Oct-06	-33.28650	130.57136	-33.28926	130.56670	156
43	19-Oct-06	-33.30048	130.66573	-33.29725	130.66953	162
45	20-Oct-06	-33.32983	131.02890	-33.32465	131.02966	137
46	19-Oct-06	-33.33255	130.79791	-33.32923	130.80156	165
47	19-Oct-06	-33.36388	130.70640	-33.36788	130.70361	188
48	19-Oct-06	-33.35476	130.57190	-33.35181	130.57621	187
50	20-Oct-06	-33.35618	131.10730	-33.35170	131.10800	150
51	20-Oct-06	-33.36038	130.91946	-33.35756	130.92363	184
52	20-Oct-06	-33.37505	131.02213	-33.37061	131.02310	177

Appendix 2. Taxonomic and functional classification of the 735 species collected during two epibenthic surveys (2002, 2006) at 40 sampling stations located inside and immediately adjacent to the BPZ. All species codes given here refer to material lodged in the South Australian Museum, Adelaide.

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Porifera	Calcarea	Calcareous beige	Sponge	Suspension	Sessile	S001
Porifera	Calcarea	Calcareous beige tube	Sponge	Suspension	Sessile	S002
Porifera	Calcarea	Calcareous brown convoluted	Sponge	Suspension	Sessile	S003
Porifera	Calcarea	Calcareous brown lobe	Sponge	Suspension	Sessile	S004
Porifera	Calcarea	Calcareous cream sponge	Sponge	Suspension	Sessile	S005
Porifera	Calcarea	Calcareous cream tube	Sponge	Suspension	Sessile	S006
Porifera	Calcarea	*Soleneiscus* sp? (24)	Sponge	Suspension	Sessile	S007
Porifera	Calcarea	Calcareous dark green tube	Sponge	Suspension	Sessile	S008
Porifera	Calcarea	Calcarea (65)	Sponge	Suspension	Sessile	S009
Porifera	Calcarea	Calcareous large black tube	Sponge	Suspension	Sessile	S010
Porifera	Calcarea	Calcareous lobes	Sponge	Suspension	Sessile	S011
Porifera	Calcarea	Calcareous long solid tube 1	Sponge	Suspension	Sessile	S012
Porifera	Calcarea	Calcareous long tube 3	Sponge	Suspension	Sessile	S013
Porifera	Calcarea	Calcareous long tube 2	Sponge	Suspension	Sessile	S014
Porifera	Calcarea	Calcareous mesh sponge	Sponge	Suspension	Sessile	S015
Porifera	Calcarea	Calcareous pale beige sponge	Sponge	Suspension	Sessile	S016
Porifera	Calcarea	Calcareous pinched lobes	Sponge	Suspension	Sessile	S017
Porifera	Calcarea	Calcareous pink sponge	Sponge	Suspension	Sessile	S018
Porifera	Calcarea	Calcareous short tube	Sponge	Suspension	Sessile	S019
Porifera	Calcarea	Calcareous thin cream tubes	Sponge	Suspension	Sessile	S020
Porifera	Calcarea	Calcareous white sponge	Sponge	Suspension	Sessile	S021
Porifera	Calcarea	Calcareous white tube	Sponge	Suspension	Sessile	S022
Porifera	Calcarea	Mixed calcarea sponge spp	Sponge	Suspension	Sessile	S023
Porifera	Demospongiae	Spongiid sp (520)	Sponge	Suspension	Sessile	S025
Porifera	Demospongiae	Amorphous conulose sponge	Sponge	Suspension	Sessile	S026
Porifera	Demospongiae	*Stelletta tuberculata*	Sponge	Suspension	Sessile	S028
Porifera	Demospongiae	Bath sponge	Sponge	Suspension	Sessile	S029
Porifera	Demospongiae	Beige branched haplosclerid	Sponge	Suspension	Sessile	S030
Porifera	Demospongiae	Beige branched sponge	Sponge	Suspension	Sessile	S031
Porifera	Demospongiae	Beige bumpy sponge	Sponge	Suspension	Sessile	S032
Porifera	Demospongiae	Beige cavernous sponge	Sponge	Suspension	Sessile	S033
Porifera	Demospongiae	Beige digitate sponge 1	Sponge	Suspension	Sessile	S035
Porifera	Demospongiae	Beige digitate sponge 2	Sponge	Suspension	Sessile	S036
Porifera	Demospongiae	Beige digitate sponge 3	Sponge	Suspension	Sessile	S037
Porifera	Demospongiae	Haplosclerid sp (365)	Sponge	Suspension	Sessile	S039
Porifera	Demospongiae	Haplosclerid sp (278)	Sponge	Suspension	Sessile	S042
Porifera	Demospongiae	Beige leafy sponge	Sponge	Suspension	Sessile	S045
Porifera	Demospongiae	*Echinoclathria leoporina*	Sponge	Suspension	Sessile	S047
Porifera	Demospongiae	Beige sediment sponge	Sponge	Suspension	Sessile	S051
Porifera	Demospongiae	Beige sponge 2	Sponge	Suspension	Sessile	S053
Porifera	Demospongiae	Demosponge sp (179)	Sponge	Suspension	Sessile	S055
Porifera	Demospongiae	Poecilosclerid sp (189)	Sponge	Suspension	Sessile	S056
Porifera	Demospongiae	Demosponge sp (580)	Sponge	Suspension	Sessile	S057
Porifera	Demospongiae	Blue digitate sponge	Sponge	Suspension	Sessile	S058
Porifera	Demospongiae	Blue hollow sponge	Sponge	Suspension	Sessile	S059
Porifera	Demospongiae	Blue oxidising sponge	Sponge	Suspension	Sessile	S060
Porifera	Demospongiae	Blue/grey conulose sponge	Sponge	Suspension	Sessile	S061
Porifera	Demospongiae	*Spheciospongia purpurea*	Sponge	Suspension	Sessile	S062
Porifera	Demospongiae	Bright yellow fistule sponge	Sponge	Suspension	Sessile	S064
Porifera	Demospongiae	Demosponge sp (600)	Sponge	Suspension	Sessile	S065
Porifera	Demospongiae	Verongid sp (220)	Sponge	Suspension	Sessile	S066
Porifera	Demospongiae	Haplosclerid sp (551)	Sponge	Suspension	Sessile	S068

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Porifera	Demospongiae	Brown encrusting sponge	Sponge	Suspension	Sessile	S070
Porifera	Demospongiae	Dendroceratid sp (581)	Sponge	Suspension	Sessile	S072
Porifera	Demospongiae	Astrophorid sponge	Sponge	Suspension	Sessile	S073
Porifera	Demospongiae	Brown foliose sponge 1	Sponge	Suspension	Sessile	S074
Porifera	Demospongiae	Brown foliose sponge 2	Sponge	Suspension	Sessile	S075
Porifera	Demospongiae	Brown foliose sponge 3	Sponge	Suspension	Sessile	S076
Porifera	Demospongiae	Brown hirsute sponge	Sponge	Suspension	Sessile	S077
Porifera	Demospongiae	Brown split-fan sponge	Sponge	Suspension	Sessile	S081
Porifera	Demospongiae	Bushy lobe sponge	Sponge	Suspension	Sessile	S084
Porifera	Demospongiae	*Callyspongia bilamellata*	Sponge	Suspension	Sessile	S085
Porifera	Demospongiae	Callyspongid sponge	Sponge	Suspension	Sessile	S086
Porifera	Demospongiae	Caulospongia sp	Sponge	Suspension	Sessile	S087
Porifera	Demospongiae	Cavernous digitate sponge	Sponge	Suspension	Sessile	S088
Porifera	Demospongiae	*Cliona celata*	Sponge	Suspension	Sessile	S089
Porifera	Demospongiae	Club irciniid sponge	Sponge	Suspension	Sessile	S090
Porifera	Demospongiae	Dictyoceratid sp (446)	Sponge	Suspension	Sessile	S093
Porifera	Demospongiae	Conulose digitate sponge	Sponge	Suspension	Sessile	S094
Porifera	Demospongiae	Conulose sand sponge	Sponge	Suspension	Sessile	S095
Porifera	Demospongiae	Conulose sponge	Sponge	Suspension	Sessile	S096
Porifera	Demospongiae	Convoluted orange sponge	Sponge	Suspension	Sessile	S098
Porifera	Demospongiae	Cream bumpy sponge	Sponge	Suspension	Sessile	S099
Porifera	Demospongiae	*Axinella* sp (447)	Sponge	Suspension	Sessile	S103
Porifera	Demospongiae	Crunchy brown sponge	Sponge	Suspension	Sessile	S104
Porifera	Demospongiae	Crunchy sponge	Sponge	Suspension	Sessile	S105
Porifera	Demospongiae	Thorectid sp	Sponge	Suspension	Sessile	S109
Porifera	Demospongiae	Dark/ light grey sponge	Sponge	Suspension	Sessile	S116
Porifera	Demospongiae	Deep mauve sandy sponge	Sponge	Suspension	Sessile	S117
Porifera	Demospongiae	Demosponge sp (216)	Sponge	Suspension	Sessile	S122
Porifera	Demospongiae	Dull orange sponge	Sponge	Suspension	Sessile	S128
Porifera	Demospongiae	*Clathria* sp (112)	Sponge	Suspension	Sessile	S129
Porifera	Demospongiae	*Axinella* sp (212)	Sponge	Suspension	Sessile	S130
Porifera	Demospongiae	Fibrous sponge	Sponge	Suspension	Sessile	S132
Porifera	Demospongiae	Flat brown soft	Sponge	Suspension	Sessile	S133
Porifera	Demospongiae	*Haliclona* sp (382)	Sponge	Suspension	Sessile	S134
Porifera	Demospongiae	*Cymbastela* (sp 2)	Sponge	Suspension	Sessile	S135
Porifera	Demospongiae	Floppy honeycomb sponge	Sponge	Suspension	Sessile	S137
Porifera	Demospongiae	*Cribrochalina*?	Sponge	Suspension	Sessile	S139
Porifera	Demospongiae	Dictyoceratid sp (526)	Sponge	Suspension	Sessile	S142
Porifera	Demospongiae	Greeny brown dictyoceratid	Sponge	Suspension	Sessile	S144
Porifera	Demospongiae	Grey digitate dictyoceratid	Sponge	Suspension	Sessile	S146
Porifera	Demospongiae	Grey flat lobe sponge	Sponge	Suspension	Sessile	S147
Porifera	Demospongiae	Demosponge sp (279)	Sponge	Suspension	Sessile	S150
Porifera	Demospongiae	Grey pitted sponge	Sponge	Suspension	Sessile	S151
Porifera	Demospongiae	Dictyoceratid sp (407)	Sponge	Suspension	Sessile	S153
Porifera	Demospongiae	Spongiid sp (528)	Sponge	Suspension	Sessile	S157
Porifera	Demospongiae	Haplosclerid sponge	Sponge	Suspension	Sessile	S163
Porifera	Demospongiae	Honey mucousy sponge	Sponge	Suspension	Sessile	S164
Porifera	Demospongiae	Internal sandy sponge	Sponge	Suspension	Sessile	S165
Porifera	Demospongiae	*Ircinia* sp 1	Sponge	Suspension	Sessile	S166
Porifera	Demospongiae	*Ircinia* sp 3	Sponge	Suspension	Sessile	S168
Porifera	Demospongiae	*Ircinia* sp sandy	Sponge	Suspension	Sessile	S169
Porifera	Demospongiae	*Coscinoderma* sp (550)	Sponge	Suspension	Sessile	S170
Porifera	Demospongiae	Irciniid sponge 2	Sponge	Suspension	Sessile	S171
Porifera	Demospongiae	*Jaspis* sp	Sponge	Suspension	Sessile	S173
Porifera	Demospongiae	Large orange fan sponge	Sponge	Suspension	Sessile	S177
Porifera	Demospongiae	*Clathria* sp (224)	Sponge	Suspension	Sessile	S178

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Porifera	Demospongiae	Large red palmate sponge	Sponge	Suspension	Sessile	S180
Porifera	Demospongiae	Demosponge sp (225)	Sponge	Suspension	Sessile	S182
Porifera	Demospongiae	Long orange digitate sponge	Sponge	Suspension	Sessile	S183
Porifera	Demospongiae	Long tip conule sponge	Sponge	Suspension	Sessile	S184
Porifera	Demospongiae	*Spheciospongia papillosa*	Sponge	Suspension	Sessile	S187
Porifera	Demospongiae	Mauve digitate sponge	Sponge	Suspension	Sessile	S188
Porifera	Demospongiae	Mucousy convoluted sponge	Sponge	Suspension	Sessile	S191
Porifera	Demospongiae	Mucousy sponge	Sponge	Suspension	Sessile	S193
Porifera	Demospongiae	*Myrkiodermia* sp	Sponge	Suspension	Sessile	S194
Porifera	Demospongiae	Orange branching fan sponge	Sponge	Suspension	Sessile	S196
Porifera	Demospongiae	*Axinella* sp (214)	Sponge	Suspension	Sessile	S197
Porifera	Demospongiae	Orange curly fan sponge	Sponge	Suspension	Sessile	S199
Porifera	Demospongiae	Orange fibrous fan sponge	Sponge	Suspension	Sessile	S201
Porifera	Demospongiae	Orange fistule sponge 2	Sponge	Suspension	Sessile	S202
Porifera	Demospongiae	Orange fistules	Sponge	Suspension	Sessile	S204
Porifera	Demospongiae	Orange furry sponge	Sponge	Suspension	Sessile	S206
Porifera	Demospongiae	Orange haplosclerid sponge	Sponge	Suspension	Sessile	S207
Porifera	Demospongiae	Orange hispid fingers	Sponge	Suspension	Sessile	S208
Porifera	Demospongiae	Orange leaf sponge	Sponge	Suspension	Sessile	S210
Porifera	Demospongiae	Orange sand fibre sponge	Sponge	Suspension	Sessile	S214
Porifera	Demospongiae	Orange sandy sponge 2	Sponge	Suspension	Sessile	S216
Porifera	Demospongiae	*Clathria* sp (190)	Sponge	Suspension	Sessile	S217
Porifera	Demospongiae	Orange spherical sponge 2	Sponge	Suspension	Sessile	S219
Porifera	Demospongiae	Orange sponge	Sponge	Suspension	Sessile	S220
Porifera	Demospongiae	Orange stalked sponge	Sponge	Suspension	Sessile	S221
Porifera	Demospongiae	Orange thick joined-finger sponge	Sponge	Suspension	Sessile	S222
Porifera	Demospongiae	Orange with zooanthids	Sponge	Suspension	Sessile	S223
Porifera	Demospongiae	Orange zoanthid-covered sponge	Sponge	Suspension	Sessile	S225
Porifera	Demospongiae	Pale mauve sponge	Sponge	Suspension	Sessile	S230
Porifera	Demospongiae	Pale red sponge	Sponge	Suspension	Sessile	S232
Porifera	Demospongiae	Pale split-fan sponge	Sponge	Suspension	Sessile	S233
Porifera	Demospongiae	Palmate dictyoceratid	Sponge	Suspension	Sessile	S235
Porifera	Demospongiae	Parallel fibre sponge	Sponge	Suspension	Sessile	S236
Porifera	Demospongiae	*Stelletta* sp	Sponge	Suspension	Sessile	S237
Porifera	Demospongiae	*Chondropsis* sp (178)	Sponge	Suspension	Sessile	S239
Porifera	Demospongiae	Pink, conulose sponge	Sponge	Suspension	Sessile	S241
Porifera	Demospongiae	Pink/beige vase sponge	Sponge	Suspension	Sessile	S242
Porifera	Demospongiae	*Chondropsis* (sp 2)	Sponge	Suspension	Sessile	S244
Porifera	Demospongiae	Potato sponge	Sponge	Suspension	Sessile	S249
Porifera	Demospongiae	Purple dictyodendrillid	Sponge	Suspension	Sessile	S251
Porifera	Demospongiae	Purple raspaliid	Sponge	Suspension	Sessile	S254
Porifera	Demospongiae	Red encrusting sponge	Sponge	Suspension	Sessile	S258
Porifera	Demospongiae	Demosponge sp (594)	Sponge	Suspension	Sessile	S259
Porifera	Demospongiae	Red fan sponge 2	Sponge	Suspension	Sessile	S260
Porifera	Demospongiae	Red lobe sponge	Sponge	Suspension	Sessile	S263
Porifera	Demospongiae	Red sponge	Sponge	Suspension	Sessile	S265
Porifera	Demospongiae	Demosponge sp (554)	Sponge	Suspension	Sessile	S267
Porifera	Demospongiae	Reddy orange strap sponge	Sponge	Suspension	Sessile	S270
Porifera	Demospongiae	Reddy purple dendroceratid sponge	Sponge	Suspension	Sessile	S271
Porifera	Demospongiae	Round sponge	Sponge	Suspension	Sessile	S272
Porifera	Demospongiae	Sand sponge	Sponge	Suspension	Sessile	S274
Porifera	Demospongiae	Sand sponge 2	Sponge	Suspension	Sessile	S276
Porifera	Demospongiae	Sandy clumps sponge	Sponge	Suspension	Sessile	S279
Porifera	Demospongiae	Sandy conulose sponge	Sponge	Suspension	Sessile	S280
Porifera	Demospongiae	Sandy haplosclerid sponge	Sponge	Suspension	Sessile	S282
Porifera	Demospongiae	*Holopsamma laminaefavosa*	Sponge	Suspension	Sessile	S283

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Porifera	Demospongiae	Sandy porous sponge	Sponge	Suspension	Sessile	S284
Porifera	Demospongiae	Sandy sponge 4	Sponge	Suspension	Sessile	S286
Porifera	Demospongiae	Sclerosponge	Sponge	Suspension	Sessile	S287
Porifera	Demospongiae	Single fistule sponge	Sponge	Suspension	Sessile	S289
Porifera	Demospongiae	*Siphonochalina* sp	Sponge	Suspension	Sessile	S290
Porifera	Demospongiae	Slimy red sponge on stalk	Sponge	Suspension	Sessile	S291
Porifera	Demospongiae	Small club sponge	Sponge	Suspension	Sessile	S293
Porifera	Demospongiae	Small orange cup	Sponge	Suspension	Sessile	S296
Porifera	Demospongiae	*Oceanapia* (sp 4)	Sponge	Suspension	Sessile	S298
Porifera	Demospongiae	*Rhizaxinella* sp	Sponge	Suspension	Sessile	S300
Porifera	Demospongiae	Soft beige sandy sponge	Sponge	Suspension	Sessile	S301
Porifera	Demospongiae	Soft orange fan	Sponge	Suspension	Sessile	S304
Porifera	Demospongiae	Soft orange rough sponge	Sponge	Suspension	Sessile	S305
Porifera	Demospongiae	Soft purple sponge	Sponge	Suspension	Sessile	S306
Porifera	Demospongiae	Hadromerid sp	Sponge	Suspension	Sessile	S310
Porifera	Demospongiae	Spherical root sponge	Sponge	Suspension	Sessile	S311
Porifera	Demospongiae	*Oceanapia* sp 3	Sponge	Suspension	Sessile	S312
Porifera	Demospongiae	Spiked stalk sponge	Sponge	Suspension	Sessile	S313
Porifera	Demospongiae	Spiky branching sponge	Sponge	Suspension	Sessile	S314
Porifera	Demospongiae	*Echinodictyum mesenterium*	Sponge	Suspension	Sessile	S316
Porifera	Demospongiae	Sponge pen 1	Sponge	Suspension	Sessile	S317
Porifera	Demospongiae	Demosponge sp (100)	Sponge	Suspension	Sessile	S318
Porifera	Demospongiae	Stalked lobe	Sponge	Suspension	Sessile	S321
Porifera	Demospongiae	*Carteriospongia* sp.	Sponge	Suspension	Sessile	S322
Porifera	Demospongiae	*Tethya bergquistae*	Sponge	Suspension	Sessile	S323
Porifera	Demospongiae	*Tethya* sp 1	Sponge	Suspension	Sessile	S324
Porifera	Demospongiae	Thick yellow vase	Sponge	Suspension	Sessile	S326
Porifera	Demospongiae	Thin digitate sponge	Sponge	Suspension	Sessile	S327
Porifera	Demospongiae	Thin orange fan sponge	Sponge	Suspension	Sessile	S328
Porifera	Demospongiae	*Thorectandra* sp?	Sponge	Suspension	Sessile	S329
Porifera	Demospongiae	*Oceanapia* (sp 1)	Sponge	Suspension	Sessile	S332
Porifera	Demospongiae	*Mycale* sp (231)	Sponge	Suspension	Sessile	S333
Porifera	Demospongiae	*Cribrochalina* sp (49)	Sponge	Suspension	Sessile	S334
Porifera	Demospongiae	Demosponge sp (199)	Sponge	Suspension	Sessile	S336
Porifera	Demospongiae	White fistule sponge 2	Sponge	Suspension	Sessile	S337
Porifera	Demospongiae	White gelatinous sponge 1	Sponge	Suspension	Sessile	S338
Porifera	Demospongiae	White gelatinous sponge 2	Sponge	Suspension	Sessile	S339
Porifera	Demospongiae	White gelatinous sponge 3	Sponge	Suspension	Sessile	S340
Porifera	Demospongiae	White ridged sponge	Sponge	Suspension	Sessile	S341
Porifera	Demospongiae	White sand spongiid	Sponge	Suspension	Sessile	S342
Porifera	Demospongiae	*Halichondria (Halichondria)* sp	Sponge	Suspension	Sessile	S343
Porifera	Demospongiae	Wiggley sand sponge	Sponge	Suspension	Sessile	S344
Porifera	Demospongiae	*Xenospongia patelliformis*	Sponge	Suspension	Sessile	S345
Porifera	Demospongiae	*Xenospongia* sp 2	Sponge	Suspension	Sessile	S346
Porifera	Demospongiae	*Xenospongia* sp 3	Sponge	Suspension	Sessile	S347
Porifera	Demospongiae	*Xestospongia*-like sp	Sponge	Suspension	Sessile	S348
Porifera	Demospongiae	Yellow fan sponge	Sponge	Suspension	Sessile	S353
Porifera	Demospongiae	Yellow flat strap sponge	Sponge	Suspension	Sessile	S354
Porifera	Demospongiae	Yellow lobe spicule root	Sponge	Suspension	Sessile	S355
Porifera	Demospongiae	*Ceratopsion* sp?	Sponge	Suspension	Sessile	S356
Porifera	Demospongiae	Yellowy orange sponge	Sponge	Suspension	Sessile	S360
Porifera	Demospongiae	Demosponge sp (160)	Sponge	Suspension	Sessile	S361
Porifera	Demospongiae	Demosponge sp (145)	Sponge	Suspension	Sessile	S362
Porifera	Demospongiae	Dictyoceratid sp (182)	Sponge	Suspension	Sessile	S363
Porifera	Demospongiae	Desmacid sp (18)	Sponge	Suspension	Sessile	S364
Porifera	Calcarea	Calcarea (21)	Sponge	Suspension	Sessile	S365

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Porifera	Calcarea	Calcarea (26)	Sponge	Suspension	Sessile	S366
Porifera	Calcarea	Calcarea (27)	Sponge	Suspension	Sessile	S367
Porifera	Demospongiae	*Axinella* sp (31)	Sponge	Suspension	Sessile	S368
Porifera	Demospongiae	*Ircinia* sp	Sponge	Suspension	Sessile	S369
Porifera	Calcarea	Calcarea (54)	Sponge	Suspension	Sessile	S370
Porifera	Calcarea	Calcarea (66)	Sponge	Suspension	Sessile	S371
Porifera	Calcarea	Calcarea (67)	Sponge	Suspension	Sessile	S372
Porifera	Calcarea	Calcarea (78)	Sponge	Suspension	Sessile	S373
Porifera	Calcarea	Calcarea (79)	Sponge	Suspension	Sessile	S374
Porifera	Calcarea	Calcarea (82)	Sponge	Suspension	Sessile	S375
Porifera	Demospongiae	Demosponge sp (99)	Sponge	Suspension	Sessile	S376
Porifera	Demospongiae	*Oceanapia* sp 6	Sponge	Suspension	Sessile	S377
Porifera	Demospongiae	Demosponge sp (287)	Sponge	Suspension	Sessile	S378
Porifera	Demospongiae	Demosponge sp (215)	Sponge	Suspension	Sessile	S379
Porifera	Demospongiae	Demosponge sp (227)	Sponge	Suspension	Sessile	S380
Porifera	Demospongiae	Demosponge sp (228)	Sponge	Suspension	Sessile	S381
Porifera	Demospongiae	Demosponge sp (230)	Sponge	Suspension	Sessile	S382
Porifera	Calcarea	Calcarea (242)	Sponge	Suspension	Sessile	S383
Porifera	Demospongiae	Demosponge sp (260)	Sponge	Suspension	Sessile	S384
Porifera	Demospongiae	*Oceanapia* sp 5	Sponge	Suspension	Sessile	S385
Porifera	Demospongiae	Demosponge sp (283)	Sponge	Suspension	Sessile	S386
Porifera	Demospongiae	Poecilosclerid sp (290)	Sponge	Suspension	Sessile	S387
Porifera	Calcarea	Calcarea (325)	Sponge	Suspension	Sessile	S388
Porifera	Demospongiae	Demosponge sp (331)	Sponge	Suspension	Sessile	S389
Porifera	Demospongiae	Demosponge sp (332)	Sponge	Suspension	Sessile	S390
Porifera	Demospongiae	*Dysidea*?	Sponge	Suspension	Sessile	S391
Porifera	Demospongiae	Demosponge sp (381)	Sponge	Suspension	Sessile	S392
Porifera	Demospongiae	Demosponge sp (409)	Sponge	Suspension	Sessile	S393
Porifera	Demospongiae	Demosponge sp (432)	Sponge	Suspension	Sessile	S394
Porifera	Demospongiae	Demosponge sp (449)	Sponge	Suspension	Sessile	S395
Porifera	Calcarea	*Sycon* sp	Sponge	Suspension	Sessile	S396
Porifera	Demospongiae	Dictyoceratid sp (521)	Sponge	Suspension	Sessile	S397
Porifera	Demospongiae	Haplosclerid sp (523)	Sponge	Suspension	Sessile	S398
Porifera	Demospongiae	*Clathria* sp (549)	Sponge	Suspension	Sessile	S399
Porifera	Demospongiae	Irciniid sponge (568)	Sponge	Suspension	Sessile	S400
Porifera	Demospongiae	Poecilosclerid sp (588)	Sponge	Suspension	Sessile	S401
Porifera	Demospongiae	Demosponge sp (592)	Sponge	Suspension	Sessile	S402
Porifera	Demospongiae	Demosponge sp (593)	Sponge	Suspension	Sessile	S403
Porifera	Demospongiae	Demosponge sp (595)	Sponge	Suspension	Sessile	S405
Porifera	Demospongiae	Demosponge sp (596)	Sponge	Suspension	Sessile	S406
Porifera	Demospongiae	Spongiid sp (609)	Sponge	Suspension	Sessile	S407
Porifera	Demospongiae	*Ircinia* sp 4	Sponge	Suspension	Sessile	S408
Porifera	Demospongiae	Demosponge sp (612)	Sponge	Suspension	Sessile	S409
Porifera	Demospongiae	Spongiid sp (613)	Sponge	Suspension	Sessile	S410
Porifera	Demospongiae	Spongiid sp (620)	Sponge	Suspension	Sessile	S411
Porifera	Demospongiae	*Tethya* sp 2	Sponge	Suspension	Sessile	S412
Porifera	Demospongiae	Demosponge sp (629)	Sponge	Suspension	Sessile	S413
Porifera	Demospongiae	Demosponge sp (634)	Sponge	Suspension	Sessile	S414
Porifera	Demospongiae	Demosponge sp (635)	Sponge	Suspension	Sessile	S415
Porifera	Demospongiae	Demosponge sp (636)	Sponge	Suspension	Sessile	S416
Porifera	Demospongiae	*Eurospongia* sp	Sponge	Suspension	Sessile	S417
Porifera	Demospongiae	Dictyoceratid sp (638)	Sponge	Suspension	Sessile	S418
Porifera	Demospongiae	Demosponge sp (362)	Sponge	Suspension	Sessile	S419
Porifera	Demospongiae	Demosponge sp (415)	Sponge	Suspension	Sessile	S420
Porifera	Demospongiae	Demosponge sp (440)	Sponge	Suspension	Sessile	S421
Porifera	Calcarea	Calcarea (133)	Sponge	Suspension	Sessile	S422

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Porifera	Demospongiae	Dictyoceratid sp (55)	Sponge	Suspension	Sessile	S423
Porifera	Demospongiae	Hadromerid sp 2	Sponge	Suspension	Sessile	S424
Porifera	Demospongiae	Microcionid sp (98)	Sponge	Suspension	Sessile	S425
Porifera	Demospongiae	Halichondrid sponge (134)	Sponge	Suspension	Sessile	S426
Porifera	Demospongiae	Haplosclerid sp (222)	Sponge	Suspension	Sessile	S427
Porifera	Demospongiae	Dictyoceratid sp (90)	Sponge	Suspension	Sessile	S428
Porifera	Demospongiae	Verongid sp	Sponge	Suspension	Sessile	S429
Porifera	Demospongiae	Demosponge sp (60)	Sponge	Suspension	Sessile	S430
Cnidaria	Hydrozoa	Beige hydroid 1	Hydroid	Suspension	Sessile	H001
Cnidaria	Hydrozoa	Beige hydroid 2	Hydroid	Suspension	Sessile	H002
Cnidaria	Hydrozoa	Beige hydroid 3	Hydroid	Suspension	Sessile	H003
Cnidaria	Hydrozoa	Black feathers hydroid	Hydroid	Suspension	Sessile	H004
Cnidaria	Hydrozoa	*Fillellum* sp	Hydroid	Suspension	Sessile	H005
Cnidaria	Hydrozoa	Black-fine branched stalked cups	Hydroid	Suspension	Sessile	H006
Cnidaria	Hydrozoa	Blue/green hydroid	Hydroid	Suspension	Sessile	H007
Cnidaria	Hydrozoa	*Plumularia procumbens*	Hydroid	Suspension	Sessile	H008
Cnidaria	Hydrozoa	Branched hydroid 2	Hydroid	Suspension	Sessile	H009
Cnidaria	Hydrozoa	Branched hydroid 3	Hydroid	Suspension	Sessile	H010
Cnidaria	Hydrozoa	*Aglaophenia* sp (123)	Hydroid	Suspension	Sessile	H011
Cnidaria	Hydrozoa	*Sertularia* sp (132)	Hydroid	Suspension	Sessile	H012
Cnidaria	Hydrozoa	Brown branching 2	Hydroid	Suspension	Sessile	H013
Cnidaria	Hydrozoa	Brown feather hydroid	Hydroid	Suspension	Sessile	H014
Cnidaria	Hydrozoa	Brown hydroid 1	Hydroid	Suspension	Sessile	H015
Cnidaria	Hydrozoa	Brown hydroid 2	Hydroid	Suspension	Sessile	H016
Cnidaria	Hydrozoa	*Clathrozoon wilsoni*	Hydroid	Suspension	Sessile	H017
Cnidaria	Hydrozoa	Feather hydroid 1	Hydroid	Suspension	Sessile	H018
Cnidaria	Hydrozoa	Feather hydroid 2	Hydroid	Suspension	Sessile	H019
Cnidaria	Hydrozoa	*Sertularia macrocarpa* (394)	Hydroid	Suspension	Sessile	H020
Cnidaria	Hydrozoa	*Haplopteris glutinosa*	Hydroid	Suspension	Sessile	H021
Cnidaria	Hydrozoa	Grey feather hydroid	Hydroid	Suspension	Sessile	H023
Cnidaria	Hydrozoa	*Gymnangium ascidioides*	Hydroid	Suspension	Sessile	H024
Cnidaria	Hydrozoa	*Gymnangium* sp	Hydroid	Suspension	Sessile	H025
Cnidaria	Hydrozoa	*Gymnangium superbum*	Hydroid	Suspension	Sessile	H026
Cnidaria	Hydrozoa	Mixed hydroid spp	Hydroid	Suspension	Sessile	H027
Cnidaria	Hydrozoa	Pale yellow hydroid	Hydroid	Suspension	Sessile	H029
Cnidaria	Hydrozoa	Pink scraggly hydroid	Hydroid	Suspension	Sessile	H030
Cnidaria	Hydrozoa	*Symplectoscyphus* sp (114)	Hydroid	Suspension	Sessile	H031
Cnidaria	Hydrozoa	Scraggly hydroid	Hydroid	Suspension	Sessile	H032
Cnidaria	Hydrozoa	Small feather hydroid	Hydroid	Suspension	Sessile	H033
Cnidaria	Hydrozoa	*Aglaophenia* sp (530)	Hydroid	Suspension	Sessile	H034
Cnidaria	Hydrozoa	*Obelia australis*	Hydroid	Suspension	Sessile	H035
Cnidaria	Hydrozoa	*Solanderia fusca*	Hydroid	Suspension	Sessile	H036
Cnidaria	Hydrozoa	Campanulariid sp (109)	Hydroid	Suspension	Sessile	H037
Cnidaria	Hydrozoa	*Aglaophenia divaricata*	Hydroid	Suspension	Sessile	H038
Cnidaria	Hydrozoa	*Aglaophenia* sp (77)	Hydroid	Suspension	Sessile	H039
Cnidaria	Anthozoa	*Acabria* sp	Coral	Suspension	Sessile	V001
Cnidaria	Anthozoa	*Alcyonium etheridgei*	Coral	Suspension	Sessile	V002
Cnidaria	Anthozoa	*Annisis sprightly*	Coral	Suspension	Sessile	V003
Cnidaria	Anthozoa	Black soft coral	Coral	Suspension	Sessile	V005
Cnidaria	Anthozoa	*Capnella arbuscula*	Coral	Suspension	Sessile	V006
Cnidaria	Anthozoa	Cerianthid sp 1	Anemone	Suspension	Sessile	V007
Cnidaria	Anthozoa	*Culicia tenella*	Coral	Suspension	Sessile	V008
Cnidaria	Anthozoa	*Dendronephthya* sp	Coral	Suspension	Sessile	V009
Cnidaria	Anthozoa	*Euplexaura* sp	Coral	Suspension	Sessile	V010
Cnidaria	Anthozoa	Isidid gorgonian 1	Coral	Suspension	Sessile	V011
Cnidaria	Anthozoa	Mixed cnidaria spp	Coral	Suspension	Sessile	V013

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Cnidaria	Anthozoa	*Mopsea encrinula*	Coral	Suspension	Sessile	V014
Cnidaria	Anthozoa	*Mopsella klunzingeri*	Coral	Suspension	Sessile	V015
Cnidaria	Anthozoa	*Oparinisis* n.sp.	Coral	Suspension	Sessile	V017
Cnidaria	Anthozoa	*Euplexaura* sp 2	Coral	Suspension	Sessile	V018
Cnidaria	Anthozoa	*Paraplexaura* sp	Coral	Suspension	Sessile	V019
Cnidaria	Anthozoa	Pink sea fan	Coral	Suspension	Sessile	V020
Cnidaria	Anthozoa	*Pseudoplumarella thetis*	Coral	Suspension	Sessile	V021
Cnidaria	Anthozoa	*Pteronisis incerta*	Coral	Suspension	Sessile	V022
Cnidaria	Anthozoa	Sea pen	Sea Pen	Suspension	Sessile	V024
Cnidaria	Anthozoa	*Solenocaulon* sp	Coral	Suspension	Sessile	V025
Cnidaria	Anthozoa	*Telesto* sp	Coral	Suspension	Sessile	V026
Cnidaria	Anthozoa	Xeniid sp	Coral	Suspension	Sessile	V027
Cnidaria	Anthozoa	*Zignisis repens*	Coral	Suspension	Sessile	V028
Cnidaria	Anthozoa	Nephtheid sp	Coral	Suspension	Sessile	V029
Cnidaria	Anthozoa	*Carijoa* sp (395)	Coral	Suspension	Sessile	V032
Nemertea	Nemertea	Nemertea worm	Ribbon Worm	Scavenger	Mobile	N001
Annelida	Polychaeta	*Aphrodite australis*	Bristleworm	Scavenger	Mobile	P001
Annelida	Polychaeta	Bristle worm	Bristleworm	Predator	Mobile	P002
Annelida	Polychaeta	Eunice sp	Bristleworm	Predator	Mobile	P003
Annelida	Polychaeta	Fireworm	Bristleworm	Scavenger	Mobile	P004
Annelida	Polychaeta	Onuphid worm	Bristleworm	Scavenger	Mobile	P005
Annelida	Polychaeta	Polychaete tube mix	Tube Worm	Suspension	Sessile	P007
Annelida	Polychaeta	Scale worm 1	Bristleworm	Predator	Mobile	P008
Annelida	Polychaeta	Serpullid tubes 1	Tube Worm	Suspension	Sessile	P010
Annelida	Polychaeta	Serpullid tubes 2	Tube Worm	Suspension	Sessile	P011
Annelida	Polychaeta	Serpullid tubes 3	Tube Worm	Suspension	Sessile	P012
Annelida	Polychaeta	Serpullid tubes 4	Tube Worm	Suspension	Sessile	P013
Annelida	Polychaeta	Terebellid sp	Tube Worm	Suspension	Sessile	P015
Annelida	Polychaeta	*Pomatoceros taeniata*	Tube Worm	Suspension	Sessile	P016
Annelida	Polychaeta	Sigalionid sp	Bristleworm	Predator	Mobile	P017
Annelida	Polychaeta	*Prionospio* sp	Bristleworm	Deposit	Mobile	P018
Sipuncula	Sipuncula	*Phascolosoma annulatum*	Peanut Worm	Deposit	Mobile	W001
Crustacea	Malacostraca	*Actea calculosa*	Crab	Scavenger	Mobile	C001
Crustacea	Malacostraca	*Carcinoplax meridionalis*	Crab	Scavenger	Mobile	C002
Crustacea	Malacostraca	Carid shrimp 2	Shrimp	Scavenger	Mobile	C004
Crustacea	Malacostraca	Carid shrimp 3	Shrimp	Scavenger	Mobile	C005
Crustacea	Malacostraca	Dark hairy crab	Crab	Scavenger	Mobile	C006
Crustacea	Malacostraca	*Dromidiopsis globosa*	Crab	Scavenger	Mobile	C007
Crustacea	Malacostraca	*Eplumula australiensis*	Crab	Scavenger	Mobile	C008
Crustacea	Malacostraca	Galatheid sp 1	Craylet	Scavenger	Mobile	C009
Crustacea	Malacostraca	Hermit crab 1	Crab	Scavenger	Mobile	C011
Crustacea	Malacostraca	Hermit crab 2	Crab	Scavenger	Mobile	C012
Crustacea	Malacostraca	*Ibacus novemdentatus*	Slipper Lobster	Scavenger	Mobile	C013
Crustacea	Malacostraca	*Ibacus peronii*	Slipper Lobster	Scavenger	Mobile	C014
Crustacea	Malacostraca	*Leptomithrax* sp	Crab	Scavenger	Mobile	C015
Crustacea	Malacostraca	*Leptomithrax sternocostulatus*	Crab	Scavenger	Mobile	C016
Crustacea	Malacostraca	Majid long horned	Crab	Scavenger	Mobile	C017
Crustacea	Malacostraca	Majid sp 1	Crab	Scavenger	Mobile	C018
Crustacea	Malacostraca	Prawn	Shrimp	Scavenger	Mobile	C019
Crustacea	Malacostraca	*Ovalipes australiensis*	Crab	Scavenger	Mobile	C020
Crustacea	Malacostraca	*Cymodopsis crassa*	Pill Bug	Scavenger	Mobile	C021
Crustacea	Malacostraca	Pill bug sp 2	Pill Bug	Scavenger	Mobile	C022
Crustacea	Malacostraca	Portunid crab sp 1	Crab	Scavenger	Mobile	C023
Crustacea	Malacostraca	Portunid sp	Crab	Scavenger	Mobile	C024
Crustacea	Malacostraca	*Echinolatus poorei*	Crab	Scavenger	Mobile	C025
Crustacea	Malacostraca	*Prismatopus spatulifer*	Crab	Scavenger	Mobile	C026

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Crustacea	Malacostraca	Sculptured carapace crab	Crab	Scavenger	Mobile	C028
Crustacea	Malacostraca	*Scyllarus* sp 2	Slipper Lobster	Scavenger	Mobile	C030
Crustacea	Malacostraca	*Anchisquilloides mcneilli*	Mantis Shrimp	Scavenger	Mobile	C031
Crustacea	Malacostraca	*Achaeus* sp	Crab	Scavenger	Mobile	C032
Crustacea	Malacostraca	*Pilumnus tomentosus*	Crab	Scavenger	Mobile	C034
Crustacea	Pycnogonida	Pycnogonid	Sea Spider	Scavenger	Mobile	C035
Crustacea	Malacostraca	Carid shrimp 4	Shrimp	Scavenger	Mobile	C036
Crustacea	Malacostraca	Carid shrimp 5	Shrimp	Scavenger	Mobile	C037
Crustacea	Malacostraca	Carid shrimp 6	Shrimp	Scavenger	Mobile	C038
Crustacea	Malacostraca	*Cymodopsis* sp	Pill Bug	Scavenger	Mobile	C039
Crustacea	Malacostraca	Dromid sp 1	Crab	Scavenger	Mobile	C040
Crustacea	Malacostraca	Galatheid sp	Craylet	Scavenger	Mobile	C041
Crustacea	Malacostraca	*Halicarcinus ovatus*	Crab	Scavenger	Mobile	C042
Crustacea	Malacostraca	*Leptomithrax* sp 2 (515)	Crab	Scavenger	Mobile	C043
Crustacea	Malacostraca	*Munida* sp	Craylet	Scavenger	Mobile	C044
Crustacea	Malacostraca	Dromid sp 2	Crab	Scavenger	Mobile	C045
Mollusca	Bivalvia	Almond ark shell	Ark Shell	Suspension	Sessile	M001
Mollusca	Bivalvia	*Atrina tasmanica*	Razor Clam	Suspension	Sessile	M002
Mollusca	Bivalvia	*Glycymeris grayana*	Dog Cockle	Suspension	Sessile	M004
Mollusca	Bivalvia	*Brechites* sp	Watering Pot Shell	Suspension	Sessile	M005
Mollusca	Bivalvia	*Chlamys asperrimus*	Scallop	Suspension	Sessile	M006
Mollusca	Bivalvia	Flat cockle	Cockle	Suspension	Sessile	M007
Mollusca	Bivalvia	*Glycymeris* sp 1	Dog Cockle	Suspension	Sessile	M008
Mollusca	Bivalvia	*Glycymeris* sp 2	Dog Cockle	Suspension	Sessile	M009
Mollusca	Bivalvia	*Lima lima*	File Shell	Suspension	Sessile	M010
Mollusca	Bivalvia	*Malleus meridianus*	Hammer Oyster	Suspension	Sessile	M011
Mollusca	Bivalvia	Mussel	Mussel	Suspension	Sessile	M012
Mollusca	Bivalvia	*Pecten fumatus*	Scallop	Suspension	Sessile	M014
Mollusca	Bivalvia	Pectinid sp 1	Scallop	Suspension	Sessile	M015
Mollusca	Bivalvia	Pectinid sp 2	Scallop	Suspension	Sessile	M016
Mollusca	Bivalvia	Pectinid sp 3	Scallop	Suspension	Sessile	M017
Mollusca	Bivalvia	Razor clam	Razor Clam	Suspension	Sessile	M018
Mollusca	Bivalvia	Sandy cockle	Cockle	Suspension	Sessile	M019
Mollusca	Bivalvia	Spondilid sp	Thorny Oyster	Suspension	Sessile	M020
Mollusca	Bivalvia	Thorny oyster	Thorny Oyster	Suspension	Sessile	M022
Mollusca	Cephalopoda	*Octopus ?berrima*	Octopus	Predator	Mobile	M024
Mollusca	Cephalopoda	*Octopus* sp Juv	Octopus	Predator	Mobile	M025
Mollusca	Cephalopoda	*Sepia apama*	Cuttlefish	Predator	Mobile	M026
Mollusca	Cephalopoda	*Sepioloidea lineolata*	Squid	Predator	Mobile	M028
Mollusca	Cephalopoda	Spotted octopus	Octopus	Predator	Mobile	M029
Mollusca	Gastropoda	*Armina* sp	Nudibranch	Grazer	Mobile	M030
Mollusca	Gastropoda	*Ceratosoma brevicaudatum*	Nudibranch	Grazer	Mobile	M031
Mollusca	Gastropoda	*Ericusa papillosa*	Volute	Predator	Mobile	M032
Mollusca	Gastropoda	*Fusinus novaehollandiae*?	Spindle Shell	Predator	Mobile	M033
Mollusca	Gastropoda	Helmet shell	Helmet Shell	Predator	Mobile	M034
Mollusca	Gastropoda	*Melo miltonis*	Baler Shell	Predator	Mobile	M035
Mollusca	Gastropoda	Mitre shell	Mitre Shell	Predator	Mobile	M036
Mollusca	Gastropoda	*Neodoris chrysodemna*	Nudibranch	Grazer	Mobile	M037
Mollusca	Gastropoda	Screw shells	Screw Shell	Suspension	Mobile	M039
Mollusca	Gastropoda	Sea slug	Nudibranch	Predator	Mobile	M040
Mollusca	Gastropoda	*Crepidula aculeata*	Slipper Limpet	Suspension	Mobile	M041
Mollusca	Gastropoda	Turban shell	Turban Shell	Grazer	Mobile	M042
Mollusca	Gastropoda	Volute shell	Volute	Predator	Mobile	M043
Mollusca	Gastropoda	*Pterynotus* sp	Murex Shell	Predator	Mobile	M044
Mollusca	Bivalvia	*Anomia (trigonopsis)*	Jingle Shell	Suspension	Sessile	M045
Mollusca	Gastropoda	*Cavolina* sp. (68)	Sea Butterfly	Predator	Mobile	M046

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Mollusca	Bivalvia	Venerid sp	Venus Shell	Suspension	Sessile	M047
Mollusca	Bivalvia	Bivalve	Bivalve	Suspension	Sessile	M048
Mollusca	Bivalvia	Oyster	Oyster	Suspension	Sessile	M049
Mollusca	Gastropoda	Philinid sp	Sea Slug	Predator	Mobile	M050
Mollusca	Gastropoda	*Nannamoria guntheri*	Volute	Predator	Mobile	M051
Brachiopoda	Articulata	Brachiopod	Lamp Shell	Suspension	Sessile	L001
Bryozoa	Gymnolaemata	*Adeona* sp 1	Lace Coral	Suspension	Sessile	B001
Bryozoa	Gymnolaemata	*Adeona* sp	Lace Coral	Suspension	Sessile	B002
Bryozoa	Gymnolaemata	*Adeona grisea*	Lace Coral	Suspension	Sessile	B004
Bryozoa	Gymnolaemata	Alternate facing zooid pairs bryozoan	Lace Coral	Suspension	Sessile	B005
Bryozoa	Gymnolaemata	*Amathia* sp	Lace Coral	Suspension	Sessile	B006
Bryozoa	Gymnolaemata	*Amathia tortuosa*	Lace Coral	Suspension	Sessile	B007
Bryozoa	Gymnolaemata	*Orthoscuticella lorica*	Lace Coral	Suspension	Sessile	B008
Bryozoa	Gymnolaemata	Beige calcareous branch	Lace Coral	Suspension	Sessile	B009
Bryozoa	Gymnolaemata	Bryozoan sp (19)	Lace Coral	Suspension	Sessile	B010
Bryozoa	Gymnolaemata	Bryozoan sp (12)	Lace Coral	Suspension	Sessile	B011
Bryozoa	Gymnolaemata	Brown bushy bryozoan	Lace Coral	Suspension	Sessile	B013
Bryozoa	Gymnolaemata	Brown calcareous bryozoan	Lace Coral	Suspension	Sessile	B014
Bryozoa	Gymnolaemata	Brown encrusting bryozoan 1	Lace Coral	Suspension	Sessile	B016
Bryozoa	Gymnolaemata	Brown encrusting bryozoan 2	Lace Coral	Suspension	Sessile	B017
Bryozoa	Gymnolaemata	Brown fanned flat branches	Lace Coral	Suspension	Sessile	B018
Bryozoa	Gymnolaemata	*Bugularia disssimilis*	Lace Coral	Suspension	Sessile	B019
Bryozoa	Gymnolaemata	*Bugularia* sp	Lace Coral	Suspension	Sessile	B020
Bryozoa	Gymnolaemata	Bryozoan sp (3)	Lace Coral	Suspension	Sessile	B021
Bryozoa	Gymnolaemata	Bryozoan (148)	Lace Coral	Suspension	Sessile	B022
Bryozoa	Gymnolaemata	Calcareous with vanes	Lace Coral	Suspension	Sessile	B023
Bryozoa	Gymnolaemata	*Canda* sp	Lace Coral	Suspension	Sessile	B024
Bryozoa	Gymnolaemata	*Cellaria* sp 1	Lace Coral	Suspension	Sessile	B025
Bryozoa	Gymnolaemata	Curly bushy bryozoan 1	Lace Coral	Suspension	Sessile	B026
Bryozoa	Gymnolaemata	Curly bushy bryozoan 2	Lace Coral	Suspension	Sessile	B027
Bryozoa	Gymnolaemata	*Iodictyum phoniceum*	Lace Coral	Suspension	Sessile	B028
Bryozoa	Gymnolaemata	*Triphyllozoon* sp 2 (185)	Lace Coral	Suspension	Sessile	B029
Bryozoa	Gymnolaemata	Fenestrate bryozoan 3	Lace Coral	Suspension	Sessile	B030
Bryozoa	Gymnolaemata	Fenestrate bryozoan 4	Lace Coral	Suspension	Sessile	B031
Bryozoa	Gymnolaemata	*Triphyllozoon* sp 1 (1)	Lace Coral	Suspension	Sessile	B032
Bryozoa	Gymnolaemata	Flat branching orange bryozoan	Lace Coral	Suspension	Sessile	B033
Bryozoa	Gymnolaemata	Flat brown branched bryozoan	Lace Coral	Suspension	Sessile	B034
Bryozoa	Gymnolaemata	Flat brown branches	Lace Coral	Suspension	Sessile	B035
Bryozoa	Gymnolaemata	Flat calcareous	Lace Coral	Suspension	Sessile	B036
Bryozoa	Gymnolaemata	Four-branch bushy bryozoan	Lace Coral	Suspension	Sessile	B037
Bryozoa	Gymnolaemata	Green flake bryozoan	Lace Coral	Suspension	Sessile	B038
Bryozoa	Gymnolaemata	Green flake bryozoan 2	Lace Coral	Suspension	Sessile	B039
Bryozoa	Gymnolaemata	*Steginoporella* sp 2	Lace Coral	Suspension	Sessile	B040
Bryozoa	Gymnolaemata	Knobbed branch bryozoan	Lace Coral	Suspension	Sessile	B041
Bryozoa	Gymnolaemata	Bryozoan sp (187)	Lace Coral	Suspension	Sessile	B042
Bryozoa	Gymnolaemata	Leafy beige bryozoan	Lace Coral	Suspension	Sessile	B043
Bryozoa	Gymnolaemata	Light pink curly	Lace Coral	Suspension	Sessile	B044
Bryozoa	Gymnolaemata	*Lunularia capulus*	Lace Coral	Suspension	Sessile	B045
Bryozoa	Gymnolaemata	*Catenicella* sp	Lace Coral	Suspension	Sessile	B046
Bryozoa	Gymnolaemata	Mixed bryozoan spp (bushy)	Lace Coral	Suspension	Sessile	B047
Bryozoa	Gymnolaemata	Orange bryozoan	Lace Coral	Suspension	Sessile	B049
Bryozoa	Gymnolaemata	Orange bushy 2 bryozoan	Lace Coral	Suspension	Sessile	B050
Bryozoa	Gymnolaemata	Orange bushy bryozoan	Lace Coral	Suspension	Sessile	B051
Bryozoa	Gymnolaemata	Orange coralline	Lace Coral	Suspension	Sessile	B052
Bryozoa	Gymnolaemata	Orange cube bryozoan	Lace Coral	Suspension	Sessile	B053
Bryozoa	Gymnolaemata	Orange flake bryozoan	Lace Coral	Suspension	Sessile	B054

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Bryozoa	Gymnolaemata	*Bugula* sp 1	Lace Coral	Suspension	Sessile	B055
Bryozoa	Gymnolaemata	Orange plate bryozoan	Lace Coral	Suspension	Sessile	B056
Bryozoa	Gymnolaemata	Bryozoan sp (117)	Lace Coral	Suspension	Sessile	B057
Bryozoa	Gymnolaemata	*Orthoscuticella* sp 1	Lace Coral	Suspension	Sessile	B058
Bryozoa	Gymnolaemata	*Orthoscuticella* sp 10	Lace Coral	Suspension	Sessile	B059
Bryozoa	Gymnolaemata	*Orthoscuticella* sp 11	Lace Coral	Suspension	Sessile	B060
Bryozoa	Gymnolaemata	*Orthoscuticella* sp 2	Lace Coral	Suspension	Sessile	B061
Bryozoa	Gymnolaemata	*Orthoscuticella* sp (139)	Lace Coral	Suspension	Sessile	B062
Bryozoa	Gymnolaemata	*Orthoscuticella* sp 4	Lace Coral	Suspension	Sessile	B063
Bryozoa	Gymnolaemata	*Orthoscuticella* sp 5	Lace Coral	Suspension	Sessile	B064
Bryozoa	Gymnolaemata	*Orthoscuticella* sp 6	Lace Coral	Suspension	Sessile	B065
Bryozoa	Gymnolaemata	*Cornuticella* sp (392)	Lace Coral	Suspension	Sessile	B066
Bryozoa	Gymnolaemata	*Orthoscuticella* sp 8	Lace Coral	Suspension	Sessile	B067
Bryozoa	Gymnolaemata	*Orthoscuticella* sp (206)	Lace Coral	Suspension	Sessile	B068
Bryozoa	Gymnolaemata	Pale green curly bryozoan	Lace Coral	Suspension	Sessile	B069
Bryozoa	Gymnolaemata	Pale orange branching bryozoan	Lace Coral	Suspension	Sessile	B070
Bryozoa	Gymnolaemata	Pink fenestrate bryozoan 1	Lace Coral	Suspension	Sessile	B071
Bryozoa	Gymnolaemata	Pink fenestrate bryozoan 2	Lace Coral	Suspension	Sessile	B072
Bryozoa	Gymnolaemata	Pink fenestrate bryozoan 3	Lace Coral	Suspension	Sessile	B073
Bryozoa	Gymnolaemata	*Emma triangula*	Lace Coral	Suspension	Sessile	B075
Bryozoa	Gymnolaemata	Pink/cream branching bryozoan	Lace Coral	Suspension	Sessile	B076
Bryozoa	Gymnolaemata	Red perforated zooids	Lace Coral	Suspension	Sessile	B078
Bryozoa	Gymnolaemata	Reddy orange coralline	Lace Coral	Suspension	Sessile	B079
Bryozoa	Gymnolaemata	Small white branching bryozoan	Lace Coral	Suspension	Sessile	B080
Bryozoa	Gymnolaemata	*Bugula* sp 2	Lace Coral	Suspension	Sessile	B081
Bryozoa	Gymnolaemata	*Amathia* sp 2	Lace Coral	Suspension	Sessile	B082
Bryozoa	Gymnolaemata	Sponge/Bryozoa mix	Lace Coral	Suspension	Sessile	B083
Bryozoa	Gymnolaemata	Striated bushy bryozoan	Lace Coral	Suspension	Sessile	B084
Bryozoa	Gymnolaemata	Thin flat branching brown bryozoan	Lace Coral	Suspension	Sessile	B086
Bryozoa	Gymnolaemata	White branching bushy bryozoan	Lace Coral	Suspension	Sessile	B087
Bryozoa	Gymnolaemata	White bushy bryozoan	Lace Coral	Suspension	Sessile	B088
Bryozoa	Gymnolaemata	White calcareous dome	Lace Coral	Suspension	Sessile	B089
Bryozoa	Gymnolaemata	White encrusting calcareous	Lace Coral	Suspension	Sessile	B090
Bryozoa	Gymnolaemata	White fenestrate bryozoan	Lace Coral	Suspension	Sessile	B091
Bryozoa	Gymnolaemata	White jointed bryozoan	Lace Coral	Suspension	Sessile	B092
Bryozoa	Gymnolaemata	White plate bryozoan	Lace Coral	Suspension	Sessile	B093
Bryozoa	Gymnolaemata	*Lunularia repanda*	Lace Coral	Suspension	Sessile	B094
Bryozoa	Gymnolaemata	Bryozoan (162)	Lace Coral	Suspension	Sessile	B095
Bryozoa	Gymnolaemata	Bryozoan (168, calc)	Lace Coral	Suspension	Sessile	B096
Bryozoa	Gymnolaemata	Bryozoan (186, calc)	Lace Coral	Suspension	Sessile	B097
Bryozoa	Gymnolaemata	Bryozoan (9)	Lace Coral	Suspension	Sessile	B098
Bryozoa	Gymnolaemata	*Caberea* sp (28, calc)	Lace Coral	Suspension	Sessile	B099
Bryozoa	Stenolaemata	*Crisa* sp?	Lace Coral	Suspension	Sessile	B100
Bryozoa	Stenolaemata	*Hornera foliacea*	Lace Coral	Suspension	Sessile	B101
Bryozoa	Gymnolaemata	*Steginoporella* sp 1	Lace Coral	Suspension	Sessile	B102
Bryozoa	Gymnolaemata	*Triphyllozoon* sp 3	Lace Coral	Suspension	Sessile	B104
Bryozoa	Gymnolaemata	*Orthoscuticella amphora*	Lace Coral	Suspension	Sessile	B105
Bryozoa	Gymnolaemata	*Cornuticella* sp (92)	Lace Coral	Suspension	Sessile	B106
Bryozoa	Gymnolaemata	*Orthoscuticella* sp (96)	Lace Coral	Suspension	Sessile	B107
Bryozoa	Gymnolaemata	*Cornucopina grandis*(285)	Lace Coral	Suspension	Sessile	B108
Echinodermata	Asteroidea	*Astropecten pectinatus*	Starfish	Scavenger	Mobile	E001
Echinodermata	Asteroidea	*Astropecten preissei*	Starfish	Scavenger	Mobile	E002
Echinodermata	Asteroidea	*Astropecten vappa*	Starfish	Scavenger	Mobile	E003
Echinodermata	Asteroidea	*Coscinasterias* sp	Starfish	Scavenger	Mobile	E005
Echinodermata	Asteroidea	*Echinaster decanus*	Starfish	Scavenger	Mobile	E007
Echinodermata	Asteroidea	*Echinaster glomeratus*	Starfish	Scavenger	Mobile	E008

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Echinodermata	Asteroidea	*Luidia australiae*	Starfish	Scavenger	Mobile	E009
Echinodermata	Asteroidea	*Nectria wilsoni*	Starfish	Scavenger	Mobile	E010
Echinodermata	Asteroidea	*Paranepanthia grandis*	Starfish	Scavenger	Mobile	E011
Echinodermata	Asteroidea	*Pentagonaster dubeni*	Starfish	Scavenger	Mobile	E012
Echinodermata	Asteroidea	*Plectaster decanus*	Starfish	Scavenger	Mobile	E013
Echinodermata	Asteroidea	Small spined asteroid	Starfish	Scavenger	Mobile	E014
Echinodermata	Asteroidea	Wide mouthed asteroid	Starfish	Scavenger	Mobile	E016
Echinodermata	Asteroidea	Yellow asteroid	Starfish	Scavenger	Mobile	E017
Echinodermata	Crinoidea	*Antedon* sp	Feather Star	Suspension	Mobile	E018
Echinodermata	Crinoidea	*Ptilometra australis*	Feather Star	Suspension	Mobile	E019
Echinodermata	Crinoidea	*Ptilometra macronema*	Feather Star	Suspension	Mobile	E020
Echinodermata	Crinoidea	*Ptilometra* sp	Feather Star	Suspension	Mobile	E021
Echinodermata	Crinoidea	*Ptilometra* sp (14 arms)	Feather Star	Suspension	Mobile	E022
Echinodermata	Crinoidea	*Ptilometra* sp 12 arms	Feather Star	Suspension	Mobile	E023
Echinodermata	Echinoidea	*Centrostephanus* sp	Urchin	Grazer	Mobile	E024
Echinodermata	Echinoidea	*Goniocidaris tubaria*	Urchin	Grazer	Mobile	E025
Echinodermata	Echinoidea	Mouse urchin	Urchin	Deposit	Mobile	E026
Echinodermata	Echinoidea	*Peronella peronii*	Urchin	Grazer	Mobile	E027
Echinodermata	Echinoidea	Purple heart urchin	Urchin	Deposit	Mobile	E028
Echinodermata	Echinoidea	Echinoid sp (281)	Urchin	Deposit	Mobile	E029
Echinodermata	Echinoidea	Tiny urchin 2	Urchin	Deposit	Mobile	E030
Echinodermata	Echinoidea	Urchin	Urchin	Grazer	Mobile	E031
Echinodermata	Echinoidea	Echinoid sp (418)	Urchin	Grazer	Mobile	E032
Echinodermata	Holothuroidea	*Ceto cuvieria*	Sea Cucumber	Deposit	Mobile	E033
Echinodermata	Holothuroidea	*Holothuria hartmeyeri*	Sea Cucumber	Deposit	Mobile	E035
Echinodermata	Holothuroidea	*Pentacta anceps*	Sea Cucumber	Deposit	Mobile	E036
Echinodermata	Holothuroidea	*Pentacta crassa*	Sea Cucumber	Deposit	Mobile	E037
Echinodermata	Holothuroidea	Strawberry-surface holothurian	Sea Cucumber	Deposit	Mobile	E039
Echinodermata	Ophiuroidea	*Astroboa ernae*	Brittle Star	Scavenger	Mobile	E040
Echinodermata	Ophiuroidea	Ophiuroid sp (25)	Brittle Star	Scavenger	Mobile	E041
Echinodermata	Ophiuroidea	Brittle star	Brittle Star	Scavenger	Mobile	E042
Echinodermata	Ophiuroidea	Mixed brittlestar spp	Brittle Star	Scavenger	Mobile	E044
Echinodermata	Ophiuroidea	*Ophiocrossota multispina*	Brittle Star	Scavenger	Mobile	E045
Echinodermata	Ophiuroidea	*Ophiothrix spongicola*	Brittle Star	Scavenger	Mobile	E046
Echinodermata	Ophiuroidea	Orange basket star	Brittle Star	Scavenger	Mobile	E047
Echinodermata	Ophiuroidea	Pink hairy brittle star	Brittle Star	Scavenger	Mobile	E049
Echinodermata	Ophiuroidea	Ridged brittle star	Brittle Star	Scavenger	Mobile	E050
Echinodermata	Ophiuroidea	Ophiuroid sp (564)	Brittle Star	Scavenger	Mobile	E051
Echinodermata	Ophiuroidea	*Ophiomyxa australis*?	Brittle Star	Scavenger	Mobile	E052
Echinodermata	Ophiuroidea	*Ophionereis schayeri*?	Brittle Star	Scavenger	Mobile	E053
Chordata	Ascidiacea	*Aplidium petrosum*	Sea Squirt	Suspension	Sessile	A001
Chordata	Ascidiacea	Ascidian (32)	Sea Squirt	Suspension	Sessile	A002
Chordata	Ascidiacea	Black jelly ascidian	Sea Squirt	Suspension	Sessile	A003
Chordata	Ascidiacea	Black sandy sea squirt	Sea Squirt	Suspension	Sessile	A004
Chordata	Ascidiacea	Sea squirt (619)	Sea Squirt	Suspension	Sessile	A005
Chordata	Ascidiacea	Ascidian (202)	Sea Squirt	Suspension	Sessile	A006
Chordata	Ascidiacea	Blue tinged ascidian	Sea Squirt	Suspension	Sessile	A008
Chordata	Ascidiacea	Blue translucent ascidian	Sea Squirt	Suspension	Sessile	A009
Chordata	Ascidiacea	Blue/green encrusting ascidian	Sea Squirt	Suspension	Sessile	A010
Chordata	Ascidiacea	Bluish colonial ascidian	Sea Squirt	Suspension	Sessile	A011
Chordata	Ascidiacea	Brown hard dome ascidian	Sea Squirt	Suspension	Sessile	A012
Chordata	Ascidiacea	Brown pancake ascidian 1	Sea Squirt	Suspension	Sessile	A013
Chordata	Ascidiacea	Brown pancake ascidian 2	Sea Squirt	Suspension	Sessile	A014
Chordata	Ascidiacea	Brown pitted ascidian	Sea Squirt	Suspension	Sessile	A015
Chordata	Ascidiacea	Brown sandy ascidian	Sea Squirt	Suspension	Sessile	A016
Chordata	Ascidiacea	Brown sea squirt	Sea Squirt	Suspension	Sessile	A017

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Chordata	Ascidiacea	Colonial stalks ascidian	Sea Squirt	Suspension	Sessile	A018
Chordata	Ascidiacea	Didemnid (328)	Sea Squirt	Suspension	Sessile	A019
Chordata	Ascidiacea	Cream sandy ascidian	Sea Squirt	Suspension	Sessile	A020
Chordata	Ascidiacea	Cream translucent ascidian	Sea Squirt	Suspension	Sessile	A021
Chordata	Ascidiacea	Cream/pink didemnid ascidian	Sea Squirt	Suspension	Sessile	A022
Chordata	Ascidiacea	Didemnid (402)	Sea Squirt	Suspension	Sessile	A023
Chordata	Ascidiacea	Dome ascidian	Sea Squirt	Suspension	Sessile	A024
Chordata	Ascidiacea	Dome ascidian, sculptured surface	Sea Squirt	Suspension	Sessile	A025
Chordata	Ascidiacea	Ascidian	Sea Squirt	Suspension	Sessile	A026
Chordata	Ascidiacea	Flat sandy sea squirt	Sea Squirt	Suspension	Sessile	A027
Chordata	Ascidiacea	Flat topped colonial ascidian	Sea Squirt	Suspension	Sessile	A028
Chordata	Ascidiacea	Green crater ascidian	Sea Squirt	Suspension	Sessile	A031
Chordata	Ascidiacea	Green sandy ascidian	Sea Squirt	Suspension	Sessile	A032
Chordata	Ascidiacea	Green translucent ascidian 1	Sea Squirt	Suspension	Sessile	A033
Chordata	Ascidiacea	Green translucent ascidian 2	Sea Squirt	Suspension	Sessile	A034
Chordata	Ascidiacea	Green translucent dome ascidian	Sea Squirt	Suspension	Sessile	A035
Chordata	Ascidiacea	Grey sandy ascidian	Sea Squirt	Suspension	Sessile	A037
Chordata	Ascidiacea	Grey stalked sea squirt	Sea Squirt	Suspension	Sessile	A038
Chordata	Ascidiacea	Grey-beige sandy ascidian	Sea Squirt	Suspension	Sessile	A039
Chordata	Ascidiacea	*Herdmania* sp 1	Sea Squirt	Suspension	Sessile	A041
Chordata	Ascidiacea	*Herdmania* sp	Sea Squirt	Suspension	Sessile	A043
Chordata	Ascidiacea	*Herdmania* sp 4	Sea Squirt	Suspension	Sessile	A044
Chordata	Ascidiacea	Large blue dome ascidian	Sea Squirt	Suspension	Sessile	A045
Chordata	Ascidiacea	Large strawberry ascidian	Sea Squirt	Suspension	Sessile	A046
Chordata	Ascidiacea	Like *Aplidiopsis*	Sea Squirt	Suspension	Sessile	A047
Chordata	Ascidiacea	Marble ascidian	Sea Squirt	Suspension	Sessile	A048
Chordata	Ascidiacea	Ascidian (172)	Sea Squirt	Suspension	Sessile	A049
Chordata	Ascidiacea	Massive sandy colonial ascidian	Sea Squirt	Suspension	Sessile	A050
Chordata	Ascidiacea	Mixed ascidian spp	Sea Squirt	Suspension	Sessile	A051
Chordata	Ascidiacea	*Monniotus australis*	Sea Squirt	Suspension	Sessile	A053
Chordata	Ascidiacea	Ascidian (62)	Sea Squirt	Suspension	Sessile	A054
Chordata	Ascidiacea	Didemnid (74)	Sea Squirt	Suspension	Sessile	A055
Chordata	Ascidiacea	Orange didemnid 1	Sea Squirt	Suspension	Sessile	A056
Chordata	Ascidiacea	Orange didemnid 2	Sea Squirt	Suspension	Sessile	A057
Chordata	Ascidiacea	Orange didemnid 3	Sea Squirt	Suspension	Sessile	A058
Chordata	Ascidiacea	Orange didemnid 4	Sea Squirt	Suspension	Sessile	A059
Chordata	Ascidiacea	Orange marmalade ascidian	Sea Squirt	Suspension	Sessile	A061
Chordata	Ascidiacea	Orange sandy ascidian	Sea Squirt	Suspension	Sessile	A062
Chordata	Ascidiacea	Orange sandy solitary	Sea Squirt	Suspension	Sessile	A063
Chordata	Ascidiacea	Orange sea squirt	Sea Squirt	Suspension	Sessile	A064
Chordata	Ascidiacea	Ornate-surfaced ascidian	Sea Squirt	Suspension	Sessile	A066
Chordata	Ascidiacea	Pale pink didemnid	Sea Squirt	Suspension	Sessile	A067
Chordata	Ascidiacea	Didemnid (37)	Sea Squirt	Suspension	Sessile	A068
Chordata	Ascidiacea	Pink colonial ascidian	Sea Squirt	Suspension	Sessile	A069
Chordata	Ascidiacea	Pink didemnid	Sea Squirt	Suspension	Sessile	A070
Chordata	Ascidiacea	Pink stalked didemnid	Sea Squirt	Suspension	Sessile	A071
Chordata	Ascidiacea	Purple brown solitary ascidian	Sea Squirt	Suspension	Sessile	A074
Chordata	Ascidiacea	Purple colonial ascidian	Sea Squirt	Suspension	Sessile	A075
Chordata	Ascidiacea	Purple crater ascidian 1	Sea Squirt	Suspension	Sessile	A076
Chordata	Ascidiacea	Purple crater ascidian 2	Sea Squirt	Suspension	Sessile	A077
Chordata	Ascidiacea	Purple folded ascidian	Sea Squirt	Suspension	Sessile	A079
Chordata	Ascidiacea	Purple stalked ascidian	Sea Squirt	Suspension	Sessile	A081
Chordata	Ascidiacea	*Pyura spinifera*	Sea Squirt	Suspension	Sessile	A082
Chordata	Ascidiacea	Red colonial ascidian	Sea Squirt	Suspension	Sessile	A084
Chordata	Ascidiacea	Red/brown sandy ascidian 1	Sea Squirt	Suspension	Sessile	A085
Chordata	Ascidiacea	Red/brown sandy ascidian 2	Sea Squirt	Suspension	Sessile	A086

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Chordata	Ascidiacea	*Ritterella* sp 1	Sea Squirt	Suspension	Sessile	A087
Chordata	Ascidiacea	*Ritterella* sp 2	Sea Squirt	Suspension	Sessile	A088
Chordata	Ascidiacea	*Ritterella* sp (410)	Sea Squirt	Suspension	Sessile	A089
Chordata	Ascidiacea	Rough surface colonial stalk	Sea Squirt	Suspension	Sessile	A090
Chordata	Ascidiacea	Sand ascidian 1	Sea Squirt	Suspension	Sessile	A091
Chordata	Ascidiacea	Sand ascidian 2	Sea Squirt	Suspension	Sessile	A092
Chordata	Ascidiacea	Sand ascidian 3	Sea Squirt	Suspension	Sessile	A093
Chordata	Ascidiacea	Sand ascidian 4	Sea Squirt	Suspension	Sessile	A094
Chordata	Ascidiacea	Sand ascidian 5	Sea Squirt	Suspension	Sessile	A095
Chordata	Ascidiacea	Sand ascidian 6	Sea Squirt	Suspension	Sessile	A096
Chordata	Ascidiacea	Sandy bunched ascidian 1	Sea Squirt	Suspension	Sessile	A098
Chordata	Ascidiacea	Sandy bunched ascidian 2	Sea Squirt	Suspension	Sessile	A099
Chordata	Ascidiacea	Sandy button ascidian	Sea Squirt	Suspension	Sessile	A100
Chordata	Ascidiacea	Sandy dome ascidian	Sea Squirt	Suspension	Sessile	A102
Chordata	Ascidiacea	Sandy 'liver' ascidian	Sea Squirt	Suspension	Sessile	A103
Chordata	Ascidiacea	Sandy with yellow zooids	Sea Squirt	Suspension	Sessile	A104
Chordata	Ascidiacea	Small black sea squirt	Sea Squirt	Suspension	Sessile	A105
Chordata	Ascidiacea	Small brown amorphous ascidian	Sea Squirt	Suspension	Sessile	A106
Chordata	Ascidiacea	Small brown sea squirt	Sea Squirt	Suspension	Sessile	A107
Chordata	Ascidiacea	Small colonial red ascidian	Sea Squirt	Suspension	Sessile	A108
Chordata	Ascidiacea	Soft orange didemnid	Sea Squirt	Suspension	Sessile	A112
Chordata	Ascidiacea	Sea squirt (5)	Sea Squirt	Suspension	Sessile	A113
Chordata	Ascidiacea	Sea squirt (97)	Sea Squirt	Suspension	Sessile	A114
Chordata	Ascidiacea	Solitary sandy 2	Sea Squirt	Suspension	Sessile	A115
Chordata	Ascidiacea	Solitary sandy 3	Sea Squirt	Suspension	Sessile	A116
Chordata	Ascidiacea	Spherical cratered ascidian	Sea Squirt	Suspension	Sessile	A117
Chordata	Ascidiacea	Stalked colonial ascidian	Sea Squirt	Suspension	Sessile	A118
Chordata	Ascidiacea	Stalked sandy colonial ascidian	Sea Squirt	Suspension	Sessile	A119
Chordata	Ascidiacea	String -of-sand ascidian 2	Sea Squirt	Suspension	Sessile	A120
Chordata	Ascidiacea	*Ritterella* sp (88)	Sea Squirt	Suspension	Sessile	A121
Chordata	Ascidiacea	String-of-sand ascidian 1	Sea Squirt	Suspension	Sessile	A122
Chordata	Ascidiacea	*Sycozoa* sp	Sea Squirt	Suspension	Sessile	A123
Chordata	Ascidiacea	Ascidian (129)	Sea Squirt	Suspension	Sessile	A124
Chordata	Ascidiacea	White colonial ascidian	Sea Squirt	Suspension	Sessile	A125
Chordata	Ascidiacea	White didemnid ascidian 2	Sea Squirt	Suspension	Sessile	A128
Chordata	Ascidiacea	White didemnid ascidian 3	Sea Squirt	Suspension	Sessile	A129
Chordata	Ascidiacea	White dome ascidian 2	Sea Squirt	Suspension	Sessile	A131
Chordata	Ascidiacea	*Sycozoa* sp? (181)	Sea Squirt	Suspension	Sessile	A133
Chordata	Ascidiacea	White opaque solitary with blue tinge	Sea Squirt	Suspension	Sessile	A134
Chordata	Ascidiacea	Yellow didemnid	Sea Squirt	Suspension	Sessile	A136
Chordata	Ascidiacea	Yellow dome didemnid	Sea Squirt	Suspension	Sessile	A137
Chordata	Ascidiacea	Yellow gelatinous ascidian	Sea Squirt	Suspension	Sessile	A138
Chordata	Ascidiacea	Ascidian (113)	Sea Squirt	Suspension	Sessile	A139
Chordata	Ascidiacea	Ascidian (128)	Sea Squirt	Suspension	Sessile	A140
Chordata	Ascidiacea	Ascidian (14)	Sea Squirt	Suspension	Sessile	A141
Chordata	Ascidiacea	Ascidian (16)	Sea Squirt	Suspension	Sessile	A142
Chordata	Ascidiacea	Ascidian (204)	Sea Squirt	Suspension	Sessile	A143
Chordata	Ascidiacea	Ascidian (217)	Sea Squirt	Suspension	Sessile	A144
Chordata	Ascidiacea	Ascidian (261)	Sea Squirt	Suspension	Sessile	A145
Chordata	Ascidiacea	Ascidian (307)	Sea Squirt	Suspension	Sessile	A146
Chordata	Ascidiacea	Ascidian (393)	Sea Squirt	Suspension	Sessile	A147
Chordata	Ascidiacea	Ascidian (438)	Sea Squirt	Suspension	Sessile	A148
Chordata	Ascidiacea	Ascidian (465)	Sea Squirt	Suspension	Sessile	A149
Chordata	Ascidiacea	Ascidian (91)	Sea Squirt	Suspension	Sessile	A150
Chordata	Ascidiacea	Didemnid sp (207)	Sea Squirt	Suspension	Sessile	A151
Chordata	Ascidiacea	Didemnid sp (307)	Sea Squirt	Suspension	Sessile	A152

Phylum	Class	Species	Common Name	Diet	Mobility	Code
Chordata	Ascidiacea	Didemnid sp (468)	Sea Squirt	Suspension	Sessile	A153
Chordata	Ascidiacea	Didemnid sp (633)	Sea Squirt	Suspension	Sessile	A154
Chordata	Ascidiacea	Sea squirt (61)	Sea Squirt	Suspension	Sessile	A155
Chordata	Ascidiacea	Polycitid sp?	Sea Squirt	Suspension	Sessile	A156
Chordata	Ascidiacea	Ascidian (590)	Sea Squirt	Suspension	Sessile	A157
Chordata	Ascidiacea	Ascidian (218)	Sea Squirt	Suspension	Sessile	A158
Chordata	Ascidiacea	Ascidian (631)	Sea Squirt	Suspension	Sessile	A159
Chordata	Ascidiacea	Ascidian (219)	Sea Squirt	Suspension	Sessile	A160
Chordata	Ascidiacea	Ascidian (64)	Sea Squirt	Suspension	Sessile	A161
Chordata	Ascidiacea	*Aplidium* sp.	Sea Squirt	Suspension	Sessile	A162
Chordata	Ascidiacea	Ascidian (89)	Sea Squirt	Suspension	Sessile	A163

Appendix 3. Photographic plates depicting 735 organisms collected in epibenthic sled samples from 40 stations located inside and immediately adjacent the Great Australian Bight Marine Park Benthic Protection Zone.

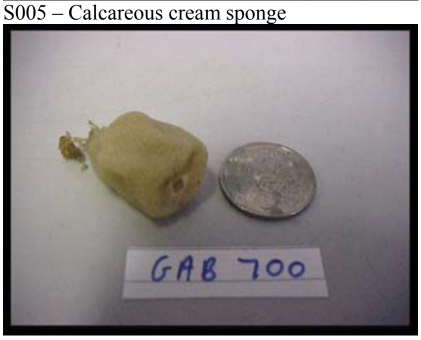
S001 – Calcareous beige

S002 – Calcareous beige tube

S003 – Calcareous brown convoluted

S004 – Calcareous brown lobe

S005 – Calcareous cream sponge



S006 – Calcareous cream tube

S007 – *Soleneiscus* sp?

S008 – Calcareous dark green tube

S009 – Calcarea (65)

S010 – calcareous large black tube

S011 – Calcareous lobes

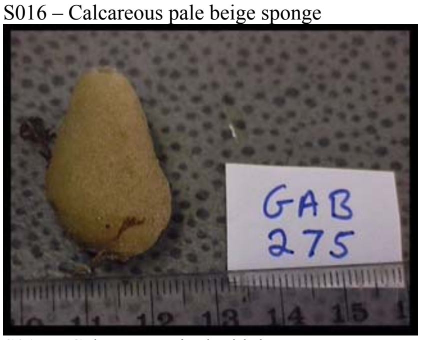
S012 – Calcareous long solid tube

S013 – Calcareous long tube 3

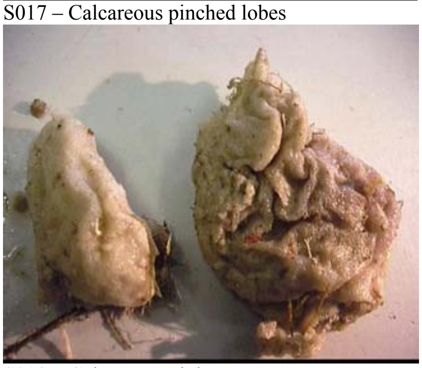
S014 – Calcareous long tube 2

S015 – Calcareous mesh sponge

S016 – Calcareous pale beige sponge



S017 – Calcareous pinched lobes

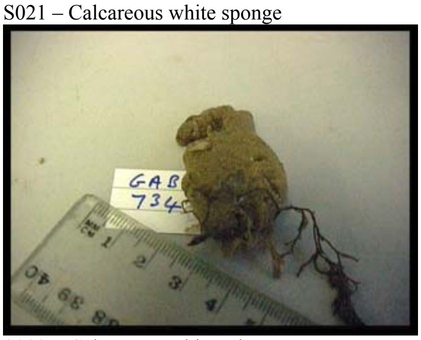


S018 – Calcareous pink sponge

S019 – Calcareous short tube

S020 – Calcareous thin cream tubes

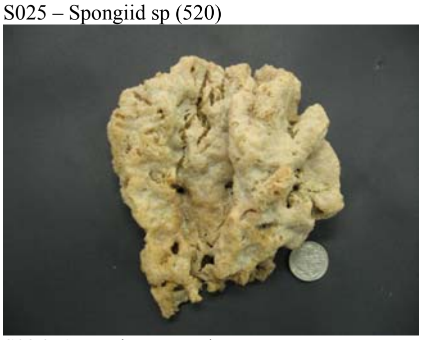
S021 – Calcareous white sponge



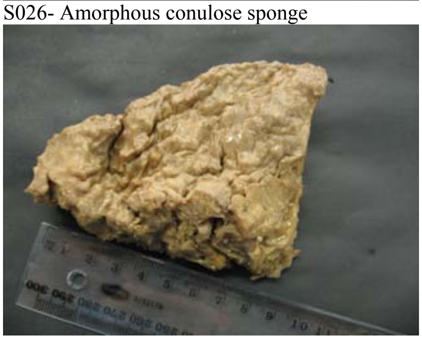
S022 – Calcareous white tube

S023 – Mixed calcarea sponge spp

S025 – Spongiid sp (520)



S026- Amorphous conulose sponge



S028- *Stelletta tuberculata*

S029 – Bath sponge

S030 – Beige branched haplosclerid

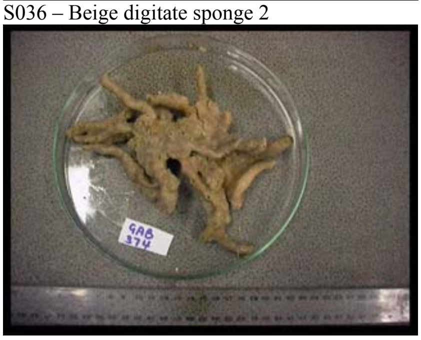
S031 – Beige branched sponge

S032 – Beige bumpy sponge

S033 – Beige cavernous sponge

S035 – Beige digitate sponge 1

S036 – Beige digitate sponge 2



S037 – Beige digitate sponge 3

S039 – Haplosclerid sp (365)

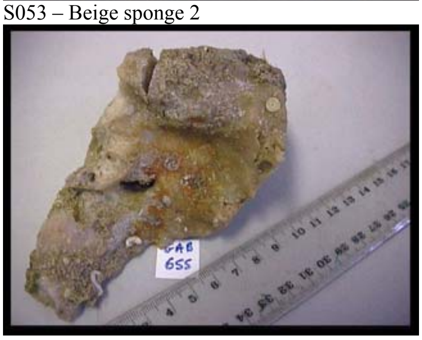
S042 – Haplosclerid sp (278)

S045 – Beige leafy sponge

S047 – *Echinoclathria leoporina*

S051 – Beige sediment sponge

S053 – Beige sponge 2



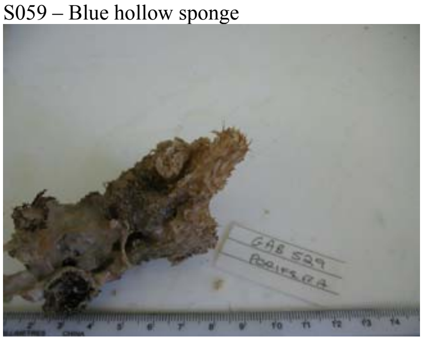
S055 – Demosponge sp (179)

S056 – Poecilosclerid sp (189)

S057 – Demosponge sp (580)

S058 – Blue digitate sponge

S059 – Blue hollow sponge

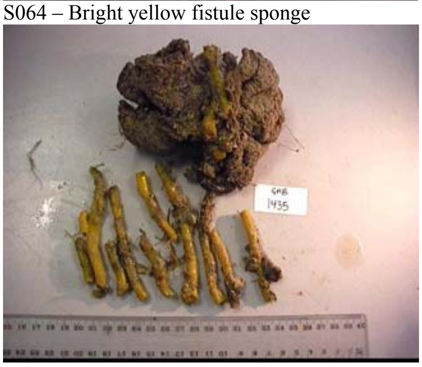


S060 – Blue oxidising sponge

S061 – Blue/grey conulose sponge

S062 – *Spheciospongia purpurea*

S064 – Bright yellow fistule sponge



S065 – Demosponge sp (600)

S066 – Verongid sp (220)

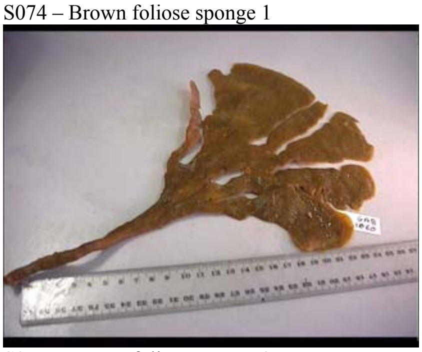
S068 – Haplosclerid sp (551)

S070 – Brown encrusting sponge

S072 – Dendroceratid sp (581)

S073 – Astrophorid sponge

S074 – Brown foliose sponge 1



S075 – Brown foliose sponge 2

S076 – Brown foliose sponge 2

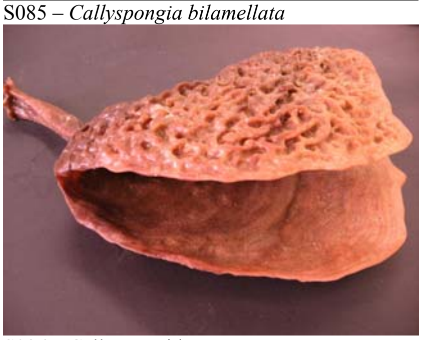
S077 – Brown hirsute sponge

S081 – Brown split-fan sponge

No photo

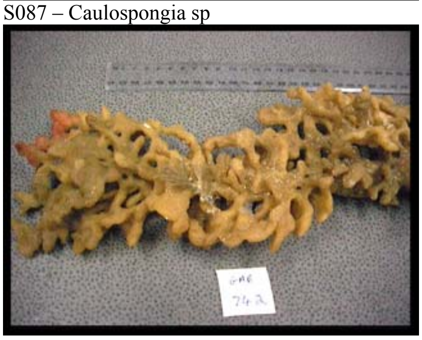
S084 – Bushy lobe sponge

S085 – *Callyspongia bilamellata*



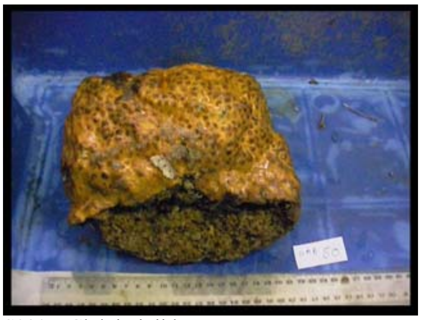
S086 – Callyspongid sponge

S087 – Caulospongia sp



S088 – Cavernous digitate sponge

S089 – *Cliona celata*



S090 – Club irciniid sponge

S093 – Dictyoceratid sp (446)

S094 – Conulose digitate sponge

S095 – Conulose sand sponge

S096 – Conulose sponge

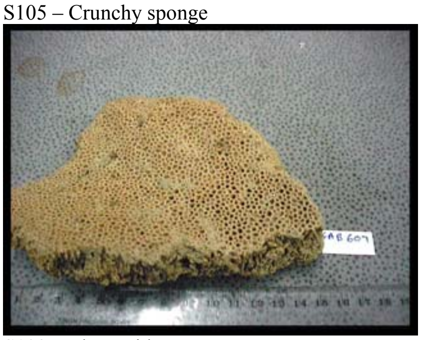
S098 – Convoluted orange sponge

S099 – Cream bumpy sponge

S103 – Axinella sp (447)

S104 – Crunchy brown sponge

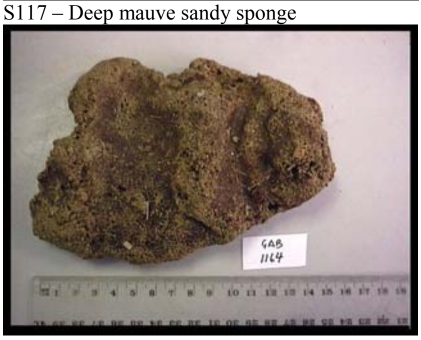
S105 – Crunchy sponge



S109 – Thorectid sp

S116 – Dark/light grey sponge

S117 – Deep mauve sandy sponge



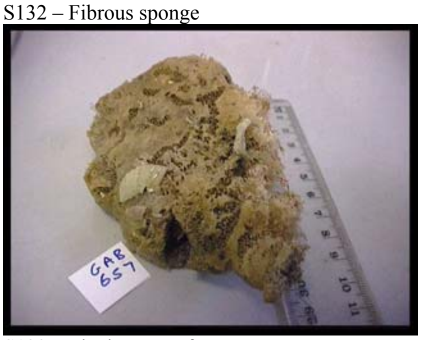
S122 – Demosponge sp (216)

S128 – Dull orange sponge

S129 – *Clathria* sp (112)

S130 – *Axinella* sp (212)

S132 – Fibrous sponge

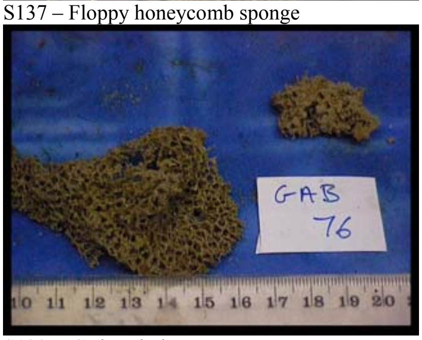


S133 – Flat brown soft

S134 – *Haliclona* sp (382)

S135 – *Cymbastela* (sp 2)

S137 – Floppy honeycomb sponge

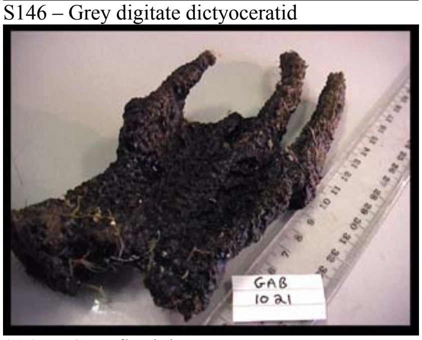


S139 – *Cribrochalina* sp

S142 – Dictyoceratid sp (526)

S144 – Greeny brown dicytoceratid

S146 – Grey digitate dictyoceratid



S147 – Grey flat-lobe sponge

S150 – Demosponge sp (279)

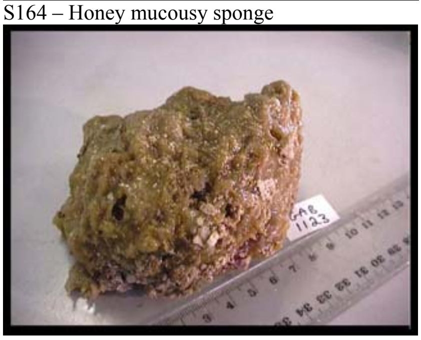
S151 – Grey pitted sponge

S153 – Dictyoceratid sp (407)

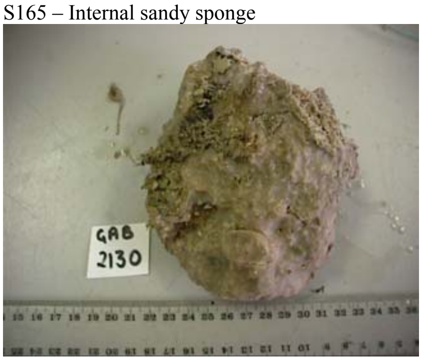
S157 – Spongiid sp (528)

S163 – Haplosclerid sponge

S164 – Honey mucousy sponge



S165 – Internal sandy sponge



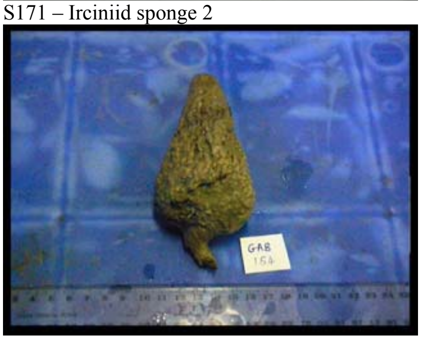
S166 – *Ircinia* sp 1

S168- Ircinia sp 3

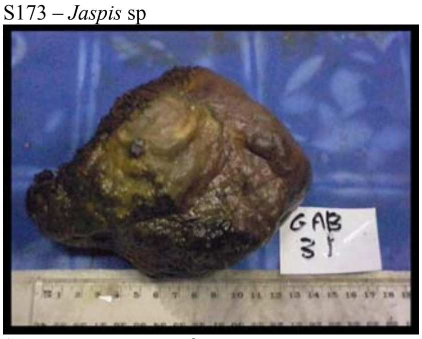
S169- *Ircinia* sp sandy

S170 – *Coscinoderma* sp (550)

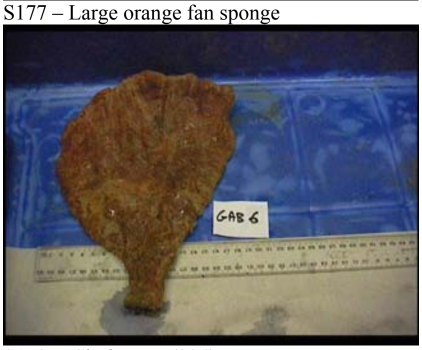
S171 – Iriciniid sponge 2



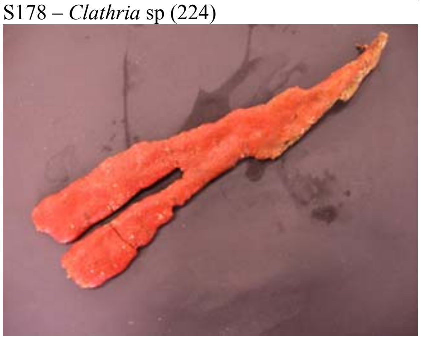
S173 – *Jaspis* sp



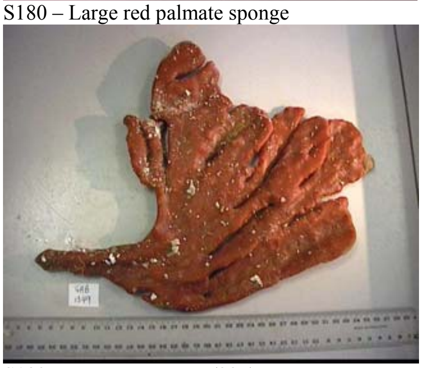
S177 – Large orange fan sponge



S178 – *Clathria* sp (224)



S180 – Large red palmate sponge



S182 – Demosponge sp (225)

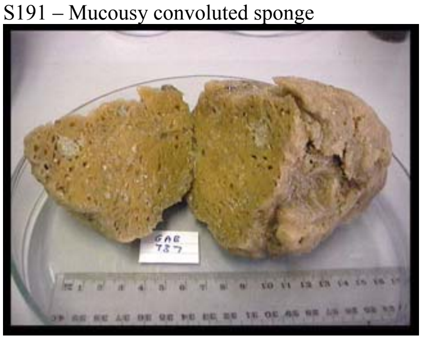
S183 – Long orange digitate sponge

S184 – Long tip conule sponge

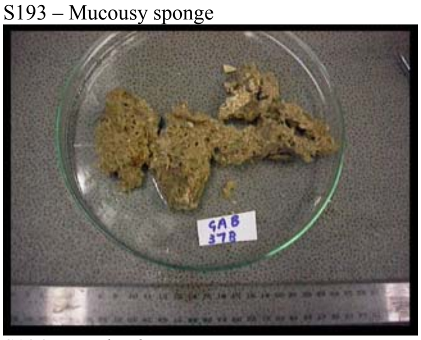
S187 – *Spheciospongia papillosa*

S188 – Mauve digitate sponge

S191 – Mucousy convoluted sponge



S193 – Mucousy sponge



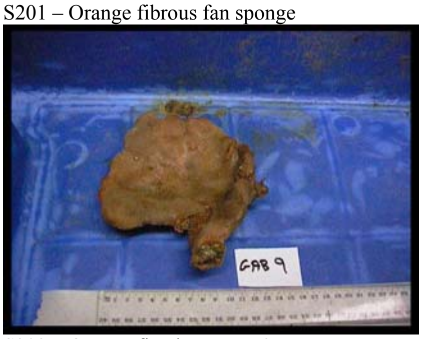
S194 – *Myrkiodermia* sp

S196 – Orange branching fan sponge

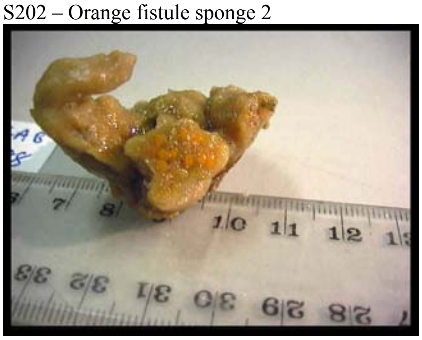
S197 – Axinella sp (214)

S199 – Orange curly fan sponge

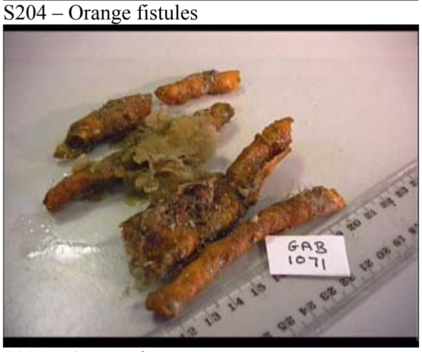
S201 – Orange fibrous fan sponge



S202 – Orange fistule sponge 2



S204 – Orange fistules



S206 – Orange furry sponge

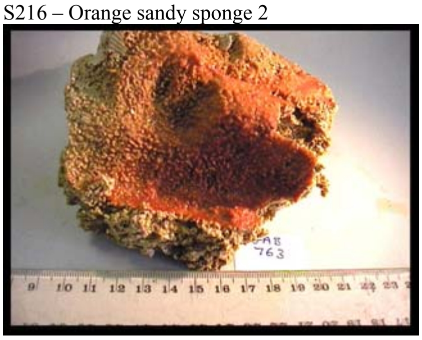
S207 – Orange haplosclerid sponge

S208 – Orange hispid fingers

S210 – Orange leaf sponge

S214 – Orange sand fibre sponge

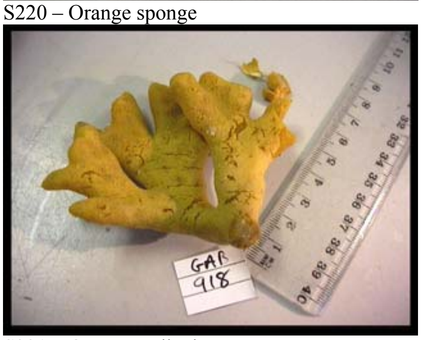
S216 – Orange sandy sponge 2



S217 – *Clathria* sp (190)

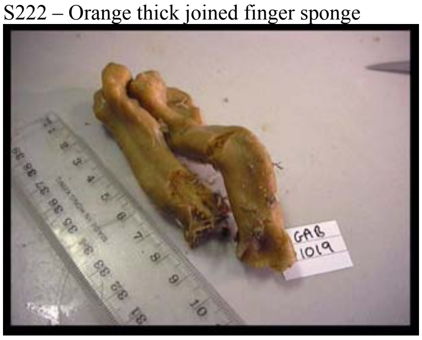
S219 – Orange spherical sponge

S220 – Orange sponge

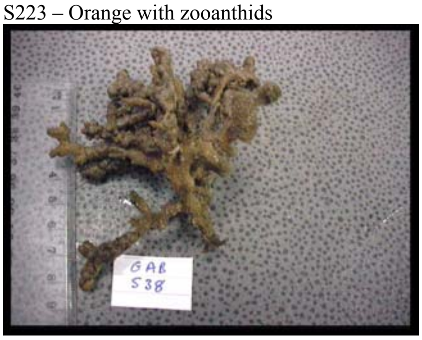


S221 – Orange stalked sponge

S222 – Orange thick joined finger sponge



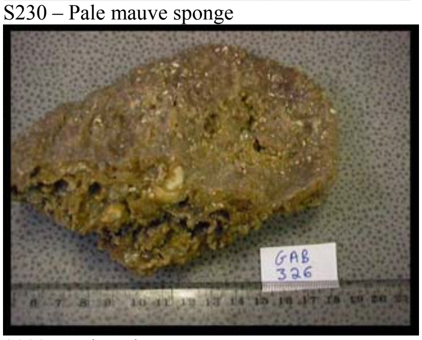
S223 – Orange with zooanthids



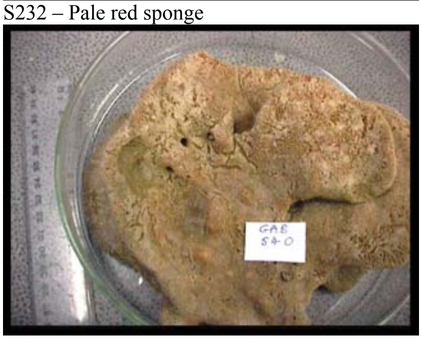
S225 – Orange zoanthid-covered sponge

No photo

S230 – Pale mauve sponge



S232 – Pale red sponge

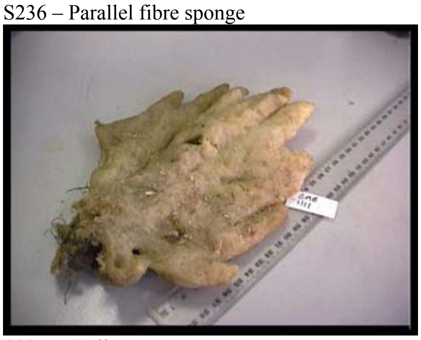


S233 – Pale split-fan sponge

No photo

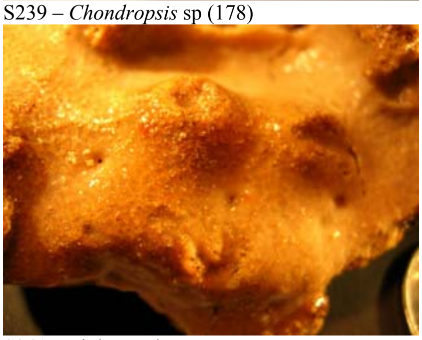
S235 – Palmate dictyoceratid

S236 – Parallel fibre sponge



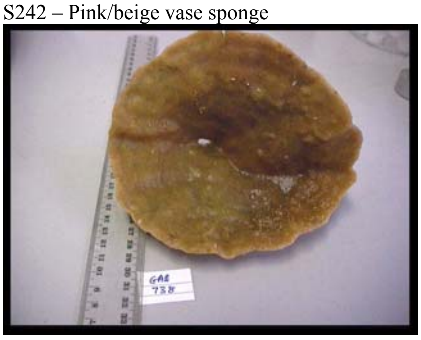
S237 – *Stelletta* sp

S239 – *Chondropsis* sp (178)

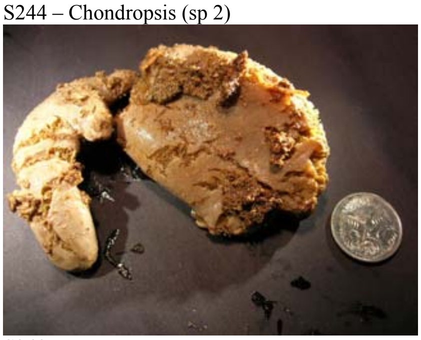


S241 – Pink conulose sponge

S242 – Pink/beige vase sponge



S244 – Chondropsis (sp 2)



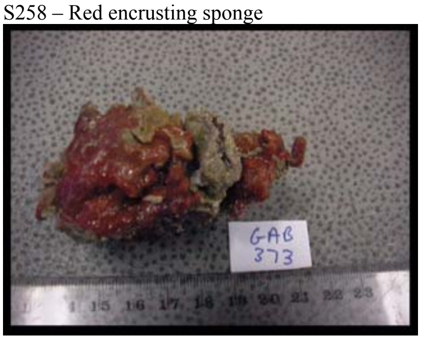
S249 – Potato sponge

No photo

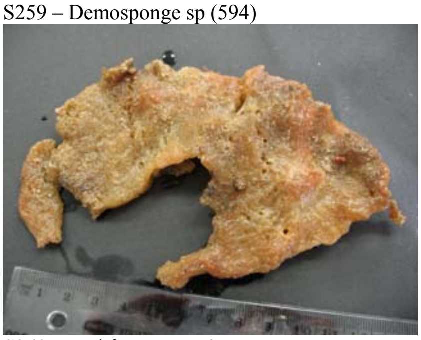
S251 – Purple dictyodendrillid

S254 – Purple raspailid

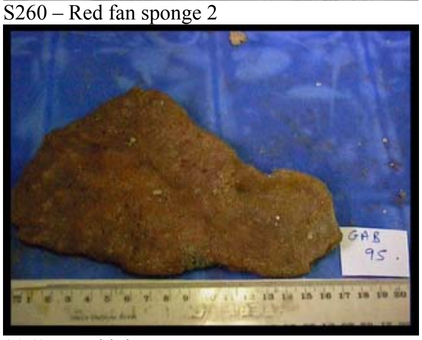
S258 – Red encrusting sponge



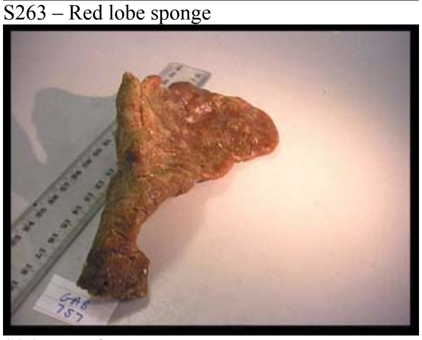
S259 – Demosponge sp (594)



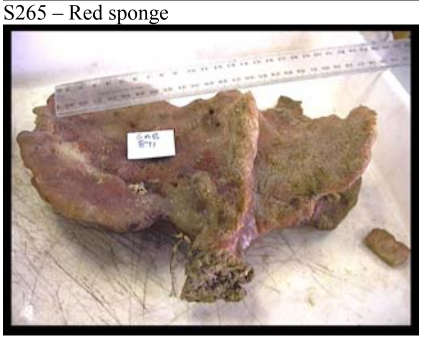
S260 – Red fan sponge 2



S263 – Red lobe sponge

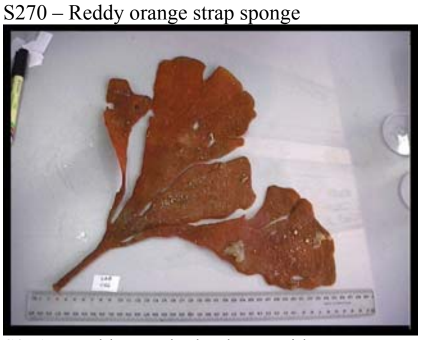


S265 – Red sponge



S267 – Demosponge sp (554)

S270 – Reddy orange strap sponge



S271 – Reddy purple dendroceratid sponge

S272 – Round sponge

S274 – Sand sponge

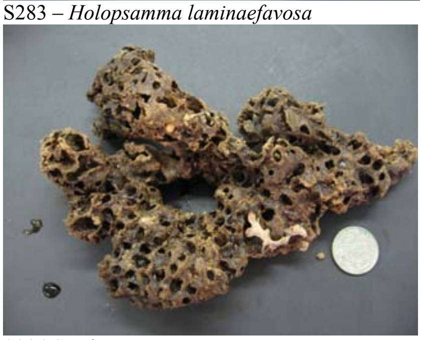
S276 – Sand sponge 2

S279 – Sandy clumps sponge

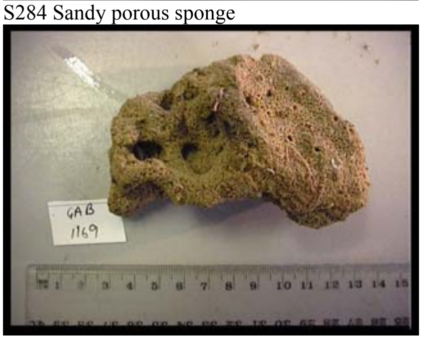
S280 – Sandy conulose sponge

S282 – Sandy haplosclerid sponge

S283 – *Holopsamma laminaefavosa*



S284 Sandy porous sponge



S286 – Sandy sponge 4

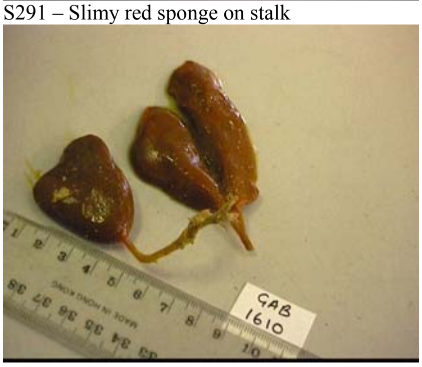
S287 – Sclerosponge

No photo

S289 – Single fistule sponge

S290 – *Siphonchalina* sp

S291 – Slimy red sponge on stalk



S293 – Small club sponge

S296 – Small orange cup

S298 – *Oceanapia* (sp 4)

S300 – Rhizaxinella sp

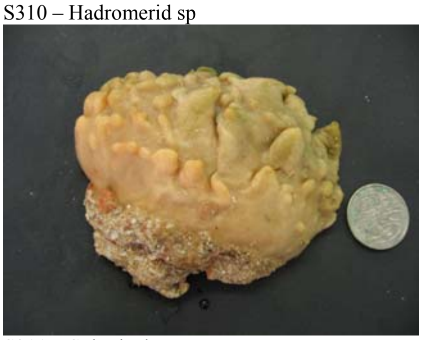
S301 – Soft beige sandy sponge

S304 Soft orange fan

S305 – Soft orange rough sponge

S306 – Soft purple sponge

S310 – Hadromerid sp



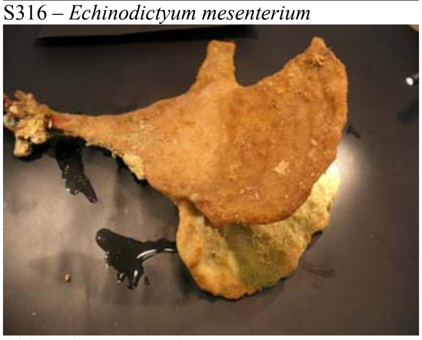
S311 – Spherical root sponge

S312 – *Oceanapia* sp 3

S313 – Spiked stalk sponge

S314 – Spiky branching sponge

S316 – *Echinodictyum mesenterium*



S317 – Sponge pen 1

S318 – Demosponge sp (100)

S321 – Stalked lobe

S322 – *Carteriospongia* sp

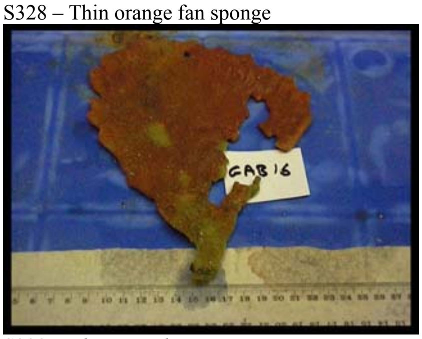
S323 - *Tetthya bergquistae*

S324 – *Tethya* sp 1

S326 – Thick yellow vase

S327 – Thin digitate sponge

S328 – Thin orange fan sponge



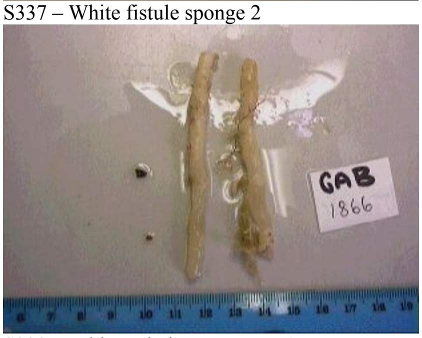
S329 – *Thorectandra* sp

S332 – *Oceanapia* (sp 1)

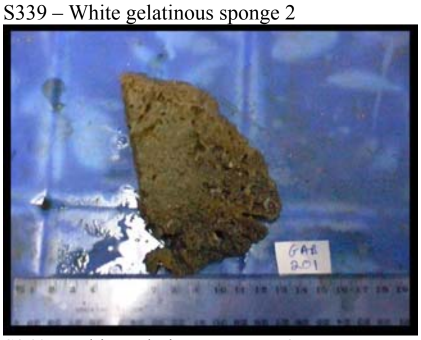
S333 – *Mycale* sp (321)


S334 – *Cribrochalina* sp (49)

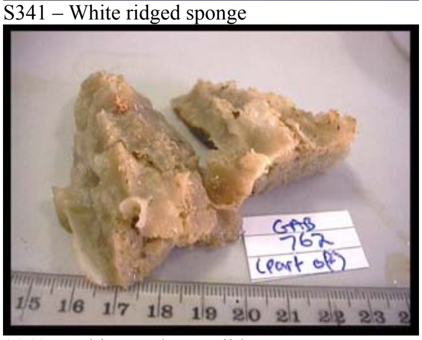

S336 Demosponge sp (199)


S337 – White fistule sponge 2


S338 – White gelatinous sponge 1


S339 – White gelatinous sponge 2


S340 – White gelatinous sponge 3


S341 – White ridged sponge


S342 – White sand spongiid


S343 – *Halichondria (Halichondria)* sp


S344 – Wiggley sand sponge


S345 – *Xenospongia patelliformis*

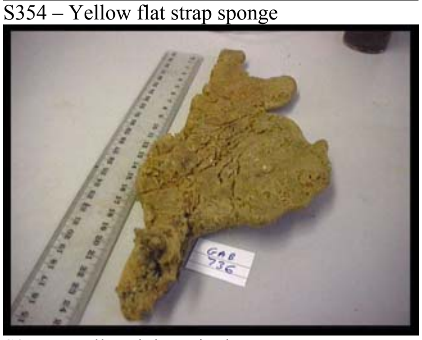

S346 – *Xenospongia* sp 2


S347 – *Xenospongia* sp 3

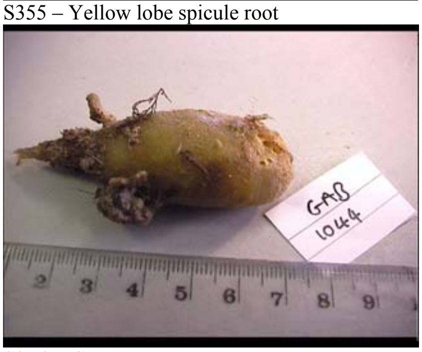

S348 – Xestospongia- like sp


S353 – Yellow fan sponge

S354 – Yellow flat strap sponge

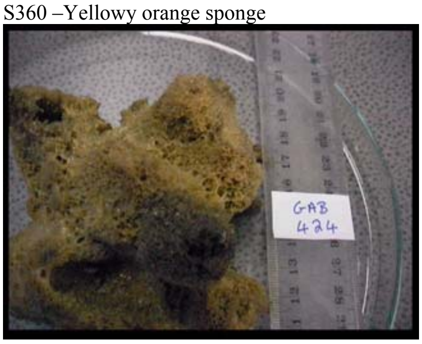


S355 – Yellow lobe spicule root

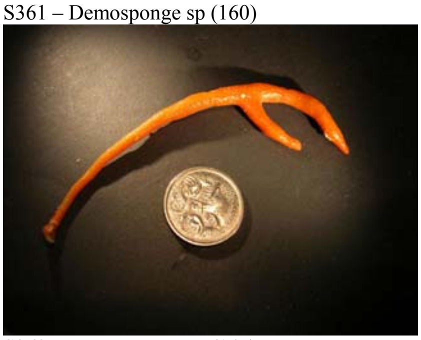


S356 – *Ceratopsion* sp

S360 –Yellowy orange sponge



S361 – Demosponge sp (160)



S362 – Demosponge sp (145)

S363 – Dictyoceratids sp (182)

S364 – Desmacid sp (18)

S365 – Calcarea (21)

S366 – Calcarea (26)

S367 – Calcarea (27)

S368 – *Axinella* sp (31)

S369 – Ircinia sp

S370 – Calcarea (54)

S371 – Calcarea (66)

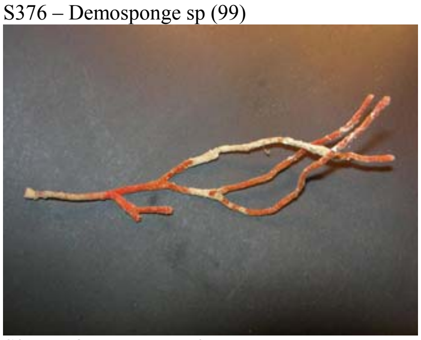
S372 – Calcarea (67)

S373 – Calcarea (78)

S374 – Calcarea (79)

S375 – Calcarea (82)

S376 – Demosponge sp (99)



S377 – *Oceanapia* sp 6

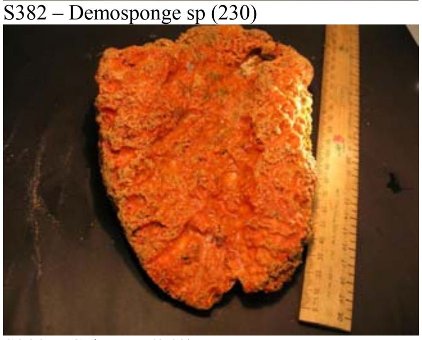
S378 – Demosponge sp (287)

S379 – Demosponge sp (215)

S380 – Demosponge sp (227)

S381 – Demosponge sp (228)

S382 – Demosponge sp (230)



S383 – Calcarea (242)

S384 – Demosponge sp (260)

S385 – *Oceanapia* sp 5

S386 – Demosponge sp (283)

S387 – Poecilosclerid sp (290)

S388 – Calcarea (325)

S389 – Demosponge sp (331)

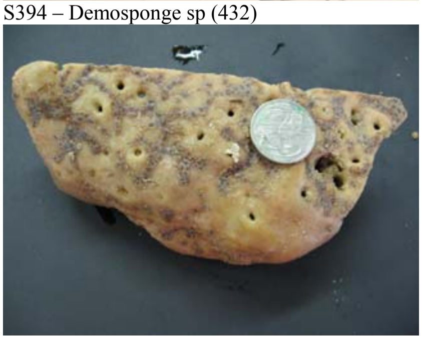
S390 – Demosponge sp (332)

S391 – *Dysidea* sp

S392 – Demosponge sp (381)

S393 – Demosponge sp (409)

S394 – Demosponge sp (432)



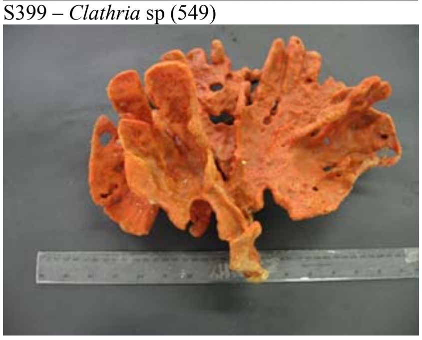
S395 – Demosponge (449)

S396 – *Sycon* sp

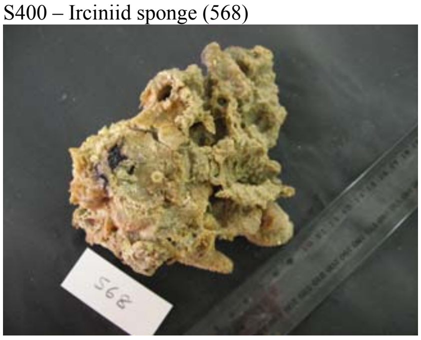
S397 – Dictyoceratid sp (521)

S398 – Halplosclerid sp (523)

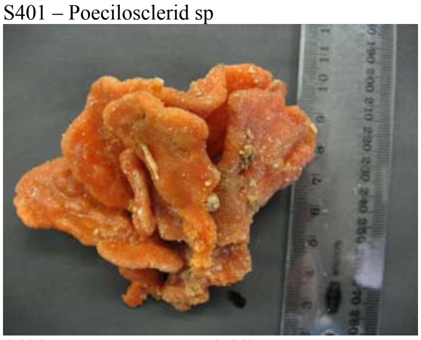
S399 – *Clathria* sp (549)



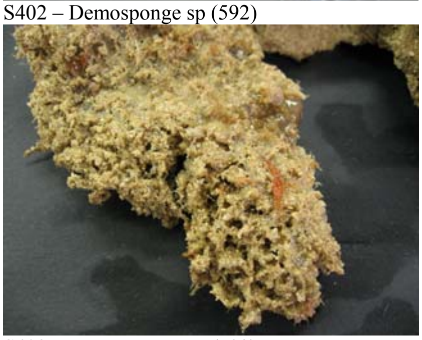
S400 – Irciniid sponge (568)



S401 – Poecilosclerid sp

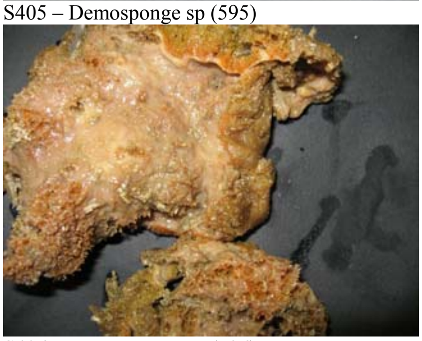


S402 – Demosponge sp (592)

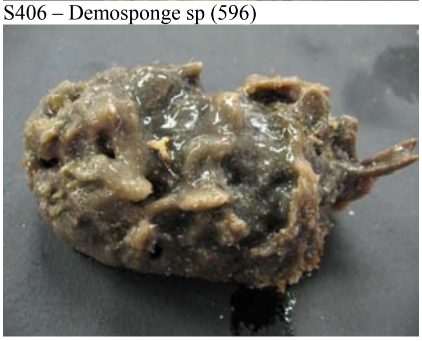


S403 – Demosponge sp (593)

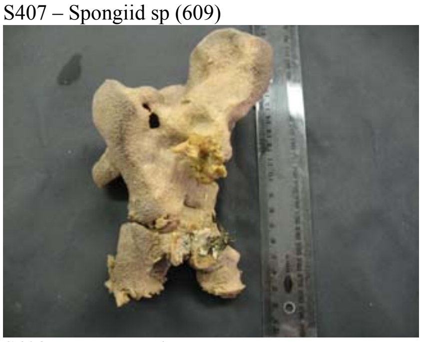
S405 – Demosponge sp (595)



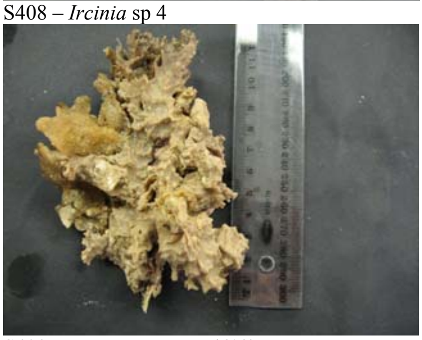
S406 – Demosponge sp (596)



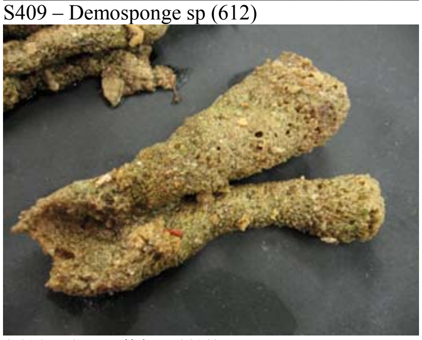
S407 – Spongiid sp (609)



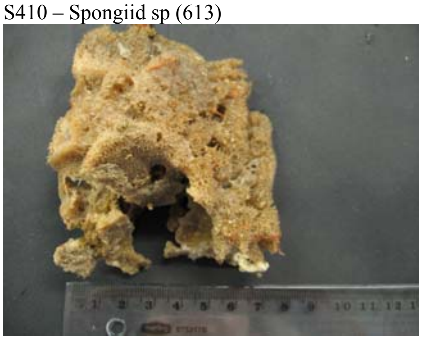
S408 – *Ircinia* sp 4



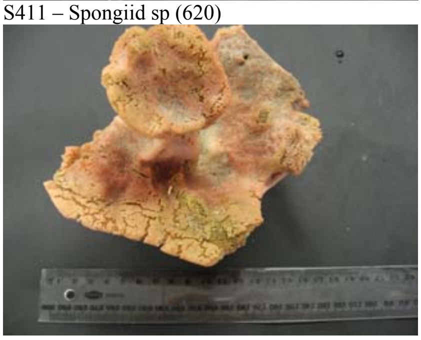
S409 – Demosponge sp (612)



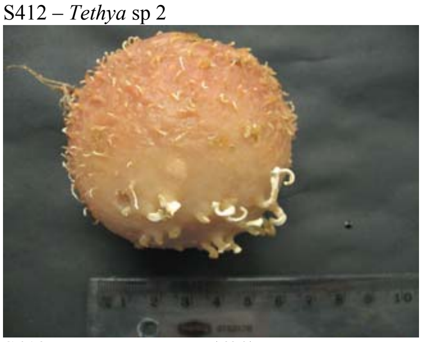
S410 – Spongiid sp (613)



S411 – Spongiid sp (620)

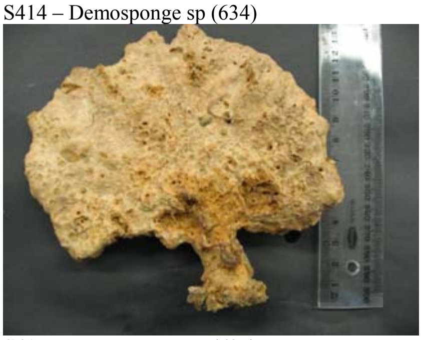


S412 – *Tethya* sp 2



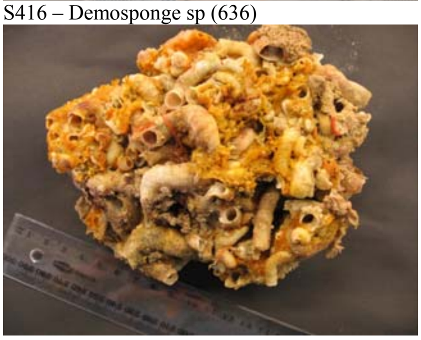
S413 – Demosponge sp (629)

S414 – Demosponge sp (634)

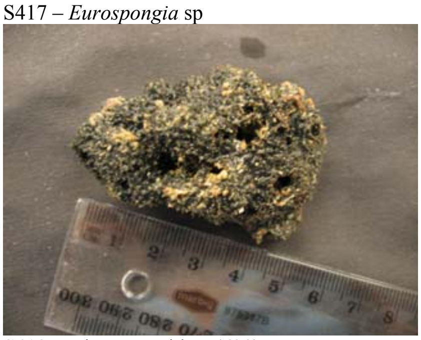


S415 – Demosponge sp (635)

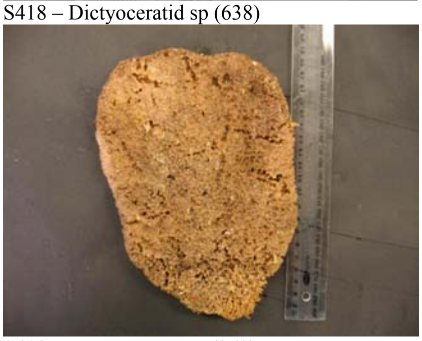
S416 – Demosponge sp (636)



S417 – *Eurospongia* sp



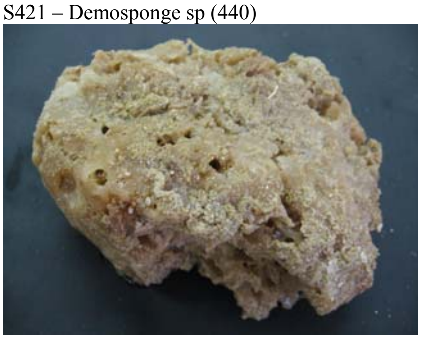
S418 – Dictyoceratid sp (638)



S419 – Demosponge sp (362)

S420 – Demosponge sp (415)

S421 – Demosponge sp (440)



S422 – Calcarea (133)

S423 – Dictyoceratid sp (55)

S424 – Hadromerid sp 2

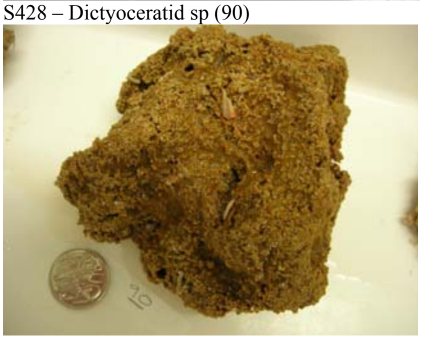
S425 – Microcionid sp (98)

No photo

S426 – Halichondrid sponge (134)

S427 – Haplosclerid sp (222)

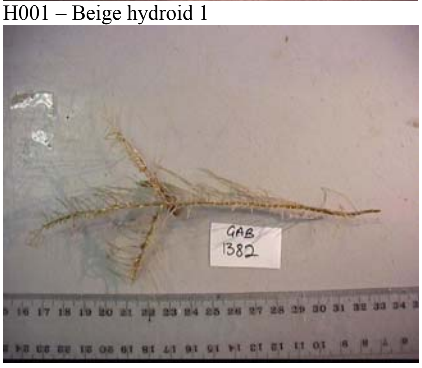
S428 – Dictyoceratid sp (90)



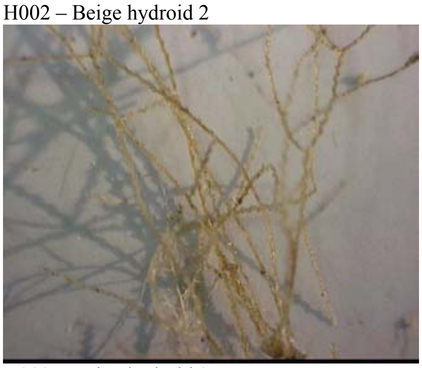
S429 – Verongid sp

S430 – Demosponge sp (60)

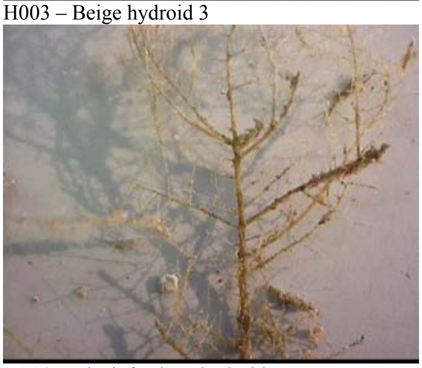
H001 – Beige hydroid 1



H002 – Beige hydroid 2



H003 – Beige hydroid 3

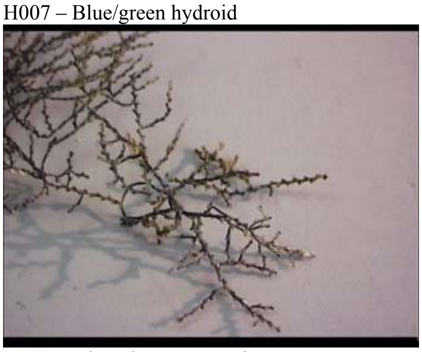


H004 – Black feathers hydroid

H005 – Fillellum sp

H006 – Black-fine branched stalked cups

H007 – Blue/green hydroid



H008 – *Plumularia procumbens*

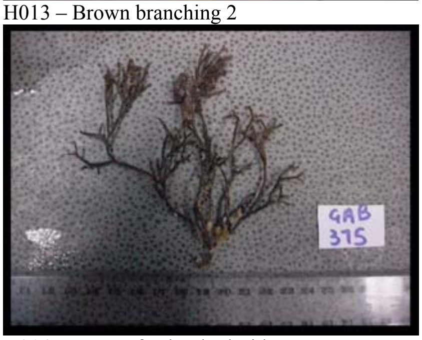
H009 – Branched hydroid 2

H010 – Branched hydroid 3

H011 – *Aglaophenia* sp (123)

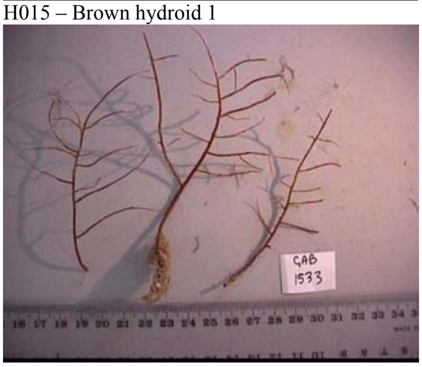
H012 – *Setularia* sp (132)

H013 – Brown branching 2



H014 – Brown feather hydroid

H015 – Brown hydroid 1



H016 – Brown hydroid 2

H017 – Clathrozoon wilsoni

H018 – Feather hydroid 1

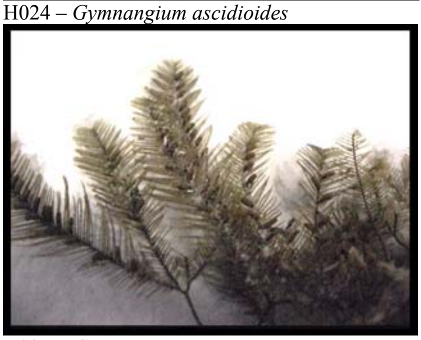
H019 – Feather hydroid 2

H020 – *Sertularia macrocarpa* (394)

H021 – *Haplopteris glutinosa*

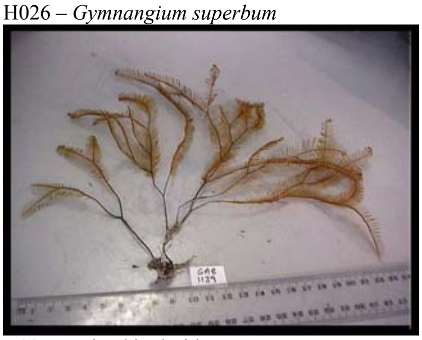
H023 – Grey feather hydroid

H024 – *Gymnangium ascidioides*



H025 – *Gymnangium* sp

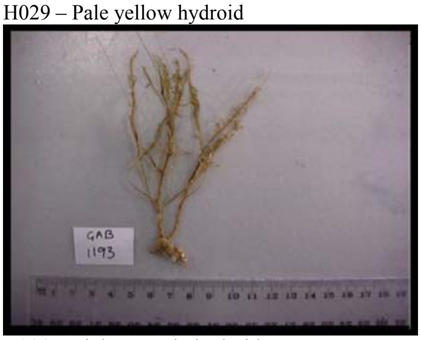
H026 – *Gymnangium superbum*



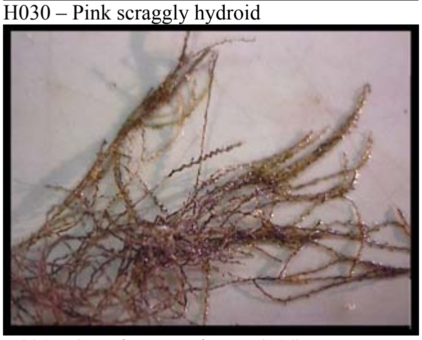
H027 – Mixed hydroid spp

No photo

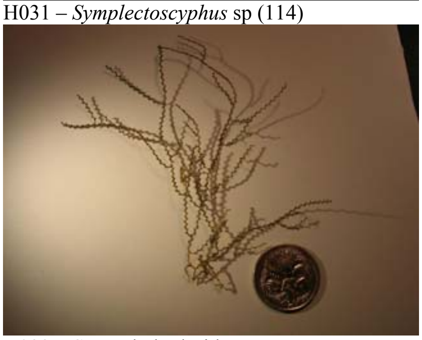
H029 – Pale yellow hydroid



H030 – Pink scraggly hydroid



H031 – *Symplectoscyphus* sp (114)



H032 – Scraggly hydroid

H033 – Small feather hydroid

H034 – *Aglaophenia* sp (530)

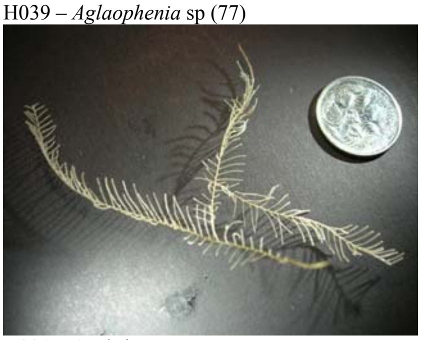
H035 – *Obelia australis*

H036 – Solanderia fusca

H037 – Campanulariid sp (109)

H038 – *Aglaophenia divaricata*

H039 – *Aglaophenia* sp (77)



V001 – Acabria sp

V002 – Alcyonium etheridgei

No photo

V003 – *Annisis sprightly*

V005 – Black soft coral

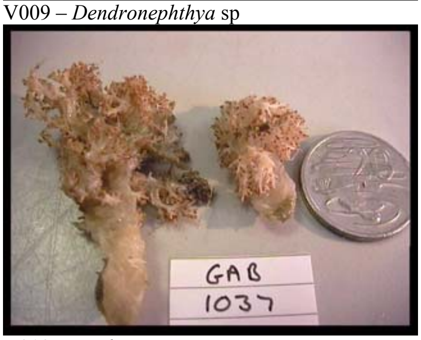
V006 – Capnella arbuscula

No photo

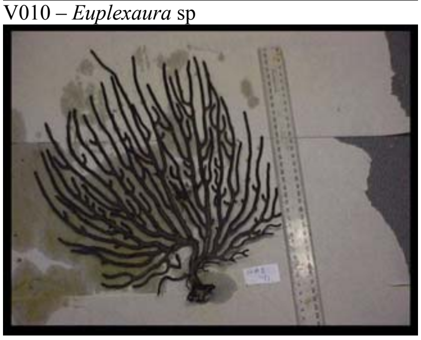
V007 – Cerianthid sp 1

V008 – *Culicia tenella*

V009 – *Dendronephthya* sp



V010 – *Euplexaura* sp



V011 – Isidid gorgonian 1

V013 – Mixed cnidaria spp

No photo

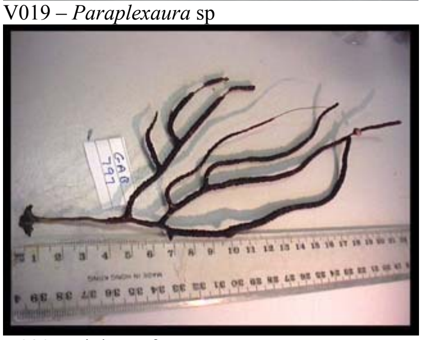
V014 – *Mopsea encrinula*

V015 – *Mopsella klunzingeri*

V017 – *Oparinisis* n. sp

V018 – *Euplexaura* sp 2

V019 – *Paraplexaura* sp



V020 – Pink sea fan

No photo

V021 – *Pseudoplumarella thetis*

V022 – *Pteronisis incerata*

V024 – Sea pen

V025 – *Solenocaulon* sp

V026 – *Telesto* sp

V027 – Xeniid sp

V028 – *Zignisis repens*

V029 – Nephtheid sp


V032 – *Carijoa* sp (395)


N001 – Nemertea worm


P001 – *Aphrodite australis*


P002 – Bristle worm


P003 – *Eunice* sp


P004 – Fireworm

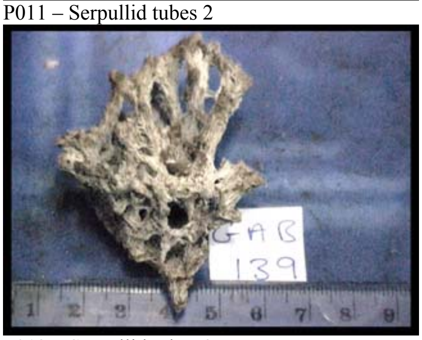

P005 – Onuphid worm

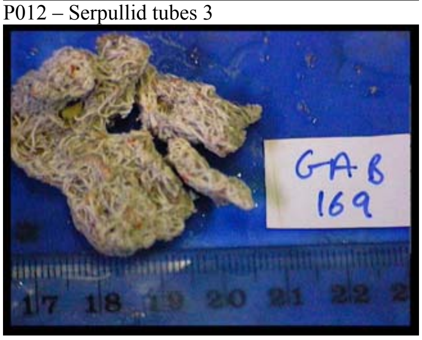

P007 – Polychaete tube mix

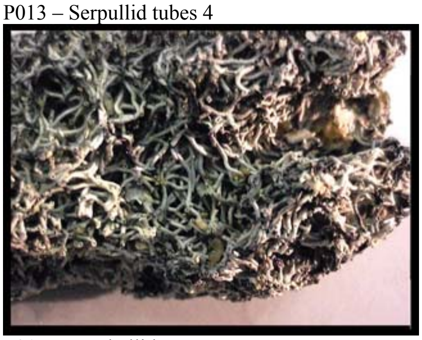
No photo

P008 – Scale worm 1


P010 – Serpullid tubes 1


P011 – Serpullid tubes 2


P012 – Serpullid tubes 3


P013 – Serpullid tubes 4


P015 – Terebellid sp


P016 – *Pomatoceros taeniata*

P017 – Sigalionid sp

P018 – *Prionospio* sp

W001 – *Phascolosoma annulatum*

C001 – *Actea calculosa*

C002 – *Carcinoplax meridionalis*

C004 – Carid shrimp 2

C005 – Carid shrimp 3

C006 – Dark hairy crab

C007 – *Dromidiopsis globosa*

C008 – *Eplumula australiensis*

C009 – Galatheid sp 1

C011 – Hermit crab 1

C012 – Hermit crab 2

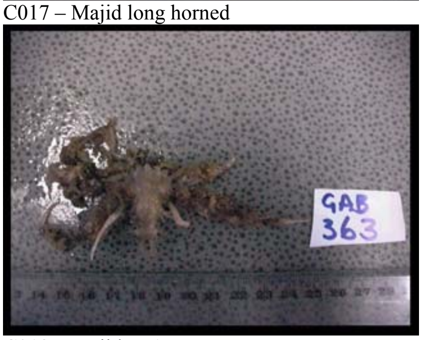
C013 – *Ibacus novemdentatus*

C014 – *Ibacus peronii*

C015 – *Leptopmithrax* sp

C016 – *Leptomithrax sternocostulatus*

C017 – Majid long horned

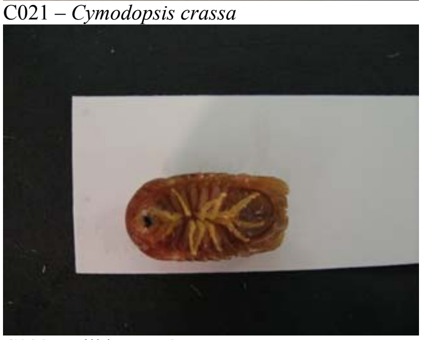


C018 – Majid sp 1

C019 – Prawn

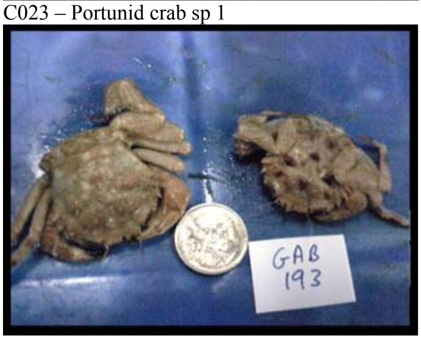
C020 – *Ovalipes australiensis*

C021 – *Cymodopsis crassa*



C022 – Pill bug sp 2

C023 – Portunid crab sp 1

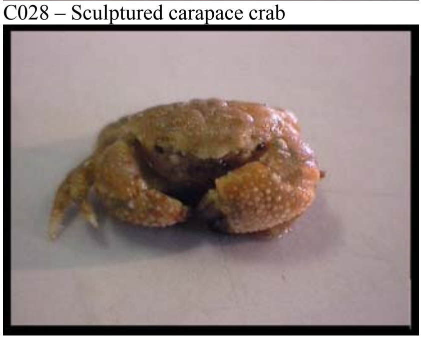


C024 – Portunid sp

C025 – *Echinolatus poorei*

C026 – *Prismatopus spatulifer*

C028 – Sculptured carapace crab



C030 – *Scyllarus* sp 2

C031 – *Anchisquilloides mcneilli*

C032 – *Achaeus* sp

C034 – Pilumnus tomentosus

C035 – Pycnogonid

C036 - Carid shrimp 4

C037 – Carid shrimp 5

C038 – Carid shrimp 6

C039 – *Cymodopsis* sp

C040 – Dromid – sp 1

C041 – Galatheid sp

C042 – *Halicarcinus ovatus*

C043 – *Leptomithrax* sp 2 9515)

C044 – *Munida* sp

C045 – Dromid sp 2

M001 – Almond ark shell

M002 – *Atrina tasmanica*

M004 – *Glycymeris grayana*

M005 – *Brechites* sp

M006 – *Chlamys asperrimus*

M007 – Flat cockle

M008 – *Glycymeris* sp 1

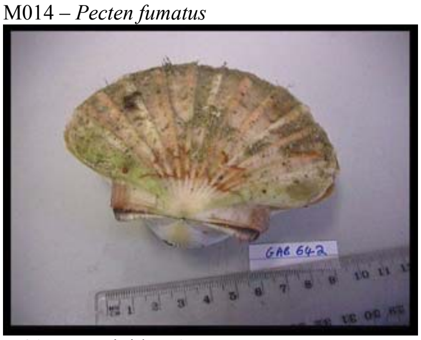
M009 – Glycymeris sp 2

M010 – *Lima lima*

M011 – *Malleus meridianus*

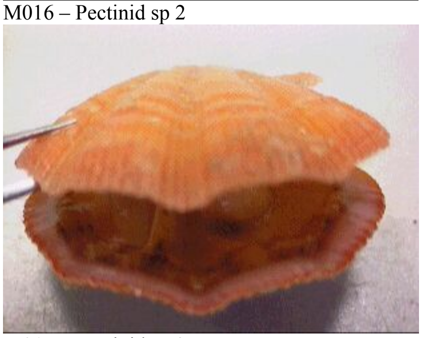
M012 – Mussel

M014 – *Pecten fumatus*



M015 – Pectinid sp 1

M016 – Pectinid sp 2



M017 – Pectinid sp 3

M018 – Razor clam

M019 – Sandy cockle

M020 – Spondilid sp

M022 – Thorny oyster

M024 – *Octopus ?berrima*

M025 – Octopus sp juv

M026 – *Sepia apama*

M028 – Sepioloidea lineolate

M029 – Spotted octopus

M030 – *Armina* sp

M031 – *Ceratosoma brevicaudatum*

M032 – *Ericusa papillosa*

M033 – *Fusinus novaehollandiae*

M034 – Helmet shell

M035 – *Melo miltonis*

M036 – Mitre shell

M037 – *Neodoris chrysoderma*

M039 – Screw shells

M040 – Sea slug

M041 – *Crepidula aculeata*

M042 – Turban shell

M043 – Volute shell

M044 – *Pterynotus* sp

M045 – *Anomia* (trigonopsis)

M046 – Cavolina sp (68)

M047 – Venerid sp

M048 – Bivalve

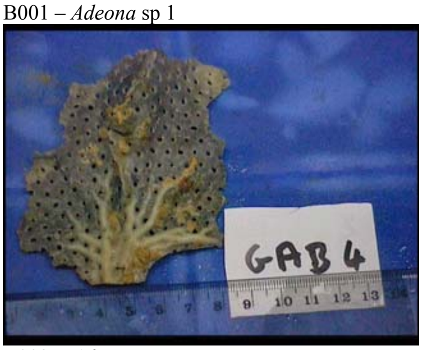
M049 – Oyster

M050 – Philinid sp

M051 – *Nannamoria guntheri*

L001 – Brachiopod

B001 – *Adeona* sp 1

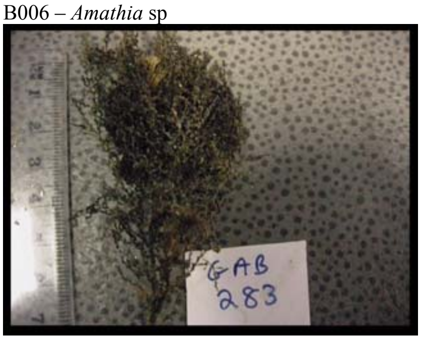


B002 – *Adeona* sp

B004 – Adeona grisea

B005 – Alternate facing zooid pairs bryozoan

B006 – *Amathia* sp



B007 – *Amathia tortuosa*

B008 – *Orthoscuticella lorica*

B009 – Beige calcareous branch

B010 – Bryozoan sp (19)

B011 – Bryozoan sp (12)

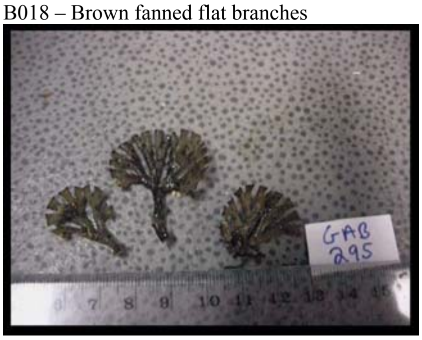
B013 – Brown bushy bryozoan

B014 – Brown calcareous bryozoan

B016 – Brown encrusting bryozoan 1

B017 – Brown encrusting bryozoan 2

B018 – Brown fanned flat branches



B019 – *Bugularia dissimilis*

B020 – *Bugularia* sp

B021 – Bryozoan sp (3)

B022 – Bryozoan (148)

B023 – Calcareous with vanes

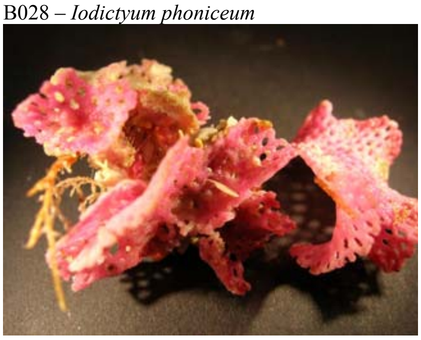
B024 – *Canda* sp

B025 – *Cellaria* sp 1

B026 – Curly busy bryozoan 1

B027 – Curly bushy bryozoan 2

B028 – *Iodictyum phoniceum*



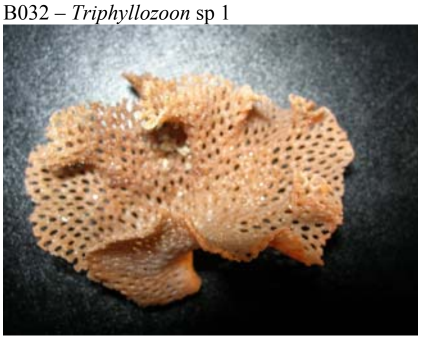
B029 – *Triphyllozoon* sp 2 (185)

B030 – Fenestrate bryozoan 3

No photo

B031 – Fenestrate bryozoan 4

B032 – *Triphyllozoon* sp 1



B033 – Flat branching orange bryozoan

B034 – Flat brown branched bryozoan

B035 – Flat brown branches

B036 – Flat calcareous

B037 – Four-branch bushy bryo

B038 – Green flake bryozoan

B039 – Green flake bryozoan 2

B040 – *Steginoporella* sp 2

B041 – Knobbed branch bryozoan

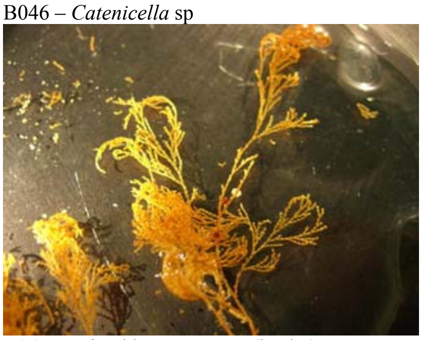
B042 – Bryozoan sp (187)

B043 – Leafy beige bryozoan

B044 – Light pink curly

B045 – *Lunularia capulus*

B046 – *Catenicella* sp

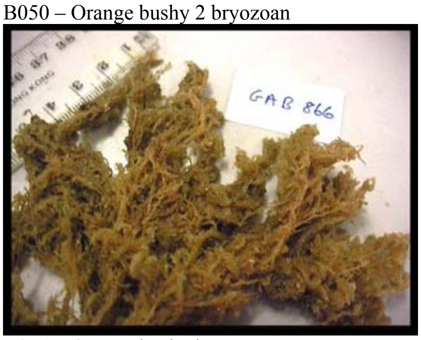


B047 – Mixed bryozoan spp (bushy)

No photo

B049 – Orange bryozoan

B050 – Orange bushy 2 bryozoan



B051 – Orange bushy bryozoan

B052 – Orange coralline

B053 – Orange cube bryozoan

B054 – Orange flake bryozoan

B055 – *Bugula* sp 1

B056 – Orange plate bryozoan

B057 – Bryozoan sp (117)

B058 – *Orthoscuticella* sp 1

B059 – *Orthoscuticella* sp 10

B060 – *Orthoscuticella* sp 11

B061 – *Orthoscuticella* sp 2

B062 – *Orthoscuticella* sp (139)

B063 – *Orthoscuticella* sp 4

B064 – *Orthoscuticella* sp 5

B065 – *Orthoscuticella* sp 6

No photo

B066 – *Cornuticella* sp (392)

B067 – *Orthoscuticella* sp 8

B068 – *Orthoscuticella* sp (206)

B069 – Pale green curly bryozoan

B070 – Pale orange branching bryozoan

B071 – Pink fenestrate bryozoan 1

No photo

B072 – Pink fenestrate bryozoan 2

No photo

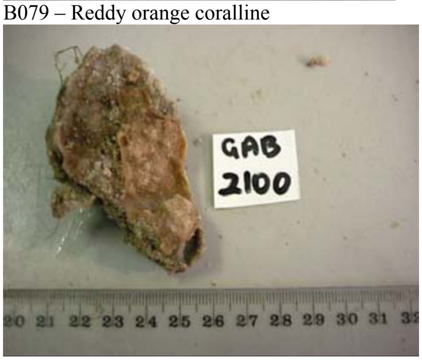
B073 – Pink fenestrate bryozoan 3

B075 – Emma triangular

B076 – Pink/cream branching bryozoan

B078 – Red perforated zooids

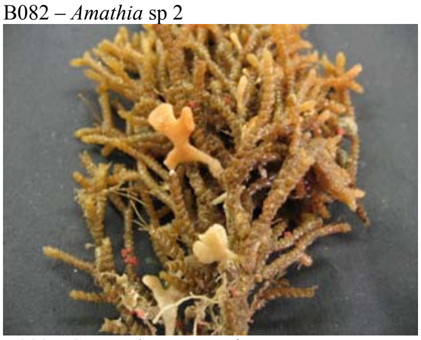
B079 – Reddy orange coralline



B080 – Small white branching bryozoan

B081 – *Bugula* sp 2

B082 – *Amathia* sp 2



B083 – Sponge/Bryozoa mix

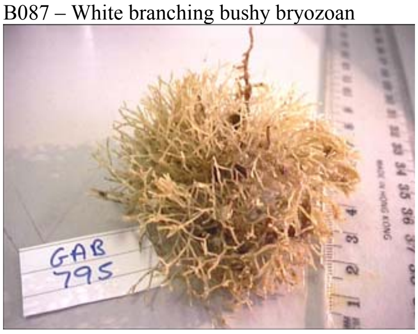
No photo

B084 – Striated bushy bryozoan

No photo

B086 – Thin flat branching brown bryozoan

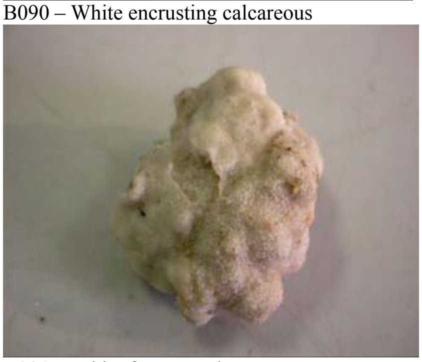
B087 – White branching bushy bryozoan



B088 – White bushy bryozoan

B089 – White calcareous dome

B090 – White encrusting calcareous

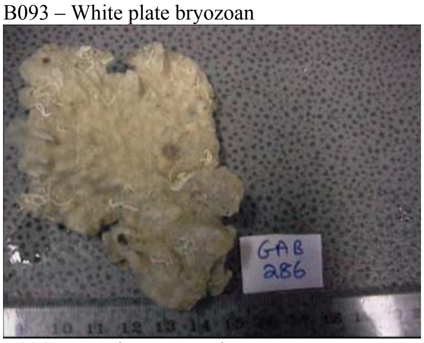


B091 – White fenestrate bryozoan

No photo

B092 – White jointed bryozoan

B093 – White plate bryozoan



B094 – *Lunularia repanda*

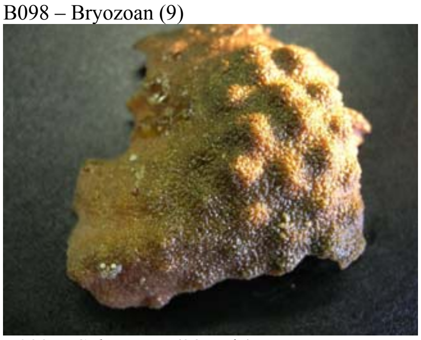
B095 – Bryozoan (162)

B096 – Bryozoan (168, calc)

No photo

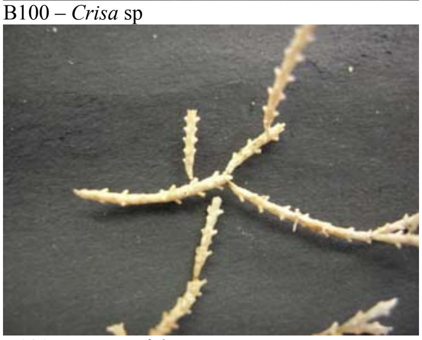
B097 – Bryozoan (186, calc)

B098 – Bryozoan (9)



B099 – *Caberea* sp (28, calc)

B100 – *Crisa* sp



B101 – *Honera foliacea*

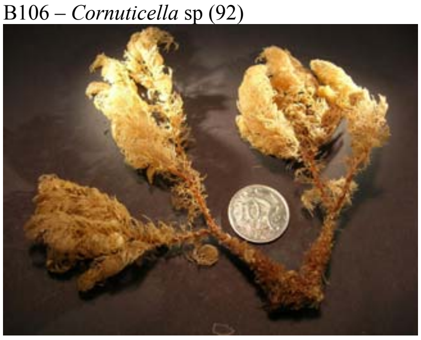
B102 – *Steginoporella* sp 1

B104 – *Triphyllozoon* sp 3

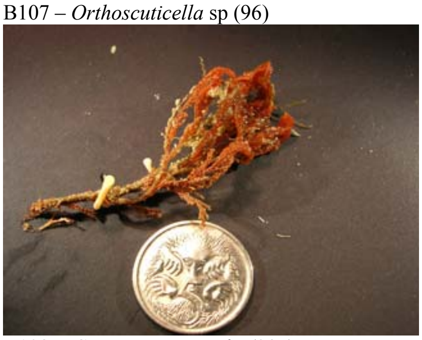
No photo

B105 – *Orthoscuticella amphora*

B106 – *Cornuticella* sp (92)



B107 – *Orthoscuticella* sp (96)



B108 – *Cornucopia grandis* (285)

E001 – *Astropecten pectinatus*

E002 – *Astropecten preissei*

E003 – *Astropecten vappa*

E005 – *Coscinasterias* sp

E007 – *Echinaster decanus*

No photo

E008 – *Echinaster glomeratus*

E009 – *Luidia australiae*

E010 – *Nectria wilsoni*

E011 – *Paranepanthia grandis*

E012 – *Pentagonaster dubeni*

E013 – *Plectaster decanus*

E014 – Small spined asteroid

E016 – Wide mouthed asteroid

E017 – Yellow asteroid

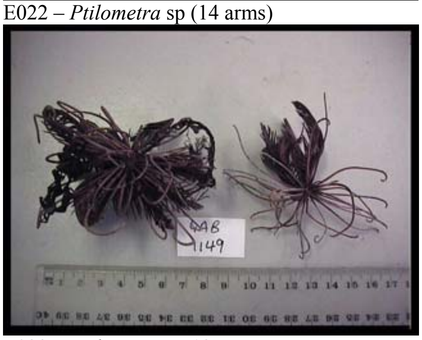
E018 – *Antedon* sp.

E019 – *Ptilometra australis*

E020 – *Ptilometra macronema*

E021 – *Ptilometra* sp

E022 – *Ptilometra* sp (14 arms)



E023 – *Ptilometra* sp 12 arms

No photo

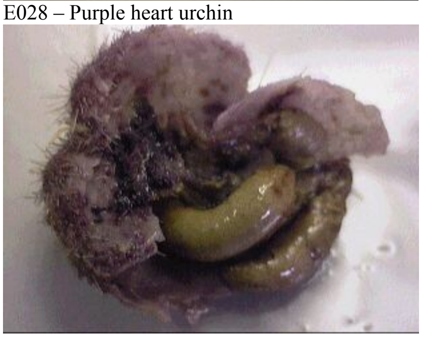
E024 – *Centrostephanus* sp

E025 – *Goniocidaris tubaria*

E026 – Mouse urchin

E027 – *Peronella peronii*

E028 – Purple heart urchin



E029 – Echinoid sp (281)

E030 – Tiny urchin 2

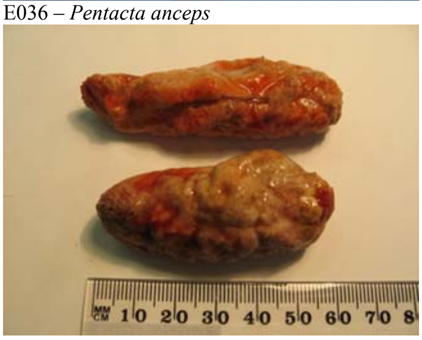
E031 – Urchin

E032 – Echinoid sp (418)

E033 – *Ceto cuvieria*

E035 – *Holothuria hartmeyeri*

E036 – *Pentacta anceps*

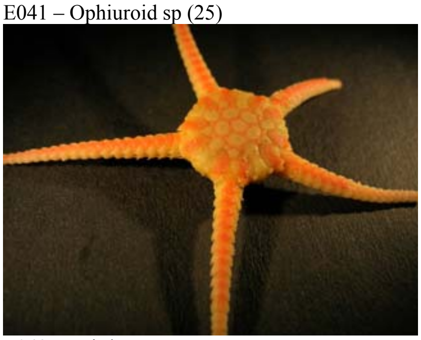


E037 – *Pentacta crassa*

E039 – Strawberry-surface holothurian

E040 – *Astroboa ernae*

E041 – Ophiuroid sp (25)



E042 – Brittle star

E044 – Mixed brittlestar spp

E045 – *Ophiocrossota multispina*

E046 – *Ophiothrix spongicola*

E047 – Orange basket star

E049 – Pink hairy brittle star

E050 – Ridged brittle star

No photo

E051 – Ophiuroid sp (564)

E052 – *Ophiomyxa australis*

E053 – *Ophionereis schayeri*

A001 – *Aplidium petrosum*

A002 – Ascidian (32)

A003 – Black jelly ascidian

A004 – Black sandy sea squirt

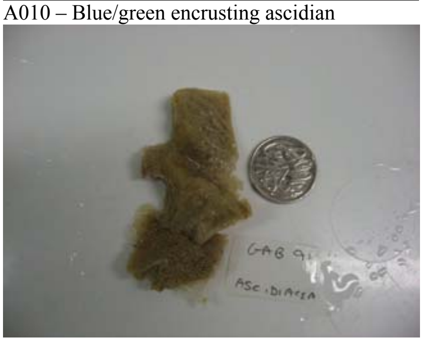
A005 – Sea squirt (619)

A006 – Ascidian (202)

A008 – Blue tinged ascidian

A009 – Blue translucent ascidian

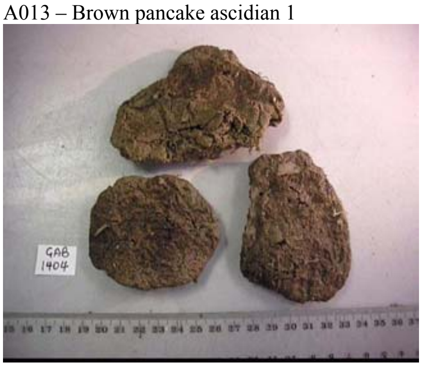
A010 – Blue/green encrusting ascidian



A011 - Bluish colonial ascidian

A012 – Brown hard dome ascidian

A013 – Brown pancake ascidian 1



A014 – Brown pancake ascidian 2

A015 – Brown pitted ascidian

A016 – Brown sandy ascidian

A017 – Brown sea squirt

A018 – Colonial stalks ascidian

A019 – Didemnid (328)

A020 – Cream sandy ascidian

A021 – Cream translucent ascidian

A022 – Cream/pink didemnid ascidian

A023 – Didemnid (402)

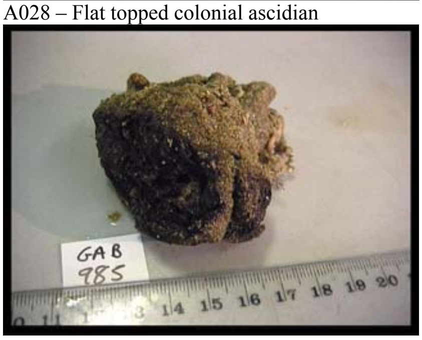
A024 – Dome ascidian

A025 – Dome ascidian, sculptured surface

A026 – Ascidian

A027 – Flat sandy sea squirt

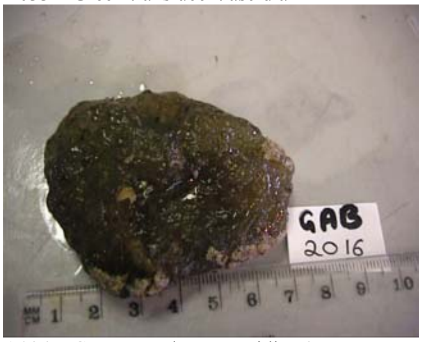
A028 – Flat topped colonial ascidian



A031 – Green crater ascidian

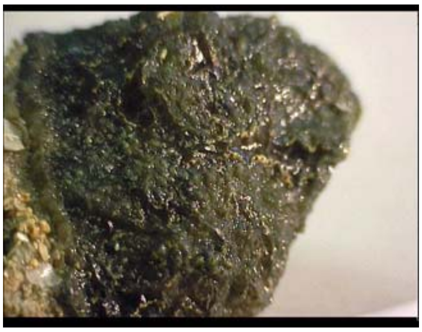
A032 – Green sandy ascidian

A033 – Green translucent ascidian 1



A034 – Green translucent ascidian 2

A035 – Green translucent dome ascidian



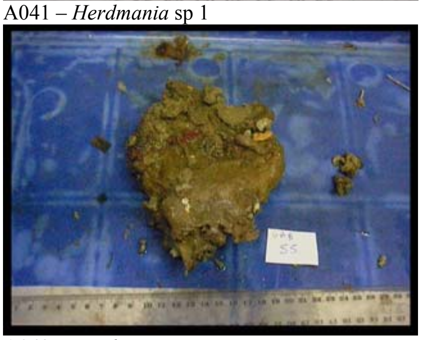
A037 – Grey sandy ascidian

A038 – Grey stalked sea squirt

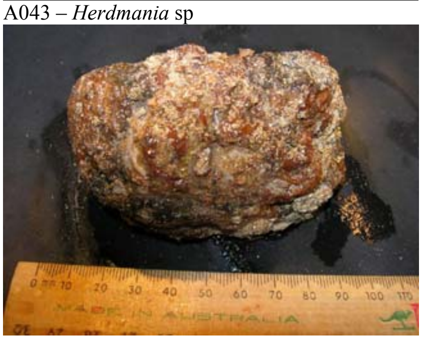
No photo

A039 – Grey-beige sandy ascidian

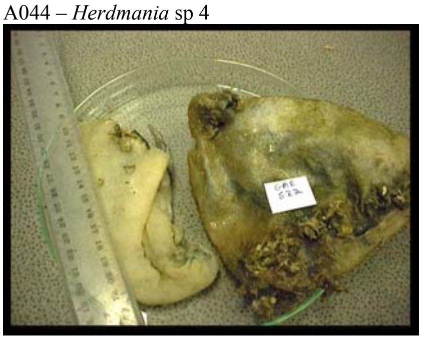
A041 – *Herdmania* sp 1



A043 – *Herdmania* sp

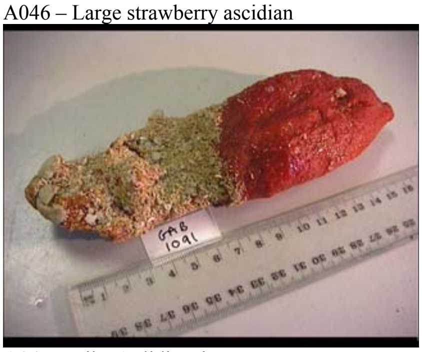


A044 – *Herdmania* sp 4



A045 – Large blue dome ascidian

A046 – Large strawberry ascidian



A047 – Like Aplidiopsis

A048 – Marble ascidian

A049 – Ascidian (172)

No photo

A050 – Massive sandy colonial ascidian

No photo

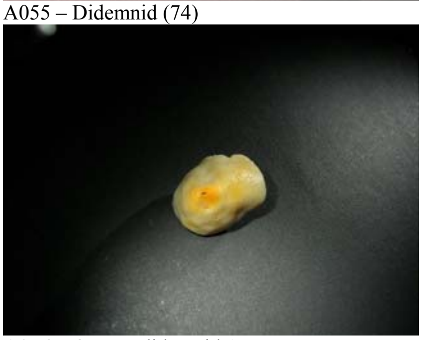
A051 – Mixed ascidian spp

No photo

A053 – Monniotus australis

A054 – Ascidian (62)

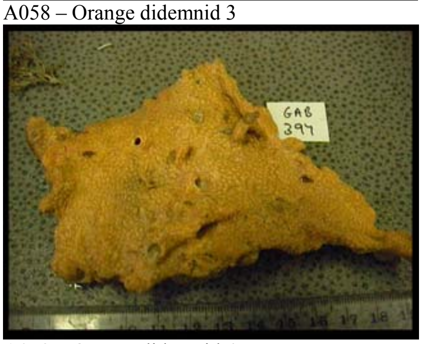
A055 – Didemnid (74)



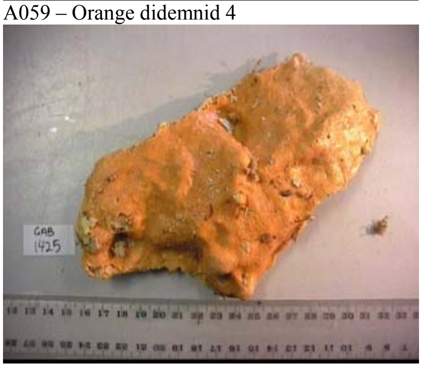
A056 – Orange didemnid 1

A057 – Orange didemnid 2

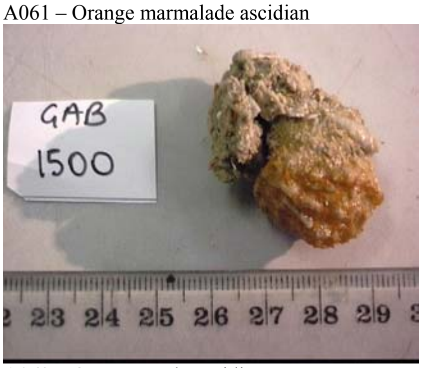
A058 – Orange didemnid 3



A059 – Orange didemnid 4



A061 – Orange marmalade ascidian

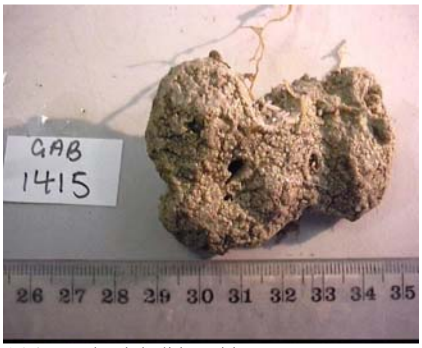


A062 – Orange sandy ascidian

A063 – Orange sandy solitary

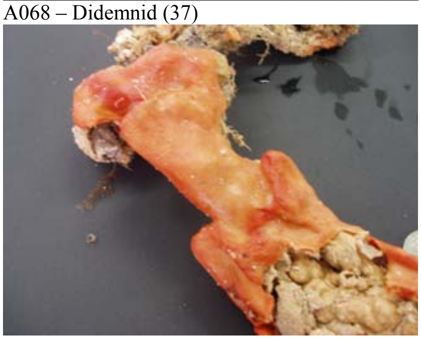
A064 – Orange sea squirt

A066 – Ornate-surfaced ascidian



A067 – pale pink didemnid

A068 – Didemnid (37)



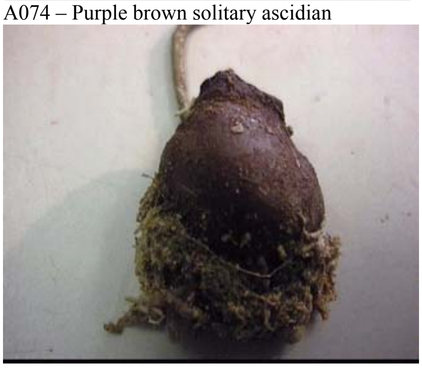
A069 – Pink colonial ascidian

A070 – Pink didemnid

A071 – Pink stalked didemnid

No photo

A074 – Purple brown solitary ascidian



A075 – Purple colonial ascidian

A076 – Purple crater ascidian 1

A077 – Purple crater ascidian 2

A079 – Purple folded ascidian

A081 – Purple stalked ascidian

No photo

A082 – *Pyura spinifera*

A084 – Red colonial ascidian

No photo

A085 – Red/brown sandy ascidian 1

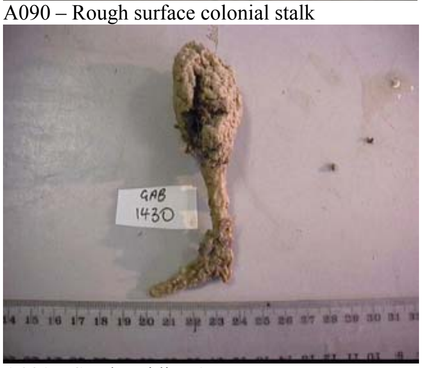
A086 – Red/brown sandy ascidian 2

A087 – *Ritterella* sp 1

A088 – *Ritterella* sp 2

A089 – *Ritterella* sp (410)

A090 – Rough surface colonial stalk



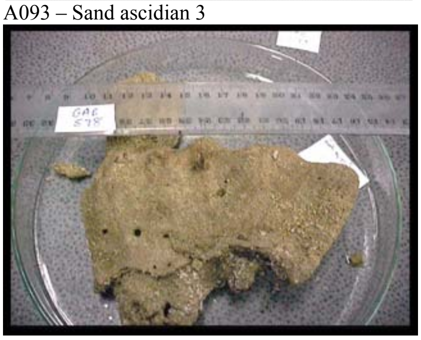
A091 – Sand ascidian 1

No photo

A092 – Sand ascidian 2

No photo

A093 – Sand ascidian 3



A094 – Sand ascidian 4

A095 – Sand ascidian 5

A096 – Sand ascidian 6

A098 – Sandy bunched ascidian 1

A099 – Sandy bunched ascidian 2

A100 – Sandy button ascidian

A102 – Sandy dome ascidian

A103 – sandy 'liver' ascidian

A104 – Sandy with yellow zooids

A105 – Small black sea squirt

A106 – Small brown amorphous ascidian

A107 – Small brown sea squirt

A108 – Small colonial red ascidian

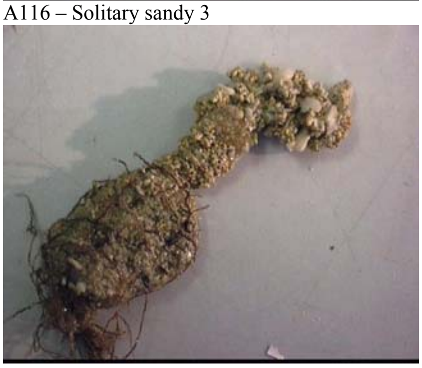
A112 – Soft orange didemnid

A113 – Sea squirt (5)

A114 – Sea squirt (97)

A115 – Solitary sandy 2

A116 – Solitary sandy 3



A117 – Spherical cratered ascidian

A118 – Stalked colonial ascidian

A119 – Stalked sandy colonial ascidian

A120 – String-of-sand ascidian 2

A121 – *Ritterella* sp (88)

A122 – String-of-sand ascidian 1

A123 – *Scycozoa* sp

No photo

A124 – Ascidian (129)

A125 – White colonial ascidian

A128 – White didemnid ascidian 2

No photo

A129 – White didemnid ascidian 3

A131 – White dome ascidian 2

A133 – Sycozoa sp? (181)

A134 – White opaque solitary with blue tinge

A136 – Yellow didemnid

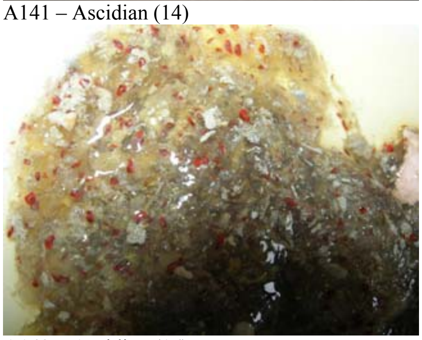
A137 – Yellow dome didemnid

A138 – Yellow gelatinous ascidian

A139 – Ascidian (113)

A140 – Ascidian (128)

A141 – Ascidian (14)



A142 – Ascidian (16)

A143 – Ascidian (204)

A144 – Ascidian (217)

A145 – Ascidian (261)

A146 – Ascidian (307)

No photo

A147 – Ascidian (393)

A148 – Ascidian (438)

No photo

A149 – Ascidian (465)

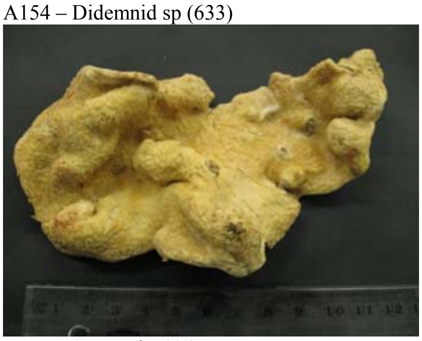
A150 – Ascidian (91)

A151 – Didemnid sp (207)

A152 – Didemnid sp (307)

A153 – Didemnid sp (468)

A154 – Didemnid sp (633)



A155 – Sea squirt (61)

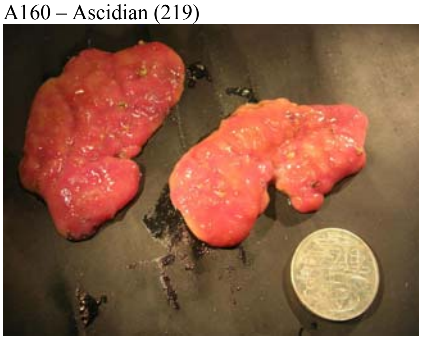
A156 – Polycitid sp?

A157 – Ascidian (590)

A158 – Ascidian (218)

A159 – Ascidian (631)

A160 – Ascidian (219)



A161 – Ascidian (64)

A162 – *Aplidium* sp

A163 – Ascidian (89)

Appendix 4. Summary list of species biomasses (kg) collected during two epibenthic surveys (2002, 2006) from 40 sampling stations located inside and immediately adjacent to the BPZ.

Station	Year	Species	Code	Weight
1	2006	*Adeona* sp	B002	0.015
1	2002	*Astropecten preissei*	E002	0.198
1	2002	*Bugularia* sp	B020	0.016
1	2002	White gelatinous sponge 2	S339	0.524
2	2006	*Acabria* sp	V001	0.009
2	2002	*Actea calculosa*	C001	0.001
2	2006	*Actea calculosa*	C001	0.003
2	2006	*Adeona grisea*	B004	0.546
2	2002	*Adeona* sp	B002	3.485
2	2006	*Adeona* sp	B002	0.237
2	2002	*Adeona* sp 1	B001	0.005
2	2006	*Aglaophenia divaricata*	H038	0.019
2	2006	*Amathia* sp 2	B082	0.015
2	2006	Amorphous conulose sponge	S026	12.900
2	2006	*Anomia* (*trigonopsis*)	M045	0.003
2	2002	Ascidian (172)	A049	0.926
2	2006	Ascidian (393)	A147	3.118
2	2006	Ascidian (590)	A157	0.270
2	2006	Ascidian (631)	A159	0.011
2	2002	Ascidian (89)	A163	0.118
2	2002	*Astroboa ernae*	E040	0.052
2	2006	*Axinella* sp (212)	S130	0.052
2	2002	Bath sponge	S029	0.283
2	2002	Beige calcareous branch	B009	0.057
2	2002	Beige digitate sponge 1	S035	0.590
2	2002	Blue translucent ascidian	A009	0.037
2	2002	Blue/green encrusting ascidian	A010	0.882
2	2002	Brown calcareous bryozoan	B014	0.035
2	2002	Brown split-fan sponge	S081	0.054
2	2006	Bryozoan (9)	B098	0.121
2	2006	*Bugula* sp 2	B081	0.110
2	2002	Bushy lobe sponge	S084	0.030
2	2006	*Callyspongia bilamellata*	S085	2.200
2	2006	Carid shrimp 6	C038	0.006
2	2002	*Cellaria* sp 1	B025	0.017
2	2002	*Centrostephanus* sp	E024	0.078
2	2002	*Ceratosoma brevicaudatum*	M031	0.009
2	2002	*Ceto cuvieria*	E033	0.461
2	2006	*Ceto cuvieria*	E033	0.420
2	2006	*Chlamys asperrimus*	M006	0.261
2	2002	*Chondropsis* (sp 2)	S244	0.225
2	2006	*Chondropsis* (sp 2)	S244	3.341
2	2006	*Chondropsis* sp (178)	S239	1.662
2	2006	*Clathria* sp (112)	S129	0.020
2	2006	*Clathria* sp (224)	S178	1.455
2	2006	*Clathria* sp (549)	S399	0.700
2	2002	Conulose sponge	S096	0.066
2	2006	*Cornucopina grandis*(285)	B108	0.767
2	2006	*Cornuticella* sp (392)	B066	0.005
2	2002	*Coscinasterias* sp	E005	0.042
2	2002	*Coscinoderma* sp (550)	S170	0.211
2	2006	*Coscinoderma* sp (550)	S170	0.271
2	2002	*Crepidula aculeata*	M041	0.002
2	2006	*Cribrochalina*?	S139	0.800
2	2002	Crunchy brown sponge	S104	0.218
2	2002	*Cymbastela* (sp 2)	S135	0.864
2	2006	*Cymodopsis crassa*	C021	0.001
2	2006	*Cymodopsis* sp	C039	0.008
2	2002	Dark/ light grey sponge	S116	0.234
2	2006	Demosponge sp (592)	S402	0.166
2	2006	Demosponge sp (596)	S406	0.090
2	2002	Demosponge sp (600)	S065	0.018
2	2006	Demosponge sp (600)	S065	0.050
2	2006	Demosponge sp (612)	S409	0.229
2	2006	Demosponge sp (199)	S336	0.020
2	2006	Demosponge sp (287)	S378	0.330
2	2006	Demosponge sp (332)	S390	0.025
2	2006	Demosponge sp (440)	S421	0.043
2	2006	Demosponge sp (554)	S267	0.147
2	2002	Demosponge sp (580)	S057	0.103
2	2006	Demosponge sp (580)	S057	0.025
2	2006	Demosponge sp (593)	S403	0.086
2	2002	Demosponge sp (594)	S259	0.294
2	2006	Demosponge sp (594)	S259	0.044
2	2006	Demosponge sp (595)	S405	0.788
2	2006	Demosponge sp (629)	S413	4.000
2	2006	Demosponge sp (634)	S414	0.111
2	2006	Demosponge sp (635)	S415	0.022
2	2006	Demosponge sp (636)	S416	0.542
2	2006	Dendroceratid sp (581)	S072	0.365
2	2002	Dictyoceratid sp (446)	S093	0.445
2	2006	Dictyoceratid sp (446)	S093	0.261
2	2006	Dictyoceratid sp (638)	S418	0.367
2	2002	Didemnid (37)	A068	0.196
2	2006	Didemnid sp (633)	A154	0.037
2	2006	*Echinodictyum mesenterium*	S316	0.225
2	2006	Echinoid sp (281)	E029	0.006
2	2006	Echinoid sp (418)	E032	0.004
2	2006	*Eunice* sp	P003	0.004
2	2002	*Euplexaura* sp 2	V018	0.025
2	2006	*Euplexaura* sp 2	V018	0.010
2	2006	*Eurospongia* sp	S417	0.012
2	2002	Fenestrate bryozoan 3	B030	0.005
2	2002	*Goniocidaris tubaria*	E025	1.001
2	2006	*Goniocidaris tubaria*	E025	0.302
2	2006	*Haplopteris glutinosa*	H021	0.011
2	2002	Haplosclerid sp (278)	S042	0.430
2	2006	Haplosclerid sp (551)	S068	1.392
2	2002	Haplosclerid sponge	S163	0.124
2	2006	*Herdmania* sp	A043	0.627
2	2002	*Herdmania* sp 1	A041	4.206
2	2002	*Holopsamma laminaefavosa*	S283	2.342
2	2006	*Holopsamma laminaefavosa*	S283	0.058
2	2002	*Holothuria hartmeyeri*	E035	2.200
2	2002	*Ircinia* sp 1	S166	0.578
2	2006	*Ircinia* sp 4	S408	0.196
2	2006	Irciniid sponge (568)	S400	2.139
2	2002	Irciniid sponge 2	S171	0.057
2	2006	*Leptomithrax* sp 2 (515)	C043	0.010
2	2002	*Lima lima*	M010	0.011
2	2006	*Lima lima*	M010	0.040
2	2002	*Luidia australiae*	E009	0.042
2	2002	Majid long horned	C017	0.008
2	2002	Majid sp 1	C018	0.010
2	2006	Majid sp 1	C018	0.013
2	2006	*Malleus meridianus*	M011	0.337
2	2002	*Mopsella klunzingeri*	V015	0.026
2	2006	*Mopsella klunzingeri*	V015	0.375
2	2002	Mucousy sponge	S193	0.096
2	2006	*Mycale* sp (231)	S333	0.570

Station	Year	Species	Code	Weight
2	2002	*Nectria wilsoni*	E010	0.016
2	2006	*Oceanapia* (sp 1)	S332	0.314
2	2002	*Oceanapia* sp 3	S312	0.268
2	2002	*Ophiothrix spongicola*	E046	0.001
2	2006	*Ophiothrix spongicola*	E046	0.018
2	2006	Ophiuroid sp (564)	E051	0.006
2	2002	Orange basket star	E047	0.075
2	2002	Orange didemnid 3	A058	0.038
2	2006	Orange plate bryozoan	B056	0.045
2	2002	Orange zoanthid-covered sponge	S225	0.020
2	2002	*Orthoscuticella lorica*	B008	0.102
2	2006	*Orthoscuticella* sp (206)	B068	0.238
2	2002	*Orthoscuticella* sp 1	B058	0.340
2	2002	*Orthoscuticella* sp 2	B061	0.069
2	2006	*Paranepanthia grandis*	E011	0.041
2	2002	Pectinid sp 1	M015	0.017
2	2002	*Pentacta anceps*	E036	0.113
2	2006	*Pentacta anceps*	E036	0.062
2	2002	*Pentacta crassa*	E037	0.050
2	2006	*Pentacta crassa*	E037	0.115
2	2006	*Phascolosoma annulatum*	W001	0.003
2	2002	Pink/cream branching bryozoan	B076	0.004
2	2002	*Plectaster decanus*	E013	0.029
2	2006	Poecilosclerid sp (189)	S056	2.023
2	2006	Poecilosclerid sp (588)	S401	0.036
2	2006	*Pomatoceros taeniata*	P016	0.034
2	2002	*Ptilometra macronema*	E020	0.026
2	2002	Purple stalked ascidian	A081	0.056
2	2002	Razor clam	M018	0.129
2	2002	Red colonial ascidian	A084	0.047
2	2006	*Ritterella* sp (88)	A121	0.146
2	2002	Sandy 'liver' ascidian	A103	4.220
2	2002	Sea squirt (619)	A005	0.010
2	2006	Sea squirt (619)	A005	0.010
2	2002	*Sepia apama*	M026	0.007
2	2002	Serpullid tubes 2	P011	0.025
2	2002	Small brown sea squirt	A107	0.014
2	2006	*Spheciospongia purpurea*	S062	0.040
2	2006	Spondilid sp	M020	0.242
2	2006	Spongiid sp (520)	S025	0.120
2	2006	Spongiid sp (609)	S407	0.229
2	2006	Spongiid sp (613)	S410	0.065
2	2006	Spongiid sp (620)	S411	0.285
2	2002	*Steginoporella* sp 2	B040	0.035
2	2006	*Steginoporella* sp 2	B040	3.335
2	2002	*Sycozoa* sp	A123	0.011
2	2006	*Tethya* sp 2	S412	0.126
2	2006	*Triphyllozoon* sp 1 (1)	B032	0.015
2	2006	Verongid sp (220)	S066	0.070
2	2002	White didemnid ascidian 3	A129	0.069
2	2002	Wide mouthed asteroid	E016	0.007
2	2002	Yellow asteroid	E017	0.016
2	2002	Yellowy orange sponge	S360	0.289
4	2002	*Adeona* sp 1	B001	0.077
4	2002	*Amathia* sp	B006	0.004
4	2002	*Aphodite australis*	P001	0.005
4	2006	Ascidian (89)	A163	0.304
4	2006	Ascidian (91)	A150	0.345
4	2002	*Astropecten pectinatus*	E001	0.018
4	2002	*Astropecten vappa*	E003	0.007
4	2002	*Atrina tasmanica*	M002	0.306
4	2002	Beige sponge 2	S053	0.265
4	2006	Bryozoan sp (12)	B011	0.001
4	2006	Bryozoan sp (19)	B010	0.004
4	2002	*Bugula* sp 1	B055	0.005
4	2006	*Cellaria* sp 1	B025	0.001
4	2002	*Chondropsis* (sp 2)	S244	0.138
4	2006	*Cornuticella* sp (92)	B106	0.018
4	2002	*Crepidula aculeata*	M041	0.005
4	2006	*Crepidula aculeata*	M041	0.002
4	2006	Demosponge sp (99)	S376	0.001
4	2006	Demosponge sp (100)	S318	<0.001
4	2002	Demosponge sp (279)	S150	0.031
4	2002	Dictyoceratid sp (446)	S093	0.628
4	2006	Dictyoceratid sp (90)	S428	0.561
4	2002	Fibrous sponge	S132	0.065
4	2002	*Goniocidaris tubaria*	E025	0.138
4	2002	*Ircinia* sp 1	S166	0.423
4	2006	*Lunularia capulus*	B045	0.001
4	2006	Microcionid sp (98)	S425	0.110
4	2006	*Orthoscuticella* sp (96)	B107	<0.001
4	2002	*Orthoscuticella* sp 1	B058	0.003
4	2002	*Orthoscuticella* sp 2	B061	0.003
4	2002	*Orthoscuticella* sp 8	B067	0.015
4	2002	*Ovalipes australiensis*	C020	0.012
4	2002	*Pecten fumatus*	M014	0.113
4	2006	Philinid sp	M050	0.002
4	2002	*Pilumnus tomentosus*	C034	0.009
4	2006	Polycitid sp?	A156	0.001
4	2002	Portunid crab sp 1	C023	0.003
4	2006	*Ritterella* sp (88)	A121	0.048
4	2002	Sea squirt (619)	A005	0.002
4	2002	Sea squirt (97)	A114	0.025
4	2006	Sea squirt (97)	A114	0.001
4	2006	*Stelletta* sp	S237	<0.001
5	2002	*Actea calculosa*	C001	0.005
5	2006	*Actea calculosa*	C001	0.004
5	2006	*Adeona* sp	B002	0.054
5	2002	*Adeona* sp 1	B001	3.504
5	2006	*Aglaophenia divaricata*	H038	0.131
5	2006	Ascidian (217)	A144	12.000
5	2002	Ascidian (89)	A163	0.057
5	2006	Ascidian (89)	A163	0.581
5	2002	*Astroboa ernae*	E040	0.035
5	2002	*Axinella* sp (212)	S130	0.100
5	2002	*Axinella* sp (447)	S103	0.374
5	2006	*Axinella* sp (447)	S103	0.240
5	2002	Beige calcareous branch	B009	0.154
5	2002	Beige cavernous sponge	S033	2.700
5	2002	Beige digitate sponge 1	S035	0.170
5	2002	Blue hollow sponge	S059	0.052
5	2002	Branched hydroid 2	H009	0.005
5	2002	Brown sea squirt	A017	0.220
5	2006	*Bugula* sp 1	B055	0.001
5	2002	*Bugularia disssimilis*	B019	0.066
5	2002	*Cellaria* sp 1	B025	0.001
5	2002	*Centrostephanus* sp	E024	0.016
5	2002	Ceriantid sp 1	V007	0.030
5	2002	*Ceto cuvieria*	E033	0.030
5	2002	*Chlamys asperrimus*	M006	0.088
5	2006	*Chlamys asperrimus*	M006	0.009
5	2002	*Chondropsis* (sp 2)	S244	1.080
5	2006	*Chondropsis* (sp 2)	S244	3.069
5	2006	*Chondropsis* sp (178)	S239	0.368
5	2002	*Clathrozoon wilsoni*	H017	0.043
5	2006	*Clathrozoon wilsoni*	H017	0.118

Station	Year	Species	Code	Weight
5	2002	*Cornucopina grandis* (285)	B108	0.035
5	2002	*Cornuticella* sp (392)	B066	0.560
5	2002	*Coscinasterias* sp	E005	0.004
5	2002	*Crepidula aculeata*	M041	0.001
5	2002	Crunchy brown sponge	S104	0.762
5	2006	Demosponge sp (287)	S378	0.013
5	2006	Demosponge sp (331)	S389	0.171
5	2006	Demosponge sp (432)	S394	11.900
5	2006	Demosponge sp (440)	S421	2.295
5	2006	Demosponge sp (449)	S395	0.034
5	2002	Demosponge sp (554)	S267	0.011
5	2002	Demosponge sp (594)	S259	1.386
5	2002	Dictyoceratid sp (446)	S093	0.061
5	2006	Dictyoceratid sp (446)	S093	0.455
5	2006	Dromid sp 1	C040	0.009
5	2002	*Echinaster decanus*	E007	0.034
5	2002	*Echinaster glomeratus*	E008	0.012
5	2006	*Echinaster glomeratus*	E008	0.022
5	2002	*Euplexaura* sp	V010	2.691
5	2002	Fenestrate bryozoan 3	B030	0.107
5	2002	Floppy honeycomb sponge	S137	0.261
5	2002	*Goniocidaris tubaria*	E025	0.490
5	2002	Grey flat lobe sponge	S147	0.226
5	2002	*Gymnangium ascidioides*	H024	0.015
5	2002	*Halichondria (Halichondria)* sp	S343	0.350
5	2006	*Haplopteris glutinosa*	H021	0.196
5	2006	Haplosclerid sp (278)	S042	1.746
5	2002	*Herdmania* sp	A043	0.556
5	2006	*Herdmania* sp	A043	0.566
5	2002	*Herdmania* sp 4	A044	0.666
5	2006	*Holopsamma laminaefavosa*	S283	1.800
5	2002	*Holothuria hartmeyeri*	E035	0.679
5	2002	Isidid gorgonian 1	V011	0.440
5	2002	*Malleus meridianus*	M011	0.003
5	2006	*Malleus meridianus*	M011	0.017
5	2002	Mixed bryozoan spp (bushy)	B047	0.051
5	2002	*Mopsella klunzingeri*	V015	0.041
5	2006	*Mopsella klunzingeri*	V015	0.002
5	2002	*Oceanapia* (sp 1)	S332	1.129
5	2002	*Ophiothrix spongicola*	E046	0.003
5	2002	Orange basket star	E047	0.053
5	2002	Orange bushy 2 bryozoan	B050	0.055
5	2002	Orange fistule sponge 2	S202	0.010
5	2002	Orange sand fibre sponge	S214	0.039
5	2002	Orange sandy sponge 2	S216	5.300
5	2002	Orange with zooanthids	S223	0.023
5	2002	Orange zoanthid-covered sponge	S225	0.049
5	2002	*Orthoscuticella* sp (206)	B068	0.085
5	2006	*Orthoscuticella* sp (206)	B068	0.002
5	2002	*Orthoscuticella* sp 1	B058	0.112
5	2002	Pale red sponge	S232	0.339
5	2002	Pectinid sp 2	M016	0.090
5	2002	*Pentacta crassa*	E037	0.057
5	2002	*Pentagonaster dubeni*	E012	0.006
5	2002	Pill bug sp 2	C022	0.003
5	2006	*Plumularia procumbens*	H008	0.003
5	2002	Poecilosclerid sp (189)	S056	0.271
5	2002	Portunid sp	C024	0.003
5	2002	*Ptilometra australis*	E019	0.019
5	2006	*Ptilometra macronema*	E020	0.010
5	2002	Purple dictyodendrillid	S251	0.161
5	2002	*Pyura spinifera*	A082	9.100
5	2006	*Pyura spinifera*	A082	2.029
5	2002	Red sponge	S265	1.050
5	2006	*Ritterella* sp (410)	A089	22.350
5	2006	*Ritterella* sp (88)	A121	0.388
5	2002	*Ritterella* sp 1	A087	0.028
5	2002	*Ritterella* sp 2	A088	0.144
5	2002	Sand ascidian 1	A091	0.017
5	2002	Sand ascidian 2	A092	0.084
5	2002	Sand ascidian 3	A093	0.511
5	2002	Sand sponge	S274	0.240
5	2002	Sandy haplosclerid sponge	S282	3.584
5	2002	Sea slug	M040	0.002
5	2002	Sea squirt (619)	A005	0.018
5	2006	Sea squirt (97)	A114	0.007
5	2002	Serpullid tubes 3	P012	0.002
5	2006	*Sertularia macrocarpa* (394)	H020	0.003
5	2002	Small colonial red ascidian	A108	0.073
5	2002	Soft orange didemnid	A112	0.040
5	2002	*Spheciospongia papillosa*	S187	4.140
5	2006	*Spheciospongia papillosa*	S187	2.200
5	2006	*Stelletta tuberculata*	S028	0.394
5	2002	Strawberry-surface holothurian	E039	0.051
5	2002	Striated bushy bryozoan	B084	0.158
5	2006	*Sycon* sp	S396	0.002
5	2002	*Tethya bergquistae*	S323	0.022
5	2002	Thin orange fan sponge	S328	0.511
5	2002	Urchin	E031	0.124
5	2002	White gelatinous sponge 3	S340	0.965
5	2002	Yellow fan sponge	S353	0.029
5	2002	*Zignisis repens*	V028	0.008
7	2002	*Amathia* sp	B006	0.002
7	2006	Ascidian (261)	A145	0.046
7	2002	Bryozoan sp (19)	B010	0.007
7	2006	Demosponge sp (260)	S384	0.164
7	2002	Echinoid sp (281)	E029	0.002
7	2002	*Glycymeris* sp 1	M008	0.026
7	2006	*Glycymeris* sp 1	M008	0.023
7	2002	Grey stalked sea squirt	A038	0.032
7	2002	*Lunularia capulus*	B045	0.003
7	2002	*Ophiothrix spongicola*	E046	0.001
7	2002	*Orthoscuticella* sp 2	B061	0.021
7	2002	*Ovalipes australiensis*	C020	0.006
7	2002	Pale orange branching bryozoan	B070	0.004
7	2002	String-of-sand ascidian 1	A122	0.014
7	2006	Venerid sp	M047	0.009
8	2002	*Adeona* sp	B002	0.133
8	2006	*Adeona* sp	B002	0.728
8	2006	*Anomia* (*trigonopsis*)	M045	0.003
8	2002	*Aplidium petrosum*	A001	6.840
8	2006	Ascidian (202)	A006	0.365
8	2006	Ascidian (204)	A143	0.273
8	2006	Ascidian (217)	A144	0.250
8	2006	Ascidian (218)	A158	0.841
8	2006	Ascidian (219)	A160	0.032
8	2006	*Axinella* sp (212)	S130	0.035
8	2006	*Axinella* sp (214)	S197	0.038
8	2002	Beige calcareous branch	B009	0.247
8	2002	Beige digitate sponge 2	S036	0.096
8	2002	Blue/green encrusting ascidian	A010	3.256
8	2002	Brown branching 2	H013	0.003
8	2006	Bryozoan (186, calc)	B097	0.208
8	2002	Bryozoan sp (12)	B011	0.017
8	2006	Bryozoan sp (187)	B042	0.120
8	2002	Calcareous pink sponge	S018	0.055

Station	Year	Species	Code	Weight
8	2006	*Carteriospongia* sp.	S322	0.376
8	2002	*Cellaria* sp 1	B025	0.014
8	2006	*Cellaria* sp 1	B025	0.138
8	2006	*Ceto cuvieria*	E033	0.062
8	2002	*Chondropsis* (sp 2)	S244	0.275
8	2006	*Chondropsis* (sp 2)	S244	1.141
8	2006	*Chondropsis* sp (178)	S239	0.955
8	2006	*Clathria* sp (190)	S217	2.000
8	2002	*Clathria* sp (224)	S178	0.336
8	2006	*Clathria* sp (224)	S178	0.200
8	2006	*Clathrozoon wilsoni*	H017	0.109
8	2006	Demosponge sp (179)	S055	0.800
8	2006	Demosponge sp (216)	S122	0.614
8	2006	Demosponge sp (225)	S182	1.000
8	2002	Demosponge sp (600)	S065	0.024
8	2006	Demosponge sp (199)	S336	0.159
8	2006	Demosponge sp (215)	S379	0.025
8	2006	Demosponge sp (227)	S380	1.000
8	2006	Demosponge sp (228)	S381	8.000
8	2006	Demosponge sp (230)	S382	2.000
8	2006	Dictyoceratid sp (182)	S363	2.400
8	2006	Didemnid sp (207)	A151	0.048
8	2006	*Echinodictyum mesenterium*	S316	0.185
8	2002	*Haliclona* sp (382)	S134	0.050
8	2006	Haplosclerid sp (222)	S427	3.000
8	2006	*Herdmania* sp	A043	0.100
8	2002	Like *Aplidiopsis*	A047	0.202
8	2002	*Luidia australiae*	E009	0.020
8	2002	Majid long horned	C017	0.007
8	2006	*Malleus meridianus*	M011	0.205
8	2002	*Melo miltonis*	M035	0.273
8	2006	*Mopsea encrinula*	V014	0.001
8	2006	*Mopsella klunzingeri*	V015	0.003
8	2002	Mucousy sponge	S193	0.105
8	2006	*Mycale* sp (231)	S333	0.800
8	2006	*Nectria wilsoni*	E010	0.050
8	2006	*Obelia australis*	H035	0.001
8	2006	*Ophionereis schayeri*?	E053	<0.001
8	2002	*Ophiothrix spongicola*	E046	0.006
8	2002	Orange haplosclerid sponge	S207	0.068
8	2002	Orange sand fibre sponge	S214	0.472
8	2002	*Orthoscuticella* sp (139)	B062	0.183
8	2006	*Orthoscuticella* sp (206)	B068	0.069
8	2002	*Orthoscuticella* sp 2	B061	0.086
8	2002	Pale mauve sponge	S230	0.120
8	2002	Pink fenestrate bryozoan 1	B071	0.026
8	2006	*Plumularia procumbens*	H008	0.011
8	2006	Poecilosclerid sp (189)	S056	38.776
8	2002	*Ptilometra macronema*	E020	0.018
8	2002	Purple raspaliid	S254	0.005
8	2006	*Pyura spinifera*	A082	0.684
8	2002	Red encrusting sponge	S258	0.041
8	2002	Red fan sponge 2	S260	0.102
8	2002	*Ritterella* sp (410)	A089	0.042
8	2006	*Ritterella* sp (88)	A121	0.635
8	2002	*Ritterella* sp 1	A087	0.684
8	2002	Sand sponge 2	S276	0.117
8	2002	Sandy 'liver' ascidian	A103	1.542
8	2002	Sea squirt (619)	A005	0.006
8	2006	Sigalionid sp	P017	<0.001
8	2002	Soft beige sandy sponge	S301	2.664
8	2002	Soft orange didemnid	A112	0.161
8	2002	*Spheciospongia papillosa*	S187	1.478
8	2006	*Spheciospongia papillosa*	S187	10.000
8	2002	Stalked colonial ascidian	A118	0.013
8	2002	*Steginoporella* sp 2	B040	0.054
8	2002	String-of-sand ascidian 1	A122	0.077
8	2006	*Sycozoa* sp? (181)	A133	0.041
8	2006	Terebellid sp	P015	0.007
8	2006	*Tethya* sp 1	S324	0.100
8	2006	*Thorectandra* sp?	S329	1.000
8	2006	*Triphyllozoon* sp 1 (1)	B032	0.008
8	2006	*Triphyllozoon* sp 2 (185)	B029	0.012
8	2006	Verongid sp (220)	S066	0.137
8	2002	Wiggley sand sponge	S344	0.452
9	2006	*Adeona* sp	B002	0.128
9	2002	*Adeona* sp 1	B001	0.053
9	2002	*Amathia* sp	B006	0.003
9	2002	*Amathia tortuosa*	B007	0.090
9	2002	*Aphrodite australis*	P001	0.005
9	2002	Ascidian (89)	A163	0.268
9	2006	Ascidian (89)	A163	0.040
9	2002	*Astropecten vappa*	E003	0.007
9	2002	Brown bushy bryozoan	B013	0.010
9	2002	Brown fanned flat branches	B018	0.001
9	2002	Bryozoan sp (12)	B011	0.013
9	2006	Bryozoan sp (12)	B011	0.108
9	2002	Bryozoan sp (19)	B010	0.066
9	2002	*Bugularia disssimilis*	B019	0.010
9	2006	*Bugularia disssimilis*	B019	0.007
9	2002	Calcareous pale beige sponge	S016	0.003
9	2002	*Cellaria* sp 1	B025	0.004
9	2002	*Cornucopina grandis* (285)	B108	0.402
9	2002	*Crepidula aculeata*	M041	0.008
9	2006	*Crepidula aculeata*	M041	0.003
9	2002	Crunchy brown sponge	S104	0.064
9	2006	Dictyoceratid sp (182)	S363	3.200
9	2002	Didemnid (328)	A019	0.008
9	2002	Flat branching orange bryozoan	B033	0.002
9	2006	*Haplopteris glutinosa*	H021	0.010
9	2002	Hermit crab 1	C011	0.008
9	2002	*Lunularia capulus*	B045	0.001
9	2002	*Ophiothrix spongicola*	E046	0.002
9	2002	Orange flake bryozoan	B054	0.005
9	2006	*Orthoscuticella amphora*	B105	0.021
9	2006	*Orthoscuticella* sp (206)	B068	0.190
9	2002	*Orthoscuticella* sp 2	B061	0.271
9	2002	*Ovalipes australiensis*	C020	0.004
9	2002	Pectinid sp 1	M015	0.004
9	2006	Poecilosclerid sp (189)	S056	4.000
9	2002	Prawn	C019	0.001
9	2002	*Ritterella* sp 2	A088	0.065
9	2002	White bushy bryozoan	B088	0.005
9	2002	White plate bryozoan	B093	0.038
10	2002	*Acabria* sp	V001	0.001
10	2002	*Actea calculosa*	C001	0.001
10	2006	*Adeona grisea*	B004	0.053
10	2006	*Adeona* sp	B002	0.288
10	2002	*Adeona* sp 1	B001	0.978
10	2002	*Amathia tortuosa*	B007	0.009
10	2006	Ascidian (202)	A006	0.168
10	2006	Ascidian (217)	A144	0.800
10	2006	Ascidian (89)	A163	0.188
10	2002	*Astropecten vappa*	E003	0.046
10	2002	*Axinella* sp (214)	S197	0.037
10	2002	Brown fanned flat branches	B018	0.002

Station	Year	Species	Code	Weight
10	2002	Bryozoan sp (12)	B011	0.034
10	2002	Bryozoan sp (19)	B010	0.004
10	2002	*Canda* sp	B024	0.005
10	2002	*Capnella arbuscula*	V006	0.003
10	2002	*Cellaria* sp 1	B025	0.012
10	2002	*Chondropsis* (sp 2)	S244	0.376
10	2006	*Chondropsis* sp (178)	S239	0.111
10	2002	*Clathria* sp (190)	S217	0.039
10	2006	*Clathria* sp (190)	S217	0.200
10	2002	*Clathria* sp (224)	S178	1.070
10	2002	*Clathrozoon wilsoni*	H017	0.018
10	2006	*Clathrozoon wilsoni*	H017	0.006
10	2002	Conulose sand sponge	S095	0.370
10	2002	*Cornucopina grandis* (285)	B108	0.011
10	2006	*Cornucopina grandis* (285)	B108	0.023
10	2002	*Cornuticella* sp (392)	B066	0.086
10	2002	Crunchy sponge	S105	6.542
10	2006	Demosponge sp (279)	S150	0.065
10	2006	Demosponge sp (283)	S386	0.017
10	2006	Demosponge sp (287)	S378	0.020
10	2006	Echinoid sp (281)	E029	0.005
10	2002	Four-branch bushy bryozoan	B037	0.033
10	2002	*Goniocidaris tubaria*	E025	0.146
10	2002	Grey flat lobe sponge	S147	0.095
10	2002	*Haliclona* sp (382)	S134	0.020
10	2002	*Haplopteris glutinosa*	H021	0.005
10	2006	*Haplopteris glutinosa*	H021	<0.001
10	2006	Haplosclerid sp (278)	S042	0.385
10	2006	*Iodictyum phoniceum*	B028	0.012
10	2002	*Leptomithrax* sp	C015	0.006
10	2006	*Lima lima*	M010	0.013
10	2002	Long orange digitate sponge	S183	0.198
10	2006	Microcionid sp (98)	S425	0.053
10	2002	*Nectria wilsoni*	E010	0.023
10	2006	*Oceanapia* sp 5	S385	0.043
10	2002	Orange sandy sponge 2	S216	5.550
10	2006	*Orthoscuticella lorica*	B008	0.014
10	2006	*Orthoscuticella* sp (206)	B068	0.016
10	2002	*Orthoscuticella* sp 6	B065	0.046
10	2002	*Orthoscuticella* sp 8	B067	0.071
10	2006	Oyster	M049	0.004
10	2002	Pale mauve sponge	S230	0.156
10	2002	Pale split-fan sponge	S233	0.264
10	2002	*Paraplexaura* sp	V019	0.003
10	2002	*Pilumnus tomentosus*	C034	0.004
10	2002	Pink/cream branching bryozoan	B076	0.004
10	2002	*Plectaster decanus*	E013	0.085
10	2002	Poecilosclerid sp (189)	S056	0.586
10	2006	Poecilosclerid sp (189)	S056	5.068
10	2006	Poecilosclerid sp (290)	S387	0.015
10	2002	Red lobe sponge	S263	0.245
10	2002	*Ritterella* sp 2	A088	0.047
10	2002	Sand ascidian 4	A094	5.248
10	2002	Serpullid tubes 1	P010	0.001
10	2002	*Sertularia macrocarpa* (394)	H020	0.002
10	2002	*Siphonochalina* sp	S290	0.142
10	2006	*Siphonochalina* sp	S290	0.100
10	2006	*Spheciospongia papillosa*	S187	5.000
10	2002	String-of-sand ascidian 1	A122	0.004
10	2002	Thorny oyster	M022	0.028
10	2006	*Triphyllozoon* sp 2 (185)	B029	0.002
10	2002	White branching bushy bryozoan	B087	0.003
10	2002	White gelatinous sponge 1	S338	2.280
10	2002	White ridged sponge	S341	0.680
10	2002	Wiggley sand sponge	S344	0.698
12	2002	*Acabria* sp	V001	0.001
12	2006	*Acabria* sp	V001	0.003
12	2002	*Actea calculosa*	C001	0.006
12	2006	*Actea calculosa*	C001	0.004
12	2006	*Adeona grisea*	B004	0.110
12	2006	*Adeona* sp	B002	0.333
12	2002	*Adeona* sp 1	B001	0.754
12	2006	*Amathia tortuosa*	B007	0.001
12	2006	Ascidian (204)	A143	0.851
12	2006	Ascidian (91)	A150	0.020
12	2006	*Astropecten preissei*	E002	0.001
12	2002	Beige calcareous branch	B009	0.160
12	2006	Bivalve	M048	0.003
12	2002	Brown hirsute sponge	S077	0.106
12	2002	Bryozoan sp (12)	B011	0.018
12	2006	Bryozoan sp (12)	B011	0.027
12	2002	Bryozoan sp (19)	B010	0.012
12	2002	*Bugularia disssimilis*	B019	0.001
12	2006	Calcarea (325)	S388	0.004
12	2002	Calcareous cream sponge	S005	0.003
12	2002	Calcareous white sponge	S021	0.005
12	2002	*Caulospongia* sp	S087	0.546
12	2006	*Cellaria* sp 1	B025	0.003
12	2002	*Ceratopsion* sp?	S356	0.041
12	2002	*Chondropsis* (sp 2)	S244	0.927
12	2006	*Clathria* sp (190)	S217	0.203
12	2002	*Clathrozoon wilsoni*	H017	0.659
12	2006	*Clathrozoon wilsoni*	H017	0.001
12	2002	*Cornucopina grandis* (285)	B108	0.060
12	2006	*Cornucopina grandis* (285)	B108	0.011
12	2006	*Crepidula aculeata*	M041	0.004
12	2002	Crunchy brown sponge	S104	1.348
12	2002	Crunchy sponge	S105	4.190
12	2006	Demosponge sp (100)	S318	0.001
12	2006	Demosponge sp (145)	S362	0.002
12	2006	Demosponge sp (331)	S389	0.016
12	2006	Demosponge sp (332)	S390	0.016
12	2002	Demosponge sp (594)	S259	0.158
12	2002	Dictyoceratid sp (446)	S093	0.062
12	2006	Dictyoceratid sp (55)	S423	0.006
12	2006	Didemnid (328)	A019	0.014
12	2006	Didemnid sp (307)	A152	2.065
12	2002	Feather hydroid 1	H018	0.003
12	2002	Feather hydroid 2	H019	0.003
12	2002	*Goniocidaris tubaria*	E025	0.224
12	2002	Green flake bryozoan 2	B039	0.029
12	2002	*Haplopteris glutinosa*	H021	0.008
12	2006	*Haplopteris glutinosa*	H021	0.008
12	2002	Haplosclerid sp (278)	S042	0.542
12	2006	Haplosclerid sp (278)	S042	0.044
12	2002	*Holopsamma laminaefavosa*	S283	0.314
12	2002	Large blue dome ascidian	A045	0.196
12	2002	Large orange fan sponge	S177	2.836
12	2002	*Leptomithrax* sp	C015	0.010
12	2006	*Lunularia capulus*	B045	0.006
12	2006	*Lunularia repanda*	B094	0.002
12	2002	Mucousy convoluted sponge	S191	0.610
12	2002	*Mycale* sp (231)	S333	0.530
12	2006	*Nannamoria guntheri*	M051	0.001
12	2002	*Oceanapia* (sp 1)	S332	0.288
12	2002	*Ophiothrix spongicola*	E046	0.001

Station	Year	Species	Code	Weight
12	2006	*Ophiothrix spongicola*	E046	0.004
12	2002	Orange branching fan sponge	S196	0.138
12	2006	*Orthoscuticella* sp (96)	B107	0.083
12	2002	*Orthoscuticella* sp 2	B061	0.037
12	2002	*Ovalipes australiensis*	C020	0.010
12	2006	*Ovalipes australiensis*	C020	0.004
12	2002	Pink stalked didemnid	A071	0.007
12	2002	Pink/beige vase sponge	S242	0.142
12	2002	*Plectaster decanus*	E013	0.052
12	2002	Poecilosclerid sp (189)	S056	1.620
12	2006	Poecilosclerid sp (189)	S056	0.373
12	2006	Poecilosclerid sp (290)	S387	0.164
12	2006	*Prismatopus spatulifer*	C026	0.001
12	2002	*Ptilometra macronema*	E020	0.028
12	2006	*Ptilometra macronema*	E020	0.013
12	2002	*Ptilometra* sp	E021	0.076
12	2002	Reddy purple dendroceratid sponge	S271	0.270
12	2002	*Ritterella* sp 2	A088	0.366
12	2002	Sand ascidian 3	A093	1.620
12	2006	Sea squirt (97)	A114	0.015
12	2002	Soft purple sponge	S306	0.065
12	2006	Steginoporella sp 2	B040	0.046
12	2006	*Triphyllozoon* sp 2 (185)	B029	0.001
12	2006	*Triphyllozoon* sp 3	B104	0.005
12	2002	Yellow flat strap sponge	S354	0.288
13	2002	*Acabria* sp	V001	0.002
13	2002	*Adeona* sp	B002	0.036
13	2006	*Adeona* sp	B002	0.042
13	2002	*Adeona* sp 1	B001	0.017
13	2002	*Aglaophenia* sp (123)	H011	0.002
13	2006	*Aglaophenia* sp (530)	H034	0.007
13	2002	*Amathia* sp	B006	0.009
13	2002	*Aplidium petrosum*	A001	0.664
13	2006	Ascidian	A026	0.034
13	2006	Ascidian (16)	A142	0.244
13	2006	Ascidian (217)	A144	0.026
13	2006	Ascidian (307)	A146	0.015
13	2006	Ascidian (465)	A149	0.015
13	2006	Ascidian (89)	A163	5.588
13	2006	*Axinella* sp (31)	S368	0.150
13	2002	*Axinella* sp (447)	S103	0.742
13	2006	*Axinella* sp (447)	S103	0.037
13	2002	Beige branched haplosclerid	S030	0.308
13	2002	*Brechites* sp	M005	0.339
13	2002	Brown encrusting sponge	S070	0.200
13	2002	Bryozoan sp (12)	B011	0.020
13	2002	Bryozoan sp (19)	B010	0.046
13	2002	*Bugula* sp 1	B055	0.009
13	2002	Callyspongid sponge	S086	0.050
13	2006	*Carijoa* sp (395)	V032	0.002
13	2002	*Cellaria* sp 1	B025	0.081
13	2002	*Ceratopsion* sp?	S356	0.047
13	2006	*Ceratopsion* sp?	S356	0.119
13	2006	*Chlamys asperrimus*	M006	0.008
13	2006	*Chondropsis* sp (178)	S239	1.245
13	2002	Club irciniid sponge	S090	0.232
13	2002	Conulose sand sponge	S095	0.373
13	2006	*Cornuticella* sp (92)	B106	0.016
13	2006	*Crepidula aculeata*	M041	0.001
13	2002	Crunchy brown sponge	S104	4.239
13	2002	*Cymbastela* (sp 2)	S135	0.416
13	2006	Demosponge sp (160)	S361	0.003
13	2002	Demosponge sp (600)	S065	0.020
13	2006	Demosponge sp (145)	S362	0.001
13	2006	Demosponge sp (199)	S336	0.150
13	2006	Demosponge sp (332)	S390	0.025
13	2006	Demosponge sp (362)	S419	0.020
13	2002	Demosponge sp (594)	S259	0.388
13	2006	Dictyoceratid sp (446)	S093	0.114
13	2006	Dictyoceratid sp (521)	S397	0.318
13	2006	Dictyoceratid sp (526)	S142	0.038
13	2006	Dromid sp 2	C045	0.007
13	2002	Dull orange sponge	S128	0.094
13	2006	*Emma triangula*	B075	0.015
13	2002	Fenestrate bryozoan 4	B031	0.003
13	2002	Green flake bryozoan	B038	0.049
13	2006	Hadromerid sp	S310	3.000
13	2006	Halichondria (Halichondria) sp	S343	0.775
13	2002	*Haliclona* sp (382)	S134	0.486
13	2006	Haplosclerid sp (278)	S042	0.128
13	2006	Haplosclerid sp (523)	S398	0.285
13	2006	*Leptomithrax* sp 2 (515)	C043	0.011
13	2002	Massive sandy colonial ascidian	A050	0.386
13	2002	*Monniotus australis*	A053	0.039
13	2006	*Mopsella klunzingeri*	V015	0.002
13	2002	*Ophiothrix spongicola*	E046	0.003
13	2002	Orange curly fan sponge	S199	0.032
13	2002	Orange fibrous fan sponge	S201	1.094
13	2002	Orange sand fibre sponge	S214	0.056
13	2006	*Orthoscuticella amphora*	B105	0.015
13	2006	*Orthoscuticella* sp (206)	B068	0.058
13	2002	*Orthoscuticella* sp 2	B061	0.191
13	2006	*Ovalipes australiensis*	C020	0.006
13	2002	Pale mauve sponge	S230	0.368
13	2002	Pectinid sp 1	M015	0.003
13	2006	Poecilosclerid sp (290)	S387	0.276
13	2002	Purple dictyodendrillid	S251	0.048
13	2002	*Ritterella* sp 1	A087	0.108
13	2002	*Ritterella* sp 2	A088	0.100
13	2002	*Sertularia* sp (132)	H012	0.006
13	2002	Soft beige sandy sponge	S301	1.500
13	2006	*Solanderia fusca*	H036	0.100
13	2002	*Spheciospongia papillosa*	S187	0.340
13	2006	*Spheciospongia papillosa*	S187	3.300
13	2006	Spongiid sp (520)	S025	0.298
13	2006	Spongiid sp (528)	S157	0.250
13	2006	*Steginoporella* sp 2	B040	0.163
13	2006	*Sycozoa* sp? (181)	A133	0.025
13	2006	Thorectid sp	S109	1.400
13	2006	*Triphyllozoon* sp 2 (185)	B029	0.022
13	2002	White didemnid ascidian 2	A128	0.033
13	2002	White plate bryozoan	B093	0.084
15	2006	*Adeona grisea*	B004	0.012
15	2006	*Adeona* sp	B002	0.251
15	2002	*Amathia tortuosa*	B007	0.001
15	2006	Ascidian (438)	A148	0.709
15	2006	Astrophorid sponge	S073	0.825
15	2006	*Callyspongia bilamellata*	S085	0.324
15	2006	*Cellaria* sp 1	B025	0.004
15	2006	*Chlamys asperrimus*	M006	0.003
15	2006	*Chondropsis* sp (178)	S239	3.000
15	2006	*Clathria* sp (224)	S178	1.983
15	2006	*Clathrozoon wilsoni*	H017	0.070
15	2006	*Cornuticella* sp (392)	B066	0.026
15	2006	Demosponge sp (283)	S386	0.078
15	2006	Demosponge sp (440)	S421	0.910

Station	Year	Species	Code	Weight
15	2002	*Lunularia capulus*	B045	0.020
15	2006	*Orthoscuticella amphora*	B105	0.034
15	2006	Poecilosclerid sp (189)	S056	4.419
15	2006	*Ptilometra macronema*	E020	0.008
15	2002	Sculptured carapace crab	C028	0.002
15	2006	*Symplectoscyphus* sp (114)	H031	0.009
15	2006	*Triphyllozoon* sp 1 (1)	B032	0.003
16	2002	*Amathia* sp 2	B082	0.001
16	2002	*Aphodite australis*	P001	0.002
16	2002	*Astropecten vappa*	E003	0.012
16	2002	Conulose digitate sponge	S094	0.052
16	2002	Convoluted orange sponge	S098	0.005
16	2002	Fenestrate bryozoan 3	B030	0.006
16	2002	*Glycymeris grayana*	M004	0.013
16	2002	Large red palmate sponge	S180	0.316
16	2002	*Lunularia capulus*	B045	0.015
16	2006	*Lunularia repanda*	B094	0.003
16	2002	Orange sandy ascidian	A062	0.139
16	2002	*Prismatopus spatulifer*	C026	0.001
16	2002	Sandy bunched ascidian 1	A098	0.013
16	2002	Sculptured carapace crab	C028	0.001
16	2002	Solitary sandy 2	A115	0.010
16	2002	Solitary sandy 3	A116	0.006
16	2002	Sponge pen 1	S317	0.001
16	2002	Stalked sandy colonial ascidian	A119	0.017
16	2006	*Triphyllozoon* sp 1 (1)	B032	0.007
18	2002	*Amathia tortuosa*	B007	0.009
18	2006	*Amathia tortuosa*	B007	0.010
18	2002	*Echinolatus poorei*	C025	0.002
18	2002	Fenestrate bryozoan 3	B030	0.004
18	2002	Flat cockle	M007	0.030
18	2002	*Glycymeris* sp 1	M008	0.037
18	2002	Haplosclerid sp (365)	S039	0.066
18	2006	Haplosclerid sp (365)	S039	0.035
18	2002	*Lunularia capulus*	B045	0.022
18	2006	*Lunularia capulus*	B045	0.011
18	2002	Orange leaf sponge	S210	0.008
18	2002	Orange with zooanthids	S223	0.005
18	2002	Pink fenestrate bryozoan 2	B072	0.002
18	2002	Serpullid tubes 3	P012	0.002
18	2002	Soft beige sandy sponge	S301	2.216
19	2006	*Acabria* sp	V001	<0.001
19	2002	Ascidian	A026	0.029
19	2002	*Astropecten vappa*	E003	0.016
19	2002	Bryozoan (148)	B022	0.010
19	2006	Bryozoan (148)	B022	0.020
19	2006	Bryozoan (162)	B095	0.002
19	2006	Bryozoan (9)	B098	0.010
19	2002	*Catenicella* sp	B046	0.002
19	2006	Demosponge sp (160)	S361	0.001
19	2006	Demosponge sp (100)	S318	0.001
19	2002	Fenestrate bryozoan 3	B030	0.009
19	2006	*Glycymeris grayana*	M004	0.007
19	2006	*Ibacus peronii*	C014	0.010
19	2002	*Lunularia capulus*	B045	0.014
19	2006	*Lunularia capulus*	B045	0.004
19	2006	*Lunularia repanda*	B094	0.001
19	2006	*Ophiothrix spongicola*	E046	<0.001
19	2002	*Orthoscuticella* sp 2	B061	0.006
19	2006	*Ovalipes australiensis*	C020	0.004
19	2006	Prawn	C019	0.003
19	2002	Sandy clumps sponge	S279	0.034
19	2006	Sea squirt (97)	A114	0.003
19	2002	*Sepioloidea lineolata*	M028	0.006
19	2002	Serpullid tubes 3	P012	0.009
19	2002	Serpullid tubes 4	P013	0.041
20	2002	*Adeona* sp 1	B001	0.004
20	2002	*Astropecten vappa*	E003	0.007
20	2002	Blue translucent ascidian	A009	0.029
20	2002	Blue/green hydroid	H007	<0.001
20	2006	Brachiopod	L001	0.001
20	2002	Brown foliose sponge 3	S076	2.416
20	2002	Bryozoan (148)	B022	0.006
20	2002	Calcareous mesh sponge	S015	0.002
20	2002	Fenestrate bryozoan 3	B030	0.005
20	2002	Flat sandy sea squirt	A027	0.019
20	2002	Green translucent ascidian 1	A033	0.030
20	2006	*Halicarcinus ovatus*	C042	<0.001
20	2002	*Haliclona* sp (382)	S134	0.066
20	2002	*Ibacus peronii*	C014	0.033
20	2002	*Lunularia capulus*	B045	0.148
20	2006	*Lunularia capulus*	B045	0.007
20	2006	*Lunularia repanda*	B094	0.006
20	2002	Marble ascidian	A048	0.112
20	2002	*Ophiocrossota multispina*	E045	0.001
20	2006	*Orthoscuticella* sp (206)	B068	0.338
20	2002	*Orthoscuticella* sp 5	B064	0.004
20	2002	*Ovalipes australiensis*	C020	0.001
20	2006	*Pilumnus tomentosus*	C034	0.001
20	2002	*Ritterella* sp 1	A087	0.004
20	2002	Sandy cockle	M019	0.021
20	2002	Sea pen	V024	0.001
20	2002	Serpullid tubes 3	P012	0.004
21	2002	Bryozoan sp (117)	B057	0.003
21	2002	Conulose digitate sponge	S094	0.128
21	2002	Fenestrate bryozoan 3	B030	0.002
21	2002	Flat calcareous	B036	0.002
21	2002	*Glycymeris* sp 1	M008	0.016
21	2006	*Glycymeris* sp 2	M009	0.026
21	2002	Green flake bryozoan	B038	0.032
21	2002	*Lunularia capulus*	B045	0.136
21	2006	*Lunularia capulus*	B045	0.024
21	2006	*Lunularia repanda*	B094	0.016
21	2002	*Ophiocrossota multispina*	E045	0.001
21	2002	*Orthoscuticella* sp 2	B061	0.004
21	2002	Sea pen	V024	0.001
21	2002	*Sertularia* sp (132)	H012	0.001
21	2002	*Triphyllozoon* sp 1 (1)	B032	0.028
21	2002	Volute shell	M043	0.002
21	2006	*Xenospongia patelliformis*	S345	0.001
23	2002	*Acabria* sp	V001	0.002
23	2006	*Actea calculosa*	C001	0.001
23	2006	*Adeona grisea*	B004	0.029
23	2002	*Adeona* sp	B002	0.286
23	2006	*Adeona* sp	B002	0.072
23	2002	*Adeona* sp 1	B001	0.395
23	2002	Alternate facing zooid pairs bryozoan	B005	0.001
23	2002	*Amathia tortuosa*	B007	0.006
23	2006	*Annisis sprightly*	V003	0.006
23	2006	Ascidian (393)	A147	1.629
23	2002	Ascidian (89)	A163	0.172
23	2006	Ascidian (89)	A163	0.088
23	2006	*Astropecten pectinatus*	E001	0.006
23	2006	*Axinella* sp (212)	S130	0.004
23	2002	Beige branched haplosclerid	S030	0.010
23	2002	Beige branched sponge	S031	0.008

Station	Year	Species	Code	Weight
23	2002	Blue digitate sponge	S058	0.014
23	2002	Brown bushy bryozoan	B013	0.001
23	2002	Brown foliose sponge 2	S075	0.350
23	2002	Bryozoan sp (12)	B011	0.033
23	2002	*Bugula* sp 2	B081	0.008
23	2002	Calcareous cream sponge	S005	0.011
23	2002	Calcareous with vanes	B023	0.023
23	2006	*Carijoa* sp (395)	V032	0.002
23	2002	Cavernous digitate sponge	S088	0.137
23	2002	*Cellaria* sp 1	B025	0.019
23	2006	*Cellaria* sp 1	B025	0.039
23	2002	*Chondropsis* sp (178)	S239	0.626
23	2002	*Cliona celata*	S089	7.000
23	2002	*Cornucopina grandis* (285)	B108	0.003
23	2002	*Cornuticella* sp (392)	B066	0.013
23	2006	*Cornuticella* sp (392)	B066	0.020
23	2002	Dark hairy crab	C006	0.003
23	2002	Deep mauve sandy sponge	S117	1.928
23	2006	Demosponge sp (381)	S392	0.034
23	2002	Dendroceratid sp (581)	S072	0.096
23	2006	Dromid sp 2	C045	0.010
23	2006	*Dysidea*?	S391	1.348
23	2006	*Echinolatus poorei*	C025	0.009
23	2006	*Emma triangula*	B075	0.026
23	2002	Fenestrate bryozoan 3	B030	0.022
23	2002	Flat brown branched bryozoan	B034	0.001
23	2002	Flat brown branches	B035	0.001
23	2002	Flat cockle	M007	0.012
23	2002	Grey flat lobe sponge	S147	0.012
23	2002	*Gymnangium superbum*	H026	0.002
23	2002	*Haliclona* sp (382)	S134	0.206
23	2006	*Haliclona* sp (382)	S134	0.041
23	2002	*Haplopteris glutinosa*	H021	0.006
23	2006	Haplosclerid sp (365)	S039	0.222
23	2006	*Iodictyum phoniceum*	B028	0.002
23	2002	*Leptomithrax* sp	C015	0.002
23	2002	Like *Aplidiopsis*	A047	0.064
23	2002	*Lunularia capulus*	B045	0.003
23	2006	*Lunularia capulus*	B045	0.002
23	2006	Majid sp 1	C018	0.001
23	2002	*Malleus meridianus*	M011	0.028
23	2002	Massive sandy colonial ascidian	A050	0.314
23	2006	Microcionid sp (98)	S425	0.066
23	2002	Orange cube bryozoan	B053	0.001
23	2002	Orange curly fan sponge	S199	0.107
23	2002	Orange fistules	S204	0.110
23	2006	*Orthoscuticella amphora*	B105	0.015
23	2006	*Orthoscuticella* sp (139)	B062	0.008
23	2002	*Orthoscuticella* sp (206)	B068	0.064
23	2006	*Orthoscuticella* sp (206)	B068	0.060
23	2006	*Orthoscuticella* sp (96)	B107	0.116
23	2002	*Orthoscuticella* sp 4	B063	0.033
23	2002	*Orthoscuticella* sp 8	B067	0.105
23	2002	Pale mauve sponge	S230	0.528
23	2002	Pale orange branching bryozoan	B070	0.037
23	2002	Pale yellow hydroid	H029	0.016
23	2006	*Pilumnus tomentosus*	C034	0.001
23	2002	Pink fenestrate bryozoan 1	B071	0.011
23	2002	Pink sea fan	V020	0.009
23	2002	*Ptilometra macronema*	E020	0.015
23	2006	*Ptilometra macronema*	E020	0.016
23	2002	*Ptilometra* sp (14 arms)	E022	0.013
23	2002	Red perforated zooids	B078	0.075
23	2002	Reddy orange strap sponge	S270	0.124
23	2002	Sand ascidian 3	A093	0.159
23	2002	Sand ascidian 6	A096	0.175
23	2002	Sandy bunched ascidian 1	A098	0.240
23	2002	Sandy 'liver' ascidian	A103	0.940
23	2002	Sandy porous sponge	S284	0.355
23	2002	Sandy sponge 4	S286	0.070
23	2002	Sclerosponge	S287	0.225
23	2006	*Sepioloidea lineolata*	M028	0.020
23	2002	Serpullid tubes 2	P011	0.003
23	2006	*Sertularia macrocarpa* (394)	H020	0.002
23	2002	*Sertularia* sp (132)	H012	0.001
23	2002	Small club sponge	S293	0.031
23	2002	*Spheciospongia papillosa*	S187	0.933
23	2002	Sponge/Bryozoa mix	B083	0.070
23	2002	Spongiid sp (528)	S157	0.175
23	2002	*Steginoporella* sp 2	B040	0.270
23	2002	*Stelletta tuberculata*	S028	0.026
23	2006	*Triphyllozoon* sp 1 (1)	B032	0.108
23	2002	White opaque solitary with blue tinge	A134	0.412
23	2002	Yellow gelatinous ascidian	A138	0.840
24	2002	*Adeona* sp	B002	0.235
24	2002	*Aglaophenia* sp (123)	H011	0.003
24	2002	*Amathia tortuosa*	B007	0.001
24	2006	Ascidian (202)	A006	0.055
24	2006	Ascidian (465)	A149	0.121
24	2002	Beige digitate sponge 3	S037	0.041
24	2002	Bristle worm	P002	0.004
24	2002	Brown feather hydroid	H014	0.008
24	2002	Brown foliose sponge 1	S074	0.109
24	2006	Bryozoan sp (19)	B010	0.073
24	2002	Deep mauve sandy sponge	S117	0.100
24	2006	Didemnid (37)	A068	0.073
24	2006	Didemnid (74)	A055	0.011
24	2006	Didemnid sp (468)	A153	0.024
24	2006	*Echinoclathria leoporina*	S047	0.178
24	2002	Echinoid sp (418)	E032	0.006
24	2002	Fenestrate bryozoan 3	B030	0.003
24	2006	*Goniocidaris tubaria*	E025	0.001
24	2006	*Haliclona* sp (382)	S134	0.007
24	2002	*Haplopteris glutinosa*	H021	0.005
24	2006	*Haplopteris glutinosa*	H021	0.005
24	2002	*Lunularia capulus*	B045	0.048
24	2006	*Lunularia capulus*	B045	0.002
24	2002	*Malleus meridianus*	M011	0.015
24	2002	Orange didemnid 2	A057	0.142
24	2002	Pink scraggly hydroid	H030	0.001
24	2002	*Ritterella* sp (88)	A121	0.028
24	2002	*Ritterella* sp 1	A087	0.179
24	2002	Sand ascidian 5	A095	0.063
24	2006	*Sertularia macrocarpa* (394)	H020	0.004
24	2002	Small feather hydroid	H033	0.008
24	2002	Spongiid sp (520)	S025	0.117
24	2002	*Steginoporella* sp 2	B040	0.069
26	2002	*Amathia* sp 2	B082	0.006
26	2002	Ascidian	A026	0.522
26	2002	Blue/green hydroid	H007	0.002
26	2002	Brachiopod	L001	0.001
26	2002	*Bugularia disssimilis*	B019	0.002
26	2002	*Clathrozoon wilsoni*	H017	0.016
26	2002	*Cornuticella* sp (392)	B066	0.013
26	2002	Demosponge sp (600)	S065	0.019
26	2006	Demosponge sp (100)	S318	0.001

Station	Year	Species	Code	Weight
26	2006	*Echinolatus poorei*	C025	0.005
26	2002	Flat brown soft	S133	0.035
26	2002	Green flake bryozoan	B038	0.004
26	2002	*Lunularia capulus*	B045	0.101
26	2006	*Lunularia capulus*	B045	0.016
26	2006	*Lunularia repanda*	B094	0.009
26	2002	Mixed bryozoan spp (bushy)	B047	0.008
26	2006	*Ovalipes australiensis*	C020	0.004
26	2002	Pale orange branching bryozoan	B070	0.011
26	2006	*Pilumnus tomentosus*	C034	0.002
26	2006	*Plumularia procumbens*	H008	0.001
26	2002	Serpullid tubes 2	P011	0.010
26	2002	Serpullid tubes 3	P012	0.003
26	2002	*Sertularia* sp (132)	H012	0.001
26	2006	*Sertularia* sp (132)	H012	<0.001
26	2002	Spotted octopus	M029	0.001
26	2002	*Steginoporella* sp 2	B040	0.013
26	2002	Tiny urchin 2	E030	<0.001
26	2002	*Triphyllozoon* sp 1 (1)	B032	0.031
26	2006	*Triphyllozoon* sp 1 (1)	B032	0.001
26	2002	*Xenospongia patelliformis*	S345	0.001
27	2002	*Adeona grisea*	B004	0.058
27	2002	*Adeona* sp	B002	0.039
27	2002	*Amathia* sp 2	B082	0.003
27	2002	*Amathia tortuosa*	B007	0.004
27	2002	Ascidian (89)	A163	0.176
27	2002	Blue/green hydroid	H007	0.001
27	2002	Branched hydroid 3	H010	0.003
27	2006	Bryozoan (148)	B022	0.001
27	2002	*Catenicella* sp	B046	0.008
27	2002	*Clathrozoon wilsoni*	H017	0.056
27	2002	*Cornuticella* sp (392)	B066	0.131
27	2006	Demosponge sp (145)	S362	0.001
27	2002	Flat topped colonial ascidian	A028	0.026
27	2002	Four-branch bushy bryozoan	B037	0.017
27	2002	*Goniocidaris tubaria*	E025	0.005
27	2002	Grey flat lobe sponge	S147	0.196
27	2006	*Iodictyum phoniceum*	B028	0.003
27	2002	*Lunularia capulus*	B045	0.007
27	2006	*Lunularia capulus*	B045	0.045
27	2006	*Lunularia repanda*	B094	0.008
27	2002	Orange bushy bryozoan	B051	0.013
27	2002	Orange cube bryozoan	B053	0.008
27	2002	Orange didemnid 1	A056	0.041
27	2002	Orange sandy ascidian	A062	0.686
27	2002	*Orthoscuticella* sp (139)	B062	0.136
27	2006	*Orthoscuticella* sp (139)	B062	<0.001
27	2002	*Orthoscuticella* sp 10	B059	0.020
27	2002	*Orthoscuticella* sp 6	B065	0.006
27	2002	Pale green curly bryozoan	B069	0.017
27	2002	Pale orange branching bryozoan	B070	0.025
27	2002	Pink fenestrate bryozoan 2	B072	0.004
27	2002	*Ritterella* sp 1	A087	0.125
27	2002	Sand ascidian 2	A092	0.044
27	2002	Sandy cockle	M019	0.017
27	2002	*Sertularia* sp (132)	H012	0.002
27	2006	*Sertularia* sp (132)	H012	0.001
27	2002	Small white branching bryozoan	B080	0.003
27	2002	Soft orange fan	S304	0.111
27	2002	Stalked sandy colonial ascidian	A119	0.337
27	2002	*Steginoporella* sp 2	B040	0.102
27	2006	*Triphyllozoon* sp 1 (1)	B032	0.001
27	2002	White fistule sponge 2	S337	0.014
27	2002	White jointed bryozoan	B092	0.003
27	2006	*Xenospongia patelliformis*	S345	0.001
27	2002	Yellow gelatinous ascidian	A138	0.020
29	2002	*Adeona* sp	B002	0.016
29	2006	*Adeona* sp	B002	0.034
29	2002	*Aglaophenia* sp (123)	H011	0.001
29	2002	*Amathia tortuosa*	B007	0.002
29	2002	Ascidian	A026	0.042
29	2006	Ascidian (204)	A143	0.196
29	2002	Ascidian (32)	A002	0.246
29	2006	Ascidian (393)	A147	0.612
29	2002	Black jelly ascidian	A003	0.078
29	2002	Black-fine branched stalked cups	H006	0.001
29	2002	Brown encrusting bryozoan 2	B017	0.065
29	2002	Brown hard dome ascidian	A012	0.232
29	2002	Brown pitted ascidian	A015	0.142
29	2002	*Canda* sp	B024	0.003
29	2002	*Catenicella* sp	B046	0.010
29	2002	*Cellaria* sp 1	B025	0.015
29	2002	*Cornucopina grandis* (285)	B108	0.138
29	2006	*Cornuticella* sp (92)	B106	0.039
29	2006	*Cymbastela* (sp 2)	S135	0.253
29	2006	Demosponge sp (409)	S393	0.010
29	2006	Dictyoceratid sp (407)	S153	0.142
29	2006	Didemnid (402)	A023	1.309
29	2002	Fireworm	P004	0.001
29	2002	Flat branching orange bryozoan	B033	0.003
29	2002	Grey feather hydroid	H023	0.001
29	2006	*Gymnangium* sp	H025	0.001
29	2002	Large blue dome ascidian	A045	0.824
29	2002	*Leptomithrax* sp	C015	0.002
29	2002	*Lunularia capulus*	B045	0.003
29	2002	*Mopsea encrinula*	V014	0.042
29	2002	*Neodoris chrysodemna*	M037	0.002
29	2006	*Ophiocrossota multispina*	E045	0.001
29	2002	Orange coralline	B052	0.004
29	2002	Orange sandy ascidian	A062	1.640
29	2002	*Orthoscuticella* sp 10	B059	0.008
29	2002	*Pilumnus tomentosus*	C034	0.002
29	2002	Pink colonial ascidian	A069	0.011
29	2006	*Prionospio* sp	P018	0.253
29	2002	Purple folded ascidian	A079	0.049
29	2002	Red/brown sandy ascidian 2	A086	1.232
29	2002	Reddy orange coralline	B079	0.024
29	2006	*Ritterella* sp (410)	A089	0.016
29	2002	*Ritterella* sp 1	A087	0.018
29	2002	Sand ascidian 2	A092	0.025
29	2002	Sandy button ascidian	A100	0.076
29	2002	Scale worm 1	P008	0.001
29	2002	Serpullid tubes 3	P012	0.019
29	2002	Spotted octopus	M029	0.001
29	2002	Stalked sandy colonial ascidian	A119	0.172
29	2002	*Steginoporella* sp 2	B040	0.010
29	2002	String -of-sand ascidian 2	A120	0.004
29	2006	*Symplectoscyphus* sp (114)	H031	0.006
29	2002	White calcareous dome	B089	0.009
29	2002	White fenestrate bryozoan	B091	0.002
29	2002	Yellow dome didemnid	A137	0.037
30	2002	*Adeona* sp	B002	0.014
30	2006	*Adeona* sp	B002	0.427
30	2002	*Adeona* sp 1	B001	1.576
30	2002	*Aglaophenia* sp (123)	H011	0.029
30	2006	*Aglaophenia* sp (123)	H011	0.040

Station	Year	Species	Code	Weight
30	2002	*Amathia* sp 2	B082	0.012
30	2002	*Annisis sprightly*	V003	0.018
30	2006	*Aplidium* sp.	A162	4.507
30	2002	Ascidian	A026	0.006
30	2006	Ascidian (128)	A140	0.036
30	2006	Ascidian (129)	A124	0.024
30	2002	Blue/green hydroid	H007	0.026
30	2002	Brown foliose sponge 1	S074	0.060
30	2002	Brown pitted ascidian	A015	3.763
30	2002	Bryozoan sp (117)	B057	0.017
30	2006	Bryozoan sp (19)	B010	0.088
30	2006	*Bugula* sp 1	B055	0.002
30	2006	Calcarea (133)	S422	0.018
30	2002	Calcareous beige	S001	0.006
30	2002	Calcareous lobes	S011	0.021
30	2002	*Cellaria* sp 1	B025	0.014
30	2006	*Cellaria* sp 1	B025	0.011
30	2002	*Cornuticella* sp (392)	B066	0.025
30	2002	Cream sandy ascidian	A020	1.472
30	2002	Cream/pink didemnid ascidian	A022	0.610
30	2002	Dome ascidian	A024	0.014
30	2006	*Emma triangula*	B075	<0.001
30	2002	Fenestrate bryozoan 3	B030	0.005
30	2002	Green crater ascidian	A031	0.091
30	2002	Green translucent dome ascidian	A035	0.005
30	2002	Grey sandy ascidian	A037	5.480
30	2006	Halichondrid sponge (134)	S426	0.016
30	2002	*Ircinia* sp sandy	S169	0.401
30	2002	Leafy beige bryozoan	B043	0.001
30	2002	Long tip conule sponge	S184	0.095
30	2002	*Lunularia capulus*	B045	0.001
30	2006	Majid sp 1	C018	0.005
30	2006	*Oceanapia* sp 6	S377	0.040
30	2002	Orange didemnid 1	A056	0.542
30	2002	Orange fistules	S204	0.030
30	2002	Orange sandy ascidian	A062	1.886
30	2006	*Orthoscuticella* sp (139)	B062	0.026
30	2006	*Orthoscuticella* sp (96)	B107	0.056
30	2002	*Orthoscuticella* sp 8	B067	0.006
30	2002	Pink, conulose sponge	S241	0.026
30	2002	*Pseudoplumarella thetis*	V021	0.029
30	2006	*Pseudoplumarella thetis*	V021	0.028
30	2002	Purple colonial ascidian	A075	0.717
30	2002	Red/brown sandy ascidian 1	A085	10.180
30	2002	*Ritterella* sp 1	A087	0.156
30	2002	Sand ascidian 5	A095	0.534
30	2002	Sandy conulose sponge	S280	0.145
30	2002	Sandy 'liver' ascidian	A103	0.682
30	2006	*Sertularia* sp (132)	H012	0.001
30	2002	*Spheciospongia papillosa*	S187	11.260
30	2006	*Spheciospongia papillosa*	S187	2.459
30	2002	Spherical cratered ascidian	A117	0.213
30	2002	*Steginoporella* sp 2	B040	0.018
30	2006	*Steginoporella* sp 2	B040	0.012
30	2006	*Symplectoscyphus* sp (114)	H031	0.040
30	2006	*Triphyllozoon* sp 1 (1)	B032	0.002
31	2006	*Adeona* sp	B002	0.200
31	2002	*Adeona* sp 1	B001	0.454
31	2002	*Aglaophenia* sp (123)	H011	0.033
31	2002	Ascidian (129)	A124	0.616
31	2002	Ascidian (202)	A006	0.599
31	2002	Ascidian (89)	A163	0.406
31	2002	Branched hydroid 3	H010	0.008
31	2002	Brown encrusting bryozoan 1	B016	0.018
31	2002	Brown foliose sponge 1	S074	0.222
31	2002	Brown pitted ascidian	A015	0.620
31	2002	*Clathria* sp (112)	S129	0.024
31	2002	*Clathrozoon wilsoni*	H017	0.006
31	2002	*Cornucopina grandis* (285)	B108	0.082
31	2002	Cream/pink didemnid ascidian	A022	0.662
31	2002	*Cribrochalina*?	S139	0.198
31	2002	*Culicia tenella*	V008	0.010
31	2002	Demosponge sp (225)	S182	0.116
31	2002	Green sandy ascidian	A032	0.530
31	2002	*Gymnangium* sp	H025	0.033
31	2002	*Haliclona* sp (382)	S134	0.014
31	2006	*Haliclona* sp (382)	S134	0.020
31	2002	Honey mucousy sponge	S164	0.242
31	2002	*Ircinia* sp sandy	S169	0.087
31	2002	Large strawberry ascidian	A046	0.248
31	2002	*Oparinisis* n.sp.	V017	0.115
31	2002	Orange bryozoan	B049	0.009
31	2002	Orange furry sponge	S206	0.049
31	2002	Orange sandy ascidian	A062	0.376
31	2002	Orange stalked sponge	S221	0.120
31	2002	*Orthoscuticella* sp 10	B059	0.043
31	2002	Parallel fibre sponge	S236	0.415
31	2002	Pink fenestrate bryozoan 1	B071	0.004
31	2002	Purple crater ascidian 1	A076	0.043
31	2002	Red/brown sandy ascidian 1	A085	1.656
31	2002	Red/brown sandy ascidian 2	A086	1.054
31	2006	*Ritterella* sp (410)	A089	0.010
31	2002	*Ritterella* sp 1	A087	0.070
31	2002	Sand ascidian 5	A095	0.129
31	2002	Sandy bunched ascidian 1	A098	0.196
31	2002	Sandy bunched ascidian 2	A099	0.160
31	2002	Sandy 'liver' ascidian	A103	1.500
31	2002	Small orange cup	S296	0.030
31	2002	*Spheciospongia papillosa*	S187	28.200
31	2006	*Spheciospongia papillosa*	S187	12.000
31	2002	*Spheciospongia purpurea*	S062	1.800
31	2002	*Steginoporella* sp 2	B040	0.004
31	2002	Thick yellow vase	S326	0.448
31	2002	White calcareous dome	B089	0.021
32	2002	*Acabria* sp	V001	0.001
32	2006	*Acabria* sp	V001	0.002
32	2002	*Adeona* sp	B002	0.162
32	2006	*Adeona* sp	B002	0.311
32	2002	*Aglaophenia* sp (123)	H011	0.011
32	2002	*Amathia tortuosa*	B007	0.004
32	2006	Ascidian (113)	A139	0.121
32	2002	Ascidian (89)	A163	0.009
32	2002	Blue/green hydroid	H007	0.013
32	2002	Brown hydroid 1	H015	0.001
32	2002	Bryozoan (148)	B022	0.006
32	2006	Bryozoan sp (117)	B057	0.002
32	2002	*Bugularia disssimilis*	B019	0.002
32	2006	Campanulariid sp (109)	H037	0.009
32	2002	*Catenicella* sp	B046	0.003
32	2006	*Catenicella* sp	B046	0.005
32	2002	*Cellaria* sp 1	B025	0.013
32	2006	*Clathria* sp (112)	S129	0.089
32	2002	*Fillellum* sp	H005	0.011
32	2006	*Fusinus novaehollandiae*?	M033	0.002
32	2006	Galatheid sp	C041	<0.001
32	2002	Grey sandy ascidian	A037	0.240

Station	Year	Species	Code	Weight
32	2002	Leafy beige bryozoan	B043	0.001
32	2002	*Lunularia capulus*	B045	0.005
32	2002	*Mopsea encrinula*	V014	0.021
32	2006	*Mopsea encrinula*	V014	0.083
32	2002	Mussel	M012	0.004
32	2002	*Octopus* sp Juv	M025	0.001
32	2006	*Ophiocrossota multispina*	E045	0.001
32	2002	Orange fistules	S204	0.004
32	2002	Orange furry sponge	S206	0.015
32	2002	Orange sandy ascidian	A062	0.434
32	2002	Orange sea squirt	A064	0.011
32	2002	*Orthoscuticella* sp 8	B067	0.006
32	2002	Pink hairy brittle star	E049	<0.001
32	2006	*Pseudoplumarella thetis*	V021	0.068
32	2002	Purple colonial ascidian	A075	0.864
32	2002	Sand ascidian 4	A094	0.070
32	2002	*Sepioloidea lineolata*	M028	0.008
32	2002	Small black sea squirt	A105	0.001
32	2002	Soft orange rough sponge	S305	0.284
32	2002	*Spheciospongia papillosa*	S187	7.330
32	2006	*Spheciospongia papillosa*	S187	1.220
32	2002	*Steginoporella* sp 2	B040	0.102
32	2006	*Symplectoscyphus* sp (114)	H031	0.012
32	2002	White dome ascidian 2	A131	0.069
32	2002	White fistule sponge 2	S337	0.005
32	2002	*Xenospongia patelliformis*	S345	0.001
33	2002	*Acabria* sp	V001	0.001
33	2002	Bryozoan sp (117)	B057	0.005
33	2002	*Bugula* sp 2	B081	0.009
33	2002	*Cellaria* sp 1	B025	0.002
33	2002	Cream bumpy sponge	S099	4.900
33	2002	Curly bushy bryozoan 1	B026	0.008
33	2002	Curly bushy bryozoan 2	B027	0.009
33	2002	Orange hispid fingers	S208	0.028
33	2006	*Orthoscuticella* sp (139)	B062	0.002
33	2002	*Orthoscuticella* sp 8	B067	0.013
33	2002	Sandy dome ascidian	A102	0.140
33	2002	Spherical cratered ascidian	A117	0.790
33	2002	White calcareous dome	B089	0.009
35	2006	*Adeona* sp	B002	0.057
35	2006	*Aglaophenia* sp (77)	H039	<0.001
35	2006	Ascidian (202)	A006	0.074
35	2002	Beige bumpy sponge	S032	0.092
35	2002	Brown calcareous bryozoan	B014	0.070
35	2002	Bryozoan sp (117)	B057	0.002
35	2006	Calcarea (242)	S383	0.007
35	2002	*Clathrozoon wilsoni*	H017	0.075
35	2002	Fenestrate bryozoan 3	B030	0.015
35	2006	*Fillellum* sp	H005	0.002
35	2002	*Fusinus novaehollandiae*?	M033	0.013
35	2002	*Lunularia capulus*	B045	0.002
35	2002	Orange bryozoan	B049	0.014
35	2002	Orange sandy ascidian	A062	0.079
35	2002	*Orthoscuticella* sp 10	B059	0.006
35	2002	Pink fenestrate bryozoan 1	B071	0.009
35	2006	*Pseudoplumarella thetis*	V021	<0.001
35	2002	Sandy sponge 4	S286	0.259
35	2002	*Sertularia* sp (132)	H012	0.001
35	2002	*Spheciospongia papillosa*	S187	6.070
35	2006	*Symplectoscyphus* sp (114)	H031	0.001
35	2002	*Telesto* sp	V026	0.001
35	2002	White calcareous dome	B089	0.010
36	2002	*Adeona* sp	B002	0.130

Station	Year	Species	Code	Weight
36	2002	*Aglaophenia* sp (123)	H011	0.045
36	2006	*Amathia tortuosa*	B007	0.001
36	2002	Ascidian (129)	A124	0.106
36	2002	*Axinella* sp (214)	S197	0.085
36	2002	Beige hydroid 3	H003	0.003
36	2002	Brittle star	E042	0.002
36	2002	Brown bushy bryozoan	B013	0.030
36	2002	Brown encrusting bryozoan 2	B017	0.474
36	2006	Bryozoan (168, calc)	B096	0.001
36	2002	Bryozoan sp (19)	B010	0.052
36	2002	*Bugula* sp 2	B081	0.022
36	2002	Feather hydroid 2	H019	0.002
36	2002	Fenestrate bryozoan 3	B030	0.006
36	2002	*Fillellum* sp	H005	0.026
36	2002	Grey feather hydroid	H023	0.002
36	2002	*Malleus meridianus*	M011	0.006
36	2002	Mauve digitate sponge	S188	0.226
36	2002	Orange didemnid 4	A059	0.036
36	2002	Orange furry sponge	S206	0.043
36	2002	Orange haplosclerid sponge	S207	0.029
36	2002	Orange sponge	S220	0.020
36	2002	Orange stalked sponge	S221	0.042
36	2006	*Orthoscuticella* sp (139)	B062	0.001
36	2002	Pink fenestrate bryozoan 1	B071	0.001
36	2002	Purple colonial ascidian	A075	0.234
36	2002	Purple crater ascidian 1	A076	1.556
36	2002	Purple crater ascidian 2	A077	0.700
36	2002	Sandy with yellow zooids	A104	0.854
36	2002	Serpullid tubes 2	P011	0.005
36	2002	*Sertularia* sp (132)	H012	0.001
36	2002	Slimy red sponge on stalk	S291	0.113
36	2002	*Spheciospongia papillosa*	S187	19.368
36	2002	*Spheciospongia purpurea*	S062	0.660
36	2002	Stalked sandy colonial ascidian	A119	0.192
36	2002	Thick yellow vase	S326	2.170
36	2002	White calcareous dome	B089	0.015
36	2002	White encrusting calcareous	B090	0.010
36	2002	Yellow dome didemnid	A137	0.102
37	2002	*Adeona grisea*	B004	0.107
37	2002	*Adeona* sp	B002	0.037
37	2002	*Aglaophenia* sp (123)	H011	0.038
37	2006	Ascidian (172)	A049	0.169
37	2002	Ascidian (89)	A163	0.013
37	2006	Ascidian (89)	A163	0.325
37	2002	Beige bumpy sponge	S032	0.045
37	2002	Beige hydroid 1	H001	0.002
37	2002	Beige leafy sponge	S045	0.326
37	2002	Brown hard dome ascidian	A012	0.546
37	2002	Brown pitted ascidian	A015	0.164
37	2002	Brown sandy ascidian	A016	0.057
37	2002	*Bugula* sp 2	B081	0.004
37	2002	*Bugularia disssimilis*	B019	0.015
37	2002	Conulose digitate sponge	S094	0.022
37	2002	*Cornucopina grandis* (285)	B108	0.050
37	2002	Dome ascidian, sculptured surface	A025	0.678
37	2002	Fenestrate bryozoan 3	B030	0.012
37	2002	*Fillellum* sp	H005	0.002
37	2002	Green sandy ascidian	A032	1.070
37	2002	Green translucent ascidian 2	A034	1.293
37	2002	Grey-beige sandy ascidian	A039	0.036
37	2002	Internal sandy sponge	S165	0.326
37	2002	*Ircinia* sp 3	S168	0.117
37	2002	Orange coralline	B052	0.007

Station	Year	Species	Code	Weight
37	2002	Orange furry sponge	S206	0.112
37	2002	Orange sandy ascidian	A062	0.065
37	2002	Orange sandy solitary	A063	0.005
37	2002	Orange spherical sponge 2	S219	0.500
37	2002	*Orthoscuticella* sp (206)	B068	0.020
37	2002	*Orthoscuticella* sp 10	B059	0.005
37	2002	*Orthoscuticella* sp 2	B061	0.010
37	2002	*Pilumnus tomentosus*	C034	0.009
37	2002	Pink fenestrate bryozoan 1	B071	0.300
37	2002	Pink fenestrate bryozoan 2	B072	0.007
37	2002	Pink fenestrate bryozoan 3	B073	0.023
37	2002	*Pseudoplumarella thetis*	V021	0.050
37	2002	*Ptilometra* sp 12 arms	E023	0.006
37	2002	Purple folded ascidian	A079	0.053
37	2002	Serpullid tubes 4	P013	0.010
37	2002	*Spheciospongia papillosa*	S187	15.468
37	2002	*Steginoporella* sp 2	B040	0.012
37	2002	White calcareous dome	B089	0.035
37	2002	Xestospongia-like sp	S348	4.957
38	2002	*Acabria* sp	V001	0.001
38	2002	*Adeona* sp	B002	0.032
38	2002	Brown bushy bryozoan	B013	0.026
38	2002	*Bugularia disssimilis*	B019	0.002
38	2002	Dictyoceratid sp (407)	S153	0.236
38	2002	Fenestrate bryozoan 3	B030	0.010
38	2002	Light pink curly	B044	0.080
38	2006	*Lunularia capulus*	B045	0.001
38	2006	*Lunularia repanda*	B094	0.001
38	2002	Orange didemnid 1	A056	0.506
38	2002	*Orthoscuticella* sp (206)	B068	0.016
38	2002	*Orthoscuticella* sp 11	B060	0.034
38	2002	Pink colonial ascidian	A069	0.026
38	2002	Pink fenestrate bryozoan 1	B071	0.018
38	2002	*Pteronisis incerta*	V022	0.001
38	2002	Sandy cockle	M019	0.008
38	2006	Sea squirt (5)	A113	0.003
38	2002	Serpullid tubes 3	P012	0.002
38	2002	Tiny urchin 2	E030	0.001
38	2002	White calcareous dome	B089	0.009
38	2002	White colonial ascidian	A125	0.025
39	2002	*Antedon* sp	E018	<0.001
39	2002	Ascidian (202)	A006	0.039
39	2002	Beige hydroid 1	H001	0.001
39	2002	Beige hydroid 2	H002	0.002
39	2002	Beige hydroid 3	H003	0.002
39	2002	Brown hydroid 2	H016	0.006
39	2002	Bryozoan sp (117)	B057	0.002
39	2002	Bryozoan sp (3)	B021	0.004
39	2002	*Bugularia disssimilis*	B019	0.004
39	2002	Carid shrimp 3	C005	0.003
39	2002	*Cornucopina grandis* (285)	B108	0.018
39	2002	Demosponge sp (100)	S318	0.001
39	2006	Demosponge sp (362)	S419	0.009
39	2002	Hadromerid sp	S310	0.121
39	2002	Leafy beige bryozoan	B043	0.007
39	2002	*Lunularia capulus*	B045	0.002
39	2002	*Octopus* ?*berrima*	M024	<0.001
39	2002	Ophiuroid sp (25)	E041	<0.001
39	2002	*Orthoscuticella* sp (139)	B062	0.026
39	2002	*Orthoscuticella* sp 10	B059	0.007
39	2002	Serpullid tubes 2	P011	0.017
39	2002	Serpullid tubes 3	P012	0.068
39	2002	*Steginoporella* sp 2	B040	0.015

Station	Year	Species	Code	Weight
39	2002	White calcareous dome	B089	0.034
39	2002	*Xenospongia* sp 2	S346	0.001
41	2002	*Adeona* sp	B002	0.064
41	2002	*Adeona* sp 1	B001	0.081
41	2002	Ascidian (202)	A006	0.009
41	2002	Beige hydroid 1	H001	0.002
41	2002	Beige hydroid 3	H003	0.002
41	2002	Blue tinged ascidian	A008	0.110
41	2002	Bright yellow fistule sponge	S064	0.025
41	2006	Bryozoan sp (3)	B021	0.001
41	2002	*Bugula* sp 2	B081	0.072
41	2002	Calcareous pinched lobes	S017	0.054
41	2002	*Catenicella* sp	B046	0.002
41	2002	*Clathrozoon wilsoni*	H017	0.022
41	2002	Colonial stalks ascidian	A018	0.439
41	2002	*Cornucopina grandis* (285)	B108	0.004
41	2002	Cream translucent ascidian	A021	0.008
41	2002	Cream/pink didemnid ascidian	A022	0.323
41	2002	Fenestrate bryozoan 3	B030	0.012
41	2002	Grey sandy ascidian	A037	1.148
41	2002	*Ircinia* sp sandy	S169	0.018
41	2006	*Oceanapia* sp 3	S312	0.001
41	2002	Orange didemnid 4	A059	0.250
41	2002	*Orthoscuticella* sp 10	B059	0.012
41	2002	*Orthoscuticella* sp 8	B067	0.038
41	2002	Pink didemnid	A070	0.019
41	2002	Pink fenestrate bryozoan 2	B072	0.006
41	2002	Pink/cream branching bryozoan	B076	0.010
41	2002	Potato sponge	S249	0.005
41	2002	Purple brown solitary ascidian	A074	0.002
41	2002	Purple folded ascidian	A079	0.029
41	2002	Rough surface colonial stalk	A090	0.022
41	2002	Sclerosponge	S287	0.040
41	2006	Sea squirt (5)	A113	<0.001
41	2002	Serpullid tubes 3	P012	0.014
41	2002	Serpullid tubes 4	P013	0.026
41	2002	*Steginoporella* sp 2	B040	0.010
41	2002	Thin flat branching brown bryozoan	B086	0.009
41	2006	*Triphyllozoon* sp 1 (1)	B032	0.001
41	2002	White branching bushy bryozoan	B087	0.002
41	2002	White sand spongiid	S342	0.175
41	2002	Yellow didemnid	A136	0.009
42	2002	*Achaeus* sp	C032	0.001
42	2002	Black sandy sea squirt	A004	0.019
42	2002	Black soft coral	V005	0.005
42	2002	Bluish colonial ascidian	A011	0.017
42	2006	Calcarea (26)	S366	0.002
42	2002	Calcarea (65)	S009	0.005
42	2006	Calcarea (78)	S373	0.005
42	2006	Calcarea (79)	S374	0.003
42	2002	Calcareous brown convoluted	S003	0.001
42	2002	Calcareous brown lobe	S004	0.021
42	2002	Calcareous pinched lobes	S017	0.013
42	2002	*Carcinoplax meridionalis*	C002	0.003
42	2002	Cavernous digitate sponge	S088	0.048
42	2002	*Cribrochalina* sp (49)	S334	0.376
42	2006	*Cribrochalina* sp (49)	S334	0.306
42	2006	Demosponge sp (415)	S420	0.001
42	2006	Echinoid sp (418)	E032	0.001
42	2002	*Echinolatus poorei*	C025	0.001
42	2002	Feather hydroid 2	H019	0.011
42	2002	Fenestrate bryozoan 3	B030	0.003
42	2002	Galatheid sp 1	C009	0.015

Station	Year	Species	Code	Weight
42	2006	*Hornera foliacea*	B101	0.013
42	2002	Ophiuroid sp (25)	E041	0.001
42	2002	*Peronella peronii*	E027	0.018
42	2002	Potato sponge	S249	0.199
42	2002	*Prismatopus spatulifer*	C026	0.007
42	2006	*Prismatopus spatulifer*	C026	0.001
42	2002	Purple heart urchin	E028	0.005
42	2002	*Rhizaxinella* sp	S300	0.007
42	2002	Sandy button ascidian	A100	0.058
42	2002	Single fistule sponge	S289	0.001
42	2002	Small black sea squirt	A105	0.046
42	2002	Solitary sandy 3	A116	0.017
42	2002	*Steginoporella* sp 2	B040	0.008
43	2002	*Achaeus* sp	C032	0.002
43	2002	*Anchisquilloides mcneilli*	C031	0.007
43	2006	Ascidian (14)	A141	1.123
43	2002	*Astropecten vappa*	E003	0.005
43	2002	Beige hydroid 3	H003	0.001
43	2002	Black feathers hydroid	H004	0.002
43	2002	Black soft coral	V005	0.009
43	2002	Brown hydroid 1	H015	0.002
43	2002	Calcareous brown convoluted	S003	0.004
43	2002	Calcareous pinched lobes	S017	0.090
43	2002	Calcareous white sponge	S021	0.048
43	2002	*Carcinoplax meridionalis*	C002	0.006
43	2002	*Cribrochalina* sp (49)	S334	0.468
43	2002	*Dendronephthya* sp	V009	0.008
43	2002	*Echinolatus poorei*	C025	0.001
43	2002	*Eplumula australiensis*	C008	0.002
43	2002	Fenestrate bryozoan 3	B030	0.010
43	2002	Galatheid sp 1	C009	0.003
43	2002	Grey feather hydroid	H023	0.001
43	2002	Hermit crab 2	C012	0.004
43	2002	Mixed calcarea sponge spp	S023	0.002
43	2002	Ophiuroid sp (25)	E041	0.001
43	2002	Orange sandy solitary	A063	0.018
43	2002	Pectinid sp 3	M017	0.001
43	2002	Potato sponge	S249	0.364
43	2002	*Prismatopus spatulifer*	C026	0.002
43	2002	Purple folded ascidian	A079	0.017
43	2002	Pycnogonid	C035	0.001
43	2002	Sea squirt (5)	A113	0.008
43	2002	Single fistule sponge	S289	0.001
43	2002	Small black sea squirt	A105	0.018
43	2002	*Soleneiscus* sp? (24)	S007	0.001
43	2002	*Solenocaulon* sp	V025	0.007
45	2002	*Achaeus* sp	C032	0.001
45	2006	Ascidian (32)	A002	0.106
45	2006	*Axinella* sp (31)	S368	0.038
45	2002	Blue tinged ascidian	A008	0.040
45	2002	Brown pancake ascidian 1	A013	0.067
45	2002	Bryozoan sp (12)	B011	0.002
45	2002	Calcareous beige tube	S002	0.003
45	2002	Calcareous cream tube	S006	0.002
45	2002	Calcareous dark green tube	S008	0.001
45	2002	Calcareous short tube	S019	0.001
45	2002	Calcareous thin cream tubes	S020	0.001
45	2002	*Cornucopina grandis* (285)	B108	0.018
45	2006	Didemnid (37)	A068	0.028
45	2002	Echinoid sp (281)	E029	0.002
45	2002	Fenestrate bryozoan 3	B030	0.002
45	2006	*Ircinia* sp	S369	2.490
45	2002	Mitre shell	M036	0.002

Station	Year	Species	Code	Weight
45	2002	Orange marmalade ascidian	A061	0.008
45	2002	Orange sandy solitary	A063	0.006
45	2006	*Pilumnus tomentosus*	C034	0.003
45	2006	Portunid sp	C024	0.002
45	2002	Screw shells	M039	0.011
45	2002	Small brown amorphous ascidian	A106	0.005
45	2002	Small white branching bryozoan	B080	0.001
45	2002	*Steginoporella* sp 2	B040	0.008
45	2006	*Steginoporella* sp 2	B040	0.002
45	2002	*Xenospongia* sp 3	S347	0.001
46	2002	*Achaeus* sp	C032	0.001
46	2006	*Achaeus* sp	C032	<0.001
46	2006	*Aglaophenia* sp (77)	H039	<0.001
46	2002	*Anchisquilloides mcneilli*	C031	0.007
46	2006	Ascidian (14)	A141	0.252
46	2002	Ascidian (62)	A054	0.063
46	2002	Brittle star	E042	0.001
46	2002	Brown pancake ascidian 1	A013	0.171
46	2002	Brown pancake ascidian 2	A014	0.038
46	2006	Calcarea (26)	S366	0.001
46	2002	Calcarea (65)	S009	0.001
46	2006	Calcarea (66)	S371	0.006
46	2006	Calcarea (78)	S373	0.008
46	2006	Calcarea (79)	S374	0.003
46	2006	Calcarea (82)	S375	0.002
46	2002	Carid shrimp 2	C004	<0.001
46	2002	*Cribrochalina* sp (49)	S334	0.063
46	2006	Didemnid (74)	A055	0.002
46	2002	*Eplumula australiensis*	C008	0.001
46	2002	*Ericusa papillosa*	M032	0.025
46	2002	*Leptomithrax sternocostulatus*	C016	0.008
46	2002	Mouse urchin	E026	0.006
46	2002	Nemertea worm	N001	0.001
46	2006	*Ophiomyxa australis?*	E052	0.002
46	2002	Ophiuroid sp (25)	E041	0.002
46	2002	Orange sandy ascidian	A062	0.076
46	2002	Orange sandy solitary	A063	0.014
46	2002	Ornate-surfaced ascidian	A066	0.025
46	2002	*Peronella peronii*	E027	0.101
46	2006	*Peronella peronii*	E027	0.016
46	2006	*Prismatopus spatulifer*	C026	<0.001
46	2002	Purple brown solitary ascidian	A074	0.012
46	2002	Purple crater ascidian 1	A076	0.036
46	2002	Purple heart urchin	E028	0.006
46	2002	*Rhizaxinella* sp	S300	0.004
46	2006	Sea squirt (5)	A113	0.013
46	2002	Single fistule sponge	S289	0.005
46	2002	Spherical root sponge	S311	0.640
46	2002	*Steginoporella* sp 2	B040	0.019
47	2002	*Aglaophenia* sp (123)	H011	0.001
47	2002	*Alcyonium etheridgei*	V002	0.001
47	2006	Ascidian (14)	A141	1.474
47	2002	Beige hydroid 3	H003	0.001
47	2002	Beige sediment sponge	S051	0.121
47	2002	Black feathers hydroid	H004	0.001
47	2002	Black soft coral	V005	0.009
47	2002	Calcareous brown convoluted	S003	0.002
47	2002	Calcareous pinched lobes	S017	0.016
47	2002	*Carcinoplax meridionalis*	C002	0.002
47	2002	*Cribrochalina* sp (49)	S334	0.789
47	2006	*Cribrochalina* sp (49)	S334	0.257
47	2002	*Dendronephthya* sp	V009	0.155
47	2002	*Dromidiopsis globosa*	C007	0.003

Station	Year	Species	Code	Weight
47	2002	*Ericusa papillosa*	M032	0.030
47	2002	Grey feather hydroid	H023	0.002
47	2002	Hermit crab 2	C012	0.018
47	2002	*Ibacus novemdentatus*	C013	0.007
47	2002	Mixed ascidian spp	A051	0.055
47	2002	Mixed cnidaria spp	V013	0.050
47	2002	Mixed hydroid spp	H027	0.231
47	2002	*Oceanapia* (sp 4)	S298	0.015
47	2002	Ophiuroid sp (25)	E041	0.001
47	2002	Palmate dictyoceratid	S235	0.032
47	2002	*Peronella peronii*	E027	0.037
47	2002	Potato sponge	S249	0.795
47	2002	*Prismatopus spatulifer*	C026	0.002
47	2002	Purple crater ascidian 1	A076	0.031
47	2002	Sandy button ascidian	A100	0.027
47	2002	Scraggly hydroid	H032	0.001
47	2002	*Scyllarus* sp 2	C030	0.004
47	2002	Small black sea squirt	A105	0.012
47	2002	*Solenocaulon* sp	V025	0.183
47	2002	Xeniid sp	V027	0.002
48	2002	*Alcyonium etheridgei*	V002	0.002
48	2002	Beige hydroid 1	H001	0.001
48	2002	Beige sediment sponge	S051	0.200
48	2002	Blue/grey conulose sponge	S061	0.007
48	2006	*Caberea* sp (28, calc)	B099	<0.001
48	2006	Calcarea (26)	S366	0.002
48	2006	Calcarea (27)	S367	<0.001
48	2002	Calcareous brown convoluted	S003	0.006
48	2002	Calcareous large black tube	S010	0.003
48	2002	*Carcinoplax meridionalis*	C002	0.002
48	2006	*Cavolina* sp. (68)	M046	<0.001
48	2002	*Cribrochalina* sp (49)	S334	0.618
48	2006	*Crisa* sp?	B100	0.001
48	2002	Didemnid (74)	A055	0.003
48	2002	*Dromidiopsis globosa*	C007	0.004
48	2002	Grey pitted sponge	S151	0.038
48	2002	Mixed ascidian spp	A051	0.052
48	2002	Mixed brittlestar spp	E044	0.026
48	2002	Mixed calcarea sponge spp	S023	0.005
48	2002	Mixed hydroid spp	H027	0.013
48	2002	Mouse urchin	E026	0.004
48	2002	Onuphid worm	P005	0.001
48	2002	Ophiuroid sp (25)	E041	0.003
48	2006	Ophiuroid sp (25)	E041	<0.001
48	2002	Orange sandy ascidian	A062	0.026
48	2002	Orange sandy solitary	A063	0.003
48	2002	*Peronella peronii*	E027	0.009
48	2002	Polychaete tube mix	P007	0.052
48	2002	Potato sponge	S249	0.002
48	2002	*Rhizaxinella* sp	S300	0.003
48	2002	Ridged brittle star	E050	0.001
48	2002	Sandy dome ascidian	A102	0.051
48	2002	Scraggly hydroid	H032	0.002
48	2002	Small black sea squirt	A105	0.039
48	2006	*Soleneiscus* sp? (24)	S007	0.001
48	2002	*Solenocaulon* sp	V025	0.024
48	2002	Spiked stalk sponge	S313	0.007
48	2002	*Stelletta* sp	S237	0.010
48	2002	Thin digitate sponge	S327	0.003
48	2002	Turban shell	M042	0.002
48	2002	Xeniid sp	V027	0.012
50	2002	*Achaeus* sp	C032	0.005
50	2002	Almond ark shell	M001	0.001

Station	Year	Species	Code	Weight
50	2002	*Amathia tortuosa*	B007	0.002
50	2006	Ascidian (14)	A141	0.039
50	2006	Ascidian (16)	A142	0.160
50	2002	Brown pancake ascidian 1	A013	0.011
50	2002	Brown pancake ascidian 2	A014	0.011
50	2006	Bryozoan (9)	B098	0.038
50	2006	Bryozoan sp (12)	B011	<0.001
50	2006	Bryozoan sp (19)	B010	0.002
50	2006	Bryozoan sp (3)	B021	0.006
50	2006	*Bugularia disssimilis*	B019	0.001
50	2002	Calcarea (65)	S009	0.001
50	2002	Calcareous pinched lobes	S017	0.004
50	2002	Calcareous thin cream tubes	S020	0.001
50	2002	Calcareous white tube	S022	0.001
50	2006	Desmacid sp (18)	S364	0.001
50	2002	*Eplumula australiensis*	C008	0.001
50	2002	Galatheid sp 1	C009	0.001
50	2002	Knobbed branch bryozoan	B041	0.001
50	2006	*Munida* sp	C044	0.003
50	2002	*Orthoscuticella* sp 8	B067	0.001
50	2002	*Pterynotus* sp	M044	0.001
50	2006	*Pterynotus* sp	M044	0.003
50	2002	*Ptilometra* sp	E021	0.006
50	2006	Sea squirt (5)	A113	0.012
50	2002	Small white branching bryozoan	B080	0.001
50	2006	*Steginoporella* sp 1	B102	0.017
50	2002	*Steginoporella* sp 2	B040	0.006
51	2002	*Achaeus* sp	C032	0.001
51	2002	Amorphous conulose sponge	S026	0.060
51	2002	*Anchisquilloides mcneilli*	C031	0.004
51	2002	*Armina* sp	M030	0.001
51	2006	Ascidian (14)	A141	0.040
51	2002	Black sandy sea squirt	A004	0.011
51	2002	Brachiopod	L001	0.002
51	2002	Brittle star	E042	0.005
51	2002	Brown hard dome ascidian	A012	0.049
51	2002	Brown pancake ascidian 1	A013	0.081
51	2002	Brown pancake ascidian 2	A014	0.030
51	2006	Calcarea (21)	S365	0.001
51	2002	Calcareous beige tube	S002	0.002
51	2002	Calcareous brown convoluted	S003	0.008
51	2002	Calcareous brown lobe	S004	0.006
51	2002	*Carcinoplax meridionalis*	C002	0.010
51	2002	Cavernous digitate sponge	S088	0.023
51	2002	Colonial stalks ascidian	A018	0.057
51	2002	*Cribrochalina* sp (49)	S334	0.142
51	2006	*Cribrochalina* sp (49)	S334	0.001
51	2002	*Dendronephthya* sp	V009	0.009
51	2002	*Dromidiopsis globosa*	C007	0.006
51	2002	Fenestrate bryozoan 3	B030	0.002
51	2002	*Fusinus novaehollandiae*?	M033	0.014
51	2002	Galatheid sp 1	C009	0.006
51	2002	Grey feather hydroid	H023	0.002
51	2002	Hermit crab 2	C012	0.001
51	2002	Mixed calcarea sponge spp	S023	0.042
51	2002	Ophiuroid sp (25)	E041	0.001
51	2002	Orange sandy solitary	A063	0.008
51	2002	Pale pink didemnid	A067	0.022
51	2002	*Peronella peronii*	E027	0.016
51	2002	Potato sponge	S249	0.022
51	2002	*Prismatopus spatulifer*	C026	0.002
51	2002	Sandy button ascidian	A100	0.425
51	2002	Scraggly hydroid	H032	0.018

Station	Year	Species	Code	Weight
51	2002	Sea squirt (5)	A113	0.003
51	2002	Small black sea squirt	A105	0.009
51	2002	Small spined asteroid	E014	0.001
51	2002	*Soleneiscus* sp? (24)	S007	0.002
51	2002	*Steginoporella* sp 2	B040	0.014
52	2002	*Adeona* sp 1	B001	0.079
52	2002	*Anchisquilloides mcneilli*	C031	0.002
52	2006	*Anchisquilloides mcneilli*	C031	0.006
52	2006	Ascidian (62)	A054	0.018
52	2006	Ascidian (64)	A161	0.010
52	2002	*Axinella* sp (214)	S197	0.363
52	2002	Blue oxidising sponge	S060	0.986
52	2006	Calcarea (54)	S370	0.030
52	2002	Calcarea (65)	S009	0.002
52	2006	Calcarea (65)	S009	0.002
52	2006	Calcarea (66)	S371	0.003
52	2006	Calcarea (67)	S372	0.001
52	2002	Calcareous beige tube	S002	0.001
52	2002	Calcareous cream tube	S006	0.020
52	2002	Calcareous long solid tube 1	S012	0.001
52	2002	Calcareous long tube 3	S013	0.001
52	2002	Calcareous long tube 2	S014	0.001
52	2006	*Carcinoplax meridionalis*	C002	0.011
52	2006	Carid shrimp 4	C036	0.006
52	2006	Carid shrimp 5	C037	0.003
52	2006	*Cavolina* sp. (68)	M046	<0.001
52	2002	*Cribrochalina* sp (49)	S334	0.740
52	2006	*Cribrochalina* sp (49)	S334	0.223
52	2006	Demosponge sp (60)	S430	0.005
52	2002	*Dendronephthya* sp	V009	0.005
52	2006	Dictyoceratid sp (55)	S423	0.027
52	2002	Flat topped colonial ascidian	A028	0.012
52	2002	Greeny brown dictyoceratid	S144	1.350
52	2002	Grey digitate dictyoceratid	S146	0.239
52	2006	Hadromerid sp 2	S424	0.005
52	2002	Helmet shell	M034	0.004
52	2002	Hermit crab 2	C012	0.035
52	2002	*Jaspis* sp	S173	1.485
52	2002	*Myrkiodermia* sp	S194	0.309
52	2006	Nephtheid sp	V029	0.003
52	2006	*Oceanapia* (sp 4)	S298	0.001
52	2002	Ophiuroid sp (25)	E041	0.001
52	2006	Ophiuroid sp (25)	E041	0.001
52	2002	Orange furry sponge	S206	0.575
52	2002	Orange thick joined-finger sponge	S222	0.132
52	2002	Palmate dictyoceratid	S235	0.510
52	2002	*Peronella peronii*	E027	0.060
52	2006	*Peronella peronii*	E027	0.082
52	2006	*Prismatopus spatulifer*	C026	0.008
52	2002	*Rhizaxinella* sp	S300	0.003
52	2006	*Rhizaxinella* sp	S300	0.012
52	2002	Round sponge	S272	0.020
52	2002	Sandy button ascidian	A100	0.223
52	2006	Sea squirt (5)	A113	0.006
52	2006	Sea squirt (61)	A155	0.004
52	2002	Small black sea squirt	A105	0.007
52	2002	*Soleneiscus* sp? (24)	S007	0.001
52	2006	*Soleneiscus* sp? (24)	S007	0.001
52	2006	*Solenocaulon* sp	V025	0.009
52	2006	*Spheciospongia purpurea*	S062	0.895
52	2002	Spiky branching sponge	S314	0.017
52	2002	Stalked lobe	S321	0.015
52	2006	Verongid sp	S429	0.002

Station	Year	Species	Code	Weight
52	2002	Yellow lobe spicule root	S355	0.012