The following supplement accompanies the article

Epifaunal community response to iceberg-mediated environmental change in McMurdo Sound, Antarctica

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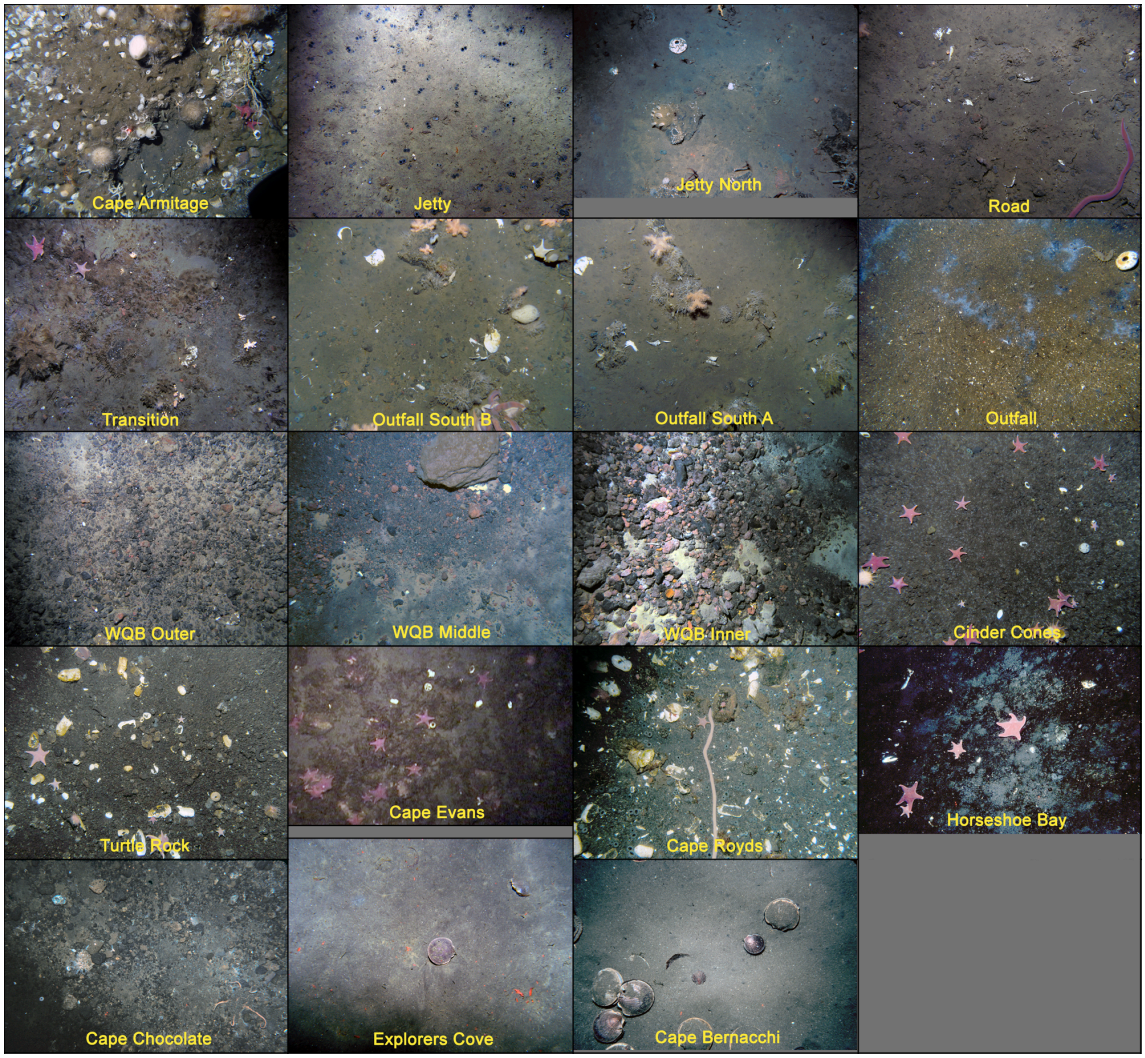

Figure S1. Representative example seafloor images from each site. Dates were: Cape Armitage 21 October 2008; Jetty 11 November 2014; Jetty North 26 October 2004; Road 10 November 2014;Transition 14 November 2014; Outfall South B 29 October 2008; Outfall South A 30 October 2008; Outfall 30 October 2008; WQB Outer 4 November 2012; WQB Middle 19 November 2007; WQB Inner 30 October 2012; Cinder Cones 18 November 2008; Turtle Rock 24 October 2012; Cape Evans 30 October 2002; Cape Royds 6 December 2007; Horseshoe Bay 1 December 2004; Cape Chocolate 28 October 2004; Explorers Cove 12 November 2008; Cape Bernacchi 15 November 2004.

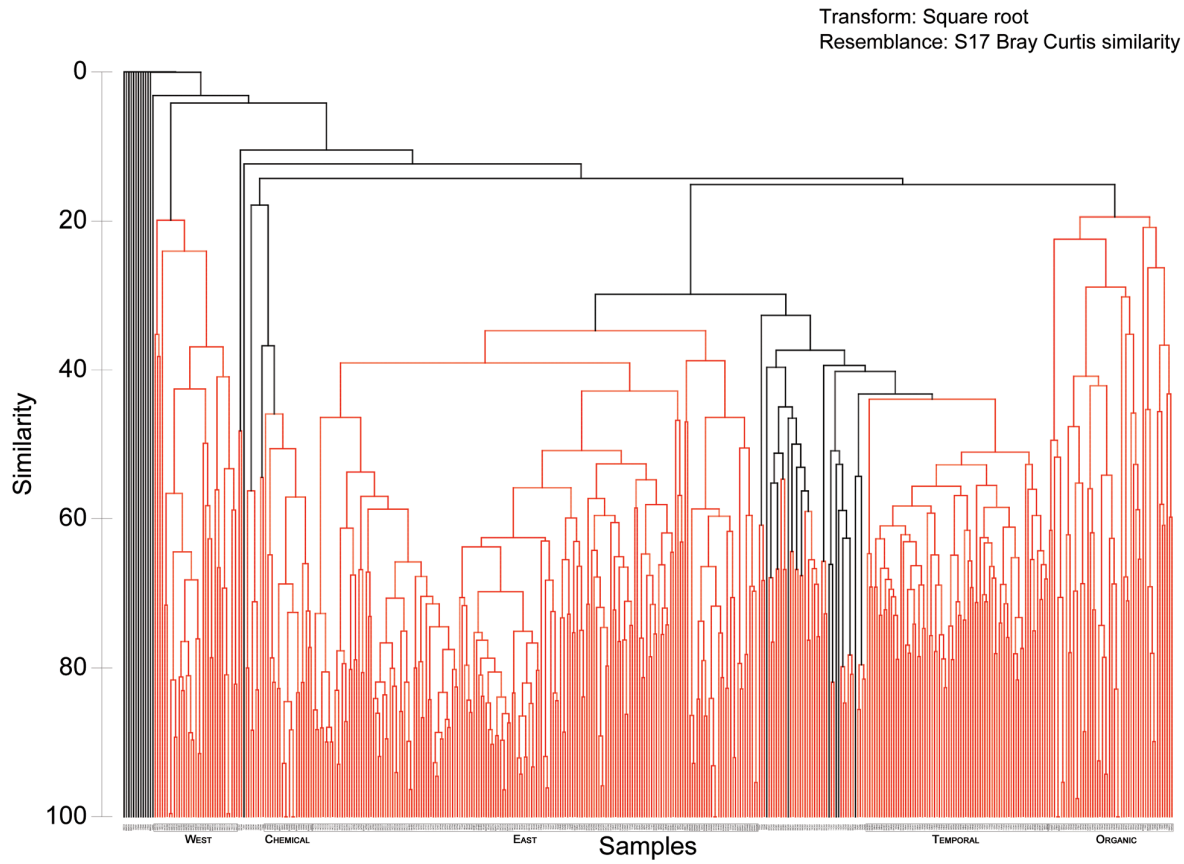

Figure S2. Dendrogram of SIMPROF results for all sites and times. Abbreviations are two digit years, followed by two character station designations as in Figure 2, followed by replicate number. Red dashed lines indicate groupings of indistinguishable samples; boxes delineate groupings West, Chemical, East, Temporal, and Organic.

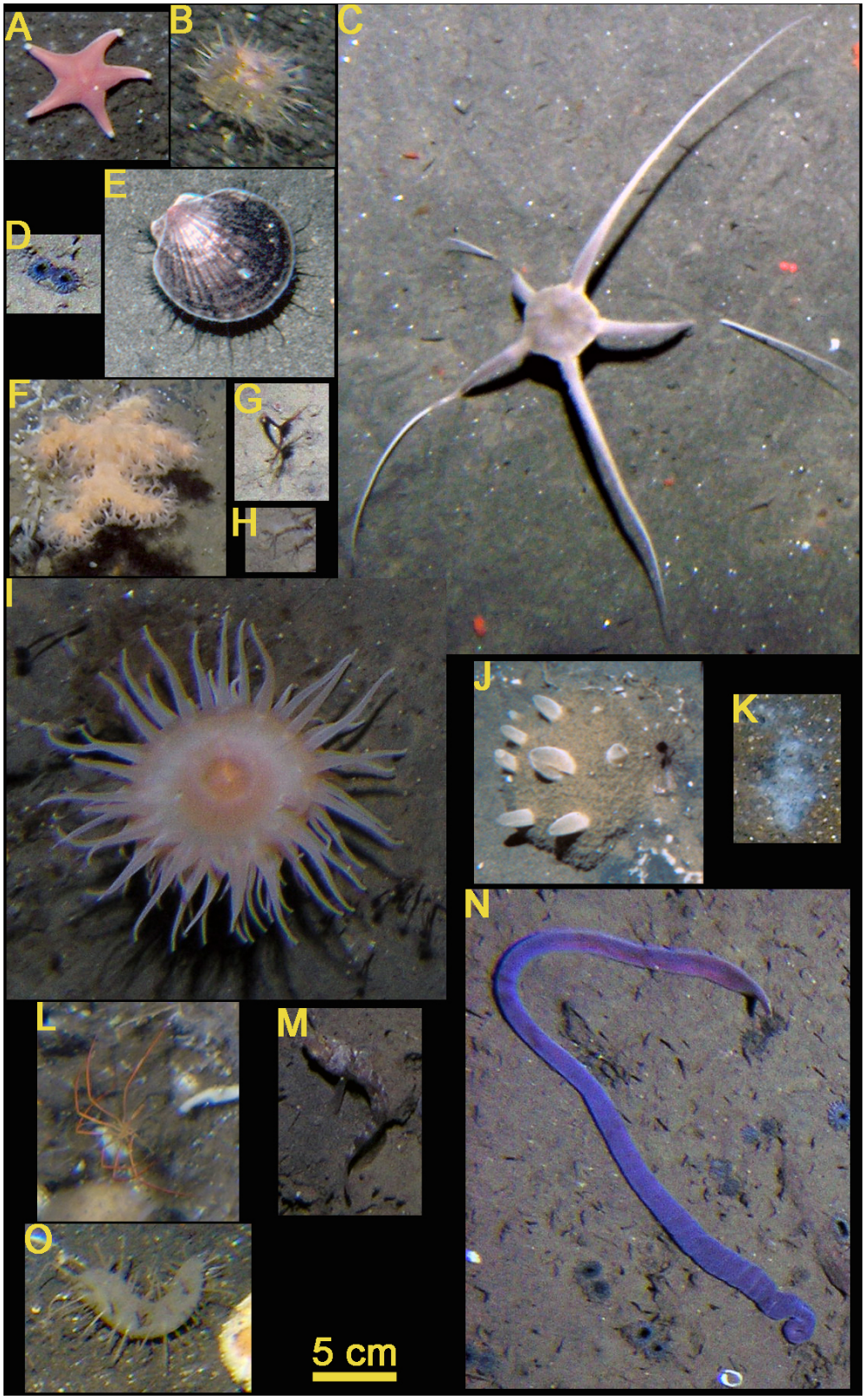

Figure S3. Representative example images of dominant taxa (per Table 3), plus *Beggiatoa*. A. *Odontaster validus.* B. *Sterechinus neumayeri.* C. *Ophionotus victoria.* D. *Laternula elliptica.* E. *Adamussium colbecki.* F. *Alcyonium antarcticum.* G. *Zyzzyzus parvula* H. *Edwardsia* sp. I. *Isotealia antarctica.* J. *Sphaerotylus antarcticus*. K. *Beggiatoa*. L. Pycnogonoidea. M. *Trematomus bernacchii.* N. *Parborlasia corrugatus.* O. *Flabegraviera mundata.*

Table S1. PERMANOVA pairwise test results for all tests. Bold indicates significant differences at the $p < 0.05$ level. Dashes indicate comparisons that could not be made because years were not sampled. Alternating white and grey shading differentiate sites.

Site		2003	2004	2007	2008	2009	2010	2011	2012	2014
Cape Armitage	2002	0.109	0.106	0.089	0.096	**0.011**	0.104	0.103	0.106	0.085
	2003		0.109	0.125	0.092	**0.015**	0.105	0.102	0.101	0.115
	2004			0.104	0.103	0.098	0.088	0.102	0.109	0.100
	2007				0.094	**0.028**	0.087	0.111	0.118	0.087
	2008					0.242	0.392	0.099	0.095	0.105
	2009						**0.036**	**0.017**	**0.013**	**0.012**
	2010							0.104	0.116	0.114
	2011								0.099	0.100
	2012									0.114
Jetty North	2002	0.110	**0.019**	-	-	-	-	-	-	-
	2003		**0.013**	-	-	-	-	-	-	-
Jetty	**2004**	-		**0.013**	**0.011**	**0.013**	**0.017**	**0.012**	**0.015**	**0.008**
	2007				0.092	0.207	0.110	0.104	0.099	0.099
	2008					0.121	0.110	0.107	0.115	0.089
	2009						0.095	0.111	0.104	0.104
	2010							0.097	0.093	0.105
	2011								0.098	0.101
	2012									0.114
Road	2002	0.102	0.081	0.093	0.111	0.095	0.094	0.093	0.095	0.101
	2003		0.077	0.107	0.128	0.109	0.088	0.098	0.108	0.095
	2004			0.102	0.297	0.112	0.108	0.088	0.087	0.093
	2007				0.091	0.099	0.098	0.092	0.098	0.103
	2008					0.109	0.110	0.117	0.102	0.113
	2009						0.105	0.094	0.103	0.088
	2010							0.084	0.110	0.084
	2011								0.097	0.083
	2012									0.095
Transition	2002	0.217	**0.011**	0.407	0.101	0.118	0.115	0.108	0.094	0.082
	2003		**0.011**	0.094	0.105	0.096	0.100	0.092	0.100	0.085
	2004			**0.015**	**0.013**	**0.016**	**0.009**	**0.011**	**0.009**	**0.018**
	2007				0.093	0.107	0.117	0.097	0.124	0.077
	2008					0.108	0.093	0.093	0.111	0.107
	2009						0.110	0.105	0.116	0.121
	2010							0.090	0.091	0.090
	2011								0.185	0.207
	2012									0.110
Outfall South B	2002	0.493	0.359	0.248	0.262	0.239	0.259	0.239	0.251	-
	2003		0.106	0.106	0.087	0.105	0.102	0.096	0.104	-

	2004			0.101	0.111	0.099	0.097	0.101	0.099	-
	2007				0.197	0.102	0.093	0.101	0.111	-
	2008					0.104	0.201	0.111	0.091	-
	2009						0.107	0.115	0.108	-
	2010							0.314	0.094	-
	2011								0.097	-
Outfall South A	**2002**	**0.016**	**0.040**	**0.012**	**0.012**	**0.016**	**0.012**	**0.013**	**0.012**	-
	2003		0.099	0.097	0.089	0.093	0.102	0.103	0.099	-
	2004			0.107	0.322	0.203	0.200	0.100	0.104	-
	2007				0.102	0.107	0.118	0.087	0.112	-
	2008					0.277	0.895	0.112	0.102	-
	2009						0.296	0.101	0.093	-
	2010							0.095	0.096	-
	2011								0.108	-
Outfall	2002	0.088	**0.012**	0.123	0.095	**0.012**	0.097	0.096	0.093	-
	2003		**0.022**	0.108	0.097	**0.018**	0.105	0.097	0.119	-
	2004			**0.039**	**0.013**	0.267	**0.018**	**0.017**	**0.027**	-
	2007				0.190	0.179	0.094	0.096	0.102	-
	2008					0.098	0.104	0.091	0.114	-
	2009						**0.023**	**0.016**	**0.036**	-
	2010							0.108	0.114	-
	2011								0.114	-
WQB Outer	2002	-	0.105	0.128	0.085	**0.029**	0.098	-	0.093	-
	2004			0.101	0.097	0.253	0.083	-	0.111	-
	2007				0.098	**0.029**	0.114	-	0.098	-
	2008					**0.035**	0.106	-	0.199	-
	2009						**0.013**	-	**0.027**	-
	2010								0.103	-
WQB Middle	2002	0.104	0.100	0.112	0.095	0.402	0.105	-	0.108	-
	2003		0.325	1.000	0.104	0.068	0.616	-	0.110	-
	2004			0.106	0.112	**0.041**	0.116	-	0.099	-
	2007				0.103	0.126	0.899	-	0.087	-
	2008					0.793	0.587	-	0.091	-
	2009						0.210	-	0.091	-
	2010								0.103	-
WQB Inner	2002	0.222	0.197	0.605	0.186	0.083	0.286	0.103	0.098	-
	2003		0.347	0.506	0.301	0.133	0.190	0.100	0.217	-
	2004			0.421	0.200	0.074	0.219	0.107	0.097	-
	2007				0.211	**0.030**	0.281	0.194	0.613	-
	2008					0.068	0.094	0.101	0.200	-
	2009						**0.020**	**0.011**	**0.016**	-
	2010							0.107	0.312	-
	2011								0.310	-
Cinder Cones	2002	0.103	0.921	0.098	0.106	0.094	0.108	0.090	0.109	0.118
	2003		**0.027**	0.093	0.088	0.102	0.101	0.095	0.095	0.099
	2004			**0.023**	**0.044**	**0.012**	**0.009**	**0.013**	**0.009**	**0.015**

	2007				0.792	0.526	0.113	0.099	0.087	0.085
	2008					0.514	0.201	0.102	0.102	0.097
	2009						0.369	0.092	0.101	0.106
	2010							0.114	0.097	0.104
	2011								0.100	0.101
	2012									0.312
Turtle Rock	2002	0.083	0.494	0.288	0.086	0.834	0.097	-	0.417	0.104
	2003		**0.011**	0.116	0.101	**0.012**	0.115	-	0.095	0.099
	2004			0.195	**0.014**	0.163	**0.021**	-	0.191	**0.013**
	2007				0.081	0.601	0.100	-	0.309	0.109
	2008					**0.019**	0.101	-	0.103	0.093
	2009						0.171	-	0.726	**0.012**
	2010								0.094	0.094
	2012									0.110
Explorers Cove	**2002**	**0.010**	0.082	**0.032**	**0.025**	0.550	**0.025**	-	-	-
	2003		0.200	0.102	0.092	**0.012**	0.102	-	-	-
	2004			0.101	0.507	0.177	0.118	-	-	-
	2007				0.112	0.309	0.106	-	-	-
	2008					**0.038**	0.188	-	-	-
	2009						0.083	-	-	-
Cape Bernacchi	2002	0.097	0.080	-	-	-	-	-	-	-
	2003		0.224	-	-	-	-	-	-	-

Table S2. Feeding designation, on small or large particulates, for each taxonomic classification, following Dayton et al. (2019) and references therein. Small particulates include pico- and nano-plankton, large particulates are microplankton.

Phylum – Class – Order - Family	Genus species	Filter feeds on
Annelida – Polychaeta - Sabellida - Sabellidae	*Perkinsiana sp.*	small particulates
Annelida – Polychaeta - Terebellida - Flabelligeridae	*Flabegraviera mundata*	
Annelida – Polychaeta - - Chaetopteridae	*Chaetopterus variopedatus*	small particulates
Arthropoda – Malacostraca - Decapoda - Hippolytidae	*Chorismus antarcticus*	
Arthropoda – Malacostraca - Isopoda - Chaetiliidae	*Glyptonotus antarcticus*	
Arthropoda – Malacostraca - Isopoda - Cirolanidae	*Natatolana* sp.	
Arthropoda - Pycnogonida - Pantopoda -	Pycnogonoidea	
Bryozoa - Gymnolaemata - Cheilostomatida - Bugulidae	*Camptoplites* sp.	small particulates
Chordata – Actinopterygii – Perciformes - Bathydraconidae	*Gymnodraco acuticeps*	
Chordata – Actinopterygii – Perciformes - Nototheniidae	*Trematomus bernacchii*	
Chordata – Ascidiacea - Stolidobranchia - Styelidae	*Cnemidocarpa verrucosa*	small particulates
Chordata – Ascidiacea - -	Tunicate	small particulates
Cnidaria – Anthozoa – Actiniaria - Actiniidae	*Isotealia antarctica*	
Cnidaria – Anthozoa – Actiniaria - Actiniidae	*Urticinopsis antarctica*	
Cnidaria – Anthozoa – Actiniaria - Edwardsiidae	*Edwardsia* sp.	large particulates
Cnidaria – Anthozoa – Actiniaria - Edwardsiidae	*Edwardsiella ignota*	large particulates
Cnidaria – Anthozoa – Actiniaria - Sagartiidae	*Artemidactis victrix*	
Cnidaria – Anthozoa – Actiniaria -	White anemone	
Cnidaria – Anthozoa – Alcyonacea - Alcyoniidae	*Alcyonium antarcticum*	large particulates
Cnidaria – Anthozoa – Alcyonacea - Clavulariidae	*Clavularia frankliniana*	large particulates
Cnidaria – Anthozoa – Alcyonacea - Nephtheidae	*Gersemia antarctica*	large particulates
Cnidaria - Hydrozoa - Anthoathecata - Corymorphidae	*Corymorpha microrhiza*	large particulates
Cnidaria - Hydrozoa - Anthoathecata - Corymorphidae	*Zyzzyzus parvula*	large particulates
Cnidaria - Hydrozoa - Anthoathecata - Hydractiniidae	*Hydractinia angusta*	
Cnidaria - Hydrozoa – Leptothecata- Haleciidae	*Hydrodendron arboreum*	large particulates
Cnidaria - Hydrozoa – Leptothecata -	White bundle hydroid	large particulates

Echinodermata – Asteroidea - Forcipulatida - Asteriidae	*Diplasterias brucei*	
Echinodermata – Asteroidea – Paxillosida - Astropectinidae	*Macroptychaster accrescens*	
Echinodermata – Asteroidea -Valvatida - Ganeriidae	*Perknaster fuscus* (*antarcticus*)	
Echinodermata – Asteroidea - Valvatida - Odontasteridae	*Acodontaster sp.*	
Echinodermata – Asteroidea - Valvatida - Odontasteridae	*Odontaster meridionalis*	
Echinodermata – Asteroidea - Valvatida - Odontasteridae	*Odontaster validus*	large particulates
Echinodermata – Asteroidea - -	Seastars	
Echinodermata - Crinoidea - Comatulida - Antedonidae	*Promachocrinus kerguelensis*	large particulates
Echinodermata - Echinoidea - Camarodonta - Echinidae	*Sterechinus neumayeri*	large particulates
Echinodermata - Echinoidea - Cidaroida - Ctenocidaridae	*Ctenocidaris perrieri*	
Echinodermata - Echinoidea - Spatangoida - Schizasteridae	*Abatus sp*.	large particulates
Echinodermata - Holothuroidea – Dendrochirotida - Cucumariidae	Cucumariidae cucumber	large particulates
Echinodermata – Ophiuroidea – Ophiurida - Ophiacanthidae	*Ophiacantha antarctica*	large particulates
Echinodermata – Ophiuroidea – Ophiurida - Ophiuridae	*Ophionotus victoriae*	large particulates
Echinodermata – Ophiuroidea – Ophiurida - Ophiuridae	*Ophiosparte gigas*	
Mollusca – Bivalvia - Anomalodesmata - Laternulidae	*Laternula elliptica*	large particulates
Mollusca – Bivalvia - Pectinoida - Pectinidae	*Adamussium colbecki*	large particulates
Mollusca – Gastropoda - Littorinimorpha - Velutinidae	*Marseniopsis mollis*	
Mollusca – Gastropoda - Naticoidea - Naticidae	*Amauropsis rossiana*	
Mollusca – Gastropoda –Neogastropoda - Buccinidae	*Neobuccinum eatoni*	
Mollusca – Gastropod – Nudibranchia - Aeolidiidae	Aeolidiidae nudibranch	
Mollusca – Gastropoda – Nudibranchia - Dorididae	*Doris kerguelenensis*	
Mollusca – Gastropoda – Nudibranchia - Tritoniidae	*Tritonia challengeriana*	
Mollusca – Gastropoda – Nudibranchia - Tritoniidae	*Tritoniella belli*	
Mollusca – Gastropoda - - Margaritidae	*Margarella antarctica*	
Nemertea - Anopla - - Lineidae	*Parborlasia corrugatus*	
Porifera – Demospongiae - -	White sponge	small particulates
Porifera - Demospongiae - Dendroceratida - Darwinellidae	*Dendrilla antarctica*	small particulates
Porifera – Demospongiae – Hadromerida - Polymastiidae	*Polymastia invaginata*	small particulates
Porifera - Demospongiae – Hadromerida - Polymastiidae	*Sphaerotylus antarcticus*	small particulates
Porifera - Demospongiae – Hadromerida - Suberitidae	*Homaxinella balfourensis*	small particulates
Porifera - Demospongiae – Hadromerida - Suberitidae	*Pseudosuberites montiniger*	small particulates

Porifera - Demospongiae - Haplosclerida - Chalinidae	*Haliclona dancoi*	small particulates
Porifera - Demospongiae - Haplosclerida - Chalinidae	*Haliclona* sp.	small particulates
Porifera - Demospongiae - Haplosclerida - Chalinidae	*Haliclona* sp. A	small particulates
Porifera - Demospongiae - Haplosclerida - Niphatidae	*Hemigellius fimbriatus*	small particulates
Porifera - Demospongiae - Haplosclerida - Niphatidae	*Microxina benedeni*	small particulates
Porifera - Demospongiae - Haplosclerida - Phloeodictyidae	*Calyx arcuarius*	small particulates
Porifera - Demospongiae – Poecilosclerida - Coelosphaeridae	*Inflatella belli*	small particulates
Porifera - Demospongiae – Poecilosclerida - Hymedesmiidae	*Kirkpatrickia variolosa*	small particulates
Porifera - Demospongiae – Poecilosclerida - Hymedesmiidae	*Phorbas areolatus*	small particulates
Porifera - Demospongiae – Poecilosclerida - Isodictyidae	*Isodictya setifera*	small particulates
Porifera - Demospongiae – Poecilosclerida - Latrunculiidae	*Latrunculia apicalis*	small particulates
Porifera - Demospongiae – Poecilosclerida - Mycalidae	*Mycale acerata*	small particulates
Porifera - Demospongiae - Spirophorida - Tetillidae	*Cinachyra antarctica*	small particulates
Porifera - Demospongiae - Spirophorida - Tetillidae	*Antarctotetilla leptoderma*	small particulates
Porifera - Hexactinellida - Lyssacinosida - Rossellidae	*Anoxycalyx joubini*	small particulates
Porifera - Hexactinellida - Lyssacinosida - Rossellidae	*Rossella racovitzae*	small particulates