SPRFMO
South Pacific Regional Fisheries Management Organisation

8th MEETING OF THE SCIENTIFIC COMMITTEE

New Zealand, 3 to 8 October 2020

SC8-DW11

VME taxa for SPRFMO Area

New Zealand

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Developing a multi-taxonomic level list of VME indicator taxa for the SPRFMO Convention Area

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Contents

1 Purpose

The purpose of this paper is to develop lists of VME taxa known from the Evaluated Area of the SPRFMO Convention Area, as agreed by the 7th meeting of the SPRFMO Scientific Committee in para 110 of its report. These lists will provide an important resource for Scientific Committee (SC) work.

2 Introduction

Recognizing the vulnerability of deep-sea biodiversity, the 2006 United Nations General Assembly (UNGA) Resolution 61/105 called upon regional fisheries management organizations (RFMOs; including general fisheries management organizations such as CCAMLR) to develop and adopt binding conservation management measures requiring their members to prevent significant adverse impacts on vulnerable marine ecosystems (VMEs) (UNGA 2007). To support the implementation of the resolution, the United Nations Food and Agriculture Organization (FAO) developed and published guidelines for defining VMEs, which included: (i) uniqueness or rarity of species or habitats; (ii) functional significance; (iii) fragility; (iv) life-history traits that limit the probability of recovery; and (iv) structural complexity (FAO 2009).

Using the FAO guidelines for identifying VMEs, plus two additional criteria related to their suitability as indicators (taxa had to have previously been encountered in deep-sea fisheries and retained as bycatch; and taxa had to be readily identifiable by scientific observers on board fishing vessels without the aid of complex morphological characters), Parker et al. (2009) used bycatch data to develop a list of ten VME indicator taxa for the South Pacific Regional Fisheries Management Organisation's (SPRFMO) Convention Area, designated variously at the level of phylum, class, order or family. These taxa were subsequently incorporated into a bottom-fishing VME encounter protocol (a 'move-on rule') for New Zealand vessels (SPRFMO CMM-2.03), and most recently, for vessels of all member countries within the SPRFMO Convention Area (SPRFMO CMM03-2019).

In the 10 years since Parker et al. (2009) identified the suite of 10 VME indicator taxa, a larger set of bycatch observations within the SPRFMO Convention Area has been generated, representing a substantial increase in both the quantity and quality of data available to inform the identification of VME indicator taxa. Recognizing this, New Zealand undertook a review of the VME indicator taxa for the SPRFMO Convention Area in 2019, taking into consideration the VME indicator taxa identified by Parker et al. 2009, VME indicator taxa identified by other RFMOs, the FAO guidelines, and the two additional criteria related to their suitability as indicators used by Parker et al. (2009). That review, presented at the 7th meeting of the SPRFMO SC (SC7) as SC7-DW13, identified 15 VME groups (also identified at the level of Phylum, Class, Order or Family) using the FAO guidelines, of which 13 satisfied additional criteria of Parker et al. (2009) related to suitability as indicators (here after referred to as VME indicator taxa – see the Glossary for definitions of VME group, VME indicator taxa, VME taxa). The two taxa that didn't satisfy the criteria related to suitability as indicators were Xenophyophorea and Serpulidae, neither of which have been recorded as bycatch within bottom trawl fisheries within the evaluated area. In the case of Xenophyophorea, this is likely due to their fragile nature and the high likelihood of them breaking up in trawl gear and not being retained. Of the 13 VME indicator

taxa identified by Geange et al. (2019) in paper SC7-DW13, Zoantharia, Hydrozoa and Bryozoa were not included as VME indicator taxa within CMM03-2019.

Glossary

VME group: 15 taxonomic groups, designated variously at the level of Phylum, Class, Order or Family, that were identified in SC7-DW13 as satisfying FAO guidelines for identifying VMEs. See Table 1 for a list of VME groups.

VME indicator taxa: 13 of the 15 VME groups that met an additional two criteria related to their suitability as VME indicators. 10 of the VME indicator taxa are currently included as VME indicators in CMM 03-2020, with the remaining 3 to be added as VME indicators when the CMM is updated in 2021.

VME taxa: Genera and species within each VME group that have been assessed as satisfying FAO guidelines for identifying VMEs, but which have not been evaluated for their suitability as indicators. The presence of VME taxa (or VME indicator taxa) at a location is not sufficient to identify a VME without further consideration of characteristics of those taxa at the location.

In discussing SC7-DW13, the SC noted that the simplification of the diversity of VME taxa into higher-level taxonomic groups, such as phylum, class, order or family, may result in heterogeneity in life-history traits, distribution patterns and meta-population dynamics among species within a group (especially for highly-diverse groups), which may prove problematic where management objectives are related to preventing significant adverse impacts to the marine biodiversity of vulnerable marine ecosystems. Although the SC acknowledged the impracticalities of extensive lists of VME indicator taxa designated at the levels of genus or species for use by observers in the field, they did note merit in the development of a more detailed list of VME taxa with greater taxonomic resolution that could be used to support SC work programmes and inform management decisions (e.g., the development of identification guides for VME indicator taxa; designating and mapping the spatial extent of VMEs; evaluating the relationship between the density/biomass of VMEs and the diversity of associated species; formulating inferences from habitat suitability models based on higher-level taxonomic groups; and reviews of fishing events that have triggered the encounter protocol). Recognizing that other RFMOs have developed lists of known VME taxa (e.g., Northwest Atlantic Fisheries Organization CEM 19-01 Annex I.E.VI), and following consideration of SC7-DW13, in the SC7 Meeting Report, the SC:

- **Recommended** to the Commission that, when it reviews CMM03-2019 in 2021, the list of VME indicator taxa used for the biodiversity component of the encounter protocol should be revised to include the following additional taxa: Zoantharia, Hydrozoa (Hydroids) and Bryozoa.
- **Agreed** that a broader list of candidate VME taxa for the SPRFMO Convention area should be developed.

Consequently, the SC multi-annual workplan in the SC7 Meeting Report was updated to include the finalization of the list of VME taxa, to be completed in 2020-2021. In support of that workplan, we review taxonomic records from within the Evaluated Area of the SPRFMO Convention Area for each of the 15 VME groups identified in SC7-DW13 (see Table A1.1), to develop lists of candidate VME taxa at a finer level of taxonomic identificaton.

3 Methods

To ensure consistency with the dataset informing the VME habitat suitability models, we compiled records from within the Evaluated Area of the SPRFMO Convention Area (Fig.1) for each of the 15 VME groups identified in SC7-DW13 by combining the existing data extract for the ten taxa modelled for the joint Bottom Fishery Impact Assessment (BFIA, Australia and New Zealand 2020) (*Solenosimilia variabilis, Medrepora oculata, Goniocorella dumosa, Enallopsammia rostrata*, Antipatharia, Alcyonacea (gorgonians), Stylasteridae, Demospongiae, Hexactinellida and Pennatulacea)[1] with new data extracts from the three New Zealand databases: *trawl* (research trawl survey records over the period 1905 - 2020), *cod* (fishery observer records over the period 1990–2020), and *niwainvert* (research records over the period 1905–2020), and the international OBIS database (records from open-access global data on marine biodiversity over the period 1924–2019)[2]. These databases were interrogated for taxa not modelled for the BFIA that occur within each of the VME groups. Databases were accessed with searches run on 4 May 2020 (trawl), 4 May 2020 (*cod*), 27 March and 6 May 2020 (niwainvert), and 29 May 2020 (OBIS). A description of the data query used for each database is included in Appendix 2.

We combined data describing the date, location, sampling method and taxa observed into a composite dataset containing 298,121 records (a full description of which data fields were combined across datasets is provided in Appendix 2), and standardized the unit of measurement for weight to kilograms. Because some observations were recorded in multiple databases (e.g., some observations in the *niwainvert* database also occur within the OBIS database) we removed duplicates from the dataset. First, we removed all records within the OBIS dataset that were tagged as originating from the *niwainvert* and SPRFMO VME collections. We then removed all records for taxa included in the SPRFMO VME dataset from the *niwainvert*, *trawl* and *cod* extracts. We then used the *distinct* function in the *dplyr* package in R 3.6.1 to identify and remove duplicate records based on event date, location (start latitude and longitude), taxon (scientific name) and weight. Finally, we used a Family level classification for six taxa that expert reviewers identified as being misclassified at the genus or species level (*Polymastia conigera*, *Trachyteleia*, *Brisinga chathamica*, *Brisinga tasmani*, *Novodinia novaezelandiae, Paracalliactis rosea*). The final dataset included 101,253 unique records across the 15 VME taxa groups, of which 9,540 records were from within the SPRFMO Convention Area and 5,300 records were from within the Evaluated Area of the SPRFMO Convention Area (Table 1, Figure 1). The data from within the Evaluated Area included 2272 records for the ten taxa modelled for the BFIA, 3 records from the *trawl* database, 1903 records from the *cod* database, 455 records from the *niwainvert* database and 667 records from the OBIS database.

[1] The SPRFMO VME dataset used in the BFIA included up-to-date data from trawl, cod, NIWAinvert, and Austrlian datasets and databases.

[2] *trawl* and *cod* are Fisheries New Zealand databases - https://www.mpi.govt.nz/dmsdocument/15613-database-documentation-trawl, https://www.mpi.govt.nz/dmsdocument/15532-database-documentation-cod; *niwainvert* is a NIWA database that contains biodiversity records, mainly those associated with the NIWA Invertebrate Collection; OBIS is a global open-access data and information clearing-house on marine biodiversity.

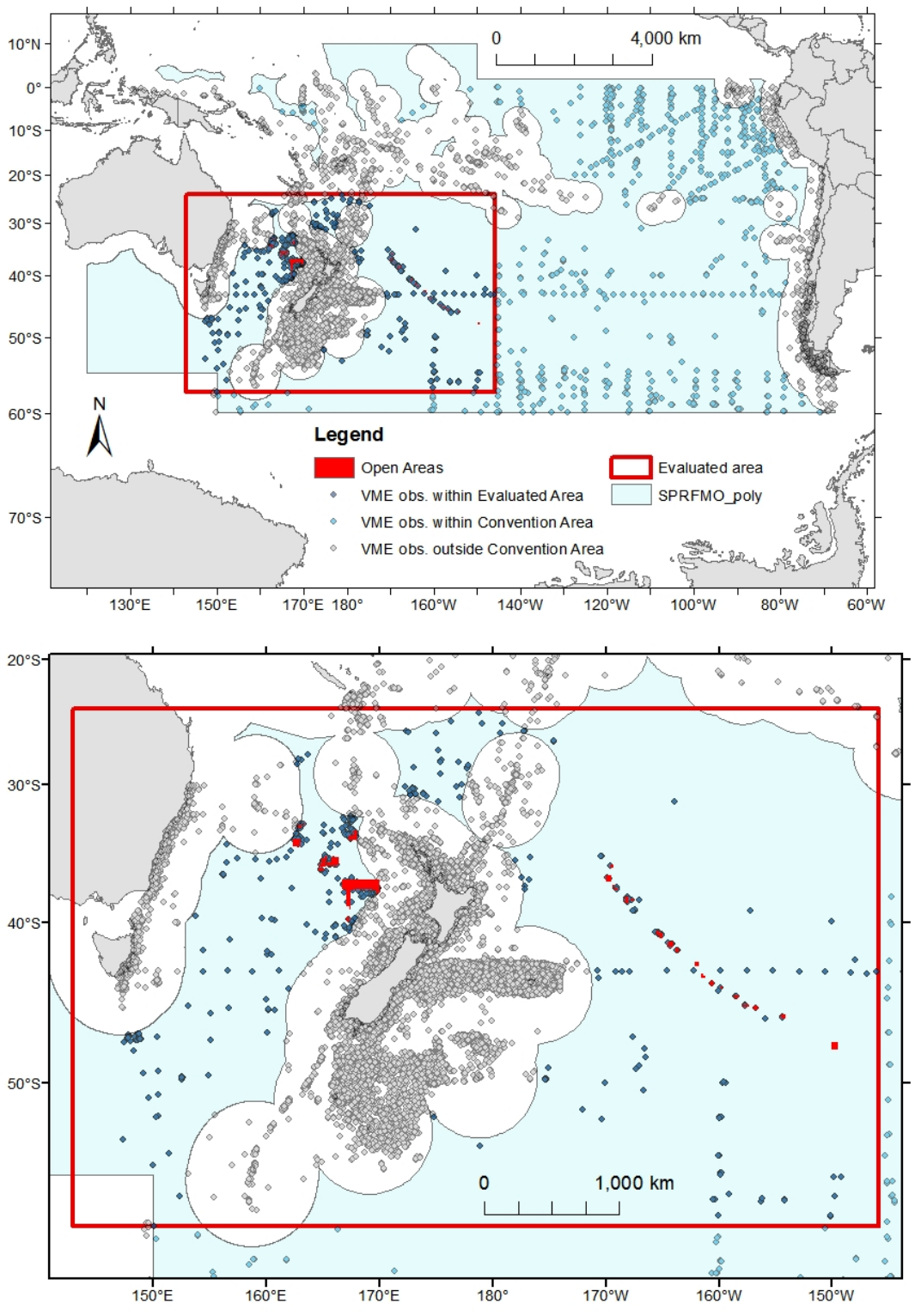

Figure 1 | The SPRFMO Convention Area with the location of the Evaluated Area from within which data was compiled. Also shown as red polygons are the locations of areas open to bottom trawling under SPRFMO CMM03-2019, and the location of VME observations included in the combined dataset.

To describe the comprehensiveness of the information associated with each of the records in the database, we calculated summary statistics for each of the 15 VME groups describing: (i) the number and percentage of records that were designated at the taxonomic levels of genera or species; (ii) the number and percentage of records that had biomass estimates; (iii) the number and percentage of records with depth data across all depths and within fishable depths (< 1400 m).

For each of the 15 VME groups, we used the *unique* function in R 3.6.1 to compile a draft list of taxa recorded within the Evaluated Area of the SPRFMO Convention Area, and used R-code provided on the World Register of Marine Species (WoRMS) website[3] to query the WoRMS database and assign an Aphia ID, and accepted taxonomic designations for phylum, order, class, family, genus and species.

For each taxon we also assigned, where available, FAO and New Zealand, and Australian (the two major bottom trawling nations operating in the SPRFMO Convention Area species identifier codes. For the FAO codes, we used species identifier codes from the ASFIS List of Species for Fishery Statistics Purposes[4]. For New Zealand and Australian codes, we used codes supplied by Fisheries New Zealand and the Australian Fisheries Management Authority, respectively.

Because there are few published studies of the life-history characteristics of deep-sea invertebrates in the SPRFMO Convention Area at the family, genus or species level, we asked taxonomists and para-taxonomists with a working familiarity of the fauna of the South-West Pacific region to assess the likely morphological, ecological and life history characteristics of the species and genera within each VME group against the FAO guidelines for identifying VMEs, taking into account their vulnerability to bottom trawling gear, where the most vulnerable ecosystems are those that are easily disturbed (fragile) and slow to recover, or may never recover. The scoring guidance provided to experts to evaluate taxa against the FAO guidelines, and a list of taxonomists and para-taxonomists who undertook the review for each VME group is provided in Appendix 3. Any taxa that were identified by experts as meeting at least one of the FAO criteria was included in the draft list of VME taxa. Similarly, a genus was included if it contained any species meeting at least one of the FAO criteria.

For each of the 15 VME groups we then calculated the number of genera and species designated as candidate VME taxa by expert reviewers that (i) were represented by a single record, (ii) were recorded from fishable depths (< 1400 m depth) from within the Evaluated Area of the Convention Area; and (iii) were represented by a single record within fishable depths.

Having compiled expert reviews into a list of candidate VME taxa and incorporated it into a draft report, we then asked four independent reviewers with extensive international experience in VME management to provide a high-level review of the draft report and the draft list of VME taxa to check for consistency with the FAO guidelines, and with the approaches taken by other RFMOs and CCAMLR to identify VMEs (see Appendix 3 for a list of reviewers). Comments from those reviewers were then incorporated into this paper, as far as was deemed relevant or practically possible.

[3] https://www.marinespecies.org/aphia/webservice/Aphia_webservice_R_elaborate.txt

[4] http://www.fao.org/fishery/collection/asfis/en

4 Results

Of the 5,300 records from within the Evaluated Area of the SPRFMO Convention Area, 44% were designated at the taxonomic level of genus or species, 54% had biomass data and 86% had depth data (Table 1). The 5,300 records included 171 family, 326 genus and 248 species-level designations (Table 2). Of the 15 VME groups, Porifera, Alcyonacea (gorgonians), Hydrozoa and Bryozoa had the most taxa identified, each with more than 40 taxa designated at the level of genera or species (Table 2). Conversely, Alcyonacea (soft corals), Brisingida, Scleractinia, Zoantharia, and Serpulidae had the least taxa identified, each with less than 10 taxa designated at the level of genera or species, and Xenophyophores had no records identified at the level of genera or species (Table 2).

The review of draft lists by taxonomic experts identified 281 genera and 231 species that, in the opinion of the expert reviewers, met FAO VME criteria and therefore could be considered candidate VME taxa (Tables 2 and 3). Porifera and Alcyonacea (gorgonians) had the greatest number of taxa identified as VME taxa, while Zoantharia and Serpulidae had the least (Table 2). 41% of genera and 48% species designated as VME taxa had a single record within the Evaluated Area (Table 2). Most of the genera (63%) and species (79%) designated as VME taxa occurred within fishable depths (< 1400 m) (Table 2).

Table 1 | The number of presence records compiled from various data sources for each of the 15 VME taxa identified in SPRFMO SC7-DW13, reported at the scale of the SPRFMO Convention Area, and the Evaluated Area of the Convention Area (as shown in Figure 1). Also shown for records from within the Evaluated Area of the Convention Area are the number and percentage of observations designated at the taxonomic level of genus or species, the number and percentage of observations with biomass estimates, and the number and percentage of observations with depth data.

VME groups	SPRFMO Convention Area	Evaluated Area	No. (%) designated at level of Genus or Species	No. (%) with biomass estimates	No. (%) with depth data
Phylum Porifera (Sponges)[1]	800	558	283 (51)	259 (46)	343 (61)
Phylum Cnidaria					
Class Anthozoa					
Order Alcyonacea (Soft corals)	461	441	21 (5)	91 (21)	357 (81)
Order Alcyonacea (Gorgonians - tree-like forms, sea fans, sea whips, bottlebrush)[2]	418	316	275 (87)	167 (53)	270 (85)
Order Scleractinia (Stony corals)[3]	426	386	386 ([4])	119 (31)	270 (70)
Order Antipatharia (Black corals)	711	687	206 (30)	186 (27)	586 (85)
Order Actiniaria (Anemones)	3 115	1 276	101 (8)	1 181 (93)	1 241 (97)
Order Pennatulacea (Sea pens)	167	159	87 (55)	71 (45)	105 (66)
Order Zoantharia (Hexacorals)	840	570	544 (95)	525 (92)	556 (98)
Class Hydrozoa (Hydroids)	1 103	235	87 (37)	75 (32)	226 (96)
Order Anthoathecatae					
Family Stylasteridae (Hydrocorals)	310	236	137 (58)	29 (12)	166 (70)
Phylum Echinodermata					
Class Crinoidea (Sea lillies)	249	160	62 (39)	39 (24)	154 (96)
Class Asteroidea					
Order Brisingida (‘Armless’ stars)	554	121	20 (17)	94 (78)	111 (92)
Phylum Bryozoa	362	141	110 (78)	11 (8)	140 (99)
Phylum Forminifera					
Class Monothalamea					
Superfamily Xenophyophoroidea (Xenophyophores)	5	2	0 (0)	0 (0)	2 (100)
Phylum Annelida					
Class Polychaeta					
Order (Sabellida)					
Family Serpulidae (Serpulid tube worms)	19	12	7 (58)	2 (17)	12 (100)
TOTAL	**9 540**	**5 300**	**2 326 (44)**	**2 849 (54)**	**4 539 (86)**

[1] Includes all Porifera within the classes Demospongiae and Hexactinellida
[2] Includes all Alcyonacea within the sub-orders Holaxonia, Calcaxonia, and Scleraxonia
[3] Includes all taxa within the following genera: Solenosmilia; Goniocorella; Oculina; Enallopsammia; Madrepora; Lophelia
[4] Not evaluated because only taxa within pre-defined genera were included within the analysis

Table 2 | The number of families, genera and species recorded within the Evaluated Area of the SPRFMO Convention Area for each of the 15 VME groups identified in SPRFMO SC7-DW13, the number of genera and species that identified as VME taxa by expert review, and the number of VME genera and species with a single record, recorded from fishable depths (< 1400 m depth) and with a single record in fishable depths. NOTE, the number of VME genera and species from fishabale depths is an underestimate because not all obervations had associated depth data (see Table 1). Complete lists of taxa are presented in Table 3 and Appendix 4.

VME group	Family	Genera	Species	No. VME genera identified by expert review (no. without species-level designations)	No. VME species identified by expert review	No. (%) VME genera with a single record	No. (%) VME species with a single record	No. (%) VME genera recorded in fishable depths	No. (%) VME species recorded in fishable depths	No. (%) VME genera with a single record in fishable depths	No. (%) VME species with a single record in fishable depths
Porifera (Sponges)[1]	47	81	65	81 (32)	65	33 (41)	27 (42)	46 (57)	47 (72)	24 (52)	19 (40)
Alcyonacea (Soft corals)	4	8	1	7 (6)	1	4 (57)	1 (100)	5 (71)	1 (100)	2 (40)	1 (100)
Alcyonacea (Gorgonains - sea fans, sea whips, bottlebrush)[2]	10	38	24	38 (22)	24	13 (34)	12 (50)	24 (63)	23 (96)	11 (46)	12 (52)
Scleractinia (Stony corals)[3]	3	5	5	5 (0)	5	0 (0)	0 (0)	5 (100)	5 (100)	0 (0)	0 (0)
Antipatharia (Black corals)	7	20	17	20 (8)	17	4 (20)	5 (29)	10 (50)	12 (71)	1 (10)	3 (25)
Actiniaria (Anemones)	11	17	12	16 (6)	12	10 (63)	8 (67)	8 (50)	4 (33)	5 (63)	2 (50)
Pennatulacea (Sea pens)	7	10	8	10 (3)	8	1 (10)	3 (38)	7 (70)	6 (75)	0 (0)	2 (33)
Zoantharia (Hexacorals)	3	3	3	3 (2)	1	0 (0)	1 (100)	2 (67)	1 (100)	0 (0)	0 (0)
Hydrozoa (Hydroids)	21	30	34	30 (7)	32	12 (40)	22 (69)	22 (73)	30 (94)	13 (59)	22 (73)
Stylasteridae (Hydrocorals)	1	14	30	14 (1)	30	3 (21)	7 (23)	8 (57)	27 (90)	4 (50)	5 (19)
Crinoidea (Sea lillies)	12	22	15	22 (8)	15	12 (55)	9 (60)	17 (77)	11 (73)	7 (41)	5 (45)
Brisingida ('Armless' stars)	2	6	5	6 (2)	5	2 (33)	3 (60)	2 (33)	1 (20)	0 (0)	0 (0)
Bryozoa	41	67	28	26 (12)	15	19 (73)	13 (87)	15 (58)	14 (93)	10 (67)	8 (57)
Xenophyophorea (Xenophyophores)	1	0	0	0 (0)	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Serpulidae (Serpulid tube worms)	1	5	1	5 (4)	1	3 (60)	1 (100)	5 (100)	1 (100)	2 (40)	1 (100)
TOTAL	**171**	**326**	**248**	**281**	**231**	**116 (41)**	**112 (48)**	**173 (63)**	**183 (79)**	**79 (46)**	**80 (44)**

[1] Includes all Porifera within the classes Demospongiae and Hexactinellida
[2] Includes all Alcyonacea within the sub-orders Holaxonia, Calcaxonia and Scleraxonia
[3] Includes all taxa within the following genera: *Solenosmilia; Goniocorella; Oculina; Enallopsammia; Madrepora; Lophelia*

Table 3 | List of candidate VME taxa identified at the genus or species level and expert scoring against FAO guidelines for identifying VME taxa. Question marks indicate where expert reviewers indicated a lack of information to evaluate a criterion, and taxa in grey are those that were not identified as VME taxa by expert reviewers. Note: no xenophyophores were identified to the level of genera or species.

			FAO Criteria				
Candidate taxa	Family	VME group	Unique/Rarity	Func. Signif.	Fragility	Recovery	Struct. Complex.
Axinella	Axinellidae	Porifera		X		X	X
Parahigginsia	Heteroxyidae		X		X	X	
Janulum imago	Raspailiidae		X		X	X	
Ircinia	Irciniidae			X		X	
Coscinoderma	Spongiidae			X		X	X
Spongia	Spongiidae			X	X	X	
Arenosclera	Callyspongiidae				X	X	
Callyspongia	Callyspongiidae			X	X	X	X
Callyspongia (Callyspongia) nuda	Callyspongiidae			X	X		X
Cladocroce	Chalinidae			X	X	X	
Amphimedon	Niphatidae			X	X		
Neopetrosia	Petrosiidae			X	X	X	
Xestospongia	Petrosiidae			X		X	X
Oceanapia	Phloeodictyidae			X	X		
Abyssocladia	Cladorhizidae		X				
Abyssocladia carcharias	Cladorhizidae		X		X	X	
Abyssocladia inflata	Cladorhizidae		X				
Chondrocladia	Cladorhizidae		X			X	
Chondrocladia concrescens	Cladorhizidae		X	X		X	
Chondrocladia (Chondrocladia) nani	Cladorhizidae		X			X	
Lissodendoryx	Coelosphaeridae			X	X		
Esperiopsis inodes	Esperiopsidae				X		
Phorbas	Hymedesmiidae			X	X		
Ophlitaspongia	Microcionidae				X		
Mycale	Mycalidae			X	X		
Phlyctaenopora	Mycalidae		X		X	X	
Tedania	Tedaniidae			X	X		
Polymastia granulosa	Polymastiidae			X	X		
Radiella	Polymastiidae		X			X	
Topsentia	Halichondriidae			X	X	X	
Aaptos	Suberitidae			X	X	X	
Rhizaxinella	Suberitidae			X	X		
Suberites	Suberitidae			X	X	X	
Suberites cupuloides	Suberitidae			X	X	X	
Halicometes hooperi	Tethyidae		X		X	X	
Tethya	Tethyidae			X	X	X	
Ecionemia novaezealandiae	Ancorinidae			X		X	
Rhabdastrella	Ancorinidae			X		X	
Stelletta	Ancorinidae			X		X	X
Calthropella (Calthropella)	Calthropellidae		X		X	X	
Calthropella (Pachataxa)	Calthropellidae		X		X	X	
Awhiowhio unda	Corallistidae		X		X	X	
Corallistes	Corallistidae		X	X	X	X	
Herengeria auriculata	Corallistidae		X		X	X	
Herengeria vasiformis	Corallistidae		X	X	X	X	X
Neoschrammeniella fulvodesmus	Corallistidae		X	X	X	X	
Erylus	Geodiidae		X	X	X	X	
Geodia	Geodiidae			X		X	
Geodia praelonga	Geodiidae		X	X		X	X
Geodia regina	Geodiidae			X	X	X	X
Geodia vestigifera	Geodiidae			X	X		X
Penares palmatoclada	Geodiidae		X		X		
Costifer wilsoni	Isoraphiniidae		X	X	X	X	X
Homophymia stipitata	Neopeltidae		X	X	X	X	
Sollasipelta punctata	Neopeltidae		X		X	X	
Characella	Pachastrellidae		X		X	X	
Neoaulaxinia persicum	Phymatellidae		X	X	X	X	
Pleroma aotea	Pleromidae		X	X	X	X	

Candidate taxa	Family	VME group	FAO Criteria: Unique/Rarity	Func. Signif.	Fragility	Recovery	Struct. Complex.
Pleroma menoui	Pleromidae		X	X	X	X	
Pleroma turbinatum	Pleromidae		X	X	X	X	X
Aciculites pulchra	Scleritodermidae		X	X	X	X	
Scleritoderma	Scleritodermidae		X	X	X	X	X
Scleritoderma flabelliformis	Scleritodermidae		X	X	X	X	X
Antarctotetilla leptoderma	Tetillidae			X	X	X	
Craniella neocaledonica	Tetillidae		X		X	X	
Fangophilina	Tetillidae		X		X	X	
Tetilla australis	Tetillidae			X	X	X	
Thenea cf. microspirastra	Theneidae		X		X	X	
Thenea novaezealandiae	Theneidae		X	X	X	X	
Discodermia proliferans	Theonellidae		X		X	X	
Poecillastra	Vulcanellidae		X	X	X	X	
Poecillastra laminaris	Vulcanellidae		X	X	X	X	X
Hyalonema	Hyalonematidae		X	X	X	X	X
Hyalonema (Corynonema) tenuifusum	Hyalonematidae		X		X	X	
Hyalonema (Cyliconemaoida)	Hyalonematidae		X		X	X	
Hyalonema (Oonema) bipinnulum	Hyalonematidae		X		X	X	
Monorhaphis chuni	Monorhaphididae		X		X	X	X
Pheronema	Pheronematidae		X	X	X	X	
Pheronema conicum	Pheronematidae		X	X	X	X	X
Euryplegma auriculare	Aulocalycidae		X		X	X	
Amphidiscella abyssalis	Euplectellidae		X		X	X	X
Amphidiscella sonnae	Euplectellidae		X		X	X	X
Amphoreus schuppi	Euplectellidae		X		X	X	
Corbitella inopiosa	Euplectellidae		X		X	X	
Dictyaulus crinolinum	Euplectellidae		X		X	X	X
Euplectella	Euplectellidae		X	X	X	X	X
Euplectella aspergillum regalis	Euplectellidae		X	X	X	X	X
Euplectella imperialis	Euplectellidae		X	X	X	X	X
Malacosaccus erectus	Euplectellidae		X	X	X	X	
Regadrella	Euplectellidae		X	X	X	X	X
Saccocalyx tetractinus	Euplectellidae		X	X	X	X	X
Walteria leuckarti	Euplectellidae		X	X	X	X	X

Candidate taxa	Family	VME group	FAO Criteria: Unique/Rarity	Func. Signif.	Fragility	Recovery	Struct. Complex.
Caulophacus	Rossellidae		X	X	X	X	X
Caulophacus (Caulodiscus) lotifolium	Rossellidae		X	X	X	X	X
Crateromorpha	Rossellidae		X	X	X	X	X
Crateromorpha (Crateromorpha) meyeri	Rossellidae		X	X	X	X	X
Hyalascus	Rossellidae		X	X	X	X	X
Rossella	Rossellidae		X	X	X	X	X
Rossella antarctica	Rossellidae		X	X	X	X	X
Symplectella rowi	Rossellidae			X	X	X	
Aphrocallistes beatrix beatrix	Aphrocallistidae			X	X	X	X
Auloplax sonnae	Auloplacidae		X	X	X	X	
Chonelasma hamatum	Euretidae		X	X	X	X	X
Chonelasma lamella	Euretidae		X	X	X	X	X
Gymnorete stabulatum	Euretidae		X	X	X	X	
Farrea	Farreidae			X	X	X	X
Farrea ananchorata	Farreidae		X	X	X	X	
Farrea similaris	Farreidae			X	X	X	X
Anomochone expansa	Tretodictyidae		X		X	X	
Anomochone furcata	Tretodictyidae		X		X	X	
Hexactinella simplex	Tretodictyidae		X		X	X	
Anthomastus	Alcyoniidae	Alcyonacea (soft corals)				?	
Pseudoanthomastus	Alcyoniidae		X			?	
Carijoa	Clavulariidae			X	X	?	X
Rhodelinda	Clavulariidae		X			?	
Rhodelinda gardineri	Clavulariidae		X			?	
Telesto	Clavulariidae			X	X	?	X
Dendronephthya	Nephtheidae			X	X	?	X
Duva	Nephtheidae			X	X	?	
Chironephthya	Nidaliidae			X	X	?	X
Acanthogorgia	Acanthogorgiidae	Alcyonacea (gorgonians)		X	X	?	X
Anthogorgia	Acanthogorgiidae			X	X	?	X
Anthothela	Anthothelidae			X	X	?	X
Chrysogorgia	Chrysogorgiidae			X	X	?	X
Iridogorgia	Chrysogorgiidae			X	X	?	X

Candidate taxa	Family	VME group	FAO Criteria: Unique/Rarity	Func. Signif.	Fragility	Recovery	Struct. Complex.
Metallogorgia	Chrysogorgiidae			X	X	?	X
Radicipes	Chrysogorgiidae			X	X	?	
Corallium	Coralliidae			X	X	X	X
Corallium tortuosum	Coralliidae		X	X	X	X	X
Hemicorallium abyssale	Coralliidae		X	X	X	X	X
Viminella	Ellisellidae			X	X	?	X
Acanella	Isididae			X	X	X	X
Acanella rigida	Isididae		X	X	X	X	X
Isidella	Isididae			X	X	X	X
Keratoisis	Isididae			X	X	X	X
Keratoisis flexibilis	Isididae		X	X	X	X	X
Keratoisis glaesa	Isididae		X	X	X	X	X
Lepidisis	Isididae			X	X	X	
Minuisis pseudoplanum	Isididae		X	X	X	X	X
Orstomisis	Isididae			X	X	X	X
Sclerisis	Isididae		X	X	X	X	X
Paragorgia	Paragorgiidae			X	X	X	X
Paragorgia arborea	Paragorgiidae			X	X	X	X
Paragorgia maunga	Paragorgiidae		X	X	X	X	X
Dentomuricea	Plexauridae			X	X	?	X
Euplexaura	Plexauridae			X	X	?	X
Muriceides	Plexauridae			X	X	?	X
Paracis	Plexauridae			X	X	?	X
Paracis squamata	Plexauridae		X	X	X	?	X
Paramuricea	Plexauridae			X	X	?	X
Placogorgia	Plexauridae			X	X	?	X
Swiftia	Plexauridae			X	X	?	X
Trimuricea	Plexauridae			X	X	?	X
Villogorgia	Plexauridae			X	X	?	X
Callogorgia	Primnoidae			X	X	?	X
Callogorgia formosa	Primnoidae		X	X	X	?	X
Callogorgia gilberti	Primnoidae		X	X	X	?	X
Callogorgia korema	Primnoidae		X	X	X	?	X
Callogorgia tuberculata	Primnoidae		X	X	X	?	X
Calyptrophora	Primnoidae			X	X	?	X
Calyptrophora diaphana	Primnoidae		X	X	X	?	X
Helicoprimnoa fasciola	Primnoidae		X	X	X	?	X
Metanarella nannolepis	Primnoidae		X	X	X	?	X
Narella	Primnoidae			X	X	?	X
Narella hypsocalyx	Primnoidae		X	X	X	?	X
Narella mesolepis	Primnoidae		X	X	X	?	X
Narella vulgaris	Primnoidae		X	X	X	?	X
Parastenella doederleini	Primnoidae		X	X	X	?	X
Parastenella pacifica	Primnoidae		X	X	X	?	X
Perissogorgia	Primnoidae			X	X	?	X
Perissogorgia colossus	Primnoidae		X	X	X	?	X
Primnoa	Primnoidae			X	X	?	X
Primnoa notialis	Primnoidae			X	X	?	X
Thouarella	Primnoidae			X	X	?	X
Victorgorgia	Victorgorgiidae			X	X	?	X
Isidoides armata	Calcaxonia[1]		X	X	X	?	X
Goniocorella dumosa	Caryophylliidae	Scleractinia	X	X	X	X	X
Solenosmilia variabilis	Caryophylliidae			X	X	X	X
Enallopsammia	Dendrophylliidae			X	X	X	X
Enallopsammia rostrata	Dendrophylliidae			X	X	X	X
Madrepora oculata	Oculinidae			X	X	X	X
Oculina virgosa	Oculinidae		X	X	X	X	X
Antipathes	Antipathidae	Antipatharia	?	?	X	X	X
Cirrhipathes	Antipathidae		?	?	X	X	
Stichopathes	Antipathidae		?	?	X	X	
Asteriopathes	Aphanipathidae		X	?	X	X	
Cladopathes	Cladopathidae		?	?	X	X	X
Trissopathes	Cladopathidae		?	?	X	X	X
Trissopathes tetracrada	Cladopathidae		?	?	X	X	X
Leiopathes	Leiopathidae		?	?	X	X	X
Leiopathes acanthophora	Leiopathidae		?	?	X	X	X
Leiopathes bullosa	Leiopathidae		?	?	X	X	X
Leiopathes secunda	Leiopathidae		?	?	X	X	X
Antipathella strigosa	Myriopathidae		?	?	X	X	X
Cupressopathes	Myriopathidae		?	?	X	X	

Candidate taxa	Family	VME group	FAO Criteria: Unique/Rarity	Func. Signif.	Fragility	Recovery	Struct. Complex.
Cupressopathes cylindrica	Myriopathidae		?	?	X	X	
Cupressopathes simplex	Myriopathidae		X	?	X	X	
Myriopathes japonica	Myriopathidae		?	?	X	X	X
Alternatipathes alternata	Schizopathidae		X	?	X	X	
Bathypathes	Schizopathidae		?	?	X	X	X
Bathypathes patula	Schizopathidae		?	?	X	X	
Dendrobathypathes	Schizopathidae		?	?	X	X	X
Dendrobathypathes isocrada	Schizopathidae		?	?	X	X	X
Dendropathes	Schizopathidae		?	?	X	X	X
Lillipathes	Schizopathidae		?	?	X	X	X
Lillipathes lillei	Schizopathidae		?	?	X	X	X
Parantipathes	Schizopathidae		?	?	X	X	
Parantipathes dodecasticha	Schizopathidae		?	?	X	X	
Parantipathes helicosticha	Schizopathidae		?	?	X	X	
Stauropathes	Schizopathidae		?	?	X	X	
Stylopathes	Stylopathidae		?	?	X	X	
Stylopathes columnaris	Stylopathidae		?	?	X	X	
Triadopathes	Stylopathidae		?	?	X	X	
Tylopathes glutinata	Stylopathidae		?	?	X	X	
Actinernus elongatus	Actinernidae	Actiniaria	X			X	
Isactinernus quadrilobatus	Actinernidae					X	
Bolocera	Actiniidae					X	
Parabunodactis inflexibilis	Actiniidae		X				
Actinoscyphia	Actinoscyphiidae					X	
Actinoscyphia plebeia	Actinoscyphiidae					X	
Sicyonis	Actinostolidae					X	
Amphianthus capensis	Amphianthidae					X	
Edwardsiella	Edwardsiidae						
Actinauge	Hormathiidae					X	
Actinauge granulate	Hormathiidae					X	
Actinauge verrillii	Hormathiidae					X	
Chondrophellia orangina	Hormathiidae		X			X	
Hormathia	Hormathiidae					X	
Hormathia lacunifera	Hormathiidae					X	
Phelliactis	Hormathiidae					X	

Candidate taxa	Family	VME group	FAO Criteria: Unique/Rarity	Func. Signif.	Fragility	Recovery	Struct. Complex.
Alvinactis chessi	Kadosactinidae		X			X	
Cyananthea hourdezi	Kadosactinidae		X			X	
Liponema	Liponematidae					X	
Actinecta cyanea	Minyadidae		X				
Phellia	Phelliidae					X	
Anthoptilum	Anthoptilidae	Pennatulacea			X	?	
Anthoptilum grandiflorum	Anthoptilidae				X	?	X
Anthoptilum murrayi	Anthoptilidae				X	?	
Funiculina quadrangularis	Funiculinidae				X	?	X
Halipteris finmarchica	Halipteridae				X	?	X
Kophobelemnon	Kophobelemnidae				X	?	
Kophobelemnon macrospinosum	Kophobelemnidae				X	?	
Gyrophyllum sibogae	Pennatulidae				X	?	
Pennatula	Pennatulidae				X	?	
Pennatula inflata	Pennatulidae				X	?	
Pteroeides	Pennatulidae				X	?	
Distichoptilum gracile	Protoptilidae				X	?	X
Protoptilum	Protoptilidae				X	?	
Umbellula	Umbellulidae				X	?	
Epizoanthus[1]	Epizoanthidae	Zoantharia	X	X	X	X	X
Epizoanthus paguriphilus	Epizoanthidae						
Epizoanthus stellaris	Epizoanthidae						
Kulamanamana haumeaae	Parazoanthidae				X	X	X
Savalia	Parazoanthidae				X	X	X
Garveia	Bougainvilliidae	Hydrozoa		X	X		
Corymorpha furcata	Corymorphidae			X	X		
Eudendrium	Eudendriidae			X	X		
Oceania armata	Oceaniidae			X	X		
Leuckartiara annexa	Pandeidae						
Solanderia	Solanderiidae			X	X		X
Aglaophenia ctenata	Aglaopheniidae		X	X	X		X
Gymnangium explorationis	Aglaopheniidae			X	X		X
Gymnangium tubuliferum	Aglaopheniidae			X	X		X
Lytocarpia	Aglaopheniidae		X	X	X		X
Lytocarpia cf. rigida	Aglaopheniidae			X	X		X

Candidate taxa	Family	VME group	FAO Criteria				
			Unique/Rarity	Func. Signif.	Fragility	Recovery	Struct. Complex.
Lytocarpia subdichotoma	Aglaopheniidae		X	X	X		X
Lytocarpia tenuissima	Aglaopheniidae			X	X		X
Campanularia diverticulata	Campanulariidae				X		
Obelia	Campanulariidae				X		
Clathrozoon	Clathrozoidae			X	X		X
Halecium	Haleciidae		X	X	X		
Halecium delicatulum	Haleciidae			X	X		
Corhiza scotiae	Halopteridiidae			X	X		
Halopteris crassa	Halopteridiidae			X	X		
Acryptolaria	Lafoeidae			X	X		X
Acryptolaria conferta	Lafoeidae			X	X		X
Acryptolaria minima	Lafoeidae		X	X	X		X
Acryptolaria operculata	Lafoeidae			X	X		X
Cryptolarella abyssicola	Lafoeidae			X	X		
Lafoea dumosa	Lafoeidae			X	X		X
Phialucium mbengha	Phialuciidae						
Plumularia	Plumulariidae		X	X	X		X
Plumularia insignis	Plumulariidae			X	X		
Sertularella	Sertularellidae		X	X	X		X
Dictyocladium monilifer	Sertulariidae		X	X	X		X
Dictyocladium reticulatum	Sertulariidae			X	X		X
Gigantotheca	Sertulariidae		X	X	X		X
Salacia	Sertulariidae			X	X		X
Salacia bicalycula	Sertulariidae		X	X	X		X
Salacia spiralis	Sertulariidae		X	X	X		X
Symplectoscyphus	Symplectoscyphidae		X	X	X		X
Symplectoscyphus cf. macroscyphus	Symplectoscyphidae			X	X		X
Synthecium	Syntheciidae			X	X		X
Synthecium brucei	Syntheciidae			X	X		X
Synthecium subventricosum	Syntheciidae			X	X		X
Parascyphus simplex	Thyroscyphidae			X	X		X
Stegolaria	Tiarannidae			X	X		X
Stegolaria geniculata	Tiarannidae			X	X		X
Stegolaria irregularis	Tiarannidae		X	X	X		X
Cryptolaria exserta	Zygophylacidae			X	X		X

Candidate taxa	Family	VME group	FAO Criteria				
			Unique/Rarity	Func. Signif.	Fragility	Recovery	Struct. Complex.
Cryptolaria pectinata	Zygophylacidae			X	X		X
Zygophylax polycarpa	Zygophylacidae		X	X	X		X
Zygophylax sibogae	Zygophylacidae			X	X		X
Adelopora fragilis	Stylasteridae	Stylasteridae			X	X	
Astya aspidopora	Stylasteridae		X		X	X	
Calyptopora reticulata	Stylasteridae		X	X	X	X	
Conopora	Stylasteridae		X	X	X	X	
Conopora candelabrum	Stylasteridae		X		X	X	
Conopora laevis	Stylasteridae			X	X	X	
Conopora tetrastichopora	Stylasteridae		X		X	X	
Conopora unifacialis	Stylasteridae		X		X	X	
Conopora verrucosa	Stylasteridae			X	X	X	
Crypthelia	Stylasteridae		X	X	X	X	
Crypthelia curvata	Stylasteridae		X		X	X	
Crypthelia cymas	Stylasteridae				X	X	
Crypthelia polypoma	Stylasteridae		X		X	X	
Crypthelia robusta	Stylasteridae		X	X	X	X	
Crypthelia stenopoma	Stylasteridae			X	X	X	
Distichopora dispar	Stylasteridae		X		X	X	
Errina	Stylasteridae		X		X	X	
Errina bicolor	Stylasteridae		X		X	X	
Errina cheilopora	Stylasteridae		X		X	X	
Errina dendyi	Stylasteridae		X		X	X	
Errina novaezelandiae	Stylasteridae		X		X	X	
Errinopsis	Stylasteridae		X		X	X	
Inferiolabiata lowei	Stylasteridae			X	X	X	
Lepidopora cryptocymas	Stylasteridae		X		X	X	
Lepidopora dendrostylus	Stylasteridae			X	X	X	
Lepidopora sarmentosa	Stylasteridae		X	X	X	X	
Lepidotheca	Stylasteridae		X	X	X	X	
Lepidotheca altispina	Stylasteridae		X		X	X	
Lepidotheca chauliostylus	Stylasteridae		X	X	X	X	
Leptohelia microstylus	Stylasteridae			X	X	X	
Sporadopora micropora	Stylasteridae			X	X	X	
Stylaster	Stylasteridae		X	X	X	X	

Candidate taxa	Family	VME group	FAO Criteria: Unique/Rarity	Func. Signif.	Fragility	Recovery	Struct. Complex.
Stylaster eguchii	Stylasteridae			X	X	X	
Stylaster gracilis	Stylasteridae		X		X	X	
Stylaster imbricatus	Stylasteridae		X	X	X	X	
Stylaster sinuosus	Stylasteridae		X	X	X	X	
Antedon	Antedonidae	Crinoidea	?		X	?	
Cyclometra	Antedonidae		?		X	?	
Erythrometra rostrata	Antedonidae		?		X	?	
Florometra novaezealandiae	Antedonidae		?		X	?	
Thaumatometra	Antedonidae				X	?	
Thaumatometra alternata	Antedonidae				X	?	
Monachocrinus	Bathycrinidae		?		X	?	X
Charitometra basicurva	Charitometridae				X	?	
Glyptometra inaequalis	Charitometridae				X	?	
Strotometra	Charitometridae		?		X	?	
Anneissia plectrophorum	Comatulidae				X	?	
Comanthus gisleni	Comatulidae		?		X	?	
Comatulidae incertae sedis imossica	Comatulidae		?		X	?	
Comissia dawsoni	Comatulidae		?		X	?	
Himerometra robustipinna	Himerometridae				X	?	
Pentametrocrinus	Pentametrocrinidae				X	?	
Pentametrocrinus semperi	Pentametrocrinidae		?		X	?	
Pentametrocrinus varians	Pentametrocrinidae		?		X	?	
Porphyrocrinus	Phrynocrinidae		X		X	?	X
Democrinus cf. weberi	Rhizocrinidae		?		X	?	X
Aglaometra valida	Thalassometridae		?		X	?	
Crotalometra	Thalassometridae		?		X	?	
Thalassocrinus	Hyocrinidae		?		X	?	X
Metacrinus	Isselicrinidae				X	?	X
Metacrinus wyvillii	Isselicrinidae		?		X	?	X
Saracrinus	Isselicrinidae		X		X	?	X
Brisinga	Brisingidae	Brisingida			X		
Brisingenes	Brisingidae				X		
Hymenodiscus	Brisingidae				X		
Hymenodiscus aotearoa	Brisingidae		X		X		
Belgicella racowitzana	Freyellidae		X		X		

Candidate taxa	Family	VME group	FAO Criteria: Unique/Rarity	Func. Signif.	Fragility	Recovery	Struct. Complex.
Freyastera digitata	Freyellidae		X		X		
Freyella	Freyellidae				X		
Freyella echinata	Freyellidae		X		X		
Freyella felleyra	Freyellidae		X		X		
Antropora	Antroporidae	Bryozoa	?				
Crateropora	Aspidostomatidae		?				
Aberrodomus candidus	Bifaxariidae		X		X		
Bifaxaria submucronata	Bifaxariidae				X		
Domosclerus	Bifaxariidae		?		X		
Domosclerus corrugatus	Bifaxariidae				X		
Domosclerus piscis	Bifaxariidae		X		X		
Raxifabia tunicata	Bifaxariidae		X		X		
Metroperiella	Bitectiporidae		?				
Parkermavella	Bitectiporidae		?				
Buffonellodes	Buffonellodidae		?				
Ipsibuffonella	Buffonellodidae		?				
Julianca	Buffonellodidae				X		
Bugula decipiens	Bugulidae		X		X		
Bugulella gracilis	Bugulidae				X		
Amphiblestrum	Calloporidae		?				
Onychoblestrum	Calloporidae		?				
Onychoblestrum hastingsae	Calloporidae						
Platypyxis	Calloporidae		?				
Amastigia	Candidae		?		X		
Caberea	Candidae		?		X		
Notoplites	Candidae		?		X		
Cellaria	Cellariidae		X		X		
Cellaria immersa	Cellariidae			X	X		
Melicerita chathamensis	Cellariidae				X		
Celleporina	Celleporidae		?				
Galeopsis	Celleporidae		?		X		
Lagenipora ferocissima	Celleporidae						
Chaperiopsis	Chaperiidae		?				
Chaperiopsis splendida	Chaperiidae						
Crepidacantha bracebridgei	Crepidacanthidae						

Candidate taxa	Family	VME group	FAO Criteria: Unique/Rarity	Func. Signif.	Fragility	Recovery	Struct. Complex.
Cribralaria	Cribrilinidae		?				
Figularia	Cribrilinidae		?				
Figularia pelmatifera	Cribrilinidae						
Puellina	Cribrilinidae		?				
Villicharixa strigosa	Electridae						
Ellisina	Ellisinidae		?				
Escharella	Escharellidae		?				
Chiastosella exuberans	Escharinidae						
Farciminellum hexagonum	Farciminariidae		?		X		
Gigantopora	Gigantoporidae		?				
Hippothoa watersi	Hippothoidae						
Hippothoa peristomata	Hippothoidae						
Lacerna	Lacernidae		?				
Phonicosia	Lacernidae		?				
Phonicosia circinata	Lacernidae		?				
Calyptotheca	Lanceoporidae		?				
Harpagozoon minutus	Lekythoporidae						
Poecilopora	Lekythoporidae		?		X		
Chronocerastes	Microporellidae		?				
Microporella	Microporellidae		?				
Micropora	Microporidae		?				
Rosemariella thompsonae	Microporidae		X				
Hippellozoon novaezelandiae	Phidoloporidae			X	X		
Reteporella	Phidoloporidae		?	X	X		
Stephanollona	Phidoloporidae		?				
Stephanollona scintillans	Phidoloporidae						
Oppiphorina	Phorioppniidae		X		X		
Haswelliporina	Porinidae		?		X		
Haswelliporina cf. venusta	Porinidae		?		X		
Quadricellaria bocki	Quadricellariidae						
Siphonicytara	Siphonicytaridae		?		X		
Smittina	Smittinidae		?				
Smithsonius	Tessaradomidae		?		X		
Acanthodesiomorpha problematica	Cheilostomatida incertae sedis		X		X		

Candidate taxa	Family	VME group	FAO Criteria: Unique/Rarity	Func. Signif.	Fragility	Recovery	Struct. Complex.
Metalcyonidium	Clavoporidae		?				
Pachyzoon	Pachyzoidae		?				
Nevianipora	Diaperoeciidae		?		X		
Entalophora	Entalophoridae		?				
Disporella	Lichenoporidae		?				
Entalophoroecia	Plagioeciidae		?				
Plagioecia	Plagioeciidae		?				
Stomatopora	Stomatoporidae		?				
Exidmonea	Tubuliporidae		?				
Fenestulipora cassiformis	Tubuliporidae		X	X	X		
Tubulipora	Tubuliporidae		?				
Pandanipora	Tubuliporina[2]		?		X		
Hyalopomatus	Serpulidae	Serpulidae	X				
Neovermilia	Serpulidae				X		
Placostegus	Serpulidae		X				
Protula	Serpulidae				X		
Spirobranchus latiscapus	Serpulidae				X		

[1]Epizoanthus is a very broad genus, one undescribed species would fit most criteria as it is arborescent (habitat forming), forming tree-like structures of agglomerated sediment (fragile) in association with a eunicid worm (functional significance). It is currently known only from New Caledonia and the North of the New Zealand waters (rarity).

[2] Suborder

5 Discussion

Within the Evaluated Area of the SPRFMO Convention Area, the expert review process identified 281 and 231 candidate VME taxa designated at the taxonomic level of genus and species, respectively. However, because most observations within our dataset (56%) were designated at the taxonomic level of family or higher, this is likely an under-estimate of the number of VME taxa (at the level of species of genera) present within the area. This underestimate is potentially further exacerbated by a high prevalence of taxa that either have low catchability (the dataset included data from a range of sampling methods, although was dominated by observer data from bottom trawl fisheries, which have been demonstrated to have low catchability for VMEs – for example see SPRFMO SC7-DW14, SC7-DW21, Auster et al 2011) or may be naturally rare, as evidenced by the high percentage of taxa with only a single observation within the dataset.

The high prevalence of apparently rare species and the high number of species within most of the 15 VME groups has potentially important conservation implications. Aggregating species by taxonomic (or functional) similarity is a common approach to overcome difficulties in analysis where there is a lack of data (Chongliang et al. 2020; Kindsvater et al 2018). However, it assumes that different species within a higher-level taxonomic group have similar characteristics affecting vulnerability and will respond to environmental gradients in a similar way, which may not always be true, leading to the ecological patterns at the species-level being obscured at coarser taxonomic resolutions (Losos 2008). Where higher-level taxonomic groups are speciose and there is a low level of congruence in life-history traits, distribution patterns, and meta-population dynamics of the species within those groups, aggregating species into higher level taxonomic groups and using habitat suitability models for these higher level taxonomic groups to design spatial management measures can result in a loss of information that could impact our ability to detect or prevent significant adverse impacts to the marine biodiversity of vulnerable marine ecosystems. Conversely, it might be necessary in some circumstances to assess and manage impacts on rare or infrequently-observed species using aggregated data, surrogates, or by "borrowing" data and models from other taxa rather than relying on very sparse data that are unlikely to be informative alone and could be misleading. The habitat suitability models that underpin the spatial management measures included in SPRMO CMM03-2020 included both species-level habitat suitability models for Scleractinia (*Solenosimilia variabilis, Madrepora oculata, Goniocorella dumosa, Enallopsommia rostrata*), alongside habitat suitability models for six higher-level taxonomic groups designated variously at the levels of Class, Order and Family (Antipatharia, Alcyonacea (gorgonians), Stylasteridae, Demospongiae, Hexactinellida and Pennatulacea). It is currently unclear if and to what extent the loss of information associated with habitat suitability models for higher-taxonomic groups affects the ability of the spatial management measures to prevent significant adverse impacts on VMEs.

While assessments of congruence in life-history traits and species distributional patterns within VME groups is beyond the scope of this paper, the large number of species in most of the 15 VME groups, and the prevalence of apparently rare species within our dataset suggests future work should evaluate congruence of life-history traits within VME groups. For example, the effects of taxonomic resolution on biodiversity patterns can be tested by combining species into coarser taxonomic groups and evaluating the similarity between ordination patterns depicted at both species-level and coaser

taxonomic levels (Anderson et al., 2005). If the patterns are similar, then groupings at higher taxonomic levels can be used with confidence to replace species-level data (e.g., Terlizzi et al., 2003). Alternatively, species archetype models could be used to evaluate whether grouping VME taxa by taxonomic (or functional) similarity preserves species-level distributional patterns (for an example evaluating benthic macrofaunal diversity in Antarctica (see Jansen et al. 2018), or identifying candidate indicator species for sponge community monitoring in the Arctic (see Murillo et al. 2018). We recognize that understanding the diversity in traits requires studies of individual species life history, which is expensive and slow, that the information needed to do this will require a long period to develop, and that the work programme of the SC is already very demanding. However, we recommend that, as resources and data permit, such approaches should be used to evaluate which of the habitat suitability models for the six broad taxonomic groups effectively describe species and genera-level variation within each group, and that future habitat suitability modelling approaches incorporate the functional traits of species to improve the ecological interpretation of results.

Many of the observations and taxa in our dataset did not include biomass (46% of observations), which is partly a consequence of compiling data from disparate data-sources that were collected for different reasons. Both biomass (or count data from which biomass can be derived) and depth information are important for informing conservation and management measures. For example, although the updated habitat suitability models for the current VME indicator taxa within the Evaluated Area of the SPRFMO Convention Area (see the BFIA, Australia and New Zealand 2020) have been modelled using presence and target group background data (i.e., the presence of another related species at a site to support designation of that site as an absence for the target taxon) to produce indices of habitat suitability at a location, the routine collection of density or biomass data (potentially via cameras mounted on trawl gear) and its incorporation into habitat suitability models would help facilitate the modelling of abundance-based predictions. If interpreted considering the density of VME indicator taxa necessary to generate the structural and functional attributes of a VME as defined by the FAO (2009), abundance-based predictions could better inform the conservation and management of impacts on VMEs. For example, abundance or biomass thresholds can be used to identify coral reef habitats that provide carbon processing (e.g., Cathelot et al. 2015) and biodiversity functions (Rowden et al. 2020), or to characterise species diversity (e.g., Murillo et al 2020a), functional diversity and ecological functions (e.g., Murillo et al 2020b). Additionally, incorporating abundance within co-occurance analyses to identify specific types of structure-forming VME habitats along with their associated species may facilitate raising the genus and species-level information provided here to the ecosystem level, which would be more practical to implement within management from the perspective of observers on fisheries vessels. Thus, we suggest that in the spirit of maximizing the use of data, where practical, comprehensive descriptions of the location (including depth, latitude and longitude), taxonomy (to the highest possible taxonomic resolution achievable), and biomass (ideally the number of individuals as well as weight would be recorded) of deep-sea benthic invertebrates is routinely collected by fisheries observers and research programmes.

Our analysis focused on the Evaluated Area of the SPRFMO Convention Area and the vulnerability of taxa to bottom trawlling; however, there are other areas within the SPRFMO Convention Area where bottom fisheries occur, most notably exploratory longlining fisheries for toothfish by New Zealand (SPRFMO CMM14a-2019) and Chilean-Flagged vessels (CMM12d-2020) immediately adjacent to the

fishing area managed by CCAMLR (using the VME avoidance and thresholds as specified in CCAMLR CM22-13), and exploratory potting fisheries by the Cook Islands for lobsters and crabs on the Foundation Seamount Chain (CMM14b-2020). We suggest that future updates to the list of candidate VME taxa provided here should also include areas outside the Evaluated Area, and identify VME taxa in terms of their vulnerability to specific gear types, including mid-water trawl, demersal longline and potting.

The dataset we compiled for the entire SPRFMO Convention Area included about twice as many records as were available for the Evaluated Area, indicating that there remains a rich data-source that could be used to broaden the analysis presented here to the wider SPRFMO Convention Area. An initial examination of data from outside the evaluated area suggests a high likelihood of additional VME taxa being present within the broader SPRFMO Convention Area. Additional benthic biodiversity data are likely held by other member nations and parties to the Convention and should be included in any expansion of this analysis. We recommend that other Members begin compiling information they hold on benthic invertebrate taxa within the SPRFMO Convention Area to contribute to future processes should they occur. For example, in their exploratory lobster fishing report (SC7-DW02), the Cook Islands noted that rhodoliths were the most common of the benthic organisms caught as benthic bycatch (although not formally identified as a VME in CMM03-2020, rhodolith beds are considered a habitat vulnerable to bottom fishing (Hall-Spencer and Moore 2000)), and that benthic bycatch on the Kopernick Seamount also included corals and hydrocorals.

Because there are few family, genus, or species-level studies of the life-history characteristics of deep-sea invertebrates in the SPRFMO Convention Area, we used an expert review process to identify taxa that, based on expert opinion, met the FAO criteria. The results presented in this paper should, therefore, be understood as using a combination of the best quality-assured data available, and expert opinion, to identify candidate VME taxa at the levels of genera or species within the Evaluated Area of the SPRFMO Convention Area. However, because there remains a considerable lack of knowledge about the life-history characteristics of many of the taxa in our analysis (with expert reviewers indicating difficulty in evaluating some taxa against the FAO guidelines due to a lack of basic biological information), and there may have been some inconsistencies in how the FAO guidelines were interpreted by different reviewers (for example the application of expert knowledge to the functional significance criteria may have differed between the sponges and the Alcyonacea (gorgonians)) we recommend that the list of VME taxa is continually updated and reviewed as better information on the life-history characteristics of VME taxa become available.

Given the incomplete knowledge we have of the life-history characteristics for many deepsea benthic invertebrates, we took a pragmatic approach of including taxa that met at least one of the uniqueness or rarity, functional significance, fragility, recovery or structural complexity criteria in the draft list of VME taxa. However, alternative approaches in how criteria are combined to identify VME taxa could be explored. For example, the FAO guidelines indicate that vulnerability is related to the likelihood that a population, community or habitat will be impacted by a specific threat, and that vulnerable ecosystems are those that are both fragile and very slow to recover (or may never recover). Therefore, where knowledge of the life-history characteristics of the taxa being evaluated is sufficient, an alternative approach to that taken here would be to identify VME taxa based on their ability to satitisfy a combination of criteria rather than a single criterion. For example, a large

proportion of the candidate VME taxa identified in this paper were scored as being susceptible to entanglement in bottom fishing gear (89%), slow to recover from fishing disturbance (51%), and occuring within fishable depths (63% of the genera and 79% of the species), suggesting that a high proportion of the candidate VME taxa have the potential to be directly exposed to bottom fishing impacts, and depending on the intensity and severity of those impacts, they could have limited ability to recover from the impact. Conversely, 56% of taxa included in the draft list of VME taxa did not meet both the fragility and recovery criteria (or couldn't be assessed due to incomplete knowledge). Therefore, a different formulation of how the criteria are applied to identify VME taxa would probably identify a different suite of taxa.

There are several ways in which the list of candidate VME taxa could be used in science processes and management advice. These include: (i) consideration of the implications (for designing and assessing the performance of spatial management measures) of biodiversity within the higher-level taxa for which habitat suitability models have been created; (ii) formal assessment of the extent to which the modelled groups are useful surrogates for unmodelled groups, and the development of guidance on new model development; (iii) the use of lists of candidate VME taxa to develop identification guides for SPRFMO VME indicator taxa for use by fisheries observers; and (iv) a co-occurance analysis to link VME taxa to specific types of habitats.

6 Recommendations

We recommend that the Scientific Committee:

- **Agrees** that the draft lists of VME taxa could be used to evaluate the potential implications of using habitat suitability models for higher-level taxonomic groups for assessing the performance of spatial management measures;
- **Agrees** that the draft lists of VME taxa could be used to develop VME indicator taxa identification guides for use by observers on bottom fishing vessels;
- **Agrees** that analysis of co-occurance would be useful to link VME taxa to specific types of habitats;
- **Agrees** that the lists of VME taxa should be updated as required to consider areas in which existing or new exploratory fisheries are operating;
- **Agrees** that the lists of VME taxa should be reviewed periodically and updated as necessary when better information on the life-history characteristics of VME indicator taxa become available;
- **Requests** Members and CNCPs to begin compiling information they hold on VME groups that can contribute to updates to the list;
- **Determines** how the FAO criteria should best be combined to identify VME taxa or adds this question to the work programme.

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8 References

Anderson, M.J., Connell, S.D., Gillanders, B.M., Diebel, C.E., Blom, W.M., Saunders, J.E. and Landers, T.J., 2005. Relationships between taxonomic resolution and spatial scales of multivariate variation. *Journal of Animal Ecology*, *74*(4), pp.636-646. doi.org/10.1111/j.1365-2656.2005.00959.x

Auster, P.J., Gjerde, K., Heupel, E., Watling, L., Grehan, A. and Rogers, A.D., 2010. Definition and detection of vulnerable marine ecosystems on the high seas: problems with the "move-on" rule. *ICES Journal of Marine Science*, *68*, 254-264. doi.org/10.1093/icesjms/fsq074

Australia and New Zealand (2020). Cumulative Bottom Fishery Impact Assessment for Australian and New Zealand Bottom Fisheries in the SPRFMO Convention Area, 2020. Paper SC8-DW07 for the 8th meeting of the SPRFMO Scientific Committee. 149 p. Available at http://www.sprfmo.int/assets/0-2020-SC8/SC8-DW07-Cumulative-Bottom-Fishery-Impact-Assessment-for-Australian-and-New-Zealand-bottom-fisheries-in-the-SPRFMO-Convention-Area.pdf.

Cathalot, C., Van Oevelen, D., Cox, T.J., Kutti, T., Lavaleye, M., Duineveld, G. and Meysman, F.J., 2015. Cold-water coral reefs and adjacent sponge grounds: Hotspots of benthic respiration and organic carbon cycling in the deep sea. *Frontiers in Marine Science*, *2*, p.37. doi.org/10.3389/fmars.2015.00037

FAO (2009). International Guidelines for the Management of Deep-Sea Fisheries in the High Seas. Food and Agriculture Organisation, Rome, 73 p.

Hall-Spencer, J.M. and Moore, P.G., 2000. Scallop dredging has profound, long-term impacts on maerl habitats. *ICES Journal of marine science*, *57*(5), pp.1407-1415. doi.org/10.1006/jmsc.2000.0918

Jansen, J., Hill, N.A., Dunstan, P.K., Eléaume, M.P. and Johnson, C.R., 2018. Taxonomic resolution, functional traits, and the influence of species groupings on mapping Antarctic seafloor biodiversity. *Frontiers in Ecology and Evolution*, *6*, p.81. doi.org/10.3389/fevo.2018.00081

Kindsvater, H.K., Dulvy, N.K., Horswill, C., Juan-Jordá, M.J., Mangel, M. and Matthiopoulos, J., 2018. Overcoming the data crisis in biodiversity conservation. *Trends in ecology & evolution*, *33*(9), pp.676-688. doi.org/10.1016/j.tree.2018.06.004

Losos, J.B., 2008. Phylogenetic niche conservatism, phylogenetic signal and the relationship between phylogenetic relatedness and ecological similarity among species. *Ecology letters*, *11*(10), pp.995-1003. doi.org/10.1111/j.1461-0248.2008.01229.x

Murillo, F.J., Kenchington, E., Tompkins, G., Beazley, L., Baker, E., Knudby, A. and Walkusz, W., 2018. Sponge assemblages and predicted archetypes in the eastern Canadian Arctic. *Marine Ecology Progress Series*, *597*, pp.115-135. doi.org/10.3354/meps12589

Murillo, F.J., Weigel, B., Bouchard Marmen, M. and Kenchington, E., 2020a. Marine epibenthic functional diversity on Flemish Cap (north-west Atlantic)—Identifying trait responses to the environment and mapping ecosystem functions. *Diversity and Distributions*, *26*(4), pp.460-478. doi.org/10.1111/ddi.13026

Murillo, F.J., Kenchington, E., Koen-Alonso, M., Guijarro, J., Kenchington, T.J., Sacau, M., Beazley, L. and Rapp, H.T., 2020b. Mapping benthic ecological diversity and interactions with bottom-contact fishing on the Flemish Cap (northwest Atlantic). *Ecological Indicators*, *112*, p.106135. doi.org/10.1016/j.ecolind.2020.106135

Parker, S.J., Penney, A.J., Clark, M.R., 2009. Detection criteria for managing trawl impacts on vulnerable marine ecosystems in high seas fisheries of the South Pacific Ocean. *Marine Ecology Progress Series*, 397: 309–317. doi.org/10.3354/meps08115

Rowden, A.A., Pearman, T.R., Bowden, D.A., Anderson, O.F. and Clark, M.R., 2020. Determining coral density thresholds for identifying structurally complex vulnerable marine ecosystems in the deep sea. *Frontiers in Marine Science*. doi.org/10.3389/fmars.2020.00095

SPRFMO. 2019. CMM30-2019 Conservation and Management Measure for the Management of Bottom Fishing in the SPRFMO Convention Area (Supersedes CMM03-2018). The Commission of the South Pacific Regional Fisheries Management Organisation. 30 pg.

Terlizzi, A., Bevilacqua, S., Fraschetti, S. and Boero, F., 2003. Taxonomic sufficiency and the increasing insufficiency of taxonomic expertise. *Marine Pollution Bulletin*, *46*(5), pp.556-561. doi.org/10.1016/S0025-326X(03)00066-3

UNGA (2007). Resolution 61/105: Sustainable fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments, *UNGA A/RES/61/105*, United Nations General Assembly.

Zhang, C., Chen, Y., Xu, B., Xue, Y. and Ren, Y., 2020. improving prediction of rare species' distribution from community data. *Scientific reports*, *10*(1), pp.1-9. doi.org/10.1038/s41598-020-69157-x

9 Appendices

Appendix 1 – Scoring of candidate VME indicator taxa from SC7-DW13

Table A1.1| Matrix from SC7-DW13 scoring candidate VME groups against FAO guidelines for identifying VMEs (blue cells) and indicator taxa (green cells). * indicates taxa currently included in SPRFMO CMM03-2019. See SC7-DW13 for evidence used to score cells.

		Uniqueness or rarity	Functional significance	Fragility	Recovery	Structural complexity	Meets FAO VME criteria	Bycatch	Identification	Meets Indicator criteria
Porifera*		M	H	M	H	H	Y	Y	H	Y
Cnidaria	Alcyonacea (Soft corals) *	M	M	H	M	H	Y	Y	H	Y
	Alcyonacea (Gorgonians - Tree-like forms, sea fans, sea whips, bottlebrush) *	H	H	H	H	H	Y	Y	M	Y
	Stylasteridae (Hydrocorals) *	H	H	H	M	H	Y	Y	M	Y
	Scleractinia (Stony corals) *	H	H	H	H	H	Y	Y	H	Y
	Antipatharia (Black corals) *	H	H	H	H	H	Y	Y	H	Y
	Actiniaria (Anemones) *	H	L	L	M	L	Y	Y	H	Y
	Pennatulacea (Sea pens) *	H	H	M	H	H	Y	Y	H	Y
	Zoantharia (Hexacorals)	H	L	M	H	M	Y	Y	H	Y
	Ceriantharia (Tube-dwelling anemones)	M	L	M	M	L	N			
	Hydrozoa (Hydroids)	M	M	H	M	M	Y	Y	M	Y
Echinodermata	Brisingida ('Armless' stars) *	H	L	H		L	Y	Y	H	Y
	Euryalida (Basket and snake stars)	M	L	M		L	N			
	Crinoidea (Sea lillies) *	H	L	M	H	H	Y	Y	H	Y
	Cidaroida (Pencil spine urchins)	L	L	L	L	L	N			
Bryozoa		L	H	H	H	H	Y	Y	H	Y
Brachiopoda		L	M	M	M	M	N			
Retaria	Xenophyophorea (Xenophyophores)	L	H	L	H	H	Y	N		
Chordata	Ascidiacea (Sea squirts)	L	M	L		M	N			
Annelida	Serpulidae (Serpulid tube worms)	M	H	H		H	Y	N		
Anthropoda	Bathylasmatidae (Goose and acorn barnacles)		M	L	L	L	N			
Hemichordata	Graptolithoidea (Acorn worms)		L	M		L	N			

Contribution to FAO criteria for identifying VME taxa	
H	High
M	Medium
L	Low
	Could not be assessed

Contribution to indicator taxa criteria			
Y	Yes	H	High
N	No	M	Medium
		L	Low
			Not assessed

Appendix 2 – Data query attributes

Table A2.1 | Fields used in the OBIS data query

Scientific Name	**Taxon ID**
Demospongiae Sollas, 1885	164811
Hexactinellida Schmidt, 1870	22612
Gorgonacea Lamouroux, 1816	1365
Alcyonacea Lamouroux, 1812	1365
Stylasteridae Gray, 1847	22805
Scleractinia Bourne, 1900	1363
Antipatharia	22549
Actiniaria	1360
Pennatulacea Verrill, 1865	1367
Zoantharia Gray, 1832	607338
Hydrozoa Owen, 1843	1337
Brisingida Fisher, 1928	123085
Crinoidea	123081
Bryozoa	146142
Monothalamea Haeckel, 1862 (as emended by Pawlowski et al., 2013)	744106
Serpulidae Rafinesque, 1815	988
Corallinales P.C. Silva & H.W. Johansen, 1986	15308
Area	**Area ID**
South Pacific Ocean	31910
Tasman Sea	34365

Table A2.2 | Sql queries for the *cod* (data request SPR2018-01) and *trawl* (data requests 20200421 and 20200503) data queries. Sql queries for the *NIWAinvert* database used a generic query with the individual taxon names swapped for each query and post-query grooming by the data custodian remove irrelevant records.

Database	Taxa queried	Other attributes queried
Cod	/*__Group 1 Porifera__*/ = c.fishing_event_key join x_species_codes s on c.species = s.species_code where c.created_date >= '2019-06-01' and (s.description = 'P-' and species not in ('SML','CLS') --Sponges, want demosponges and hexacts, so descrptn = 'P-' but excluding codes SML and CLS); /*__Group 2 Cnidaria__*/ join x_species_codes s on c.species = s.species_code where c.created_date >= '2019-06-01' and s.description = 'N-' or (species in ('ZAH','EPZ','NEE','HDR')) /*__Group 3 Echinodermata__*/ join x_species_codes s on c.species = s.species_code where c.created_date >= '2019-06-01' and (species in ('BRG','BCH') -- For the asteroids only want Brisingids. or s.description = 'EC' --all crinoids) or species in ('GPU','AWA','ABC','AEL','OSI','ASN','ASS','OPC','GOR') -- For the basket stars, Order Euryalida (not Euryalinida) just the specific codes or species in ('CID','GPA','GOU','HIS','OBE','PPR','PCD','STC')-- Pencil-spine urchins (cidaroids) just the specific codes /*__Group 4 Bryozoa__*/ join x_species_codes s on c.species = s.species_code where species in ('COZ','TNE','ECB','OFU','CEG','HVE','HNO','CAG','CEL','HFO'); /*__Group 5 Brachiopoda__*/ join x_species_codes s on c.species = s.species_code where species in ('BPD','NLE','NRC'); /*__Group 6 Retaria__*/ /*__Group 7 Chordata__*/ join x_species_codes s on c.species = s.species_code where species in ('ASC', 'SYC', 'BTL', 'BOM', 'CEU'); /*__Group 8 Annelida__*/ join x_species_codes s on c.species = s.species_code where species in ('ANN', 'SEC') or s.description in ('WP'); /*__Group 9 Anthropoda__*/ join x_species_codes s on c.species = s.species_code where species = 'BRN';	select e.trip_number, e.vessel_key, e.event_key, f.station_number, e.event_start_date, e.start_latitude, e.start_longitude, f.start_seabed_depth, f.end_seabed_depth, f.fishing_method, s.description, s.family_scientific, s.family_common, s.scientific_name, common_name, c.species, c.greenweight, c.number_of_fish, c.created_date, c.updated_date from x_event e join x_fishing_event f on e.event_key = f.event_key join x_fishing_event_catch c on f.fishing_event_key = c.fishing_event_key join x_species_codes s on c.species = s.species_code where c.created_date >= '2019-06-01' and (s.description = 'P-' and species not in ('SML','CLS') --Sponges, want demosponges and hexacts, so descrptn = 'P-' but excluding codes SML and CLS);
Trawl	--__Actiniaria__,	select s.station_no,

Database	Taxa queried	Other attributes queried
	and c.species in ('ACB','ACS','ANT','ATR','BOC','HMT','LIP','SEN')	v.name, s.trip_code, s.date_s, s.dlat_s, s.dlon_s, s.dlat_e, s.dlon_e, s.bot_gs, s.bot_gf, s.min_gdepth, s.max_gdepth, s.gear_meth, s.bot_temp, c.species, m.family_sci, m.family_com, m.com_name, m.sci_name, c.weight, number from trawl.t_station s, trawl.t_catch c, rdb.t_vessels v, rdb.species_master m, rdb.t_metadata d, load.x1_SPR201801_poly p where s.trip_code=c.trip_code and s.station_no=c.station_no and substr(s.trip_code,1,3)=v.code and c.species=m.code and substr(d.id,1,7) = s.trip_code **and c.species in (XXX)** and d.dbase = 'trawl' --and d.action_date < '2019-06-01' and ST_Within(s.startp,p.poly) is true UNION select s.station_no, v.name, s.trip_code, s.date_s, s.dlat_s, s.dlon_s, s.dlat_e, s.dlon_e, s.bot_gs, s.bot_gf, s.min_gdepth, s.max_gdepth, s.gear_meth, s.bot_temp, c.species, m.family_sci, m.family_com, m.com_name, m.sci_name, c.weight, number from trawl.t_station s, trawl.t_catch c, rdb.t_vessels v, rdb.species_master m, load.x1_SPR201801_poly p where s.trip_code=c.trip_code and s.station_no=c.station_no and substr(s.trip_code,1,3)=v.code and c.species=m.code and c.species in ('BRG','BCH') --and s.date_s < '2019-06-01' and ST_Within(s.startp,p.poly) is true ; \o
	--**Brisingida**, and c.species in ('BRG','BCH')	
	--**Crinoidea**, and c.species=m.code and m.descrptn = 'EC'	
	--**Porifera**, and c.species=m.code and m.descrptn = 'P-' and c.species not in ('SML','CLS')	
	--**Cnidaria**, and c.species in ('NEE','HDR','ZAH','EPZ')	
	--**Echinodermata**, and c.species in ('GPU','AWA','ABC','AEL','OSI','ASN','ASS','OPC','GOR') or c.species in ('CID','GPA','GOU','HIS','OBE','PPR','PCD','STC'))	
	--**Brachiopoda**, and c.species in ('BPD','NLE','NRC')	
	--**Bryozoa**, and c.species in ('COZ','TNE','ECB','OFU','CEG','HVE','HNO','CAG','CEL','HFO')	
	--**Retaria**, no match determined	
	--**Chordata**, and c.species in ('ASC','SYC','BTL','BOM','CEU')	
	--**Annelida**, and c.species in ('ANN','SEC')	
	--**Anthropoda**, and c.species = 'BRN'	
	--**Hemichordata**, no match determined	
NIWAinvert	--**Actiniaria**,	Catalog Number Station ID

Database	Taxa queried	Other attributes queried
	--**Brisingida**, --**Bryozoa**, --**Crinoidae**, --**Brachiopoda**, --**Hydrozoa**, --**Scleractinia**, --**Serpulidae**, --**Xenophyophorida**, --**Zoantharia**,	Alternate Station name Trip Name, Date, Latitude1, Longitude1, Latitude2, Longitude2, Depth 1, Depth 2, Gear, Phylum, Class, Order, Family, Genus, Species, Preferred Taxon, Initial ID Code, Total Lot Weight (g), Count, Last Modified, Determiner, Determined Date, Cataloged Date,

Table A2.3 | A comparison of which data fields were combined across datasets

Unified dataset	Cod	NIWAinvert	Trawl	OBIS	SPRFMO VME
collectionCode	-	-	-	collectionCode	Source
Catalog Number	-	Catalog Number	-	catalogNumber	-
Station ID	station_number	Station ID	station_no	-	Station
trip_code	trip_number	Trip Name	trip_code	-	-
eventDate	event_start_date	Date	date_s	eventDate	Date
start_lat	start_latitude	Latitude1	dlat_s	decimalLongitude	Latitude1
start_long	start_longitude	Longitude1	dlon_s	decimalLatitude	Longitude1
end_lat	-	Latitude2	dlat_e	-	Latitude2
end _long	-	Longitude2	dlon_e	-	Longitude2
max_depth	max(start_seabed_depth, end_seabed_depth)	max(Depth 1, Depth 2)	max_gdepth	maximumDepthInMeters	max(Depth 1, Depth 2)
min_depth	min(start_seabed_depth, end_seabed_depth)	min(Depth 1, Depth 2)	min_gdepth	minimumDepthInMeters	min(Depth 1, Depth 2)
Gear	fishing_method	Gear	gear_meth	samplingProtocol	GearMethod
phylum	-	Phylum	-	phylum	Phylum
class	-	Class	-	class	Class
order	-	Order	-	order	Order
family	family_scientific	Family	family_sci	family	Family
genus	-	Genus	-	genus	Genus
species	-	Species	-	species	Species
ScientificName	scientific_name	Preferred Taxon	sci_name	originalScientificName	PreferredTaxonFormatted
Weight	greenweight	Total Lot Weight (g)	weight	organismQuantity (biomass in kg)	Weightkg
Count	number_of_fish	Count	number	individualCount	Count

Appendix 3 – List of scoring guidance against FAO guidelines and expert reviewers

FAO criteria for identifying VME taxa and scoring guidance.

FAO Guidelines	Scoring guidance
Uniqueness or rarity – an area or ecosystem that is unique or that contains rare species whose loss could not be compensated for by similar areas or ecosystems. These include habitats that contain endemic species; habitats of rare, threatened or endangered species that occur only in discrete areas; or nurseries or discrete feeding, breeding, or spawning areas.	Those taxa that only occur in a few discrete areas within the SPRFMO Convention Area, and their loss from those areas would not be compensated for in any other areas, should be scored as meeting this criterion.
Functional significance of the habitat – discrete areas or habitats that are necessary for the survival, function, spawning/reproduction or recovery of fish stocks, particular life-history stages (e.g. nursery grounds or rearing areas), or of rare, threatened or endangered marine species.	Taxa that make an obvious and demonstratable contribution towards the survival of other species by creating nursery habitats, filtering water or recycling nutrients are considered functionally significant and should be scored as meeting this criterion**.**
Fragility – an ecosystem that is highly susceptible to degradation by anthropogenic activities.	Taxa that are brittle, delicate or have 3-dimensional structures making them susceptible to entanglement in bottom fishing gear should be scored as meeting the fragility criteria.
Life-history traits of component species that make recovery difficult – ecosystems that are characterized by populations or assemblages of species with one or more of the following characteristics: slow growth rates; late age of maturity; low or unpredictable recruitment; or long-lived.	Taxa that live for more than 30 years are expected to have a low recovery rate from fishing disturbance and should be scored as meeting this criterion.
Structural complexity – an ecosystem that is characterized by complex physical structures created by significant concentrations of biotic and abiotic features. In these ecosystems, ecological processes are usually highly dependent on these structured systems. Further, such ecosystems often have high diversity, which is dependent on the structuring organisms.	Taxa that can grow larger than 50 cm in height can be considered as structure forming and should be scored at meeting this criterion.

Taxonomists and para-taxonomists with a working familiarity of the benthic invertebrate fauna of the South-West Pacific region who provided expert review on the draft list of taxa against FAO guidelines for identifying VME taxa.

Reviewer	Affiliation	VME groups reviewed
Caroline Chin	National Institute of Water & Atmospheric Research Ltd (NIWA), New Zealand	Hydrozoa
Dennis Gordon	NIWA	Bryozoa
Dennis Opresko	Smithsonian National Museum of Natural History, USA	Antipatharia
Di Tracey	NIWA	Alcyonacea (gorgonians), Scleractinia
Estefania Rodriguez	American Museum of Natural History, USA	Actiniaria
Frederic Sinniger	Tropical Biosphere Research Centre, University of the Ryukyus, Japan	Zoantharia
Geoff Read	NIWA	Serpulidae
Jaret Bilewitch	NIWA	Alcyonacea (soft corals)
Kate Neill	NIWA	Pennatulacea, Brisingida
Michelle Kelly	NIWA	Porifera
Owen Anderson	NIWA	Crinoidea
Peter Marriott	NIWA	Stylasteridae

VME subject matter experts who provided a review of the draft manuscript.

Reviewer	Affiliation	Expertise
Dave Bowden	National Institute of Water & Atmospheric Research Ltd (NIWA), New Zealand	Dr Bowden's area of research include evaluating the resiliance of deep-sea benthic communities to bottom trawling and post-disturbance responses, with a particular focus on how the traits of individual taxa inform strategies to manage the environmental effects of resource use.
Ellen Kenchington	Bedford Institute of Oceanography.	Dr. Kenchington is an authority in benthic ecology and genetics who has conducted extensive deep-sea research. Her recent work in delineating deep-sea habitat was an essential element of the successful international process to identify vulnerable marine ecosystems in response to international policy. Her work has directly contributed to the establishment of over a dozen areas closed to bottom fishing in the high seas to protect benthic habitats.
Marta Soffker	Centre for Environment, Fisheries and Aquaculture Science (Cefas), United Kingdom	Dr Soffker provides advice on managing Southern Ocean fisheries within the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), and has been a member of the UK delegation to CCAMLR since 2014. Her research includes investigating interactions of deep-sea fisheries with cold-water coral ecosystems.
Steve Parker	National Institute of Water & Atmospheric Research Ltd (NIWA), New Zealand	Dr Parker has worked extensively on VMEs in both SPRFMO and CCAMLR settings, including development of the original list of VME indicator taxa for SPRFMO vithe integration of information about the vulnerable taxa present, their relative abundance as bycatch, evidence from previous fisheries interactions in the area, and the degree of habitat isolation and taxonomic distinctness.

Appendix 4 - Lists of taxa included in the analysis, with associated weight and depth data, and where available, species codes

Porifera (phylum)

Aphia ID	Candidate Taxa	Family	Order	Class	# Obs	Weight Min	Weight Max	# Weight Obs	Depth Min	Depth Max	Depth Median	FAO Code	FNZ Code	AUS Code
164811	-	-	-	Demospongiae	63	0.5	0.5	1	260	1095	566.5	DMO	DSO	-
131774	*Axinella*	Axinellidae	Axinellida	Demospongiae	1	0.003	0.003	1	761	765	763	-	-	-
166031	*Parahigginsia*	Heteroxyidae	Axinellida	Demospongiae	1	-	-	0	-	-	-	-	-	-
850414	*Janulum imago*	Raspailiidae	Axinellida	Demospongiae	1	-	-	0	1205	1600	1402.5	-	-	-
131751	*Ircinia*	Irciniidae	Dictyoceratida	Demospongiae	2	1	1	1	-	-	-	-	-	-
131754	*Coscinoderma*	Spongiidae	Dictyoceratida	Demospongiae	2	0.001	0.002	2	1303	1470	1374	-	-	-
131759	*Spongia*	Spongiidae	Dictyoceratida	Demospongiae	1	0.01	0.01	1	1082	1120	1101	QGX	-	-
131627	*Thorectidae*	Thorectidae	Dictyoceratida	Demospongiae	1	-	-	0	265	280	272.5	-	-	-
131598	-	-	Haplosclerida	Demospongiae	1	-	-	0	660	660	660	-	-	-
166053	*Arenosclera*	Callyspongiidae	Haplosclerida	Demospongiae	1	0.001	0.001	1	698	719	708.5	-	-	-
131825	*Callyspongia*	Callyspongiidae	Haplosclerida	Demospongiae	1	0.002	0.002	1	699	707	703	-	-	-
1424111	*Callyspongia (Callyspongia) nuda*	Callyspongiidae	Haplosclerida	Demospongiae	1	0.1	0.1	1	916	944	930	-	-	-
131636	-	Chalinidae	Haplosclerida	Demospongiae	1	-	-	0	121	126	123.5	-	-	-
131832	*Cladocroce*	Chalinidae	Haplosclerida	Demospongiae	1	0.001	0.001	1	805	938	871.5	-	-	-
166654	*Amphimedon*	Niphatidae	Haplosclerida	Demospongiae	1	0.001	0.001	1	348	362	355	-	-	-
166798	*Neopetrosia*	Petrosiidae	Haplosclerida	Demospongiae	1	1	1	1	640	640	640	-	-	-
131849	*Xestospongia*	Petrosiidae	Haplosclerida	Demospongiae	1	-	-	0	-	-	-	-	-	-
131852	*Oceanapia*	Phloeodictyidae	Haplosclerida	Demospongiae	2	0.004	0.004	1	1461	1478	1469.5	-	-	-
131599	-	-	Poecilosclerida	Demospongiae	1	-	-	0	510	510	510	-	-	-
184559	*Abyssocladia*	Cladorhizidae	Poecilosclerida	Demospongiae	1	-	-	0	1024	1024	1024	-	-	-
578592	*Abyssocladia carcharias*	Cladorhizidae	Poecilosclerida	Demospongiae	4	0	0	0	1071	1071	1071	-	-	-
235786	*Abyssocladia inflata*	Cladorhizidae	Poecilosclerida	Demospongiae	2	1	15	2	847	1071	959	-	-	-
131894	*Chondrocladia*	Cladorhizidae	Poecilosclerida	Demospongiae	6	0.002	2	4	1008	1815	1427.25	ZHD	-	-
168213	*Chondrocladia concrescens*	Cladorhizidae	Poecilosclerida	Demospongiae	2	-	-	0	1461	1478	1469.5	-	-	-
345593	*Chondrocladia (Chondrocladia) nani*	Cladorhizidae	Poecilosclerida	Demospongiae	1	2	2	1	1461	1478	1469.5	-	-	-
131930	*Lissodendoryx*	Coelosphaeridae	Poecilosclerida	Demospongiae	2	0.003	0.003	1	1635	1749	1692	-	-	-
168360	*Esperiopsis inodes*	Esperiopsidae	Poecilosclerida	Demospongiae	1	1	1	1	700	702	701	-	-	-
131953	*Phorbas*	Hymedesmiidae	Poecilosclerida	Demospongiae	19	0	13.7	18	878	1083	955.5	-	PHB	-
131873	*Ophlitaspongia*	Microcionidae	Poecilosclerida	Demospongiae	1	17	17	1	512	526	519	-	-	-
131907	*Mycale*	Mycalidae	Poecilosclerida	Demospongiae	1	0.005	0.005	1	748	763	755.5	-	-	-
131908	*Phlyctaenopora*	Mycalidae	Poecilosclerida	Demospongiae	1	0.002	0.002	1	1090	1117	1103.5	-	-	-

Aphia ID	Candidate Taxa	Family	Order	Class	# Obs	Weight Min	Weight Max	# Weight Obs	Depth Min	Depth Max	Depth Median	FAO Code	FNZ Code	AUS Code
131659	-	Tedaniidae	Poecilosclerida	Demospongiae	1	-	-	0	260	273	266.5	-	-	-
169545	*Tedania*	Tedaniidae	Poecilosclerida	Demospongiae	2	-	-	0	-	-	-	-	-	-
170635	*Polymastia granulosa*	Polymastiidae	Polymastiida	Demospongiae	2	-	-	0	146	146	146	-	-	-
170671	*Radiella*	Polymastiidae	Polymastiida	Demospongiae	1	-	-	0	-	-	-	-	-	-
131633	-	Halichondriidae	Suberitida	Demospongiae	2	-	-	0	265	280	272.5	-	-	-
131821	*Topsentia*	Halichondriidae	Suberitida	Demospongiae	2	0.004	2	2	254	944	565.25	-	-	-
131676	-	Suberitidae	Suberitida	Demospongiae	2	1	1	1	957	1083	1018.25	-	-	-
132064	*Aaptos*	Suberitidae	Suberitida	Demospongiae	1	0.002	0.002	1	758	760	759	-	-	-
132071	*Rhizaxinella*	Suberitidae	Suberitida	Demospongiae	1	-	-	0	-	-	-	ZRX	-	-
132072	*Suberites*	Suberitidae	Suberitida	Demospongiae	2	1	1	1	1076	1083	1079.5	-	-	-
170846	*Suberites cupuloides*	Suberitidae	Suberitida	Demospongiae	1	-	-	0	-	-	-	-	-	-
170910	*Halicometes hooperi*	Tethyidae	Tethyida	Demospongiae	1	23	23	1	1713	1773	1743	-	-	-
132077	*Tethya*	Tethyidae	Tethyida	Demospongiae	1	-	-	0	-	-	-	-	-	-
597812	-	-	Tetractinellida	Demospongiae	1	1	1	1	1890	1890	1890	-	-	-
131662	-	Ancorinidae	Tetractinellida	Demospongiae	2	-	-	0	265	280	272.5	-	-	-
701574	*Ecionemia novaezealandiae*	Ancorinidae	Tetractinellida	Demospongiae	1	0.2	0.2	1	660	1040	850	-	-	-
169878	*Rhabdastrella*	Ancorinidae	Tetractinellida	Demospongiae	1	1	1	1	927	927	927	-	RHA	-
131994	*Stelletta*	Ancorinidae	Tetractinellida	Demospongiae	1	1	1	1	750	944	847	WSX	SLT	-
131602	-	*Astrophorina*[1]	Tetractinellida	Demospongiae	7	1	1	7	798	1573	900	-	-	-
555788	*Calthropella (Calthropella)*	Calthropellidae	Tetractinellida	Demospongiae	2	0.002	0.002	1	926	969	947.5	-	-	-
555789	*Calthropella (Pachataxa)*	Calthropellidae	Tetractinellida	Demospongiae	2	-	-	0	-	-	-	-	-	-
131679	-	Corallistidae	Tetractinellida	Demospongiae	2	-	-	0	260	280	269.5	-	-	-
246624	*Awhiowhio unda*	Corallistidae	Tetractinellida	Demospongiae	2	-	-	0	390	490	440	-	-	-
132080	*Corallistes*	Corallistidae	Tetractinellida	Demospongiae	2	-	-	0	-	-	-	-	-	-
171081	*Herengeria auriculata*	Corallistidae	Tetractinellida	Demospongiae	4	-	-	0	486	920	703	-	-	-
171082	*Herengeria vasiformis*	Corallistidae	Tetractinellida	Demospongiae	4	-	-	0	403	530	436.25	-	-	-
414491	*Neoschrammeniella fulvodesmus*	Corallistidae	Tetractinellida	Demospongiae	15	0	100	3	260	1034	494.5	-	CFU	-
132004	*Erylus*	Geodiidae	Tetractinellida	Demospongiae	2	-	-	0	531	659	595	-	-	-
132005	*Geodia*	Geodiidae	Tetractinellida	Demospongiae	2	0.002	0.003	2	121	1083	601.5	-	-	-
862697	*Geodia praelonga*	Geodiidae	Tetractinellida	Demospongiae	2	0	0	0	1116	1350	1233	-	-	-
170165	*Geodia regina*	Geodiidae	Tetractinellida	Demospongiae	2	0.3	2.3	2	779	1041	927	-	GRE	-
170193	*Geodia vestigifera*	Geodiidae	Tetractinellida	Demospongiae	1	3	3	1	650	652	651	GVE	GVE	-
169867	*Penares palmatoclada*	Geodiidae	Tetractinellida	Demospongiae	1	1	1	1	894	977	935.5	-	-	-
171110	*Costifer wilsoni*	Isoraphiniidae	Tetractinellida	Demospongiae	8	-	-	0	206	904	448	-	-	-
171140	*Homophymia stipitata*	Neopeltidae	Tetractinellida	Demospongiae	10	0	5	1	206	757	365	-	-	-
1423579	*Sollasipelta punctata*	Neopeltidae	Tetractinellida	Demospongiae	1	1	1	1	820	820	820	-	-	-
132012	*Characella*	Pachastrellidae	Tetractinellida	Demospongiae	1	-	-	0	-	-	-	-	-	-
246619	*Neoaulaxinia persicum*	Phymatellidae	Tetractinellida	Demospongiae	3	-	-	0	406	3354	1880	-	-	-

Aphia ID	Candidate Taxa	Family	Order	Class	# Obs	Weight Min	Weight Max	# Weight Obs	Depth Min	Depth Max	Depth Median	FAO Code	FNZ Code	AUS Code
171168	*Pleroma aotea*	Pleromidae	Tetractinellida	Demospongiae	8	0	5	1	486	904	904	-	-	-
171169	*Pleroma menoui*	Pleromidae	Tetractinellida	Demospongiae	14	0	4	1	260	791	453.25	-	-	-
171171	*Pleroma turbinatum*	Pleromidae	Tetractinellida	Demospongiae	4	-	-	0	260	755	510.75	-	-	-
171172	-	Scleritodermidae	Tetractinellida	Demospongiae	2	-	-	0	260	273	266.5	-	-	-
171181	*Aciculites pulchra*	Scleritodermidae	Tetractinellida	Demospongiae	6	-	-	0	406	3354	875	AZO	APU	-
171193	*Scleritoderma*	Scleritodermidae	Tetractinellida	Demospongiae	1	0.003	0.003	1	812	818	815	-	-	-
171196	*Scleritoderma flabelliformis*	Scleritodermidae	Tetractinellida	Demospongiae	2	0	0	0	403	530	466.5	-	-	-
131683	-	Tetillidae	Tetractinellida	Demospongiae	1	4	4	1	757	757	757	-	-	-
885825	*Antarctotetilla leptoderma*	Tetillidae	Tetractinellida	Demospongiae	2	0.1	1.3	2	805	1026	956.75	-	TLD	-
833419	*Craniella neocaledonica*	Tetillidae	Tetractinellida	Demospongiae	1	32	32	1	570	575	572.5	-	-	-
171359	*Fangophilina*	Tetillidae	Tetractinellida	Demospongiae	8	1	9	8	1051	1231	1175.5	-	-	-
171370	*Tetilla australis*	Tetillidae	Tetractinellida	Demospongiae	4	0.1	3	4	775	1105	889.5	-	TTL	-
170307	*Thenea cf. microspirastra*	Theneidae	Tetractinellida	Demospongiae	1	1	1	1	691	705	698	-	-	-
170310	*Thenea novaezealandiae*	Theneidae	Tetractinellida	Demospongiae	3	1	2	2	971	1014	988	-	THN	-
171230	*Discodermia proliferans*	Theonellidae	Tetractinellida	Demospongiae	4	1	6	2	403	850	466.5	-	-	-
170263	*Poecillastra laminaris*	Vulcanellidae	Tetractinellida	Demospongiae	1	0.5	0.5	1	731	975	853	QAL	PLN	-
132016	*Poecillastra*	Vulcanellidae	Tetractinellida	Demospongiae	4	0.003	0.003	1	950	987	968.5	-	-	-
607950	-	-	Heteroscleromorpha[2]	Demospongiae	1	1	1	1	1139.1	1139.1	1139.1	-	-	-
22612	-	-	-	Hexactinellida	146	0	10	66	254	4802	980.5	-	GLS	-
132096	*Hyalonema*	Hyalonematidae	Amphidiscosida	Hexactinellida	8	1	6	6	816	1773	1046.25	-	-	-
171427	*Hyalonema (Corynonema) tenuifusum*	Hyalonematidae	Amphidiscosida	Hexactinellida	2	-	-	0	3710	3710	3710	-	-	-
934157	*Hyalonema (Cyliconemaoida)*	Hyalonematidae	Amphidiscosida	Hexactinellida	2	2	2	1	-	-	-	-	-	-
171511	*Hyalonema (Oonema) bipinnulum*	Hyalonematidae	Amphidiscosida	Hexactinellida	2	1	1	2	1411	1772	1581	-	-	-
131684	*Hyalonematidae*	Hyalonematidae	Amphidiscosida	Hexactinellida	2	1	1	1	1076	1610	1277.25	-	-	-
171556	*Monorhaphis chuni*	Monorhaphididae	Amphidiscosida	Hexactinellida	1	1	1	1	1567	1567	1567	-	-	-
131685	-	Pheronematidae	Amphidiscosida	Hexactinellida	2	1	3	2	830	990	910	-	-	-
132098	*Pheronema*	Pheronematidae	Amphidiscosida	Hexactinellida	2	0.006	1	2	921	1749	1310	-	-	-
171560	*Pheronema conicum*	Pheronematidae	Amphidiscosida	Hexactinellida	2	1	1	2	691	1049	875.25	-	-	-
171834	-	-	Lyssacinosida	Hexactinellida	4	1	2	4	755	2930	1022	-	-	-
171612	*Euryplegma auriculare*	Aulocalycidae	Lyssacinosida	Hexactinellida	1	1	1	1	-	-	-	-	-	-
131692	-	Euplectellidae	Lyssacinosida	Hexactinellida	3	1	2	3	953	1186	1074	-	-	-
1287786	*Amphidiscella abyssalis*	Euplectellidae	Lyssacinosida	Hexactinellida	2	-	-	0	4159	4159	4159	-	-	-
1287788	*Amphidiscella sonnae*	Euplectellidae	Lyssacinosida	Hexactinellida	2	-	-	0	4159	4159	4159	-	-	-
1287790	*Amphoreus schuppi*	Euplectellidae	Lyssacinosida	Hexactinellida	1	-	-	0	-	-	-	-	-	-
1287717	*Corbitella inopiosa*	Euplectellidae	Lyssacinosida	Hexactinellida	2	-	-	0	1261	1278	1269.5	-	-	-
1287733	*Dictyaulus crinolinum*	Euplectellidae	Lyssacinosida	Hexactinellida	1	-	-	0	505	812	658.5	-	-	-

Aphia ID	Candidate Taxa	Family	Order	Class	# Obs	Weight Min	Weight Max	# Weight Obs	Depth Min	Depth Max	Depth Median	FAO Code	FNZ Code	AUS Code
132114	*Euplectella*	Euplectellidae	Lyssacinosida	Hexactinellida	2	1	1	1	811	811	811	-	-	-
387345	*Euplectella aspergillum regalis*	Euplectellidae	Lyssacinosida	Hexactinellida	12	0.1	2	12	839	1149	872	-	ERE	-
171901	*Euplectella imperialis*	Euplectellidae	Lyssacinosida	Hexactinellida	1	1	1	1	1117	1117	1117	-	-	-
171928	*Malacosaccus erectus*	Euplectellidae	Lyssacinosida	Hexactinellida	3	-	-	0	4670	4670	4670	-	-	-
132117	*Regadrella*	Euplectellidae	Lyssacinosida	Hexactinellida	1	1	1	1	2199	2199	2199	-	-	-
1287781	*Saccocalyx tetractinus*	Euplectellidae	Lyssacinosida	Hexactinellida	1	1	1	1	1347.1	1347.1	1347.1	-	-	-
171885	*Walteria leuckarti*	Euplectellidae	Lyssacinosida	Hexactinellida	4	1	1	4	926	1359.7	1309.7	-	-	-
132112	*Caulophacus*	Rossellidae	Lyssacinosida	Hexactinellida	4	1	4	4	767	2250	1042.25	-	-	-
172045	*Caulophacus (Caulodiscus) lotifolium*	Rossellidae	Lyssacinosida	Hexactinellida	1	1	1	1	757	955	856	-	-	-
172068	*Crateromorpha*	Rossellidae	Lyssacinosida	Hexactinellida	1	2	2	1	959	1104	1031.5	-	-	-
172074	*Crateromorpha (Crateromorpha) meyeri*	Rossellidae	Lyssacinosida	Hexactinellida	1	-	-	0	373	373	373	-	-	-
172083	*Hyalascus*	Rossellidae	Lyssacinosida	Hexactinellida	15	0.1	4	15	512	1083	904.5	-	HYA	-
132127	*Rossella*	Rossellidae	Lyssacinosida	Hexactinellida	2	1	4	2	937	1248.6	1092.8	-	-	-
172090	*Rossella antarctica*	Rossellidae	Lyssacinosida	Hexactinellida	3	1	2	3	750	1285	1022	-	-	-
171880	*Symplectella rowi*	Rossellidae	Lyssacinosida	Hexactinellida	1	-	-	0	-	-	-	-	-	-
195837	*Aphrocallistes beatrix beatrix*	Aphrocallistidae	Sceptrulophora	Hexactinellida	10	0.001	4	5	325	1478	1067	-	-	-
577476	*Auloplax sonnae*	Auloplacidae	Sceptrulophora	Hexactinellida	3	0	1	1	640	640	640	-	-	-
190428	*Chonelasma hamatum*	Euretidae	Sceptrulophora	Hexactinellida	1	3	3	1	1508	1508	1508	-	-	-
171664	*Chonelasma lamella*	Euretidae	Sceptrulophora	Hexactinellida	1	1	1	1	1082	1082	1082	-	-	-
577463	*Gymnorete stabulatum*	Euretidae	Sceptrulophora	Hexactinellida	1	-	-	0	550	1484	1017	-	-	-
131689	-	Farreidae	Sceptrulophora	Hexactinellida	1	0.001	0.001	1	748	763	755.5	-	-	-
132107	*Farrea*	Farreidae	Sceptrulophora	Hexactinellida	2	0.2	1	2	650	1215.6	1007.8	-	FAR	-
577457	*Farrea ananchorata*	Farreidae	Sceptrulophora	Hexactinellida	2	1	1	2	1335	1385.7	1360.35	-	-	-
577453	*Farrea similaris*	Farreidae	Sceptrulophora	Hexactinellida	4	1	1	4	746	1079	976.5	-	-	-
131690	-	Tretodictyidae	Sceptrulophora	Hexactinellida	1	0.007	0.007	1	1076	1083	1079.5	-	-	-
171793	*Anomochone expansa*	Tretodictyidae	Sceptrulophora	Hexactinellida	1	1	1	1	-	-	-	-	-	-
577471	*Anomochone furcata*	Tretodictyidae	Sceptrulophora	Hexactinellida	1	1	1	1	1279.1	1279.1	1279.1	-	-	-
577473	*Hexactinella simplex*	Tretodictyidae	Sceptrulophora	Hexactinellida	3	1	1	3	730	1170	935.5	-	-	-

[1]Suborder, [2] Subclass

Cnidaria (phylum) > Anthozoa (class) > **Alcyonacea (soft corals) (order)**

Aphia ID	Candidate Taxa	Family	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
1365	-	-	415	0	42.7	78	238	2277	922.5	AJZ	-	-
125285	*Anthomastus*	Alcyoniidae	5	2	2	3	265	1034	1011.5	BXX	-	-
267770	*Pseudoanthomastus*	Alcyoniidae	2	7	11	2	1137	1380	1236.5	-	-	-
125270	-	Clavulariidae	4	1	30	3	512	934	735	-	-	-
205447	*Carijoa*	Clavulariidae	1	-	-	0	924	924	924	-	-	-
267809	*Rhodelinda*	Clavulariidae	5	1	1	2	260	280	269.5	-	-	-
290987	*Rhodelinda gardineri*	Clavulariidae	1	-	-	0	94	104	99	-	-	-
177688	*Telesto*	Clavulariidae	1	-	-	0	817	940	878.5	UXX	-	-
206503	*Dendronephthya*	Nephtheidae	4	0.001	1	2	926	1052	947.5	-	-	-
146942	*Duva*	Nephtheidae	1	0.001	0.001	1	1410	1470	1440	-	-	-
196169	-	Nidaliidae	1	-	-	0	265	280	272.5	-	-	-
415194	*Chironephthya*	Nidaliidae	1	-	-	0	-	-	NA	-	-	-

Cnidaria (phylum) > Anthozoa (class) > Alcyonacea (order) **> Alcyonacea (gorgonians) (informal group)**

Aphia ID	Candidate Taxa	Family	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
125293	*Acanthogorgia*	Acanthogorgiidae	7	0.004	1	3	531	1478	935.5	-	-	-
205062	*Anthogorgia*	Acanthogorgiidae	1	1	1	1	-	-	-	-	-	-
125324	*Anthothela*	Anthothelidae	1	1	1	1	1022	1022	1022	-	-	-
125273	-	Chrysogorgiidae	1	-	-	0	121	126	123.5	QFY	-	-
125294	*Chrysogorgia*	Chrysogorgiidae	32	0	3	11	647	1448	976.25	FHX	CHR	-
125295	*Iridogorgia*	Chrysogorgiidae	6	0	1	3	183	1049	917	-	IRI	-
125296	*Metallogorgia*	Chrysogorgiidae	14	0	2	8	495	1141	976	-	MTL	-
125297	*Radicipes*	Chrysogorgiidae	2	0.003	2	2	748	1144	948.5	-	-	-
125280	-	Coralliidae	1	-	-	0	260	273	266.5	-	-	COR
125325	*Corallium*	Coralliidae	4	0	0	0	934	984	959	COR	CLL	-
291841	*Corallium tortuosum*	Coralliidae	1	2	2	1	460	590	525	-	-	-
1311238	*Hemicorallium abyssale*	Coralliidae	1	5	5	1	1492	1492	1492	-	-	-
125300	*Viminella*	Ellisellidae	3	1	3	2	254	259	256.5	-	-	-
125276	-	Isididae	21	0	30	12	345	1392	912.5	IQO	ISI	-
125303	*Acanella*	Isididae	5	0	2	3	528	1038	974	KQL	-	-
286303	*Acanella rigida*	Isididae	1	1	1	1	1023	1023	1023	-	-	-
125305	*Isidella*	Isididae	2	1	3	2	844	2250	1578.75	-	-	-
125306	*Keratoisis*	Isididae	46	0	4	24	254	1329	936.5	-	BOO	-
125375	*Keratoisis flexibilis*	Isididae	1	1	1	1	1118	1118	1118	-	-	-
286313	*Keratoisis glaesa*	Isididae	1	2	2	1	839	929	884	-	-	-
125307	*Lepidisis*	Isididae	18	0	1	11	265	1478	994.5	QFX	LLE	-
290354	*Minuisis pseudoplanum*	Isididae	2	1	1	1	672	751	711.5	-	-	-
267656	*Orstomisis*	Isididae	1	1	1	1	625	1027	826	-	-	-
173507	*Sclerisis*	Isididae	1	-	-	0	887	908	897.5	-	-	-
125326	*Paragorgia*	Paragorgiidae	5	0.2	1	4	814	1077	872.75	-	PAB	-
125418	*Paragorgia arborea*	Paragorgiidae	10	0	3	8	660	1225	920	BFU	-	-
286604	*Paragorgia maunga*	Paragorgiidae	3	0	1	1	1082	1082	1082	-	-	-
125277	-	Plexauridae	8	0.001	1	6	244	1749	833.75	-	PLE	-
125309	*Dentomuricea*	Plexauridae	2	1	3	2	-	-	-	-	-	-
204195	*Euplexaura*	Plexauridae	1	1	1	1	-	-	-	-	-	-
125310	*Muriceides*	Plexauridae	1	-	-	0	263	298	280.5	-	-	-
267673	*Paracis*	Plexauridae	5	1	1	4	194	755	484	-	-	-
290625	*Paracis squamata*	Plexauridae	6	0.001	1	4	248	719	261.25	-	-	-
125311	*Paramuricea*	Plexauridae	1	1	1	1	-	-	-	-	-	-
125312	*Placogorgia*	Plexauridae	1	15	15	1	1244	1370	1307	-	-	-
125314	*Swiftia*	Plexauridae	1	0.002	0.002	1	1017	1042	1029.5	-	-	-

Aphia ID	Candidate Taxa	Family	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
267922	*Trimuricea*	Plexauridae	2	3	3	1	531	659	595	-	-	-
125316	*Villogorgia*	Plexauridae	1	1	1	1	-	-	-	-	-	-
125278	-	Primnoidae	10	0	0.5	2	748	1117	983.5	QON	PRI	-
125317	*Callogorgia*	Primnoidae	8	0	1	2	150	687	183	-	-	-
286487	*Callogorgia formosa*	Primnoidae	4	0.002	1	3	254	1029	259	-	-	-
286488	*Callogorgia gilberti*	Primnoidae	1	-	-	0	766	1025	895.5	-	-	-
1255132	*Callogorgia korema*	Primnoidae	1	-	-	0	150	150	150	-	-	-
292516	*Callogorgia tuberculata*	Primnoidae	1	-	-	0	1143.7	1143.7	1143.7	-	-	-
177833	*Calyptrophora*	Primnoidae	8	0	4	1	733	1255	879.5	-	CTP	-
719492	*Calyptrophora diaphana*	Primnoidae	1	-	-	0	1160.2	1160.2	1160.2	-	-	-
719494	*Helicoprimnoa fasciola*	Primnoidae	1	-	-	0	168	168	168	-	-	-
719487	*Metanarella nannolepis*	Primnoidae	2	-	-	0	150	168	159	-	-	-
125319	*Narella*	Primnoidae	5	0.1	2	3	403	1037	778.75	-	-	-
719480	*Narella hypsocalyx*	Primnoidae	4	1	3	3	790	927	883	-	-	-
719479	*Narella mesolepis*	Primnoidae	4	3	3	2	633	1690	975	-	-	-
719481	*Narella vulgaris*	Primnoidae	2	1	1	2	914	2199	1563.75	-	-	-
290683	*Parastenella doederleini*	Primnoidae	4	1	6	4	1075	1600	1180.5	-	-	-
409581	*Parastenella pacifica*	Primnoidae	2	-	-	0	910	1090	1004	-	-	-
267723	*Perissogorgia*	Primnoidae	1	3	3	1	1020	1110	1065	-	-	-
290719	*Perissogorgia colossus*	Primnoidae	2	2	2	1	1020	1110	1073.5	-	-	-
125321	*Primnoa*	Primnoidae	8	0	2	6	330	958	790.5	-	PMN	-
286538	*Primnoa notialis*	Primnoidae	1	-	-	0	881	1180	1030.5	-	-	-
125323	*Thouarella*	Primnoidae	23	0	6	10	670	1119	955.25	-	THO	-
267946	*Victorgorgia*	Victorgorgiidae	2	0.001	0.001	1	121	1280.7	702.1	-	-	-
290206	*Isidoides armata*	Calcaxonia[1]	1	1.001	1.001	1	260	273	266.5	-	-	-

[1] Suborder

Cnidaria (phylum) > Anthozoa (class) > **Scleractinia (order)**

Aphia ID	Candidate Taxa	Family	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
290021	*Goniocorella dumosa*	Caryophylliidae	68	0	20	47	512	1398	912	GDV	GDU	-
135168	*Solenosmilia variabilis*	Caryophylliidae	170	0	15	46	480	1600	943.5	RZT	SVA	-
135112	*Enallopsammia*	Dendrophylliidae	9	2	2	1	888	996	918	-	-	-
135190	*Enallopsammia rostrata*	Dendrophylliidae	94	0	20	22	420	1274	941.25	FEY	ERO	-
135209	*Madrepora oculata*	Oculinidae	41	0	1	1	403	1298	847.5	MVI	MOC	-
287103	*Oculina virgosa*	Oculinidae	4	1	1	2	805	1062	975.5	OVD	OVI	-

Cnidaria (phylum) > Anthozoa (class) > **Antipatharia (order)**

Aphia ID	Candidate Taxa	Family	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
22549	-	-	477	0	47	88	251	1925	935.5	AQZ	COB	-
103301	-	Antipathidae	4	7	7	1	254	763	261.5	-	-	-
103302	*Antipathes*	Antipathidae	3	0.2	1	3	871	1225	1036	HQT	ATP	-
204279	*Cirrhipathes*	Antipathidae	1	-	-	0	-	-	-	KRH	-	-
103308	*Stichopathes*	Antipathidae	5	0.1	0.1	1	531	768	595	QYX	-	-
267240	*Asteriopathes*	Aphanipathidae	1	-	-	0	850	850	850	-	-	-
267323	*Cladopathes*	Cladopathidae	4	1	4	3	904	1086	1021.5	-	-	-
267926	*Trissopathes*	Cladopathidae	1	-	-	0	1745	1917	1831	-	-	-
291244	*Trissopathes tetracrada*	Cladopathidae	1	-	-	0	932	932	932	-	-	-
103305	*Leiopathes*	Leiopathidae	50	0	3	22	503	1398	956.5	-	LEI	-
283949	*Leiopathes acanthophora*	Leiopathidae	3	4	4	1	263	946	838	-	-	-
283950	*Leiopathes bullosa*	Leiopathidae	2	1	1	1	890	1046	966.25	-	-	-
283951	*Leiopathes secunda*	Leiopathidae	7	0	1.7	1	330	985	954.5	-	LSE	-
289446	*Antipathella strigosa*	Myriopathidae	2	2	4	2	-	-	-	-	-	-
267357	*Cupressopathes*	Myriopathidae	2	-	-	0	122	150	136	-	-	-
723661	*Cupressopathes cylindrica*	Myriopathidae	2	-	-	0	-	-	-	-	-	-
1391217	*Cupressopathes simplex*	Myriopathidae	1	-	-	0	122	122	122	-	-	-
290434	*Myriopathes japonica*	Myriopathidae	1	-	-	0	126	126	126	-	-	-
994319	*Alternatipathes alternata*	Schizopathidae	9	2	8	3	419	1027	595	-	-	-
103304	*Bathypathes*	Schizopathidae	39	0	6	23	244	1200	976.75	-	BTP	-
103323	*Bathypathes patula*	Schizopathidae	11	2	5	6	998	4954	2887	-	-	-
267372	*Dendrobathypathes*	Schizopathidae	8	0	3.9	5	897	1113	998	-	DEN	-
289790	*Dendrobathypathes isocrada*	Schizopathidae	2	2	2	1	1110	1110	1110	-	-	-
267376	*Dendropathes*	Schizopathidae	5	0	0.6	3	964	1015	989	-	DDP	-
267553	*Lillipathes*	Schizopathidae	4	0	0	0	739	1398	959	-	LIL	-
290291	*Lillipathes lillei*	Schizopathidae	3	1	1	1	757	757	757	-	-	-
103306	*Parantipathes*	Schizopathidae	11	0	3	5	699	1164	883	-	PTP	-
884137	*Parantipathes dodecasticha*	Schizopathidae	2	-	-	0	787	1108	921.25	-	-	-
283952	*Parantipathes helicosticha*	Schizopathidae	7	0.001	2	5	260	1478	1163.25	-	-	-
267854	*Stauropathes*	Schizopathidae	2	1	1	2	750	1022	921.5	-	-	-
267875	*Stylopathes*	Stylopathidae	5	0	1	1	378	925	543	-	SLP	-
291151	*Stylopathes columnaris*	Stylopathidae	1	1	1	1	-	-	-	-	-	-
267918	*Triadopathes*	Stylopathidae	10	0	5	6	661	1090	916	-	TDP	-
589760	*Tylopathes glutinata*	Stylopathidae	1	2	2	1	-	-	-	-	-	-

Cnidaria (phylum) > Anthozoa (class) > **Actiniaria (order)**

Aphia ID	Candidate Taxa	Family	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
1360	-	-	188	0.001	15	134	100	2421	980.5	ATX	ATR	ATX
172869	*Actinernus elongatus*	Actinernidae	1	-	-	0	700	735	717.5	-	-	-
290193	*Isactinernus quadrilobatus*	Actinernidae	1	-	-	0	700	735	717.5	-	-	-
100653	-	Actiniidae	2	-	-	0	1100	1140	1120	-	-	-
100698	*Bolocera*	Actiniidae	50	0.1	5	48	516	1154	984	BVX	BOC	-
290602	*Parabunodactis inflexibilis*	Actiniidae	2	-	-	0	570	575	572.5	-	-	-
100655	-	Actinostolidae	709	0.02	75	706	286	1567	966.5	-	ACS	-
100707	*Actinoscyphia*	Actinoscyphiidae	5	-	-	0	886	1048	938	-	-	-
172918	*Actinoscyphia plebeia*	Actinoscyphiidae	2	-	-	0	1730	1772	1751	-	-	-
100654	*Actinoscyphiidae*	Actinoscyphiidae	1	-	-	0	1012	1014	1013	-	-	-
100715	*Sicyonis*	Actinostolidae	1	-	-	0	570	575	572.5	KKV	-	-
283596	*Amphianthus capensis*	Amphianthidae	1	-	-	0	-	-	-	-	-	-
100731	*Edwardsiella*	Edwardsiidae	1	-	-	0	-	-	-	-	-	-
100672	-	Hormathiidae	275	0	40	269	540	3184	968	KKW	HMT	-
100750	*Actinauge*	Hormathiidae	1	-	-	0	932	937	934.5	-	-	-
283590	*Actinauge granulata*	Hormathiidae	1	-	-	0	-	-	-	-	-	-
592915	*Actinauge verrillii*	Hormathiidae	3	-	-	0	1790	1803	1796.5	-	-	-
592973	*Chondrophellia orangina*	Hormathiidae	1	-	-	0	1880	2620	2250	-	-	-
100757	*Hormathia*	Hormathiidae	1	-	-	0	974	974	974	-	-	-
173095	*Hormathia lacunifera*	Hormathiidae	2	-	-	0	1000	1750	1375	-	-	-
100762	*Phelliactis*	Hormathiidae	1	-	-	0	686	1090	888	-	-	-
592930	*Alvinactis chessi*	Kadosactinidae	1	-	-	0	1880	2620	2250	-	-	-
592981	*Cyananthea hourdezi*	Kadosactinidae	1	-	-	0	1880	2620	2250	-	-	-
100769	*Liponema*	Liponematidae	23	0.1	4	23	574	1081	962	NVX	LIP	-
592900	*Actinecta cyanea*	Minyadidae	1	-	-	0	-	-	-	-	-	-
100775	*Phellia*	Phelliidae	1	0.001	0.001	1	1275	1380	1327.5	-	-	-

Cnidaria (phylum) > Anthozoa (class) > **Pennatulacea (order)**

Aphia ID	Candidate Taxa	Family	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
1367	-	-	67	0	1	11	426	1265	911.5	NTW	PTU	-
128489	*Anthoptilum*	Anthoptilidae	5	1	4	4	812	1773	903.75	AJG	-	-
128504	*Anthoptilum grandiflorum*	Anthoptilidae	6	1	1	4	1431	1460	1452.75	WAG	-	-
128505	*Anthoptilum murrayi*	Anthoptilidae	3	1	1	1	445	740	666.25	-	-	-
128506	*Funiculina quadrangularis*	Funiculinidae	1	1	1	1	798	798	798	FQJ	FQU	-
128509	*Halipteris finmarchica*	Halipteridae	3	1	1	1	761	765	763	HFM	-	-
128492	*Kophobelemnon*	Kophobelemnidae	2	1	1	2	691	2930	1814	-	-	-
128511	*Kophobelemnon macrospinosum*	Kophobelemnidae	1	0.001	0.001	1	121	126	123.5	-	-	-
128484	-	Pennatulidae	3	-	-	0	748	1117	815	-	-	-
286633	*Gyrophyllum sibogae*	Pennatulidae	40	0	4	33	748	1478	878	-	GYS	-
128495	*Pennatula*	Pennatulidae	13	0.001	4	9	260	1749	1075.5	-	PNN	-
1379631	*Pennatula inflata*	Pennatulidae	1	1	1	1	1730	1772	1751	-	-	-
128496	*Pteroeides*	Pennatulidae	3	1	1	1	121	126	123.5	-	-	-
128524	*Distichoptilum gracile*	Protoptilidae	2	0.001	0.001	1	1008	1029	1018.5	WDG	DGR	-
128498	*Protoptilum*	Protoptilidae	3	2	2	1	531	659	595	-	-	-
128486	-	Umbellulidae	2	-	-	0	812	818	815	-	-	-
128499	*Umbellula*	Umbellulidae	4	-	-	0	4200	4740	4489.25	-	-	-

Cnidaria (phylum) > Anthozoa (class) > **Zoantharia (order)**

Aphia ID	Candidate Taxa	Family	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
607338	-	-	10	0.1	0.1	1	761	1120	962.5	ZOT	-	
100790	*Epizoanthus*	Epizoanthidae	532	0.1	114	523	450	2930	987	-	EPZ	-
101036	*Epizoanthus paguriphilus*	Epizoanthidae	7	-	-	0	761	1120	987	-	-	-
581485	*Epizoanthus stellaris*	Epizoanthidae	1	-	-	0	1340	1610	1475	-	-	-
100689	-	Parazoanthidae	15	0.007	0.007	1	686	2277	921.5	-	-	-
715097	*Kulamanamana haumeaae*	Parazoanthidae	2	-	-	0	280	985	612	-	-	-
383013	*Savalia*	Parazoanthidae	2	-	-	0	265	300	286.25	-	-	-
100690	-	Zoanthidae	1	-	-	0	2250	2250	2250	-	-	-

Cnidaria (phylum) > **Hydrozoa (class)**

Aphia ID	Candidate Taxa	Family	Order	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
1337	-	-	-	118	0	10	66	6	2000	364	HQZ	-	-
13551	-	-	Anthoathecata	1	-	-	0	1210	1218	1214	-	-	-
117018	*Garveia*	Bougainvilliidae	Anthoathecata	3	-	-	0	-	-	-	-	-	-
292178	*Corymorpha furcata*	Corymorphidae	Anthoathecata	1	-	-	0	33	33	33	-	-	-
117093	*Eudendrium*	Eudendriidae	Anthoathecata	1	-	-	0	1071	1071	1071	-	-	-
117437	*Oceania armata*	Oceaniidae	Anthoathecata	4	-	-	0	17	500	62.5	-	-	-
285129	*Leuckartiara annexa*	Pandeidae	Anthoathecata	1	-	-	0	33	100	66.5	-	-	-
206034	*Solanderia*	Solanderiidae	Anthoathecata	1	-	-	0	194	232	213	-	-	-
1605	-	Aglaopheniidae	Leptothecata	6	-	-	0	512	1222	836	-	-	-
284162	*Aglaophenia ctenata*	Aglaopheniidae	Leptothecata	1	-	-	0	194	232	213	-	-	-
284120	*Gymnangium exploration is*	Aglaopheniidae	Leptothecata	1	-	-	0	150	150	150	-	-	-
284143	*Gymnangium tubuliferum*	Aglaopheniidae	Leptothecata	1	-	-	0	700	702	701	-	-	-
117002	*Lytocarpia*	Aglaopheniidae	Leptothecata	1	-	-	0	-	-	-	-	-	-
284178	*Lytocarpia cf. rigida*	Aglaopheniidae	Leptothecata	1	-	-	0	126	126	126	-	-	-
284182	*Lytocarpia subdichotoma*	Aglaopheniidae	Leptothecata	3	-	-	0	502	1749	966	-	-	-
284183	*Lytocarpia tenuissima*	Aglaopheniidae	Leptothecata	1	-	-	0	498	501	499.5	-	-	-
564858	*Campanularia diverticulata*	Campanulariidae	Leptothecata	1	-	-	0	887	908	897.5	-	-	-
117034	*Obelia*	Campanulariidae	Leptothecata	1	0.001	0.001	1	1230	1260	1245	-	-	-
267326	*Clathrozoon*	Clathrozoidae	Leptothecata	1	-	-	0	512	526	519	-	-	-
117103	*Halecium*	Haleciidae	Leptothecata	1	-	-	0	570	575	572.5	-	-	-
117588	*Halecium delicatulum*	Haleciidae	Leptothecata	1	-	-	0	2250	2250	2250	-	-	-
289715	*Corhiza scotiae*	Halopteridiidae	Leptothecata	4	-	-	0	130	781	144	-	-	-
287299	*Halopteris crassa*	Halopteridiidae	Leptothecata	1	-	-	0	150	150	150	-	-	-
117128	*Acryptolaria*	Lafoeidae	Leptothecata	4	-	-	0	512	1241	792.75	-	-	-
117679	*Acryptolaria conferta*	Lafoeidae	Leptothecata	3	-	-	0	130	2250	660	-	-	-
284928	*Acryptolaria minima*	Lafoeidae	Leptothecata	1	-	-	0	640	640	640	-	-	-
284931	*Acryptolaria operculata*	Lafoeidae	Leptothecata	1	-	-	0	660	660	660	-	-	-
117684	*Cryptolarella abyssicola*	Lafoeidae	Leptothecata	4	-	-	0	3710	4670	4190	-	-	-
117702	*Lafoea dumosa*	Lafoeidae	Leptothecata	1	0.001	0.001	1	910	934	922	-	-	-
843045	*Phialucium mbengha*	Phialuciidae	Leptothecata	1	-	-	0	200	200	200	-	-	-
117196	*Plumularia*	Plumulariidae	Leptothecata	5	-	-	0	481	1772	501	-	-	-
174692	*Plumularia insignis*	Plumulariidae	Leptothecata	1	-	-	0	140	140	140	-	-	-
117233	*Sertularella*	Sertularellidae	Leptothecata	4	0.001	0.006	3	887	934	922	-	-	-
1614	-	Sertulariidae	Leptothecata	1	-	-	0	887	908	897.5	-	-	-
289816	*Dictyocladium monilifer*	Sertulariidae	Leptothecata	2	-	-	0	130	168	149	-	-	-

Aphia ID	Candidate Taxa	Family	Order	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
289817	*Dictyocladium reticulatum*	Sertulariidae	Leptothecata	1	-	-	0	130	130	130	-	-	-
267447	*Gigantotheca*	Sertulariidae	Leptothecata	1	-	-	0	390	390	390	-	-	-
117231	*Salacia*	Sertulariidae	Leptothecata	1	-	-	0	194	232	213	-	-	-
285453	*Salacia bicalycula*	Sertulariidae	Leptothecata	1	-	-	0	130	130	130	-	-	-
285469	*Salacia spiralis*	Sertulariidae	Leptothecata	1	-	-	0	130	130	130	-	-	-
117235	*Symplectoscyphus*	Symplectoscyphidae	Leptothecata	3	0.052	0.106	2	450	913	840.5	-	-	-
285672	*Symplectoscyphus cf. macroscyphus*	Symplectoscyphidae	Leptothecata	1	-	-	0	600	850	725	-	-	-
117247	*Synthecium*	Syntheciidae	Leptothecata	2	-	-	0	260	273	266.5	-	-	-
285917	*Synthecium brucei*	Syntheciidae	Leptothecata	3	-	-	0	260	280	272.5	-	-	-
285937	*Synthecium subventricosum*	Syntheciidae	Leptothecata	1	-	-	0	150	150	150	-	-	-
290680	*Parascyphus simplex*	Thyroscyphidae	Leptothecata	1	-	-	0	127	127	127	-	-	-
117249	*Stegolaria*	Tiarannidae	Leptothecata	3	0.001	0.001	1	512	1154	996	-	-	-
117971	*Stegolaria geniculata*	Tiarannidae	Leptothecata	3	0.014	0.014	1	768	913	850	-	-	-
285942	*Stegolaria irregularis*	Tiarannidae	Leptothecata	3	-	-	0	406	850	850	-	-	-
117687	*Cryptolaria exserta*	Zygophylacidae	Leptothecata	1	-	-	0	337	337	337	-	-	-
117688	*Cryptolaria pectinata*	Zygophylacidae	Leptothecata	1	-	-	0	660	660	660	-	-	-
285011	*Zygophylax polycarpa*	Zygophylacidae	Leptothecata	1	-	-	0	600	850	725	-	-	-
117717	*Zygophylax sibogae*	Zygophylacidae	Leptothecata	2	-	-	0	168	273	217.25	-	-	-
19494	-	-	Hydroidolina[1]	22	-	-	0	10	2000	370	-	-	-

[1] subclass

Cnidaria (phylum) > Hydrozoa (class) > Anthoathecata (order) > **Stylasteridae (family)**

Aphia ID	Candidate Taxa	# Obs	WeightMin	WeightMax	# Weight Obs	# Weight Obs	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
22805	-	99	0	1	6	260	1128	863.5	AXT	COR	-
287501	*Adelopora fragilis*	7	0	0	0	590	640	615	-	-	-
289481	*Astya aspidopora*	4	-	-	0	590	640	615	-	-	-
174810	*Calyptopora reticulata*	3	0	3	2	745	1120	922	-	CRE	-
174816	*Conopora*	2	-	-	0	403	530	466.5	-	-	-
287506	*Conopora candelabrum*	25	0	2	3	403	975	494.5	-	-	-
287509	*Conopora laevis*	5	1	1	1	440	1355	730	-	-	-
287511	*Conopora tetrastichopora*	1	-	-	0	850	850	850	-	-	-
287512	*Conopora unifacialis*	3	-	-	0	547	646	596.5	-	-	-
231630	*Conopora verrucosa*	12	0	10	2	374	915	589	-	-	-
117241	*Crypthelia*	1	4	4	1	757	757	757	-	-	-
285777	*Crypthelia curvata*	3	-	-	0	590	640	615	-	-	-
285778	*Crypthelia cymas*	2	-	-	0	660	660	660	-	-	-
285793	*Crypthelia polypoma*	3	-	-	0	590	640	615	-	-	-
285796	*Crypthelia robusta*	5	-	-	0	374	660	390	-	-	-
285797	*Crypthelia stenopoma*	4	1	4	2	590	1380	1016	-	-	-
288324	*Distichopora dispar*	1	-	-	0	403	403	403	-	-	-
117242	*Errina*	1	0	0	0	-	-	-	DWX	ERR	-
285802	*Errina bicolor*	1	-	-	0	-	-	-	-	-	-
285806	*Errina cheilopora*	2	-	-	0	443	534	483.5	-	-	-
285810	*Errina dendyi*	3	0	0	0	-	-	-	-	-	-
285818	*Errina novaezelandiae*	1	-	-	0	81	81	81	-	-	-
174786	*Errinopsis*	1	1	1	1	980	980	980	-	-	-
289284	*Inferiolabiata lowei*	2	0	0	0	318	318	318	-	-	-
285826	*Lepidopora cryptocymas*	2	1	1	1	390	390	390	-	-	-
285828	*Lepidopora dendrostylus*	5	3	3	1	480	975	907.5	-	-	-
174796	*Lepidopora sarmentosa*	5	0	0	0	910	915	912.5	-	-	-
231552	*Lepidotheca*	2	0	1.7	1	798	848	823	NWX	LPT	-
289271	*Lepidotheca altispina*	1	-	-	0	660	660	660	-	-	-
289274	*Lepidotheca chauliostylus*	4	-	-	0	130	590	130	-	-	-
856275	*Leptohelia microstylus*	2	-	-	0	1246	1258	1252	-	-	-
287498	*Sporadopora micropora*	1	1	1	1	466	494	480	-	-	-
117246	*Stylaster*	2	-	-	0	910	915	912.5	-	-	-
231603	*Stylaster eguchii*	4	1	3	3	145	1250	751.5	-	-	-
285880	*Stylaster gracilis*	1	-	-	0	-	-	-	-	-	-
285885	*Stylaster imbricatus*	8	4	16	2	403	850	487.25	-	-	-
856308	*Stylaster sinuosus*	8	4	4	2	260	646	596.5	-	-	-

Echinodermata (phylum) > **Crinoidea (class)**

Aphia ID	Candidate Taxa	Family	Order	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
123081	-	-		58	-	-	0	265	2100	511.25	CWD	CRI	CWD
123093	-	-	Comatulida	5	0.01	1	4	499	1470	964	-	-	-
123148	-	Antedonidae	Comatulida	11	0.001	0.005	4	265	4218	1233	-	-	-
123349	*Antedon*	Antedonidae	Comatulida	4	0.001	0.001	4	910	1270	1086.75	-	-	-
205045	*Cyclometra*	Antedonidae	Comatulida	1	0.0025	0.0025	1	1205	1600	1402.5	-	-	-
414156	*Erythrometra rostrata*	Antedonidae	Comatulida	1	1	1	1	265	280	272.5	-	-	-
414157	*Florometra novaezealandiae*	Antedonidae	Comatulida	1	0.0015	0.0015	1	1205	1600	1402.5	-	-	-
123358	*Thaumatometra*	Antedonidae	Comatulida	1	-	-	0	1261	1278	1269.5	-	-	-
414160	*Thaumatometra alternata*	Antedonidae	Comatulida	1	-	-	0	3120	3120	3120	-	-	-
123144	-	Bathycrinidae	Comatulida	4	-	-	0	2930	4929	4642	-	-	-
123341	*Monachocrinus*	Bathycrinidae	Comatulida	1	-	-	0	2250	2250	2250	-	-	-
196172	-	Charitometridae	Comatulida	4	0.001	0.014	4	1098	1600	1216.25	-	-	-
414162	*Charitometra basicurva*	Charitometridae	Comatulida	10	0.0015	0.134	8	1075	1600	1245	-	-	-
340814	*Glyptometra inaequalis*	Charitometridae	Comatulida	11	0.0015	0.115	4	841	1600	1144.5	-	-	-
411382	*Strotometra*	Charitometridae	Comatulida	1	0.008	0.008	1	1223	1241	1232	-	-	-
828512	-	Comatulidae	Comatulida	6	-	-	0	137	904	272.5	-	CMT	-
829168	*Anneissia plectrophorum*	Comatulidae	Comatulida	2	1	1	1	168	280	220.25	-	-	-
246747	*Comanthus gisleni*	Comatulidae	Comatulida	1	-	-	0	-	-	-	-	-	-
393882	*Comatulidae incertae sedis imossica*	Comatulidae	Comatulida	1	-	-	0	850	850	850	-	-	-
393308	*Comissia dawsoni*	Comatulidae	Comatulida	1	-	-	0	887	908	897.5	-	-	-
367877	*Himerometra robustipinna*	Himerometridae	Comatulida	1	-	-	0	-	-	-	-	-	-
123362	*Pentametrocrinus*	Pentametrocrinidae	Comatulida	4	-	-	0	1186	3184	1573	-	-	-
562087	*Pentametrocrinus semperi*	Pentametrocrinidae	Comatulida	3	-	-	0	1392	1772	1571.5	-	-	-
213567	*Pentametrocrinus varians*	Pentametrocrinidae	Comatulida	1	-	-	0	1730	1772	1751	-	-	-
123347	*Porphyrocrinus*	Phrynocrinidae	Comatulida	1	0.01	0.01	1	1160	1470	1315	-	-	-
723571	*Democrinus cf. weberi*	Rhizocrinidae	Comatulida	1	-	-	0	974	974	974	-	-	-
123152	-	Thalassometridae	Comatulida	8	-	-	0	640	1600	1062.25	-	-	-
414171	*Aglaometra valida*	Thalassometridae	Comatulida	4	0.0295	0.06	3	847	1600	1285	-	-	-
711232	*Crotalometra*	Thalassometridae	Comatulida	2	0.011	0.011	1	1082	1280	1156.75	-	-	-
196176	-	Tropiometridae	Comatulida	2	-	-	0	1012	1104	1058	-	-	-
391353	*Thalassocrinus*	Hyocrinidae	Hyocrinida	1	0.01	0.01	1	1160	1470	1315	-	-	-
411397	*Metacrinus*	Isselicrinidae	Isocrinida	2	-	-	0	378	525	451.5	-	-	-
562081	*Metacrinus wyvillii*	Isselicrinidae	Isocrinida	3	-	-	0	378	685	560	-	-	-
411398	*Saracrinus*	Isselicrinidae	Isocrinida	2	-	-	0	378	850	614	-	-	-

Echinodermata (phylum) > Asteroidea (class) > **Brisingida (order)**

Aphia ID	Candidate Taxa	Family	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
123085	-	-	84	0.02	20	84	750	1250	974.75	-	BRG	-
123119	-	Brisingidae	16	0.002	0.014	2	260	1313	971.25	BHZ	-	-
123210	*Brisinga*	Brisingidae	3	1	1	1	950	987	967	-	-	-
178258	*Brisingenes*	Brisingidae	3	1	1	3	805	1313	1029.5	-	-	-
381753	*Hymenodiscus*	Brisingidae	5	0.002	1	3	748	3184	1232	-	-	-
381755	*Hymenodiscus aotearoa*	Brisingidae	2	-	-	0	816	830	823	-	-	-
123120	-	Freyellidae	1	-	-	0	1205	1600	1402.5	-	-	-
234876	*Belgicella racowitzana*	Freyellidae	1	-	-	0	3791	3791	3791	-	-	-
291608	*Freyastera digitata*	Freyellidae	1	-	-	0	3120	3120	3120	-	-	-
123217	*Freyella*	Freyellidae	1	0.002	0.002	1	1223	1241	1232	-	-	-
291605	*Freyella echinata*	Freyellidae	3	-	-	0	1573	1772	1705	-	-	-
291606	*Freyella felleyra*	Freyellidae	1	-	-	0	3180	3184	3182	-	-	-

Bryozoa (phylum)

Aphia ID	Candidate Taxa	Family	Order	Class	# Obs	Weight Min	Weight Max	# Weight Obs	Depth Min	Depth Max	Depth Median	FAO Code	FNZ Code	AUS Code
146142	-	-	-	-	15	0.1	4	5	100	1278	550.5	BZN	COZ	-
110722	-	-	Cheilostomatida	Gymnolaemata	3	-	-	0	920	3798	3639	-	-	-
205132	*Antropora*	Antroporidae	Cheilostomatida	Gymnolaemata	3	-	-	0	460	590	525	-	-	-
468525	*Crateropora*	Aspidostomatidae	Cheilostomatida	Gymnolaemata	1	-	-	0	277	375	326	-	-	-
293682	*Aberrodomus candidus*	Bifaxariidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1186	1186	1186	-	-	-
428514	*Bifaxaria submucronata*	Bifaxariidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1573	1573	1573	-	-	-
466906	*Domosclerus*	Bifaxariidae	Cheilostomatida	Gymnolaemata	1	-	-	0	2930	2930	2930			
466933	*Domosclerus corrugatus*	Bifaxariidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1573	1573	1573	-	-	-
466907	*Domosclerus piscis*	Bifaxariidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1705	1705	1705	-	-	-
471838	*Raxifabia tunicata*	Bifaxariidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1573	1573	1573	-	-	-
110826	*Metroperiella*	Bitectiporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1750	1750	1750	-	-	-
393234	*Parkermavella*	Bitectiporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1028	1028	1028	-	-	-
174317	*Buffonellodes*	Buffonellodidae	Cheilostomatida	Gymnolaemata	1	-	-	0	460	590	525	-	-	-
393240	*Ipsibuffonella*	Buffonellodidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1210	1218	1214	-	-	-
468821	*Julianca*	Buffonellodidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1474	1474	1474	-	-	-
428600	*Bugula decipiens*	Bugulidae	Cheilostomatida	Gymnolaemata	2	-	-	0	4670	4670	4670	-	-	-
183031	*Bugulella gracilis*	Bugulidae	Cheilostomatida	Gymnolaemata	1	-	-	0	512	526	519	-	-	-
110733	-	Calloporidae	Cheilostomatida	Gymnolaemata	6	0.001	0.001	1	554	1350	1044.25			
110849	*Amphiblestrum*	Calloporidae	Cheilostomatida	Gymnolaemata	2	-	-	0	460	908	711.25	-	-	-
468559	*Onychoblestrum*	Calloporidae	Cheilostomatida	Gymnolaemata	2	0.892	0.892	1	1010	1061	1036	-	-	-
472056	*Onychoblestrum hastingsae*	Calloporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	554	554	554	-	-	-
768216	*Platypyxis*	Calloporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	900	900	900	-	-	-
173072	*Amastigia*	Candidae	Cheilostomatida	Gymnolaemata	1	-	-	0	2930	2930	2930	-	-	-
110864	*Caberea*	Candidae	Cheilostomatida	Gymnolaemata	1	-	-	0	512	526	519	-	-	-
110865	*Notoplites*	Candidae	Cheilostomatida	Gymnolaemata	2	0	0	0	512	526	519	-	-	-
110869	*Cellaria*	Cellariidae	Cheilostomatida	Gymnolaemata	5	-	-	0	460	1474	897.5			
469483	*Cellaria immersa*	Cellariidae	Cheilostomatida	Gymnolaemata	1	-	-	0	132	132	132	-	-	-
471175	*Melicerita chathamensis*	Cellariidae	Cheilostomatida	Gymnolaemata	1	-	-	0	238	238	238	-	-	-
110875	*Celleporina*	Celleporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	781	781	781	-	-	-
770068	*Galeopsis*	Celleporidae	Cheilostomatida	Gymnolaemata	2	-	-	0	460	1013	768.25	-	-	-
469595	*Lagenipora ferocissima*	Celleporidae	Cheilostomatida	Gymnolaemata	2	-	-	0	554	1028	791	-	-	-
110881	*Chaperiopsis*	Chaperiidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1028	1028	1028	-	-	-
469642	*Chaperiopsis splendida*	Chaperiidae	Cheilostomatida	Gymnolaemata	1	-	-	0	512	526	519	-	-	-
471573	*Crepidacantha bracebridgei*	Crepidacanthidae	Cheilostomatida	Gymnolaemata	1	-	-	0	277	375	326	-	-	-
467086	*Cribralaria*	Cribrilinidae	Cheilostomatida	Gymnolaemata	2	-	-	0	277	375	326	-	-	-

Aphia ID	Candidate Taxa	Family	Order	Class	# Obs	Weight Min	Weight Max	# Weight Obs	Depth Min	Depth Max	Depth Median	FAO Code	FNZ Code	AUS Code
110894	*Figularia*	Cribrilinidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1210	1218	1214	-	-	-
469710	*Figularia pelmatifera*	Cribrilinidae	Cheilostomatida	Gymnolaemata	3	0.001	0.001	1	1010	1350	1060.5	-	-	-
110897	*Puellina*	Cribrilinidae	Cheilostomatida	Gymnolaemata	1	-	-	0	460	590	525	-	-	-
467586	*Villicharixa strigosa*	Electridae	Cheilostomatida	Gymnolaemata	1	-	-	0	-	-	-	-	-	-
110857	*Ellisina*	Ellisinidae	Cheilostomatida	Gymnolaemata	1	-	-	0	460	590	525	-	-	-
110965	*Escharella*	Escharellidae	Cheilostomatida	Gymnolaemata	2	-	-	0	460	1218	869.5	-	-	-
472200	*Chiastosella exuberans*	Escharinidae	Cheilostomatida	Gymnolaemata	1	-	-	0	460	590	525	-	-	-
428510	*Farciminellum hexagonum*	Farciminariidae	Cheilostomatida	Gymnolaemata	2	-	-	0	4670	4670	4670	-	-	-
468673	*Gigantopora*	Gigantoporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1474	1474	1474	-	-	-
111400	*Hippothoa watersi*	Hippothoidae	Cheilostomatida	Gymnolaemata	1	-	-	0	512	526	519	-	-	-
469886	*Hippothoa peristomata*	Hippothoidae	Cheilostomatida	Gymnolaemata	2	-	-	0	1010	1013	1011.5	-	-	-
174205	*Lacerna*	Lacernidae	Cheilostomatida	Gymnolaemata	1	-	-	0	460	590	525	-	-	-
468696	*Phonicosia*	Lacernidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1028	1028	1028	-	-	-
472323	*Phonicosia circinata*	Lacernidae	Cheilostomatida	Gymnolaemata	1	-	-	0	512	526	519	-	-	-
110934	*Calyptotheca*	Lanceoporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1474	1474	1474	-	-	-
472338	*Harpagozoon minutus*	Lekythoporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1060	1061	1060.5	-	-	-
468705	*Poecilopora*	Lekythoporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1010	1013	1011.5	-	-	-
468716	*Chronocerastes*	Microporellidae	Cheilostomatida	Gymnolaemata	1	-	-	0	570	575	572.5	-	-	-
110942	*Microporella*	Microporellidae	Cheilostomatida	Gymnolaemata	1	-	-	0	460	590	525	-	-	-
110944	*Micropora*	Microporidae	Cheilostomatida	Gymnolaemata	4	-	-	0	277	1750	1055.75	-	-	-
761087	*Rosemariella thompsonae*	Microporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1000	1000	1000	-	-	-
470146	*Hippellozoon novaezelandiae*	Phidoloporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	277	375	326	-	-	-
110956	*Reteporella*	Phidoloporidae	Cheilostomatida	Gymnolaemata	5	0.001	0.001	1	460	1400	525	-	-	-
110961	*Stephanollona*	Phidoloporidae	Cheilostomatida	Gymnolaemata	2	-	-	0	512	526	519	-	-	-
722998	*Stephanollona scintillans*	Phidoloporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	512	526	519	-	-	-
110768	-	Phidoloporidae	Cheilostomatida	Gymnolaemata	1	-	-	0	260	273	266.5	-	-	-
468538	*Oppiphorina*	Phorioppniidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1474	1474	1474	-	-	-
468766	*Haswelliporina*	Porinidae	Cheilostomatida	Gymnolaemata	2	0.033	0.033	1	814	1013	937.25	-	-	-
472454	*Haswelliporina cf. venusta*	Porinidae	Cheilostomatida	Gymnolaemata	1	0.014	0.014	1	910	934	922	-	-	-
467632	*Quadricellaria bocki*	Quadricellariidae	Cheilostomatida	Gymnolaemata	2	-	-	0	512	526	519	-	-	-
468793	*Siphonicytara*	Siphonicytaridae	Cheilostomatida	Gymnolaemata	1	-	-	0	1474	1474	1474	-	-	-
110775	-	Smittinidae	Cheilostomatida	Gymnolaemata	1	-	-	0	554	554	554	-	-	-
110979	*Smittina*	Smittinidae	Cheilostomatida	Gymnolaemata	2	-	-	0	881	1750	1390.25	-	-	-
466910	*Smithsonius*	Tessaradomidae	Cheilostomatida	Gymnolaemata	1	-	-	0	1508	1508	1508	-	-	-
472577	*Acanthodesiomorpha problematica*	Cheilostomatida incertae sedis	Cheilostomatida	Gymnolaemata	1	-	-	0	3999	3999	3999	-	-	-
111002	*Metalcyonidium*	Clavoporidae	Ctenostomatida	Gymnolaemata	1	-	-	0	3480	3798	3639	-	-	-
182845	*Pachyzoon*	Pachyzoidae	Ctenostomatida	Gymnolaemata	1	-	-	0	3480	3798	3639	-	-	-

Aphia ID	Candidate Taxa	Family	Order	Class	# Obs	Weight Min	Weight Max	# Weight Obs	Depth Min	Depth Max	Depth Median	FAO Code	FNZ Code	AUS Code
110724	-	-	Cyclostomatida	Stenolaemata	3	-	-	0	936	4240	1060.5	-	-	-
174161	*Nevianipora*	Diaperoeciidae	Cyclostomatida	Stenolaemata	1	-	-	0	640	640	640	-	-	-
173986	*Entalophora*	Entalophoridae	Cyclostomatida	Stenolaemata	2	-	-	0	936	936	936	-	-	-
110808	-	Horneridae	Cyclostomatida	Stenolaemata	2	-	-	0	1010	1061	1036	-	-	-
111044	*Disporella*	Lichenoporidae	Cyclostomatida	Stenolaemata	2	-	-	0	1210	1750	1482	-	-	-
111030	*Entalophoroecia*	Plagioeciidae	Cyclostomatida	Stenolaemata	2	-	-	0	936	1186	1061	-	-	-
111040	*Plagioecia*	Plagioeciidae	Cyclostomatida	Stenolaemata	1	-	-	0	900	900	900	-	-	-
111048	*Stomatopora*	Stomatoporidae	Cyclostomatida	Stenolaemata	2	-	-	0	936	965	950.5	-	-	-
173955	*Exidmonea*	Tubuliporidae	Cyclostomatida	Stenolaemata	1	-	-	0	640	640	640	-	-	-
472562	*Fenestulipora cassiformis*	Tubuliporidae	Cyclostomatida	Stenolaemata	1	-	-	0	660	660	660	-	-	-
111054	*Tubulipora*	Tubuliporidae	Cyclostomatida	Stenolaemata	1	-	-	0	277	375	326	-	-	-
1299104	*Pandanipora*	Tubuliporina[1]	Cyclostomatida	Stenolaemata	1	-	-	0	1060	1061	1060.5	-	-	-

[1] Suborder

Foraminifera (phylum) > Monothalamea (class) > **Xenophyophoroidea (superfamily)**

Aphia ID	Candidate Taxa	Family	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
468705	-	-	2	-	-	0	700	2100	1400.5	XEF	-	-

Annelida (phylum) > Polychaeta (class) > Sabellida (order) **> Serpulidae (family)**

Aphia ID	Candidate Taxa	# Obs	WeightMin	WeightMax	# Weight Obs	DepthMin	DepthMax	DepthMedian	FAO Code	FNZ Code	AUS Code
988	*Serpulidae*	5	-	-	0	640	4243	755.5	SZS	-	-
129565	*Hyalopomatus*	2	-	-	0	512	815	667	-	-	-
129570	*Neovermilia*	1	-	-	0	910	915	912.5	-	-	-
129571	*Placostegus*	2	0.001	0.001	2	1010	1154	1078.5	-	-	-
129575	*Protula*	1	-	-	0	570	575	572.5	-	-	-
209945	*Spirobranchus latiscapus*	1	-	-	0	512	526	519	-	-	-