

Supplemental Material

The epitome of data paucity: deep-sea habitats of the Southern Indian Ocean

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1. Inventory completeness

To investigate the accuracy of the consolidated occurrence dataset, we evaluated its completeness using the four-step integrated approach developed by Chao et al. (2020). The framework links the concepts of sample completeness and diversity with a class of diversity measures known as Hill numbers (Hill, 1973). Hill numbers are defined as the number of equally abundant species and are parameterized by a diversity order q . Hill numbers for order $q \geq 0$ represent the species diversity measures of species richness, Shannon diversity, and Simpson diversity as special cases of order $q = 0$, $q = 1$, and $q = 2$, respectively. For incidence-based samples, the sample completeness measure of any order $q \geq 0$ quantifies the proportion of the total number of incidences belonging to selected species. Measures of order $q \geq 1$ are disproportionately sensitive to the highly frequent species, whereas measures of orders $q < 1$ are disproportionately sensitive to the infrequent species. Measure of order $q = 1$ is the incidence-based sample coverage, which weighs all species by their detection probabilities without favouring either frequent or infrequent species. The case $q = 0$ corresponds to the observed species richness divided by the Chao2 species richness estimator (Chao, 1987). The Chao2 richness is nearly an unbiased estimator if infrequent species (specifically, uniques and undetected species) have approximately homogeneous detection probabilities. Otherwise, it is theoretically a lower bound, and thus the estimated proportion of detected species richness becomes an upper bound (Chao et al., 2020).

46 Chao et al. (2020) propose the use of the estimated sample completeness profile, which
47 depicts the estimator as a function of q , $q \geq 0$. In practice, a completeness profile is plotted
48 for all values of q , from $q = 0$ to $q = 2$. The sample completeness profile is integrated in a
49 four-step procedure that links sample completeness, diversity estimation, rarefaction and
50 extrapolation, and evenness. The four steps can be computed with the R package iNEXT-
51 4steps (Chao & Hu, 2023a). Further details and a full description of the theory, methods, and
52 interpretation of each step can be found in Chao et al. (2020).

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54 Because the quality of estimates of species richness is dependent on the spatial scale (extent
55 and resolution) of the area of the study (Soberón et al., 2007), we computed the sample
56 completeness profile for spatial grids of varying resolutions from 1° to 5° . We divided each
57 cell in sub-cells of resolution 0.01° so that each sub-cell is considered as a sampling unit to
58 compute completeness profiles for each cell. For each resolution, we calculated the observed
59 diversity (richness) per grid cell and the occurrence frequency within each cell for $q = 0$,
60 $q = 1$, and $q = 2$, using the function `obsTD` from R package `iNEXT.3D` (Chao & Hu,
61 2023b). Grid cells with less than three sampled sub-cells, with singletons only or with an
62 observed diversity ≤ 10 species were filtered out, as these constitute inadequately sampled
63 cells. Next, we ran the analysis with function `iNEXT.4steps` to calculate for each q
64 completeness, sample coverage, undetected frequent species, undetected species
65 (`iNEXT.4steps` R package; Chao & Hu, 2023a). Finally, we computed global completeness
66 profiles of each resolution to compare inventory accuracy among them (Figure S1). We also
67 produced boxplots of the sample completeness (Figure S2) and the percentage of undetected
68 diversity (Figure S3) for all values of q for adequately sampled cells at all resolutions. For 1°
69 spatial resolution, the resolution of the biogeographical analysis, we also mapped the
70 completeness values (Figure S4).

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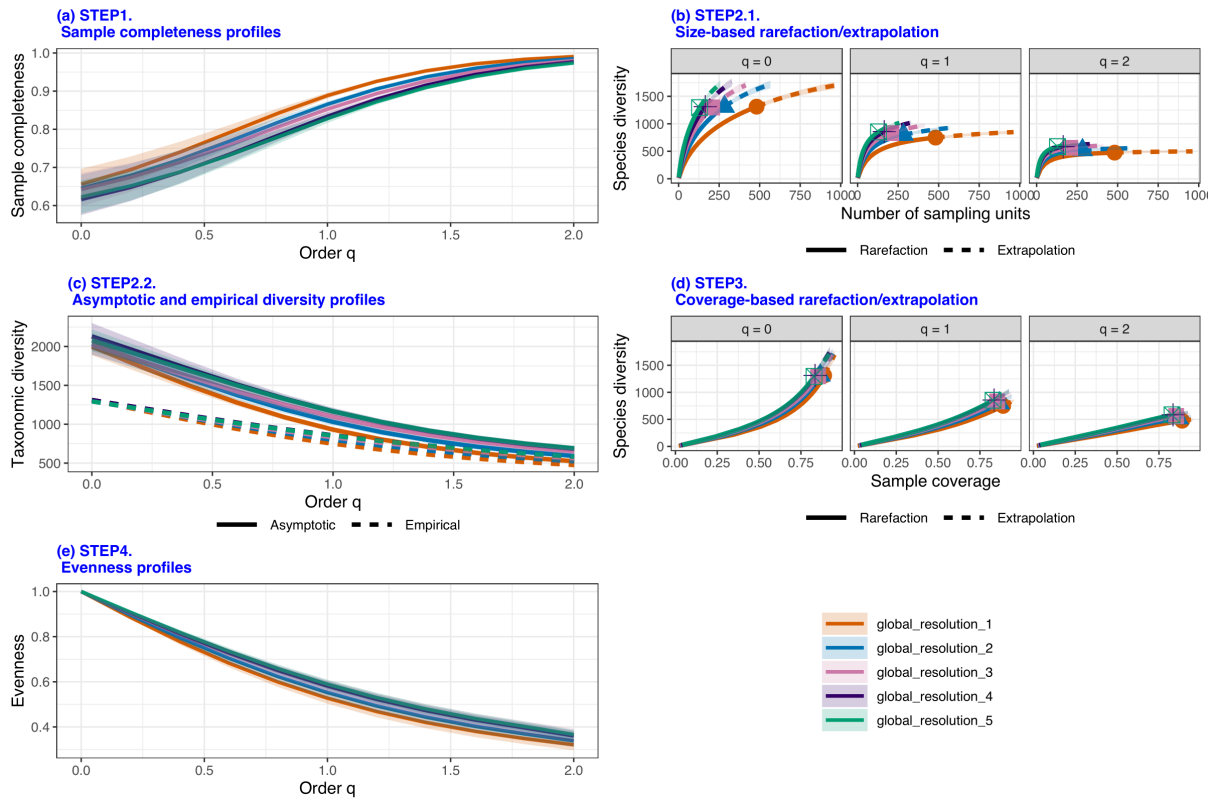
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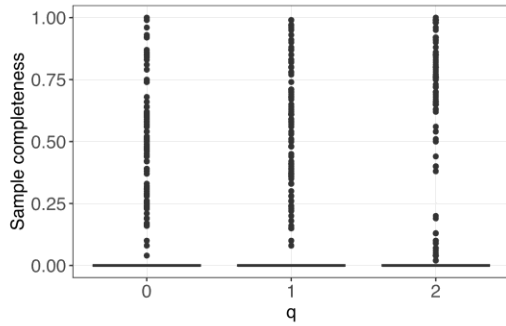
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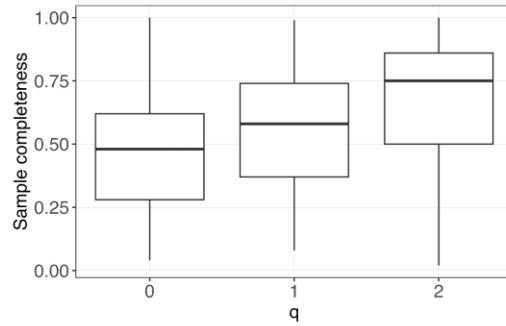
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Figure S1. (a) The plots of estimated sample completeness curves as a function of order q between 0 and 2 for VME indicator species of the Indian Ocean. (b) Size-based rarefaction (solid lines) and extrapolation (dashed lines) curves up to double the reference sample size. (c) The asymptotic estimates of diversity profiles (solid lines) and empirical diversity profiles (dotted lines); numerical values refer to the estimated asymptotic diversities. (d) Coverage-based rarefaction (solid lines) and extrapolation (dashed lines) curves up to the corresponding coverage value for a doubling of each reference sample size. (e) Evenness profile as a function of order q , based on the normalized slope of Hill numbers. Solid dots and triangles denote observed data points. All shaded areas in (a)–(d) denote 95% confidence bands obtained from a bootstrap method with 100 replications. Some bands are invisible due to narrow widths.

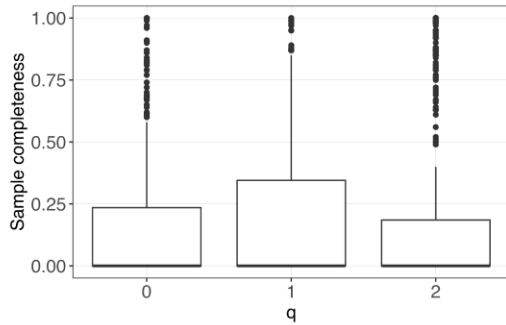
a. 1° - Completeness profiles (all cells)



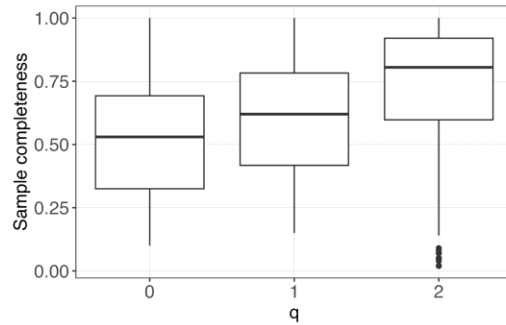
b. 1° - Completeness profiles (evaluated cells only)



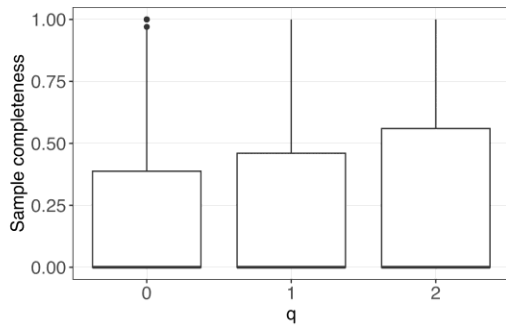
c. 2° - Completeness profiles (all cells)



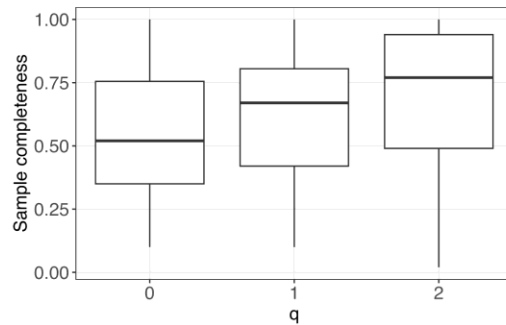
d. 2° - Completeness profiles (evaluated cells only)



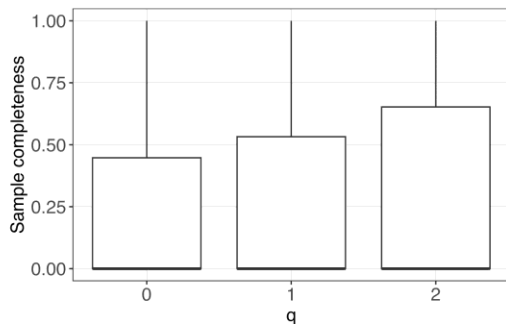
e. 3° - Completeness profiles (all cells)



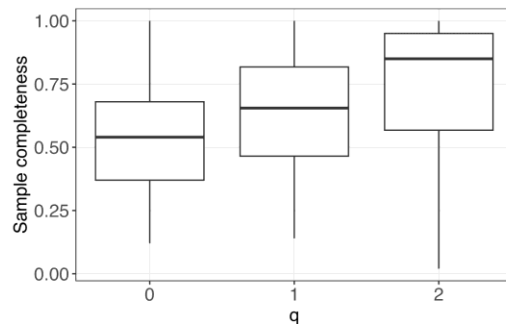
f. 3° - Completeness profiles (evaluated cells only)



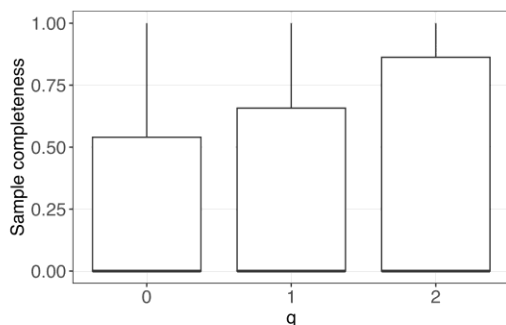
g. 4° - Completeness profiles (all cells)



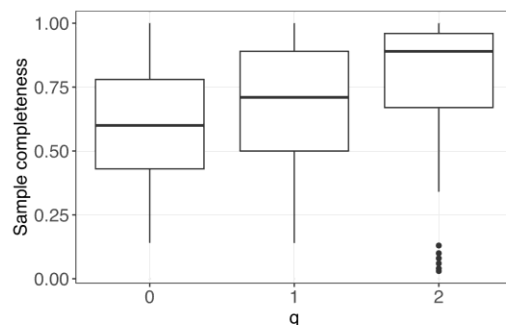
h. 4° - Completeness profiles (evaluated cells only)



i. 5° - Completeness profiles (all cells)

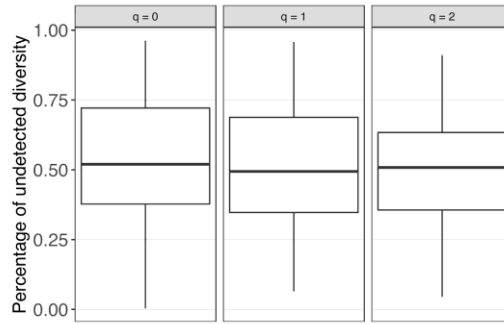


j. 5° - Completeness profiles (evaluated cells only)

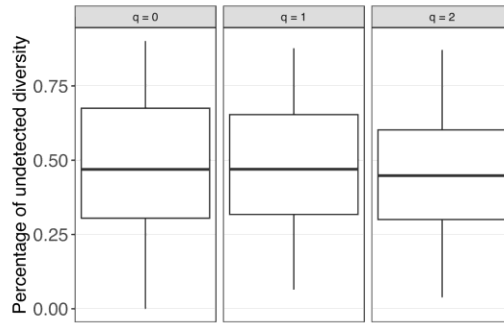


94 Figure S2. Completeness profiles for all sampled cells (left panels) and evaluated sampled
95 cells only (right panels) for all q diversity orders at spatial resolution of 1° to 5° . Evaluated
96 sampled cells are cells at each spatial resolution that have enough samples, that is, cells that
97 have more than two sampled sub-cells (of 0.01° spatial resolution), not only singletons, and
98 strictly more than ten species.

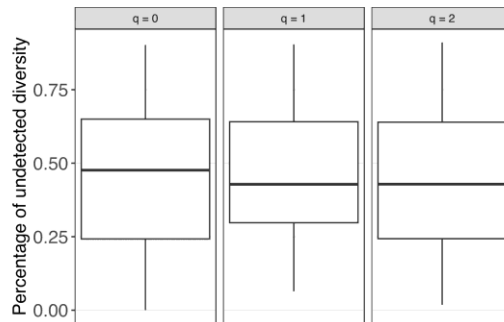
a. 1° - Undetected diversity (evaluated cells only)



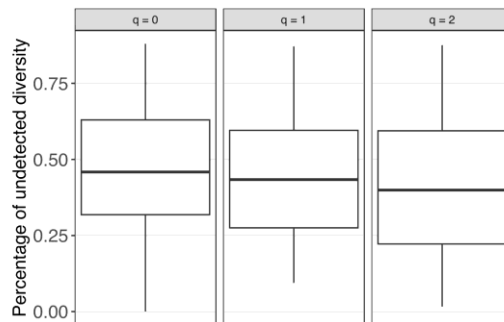
b. 2° - Undetected diversity (evaluated cells only)



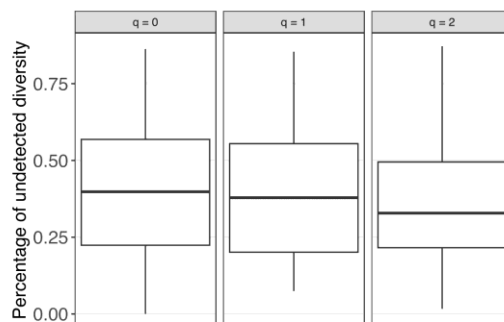
c. 3° - Undetected diversity (evaluated cells only)



d. 4° - Undetected diversity (evaluated cells only)

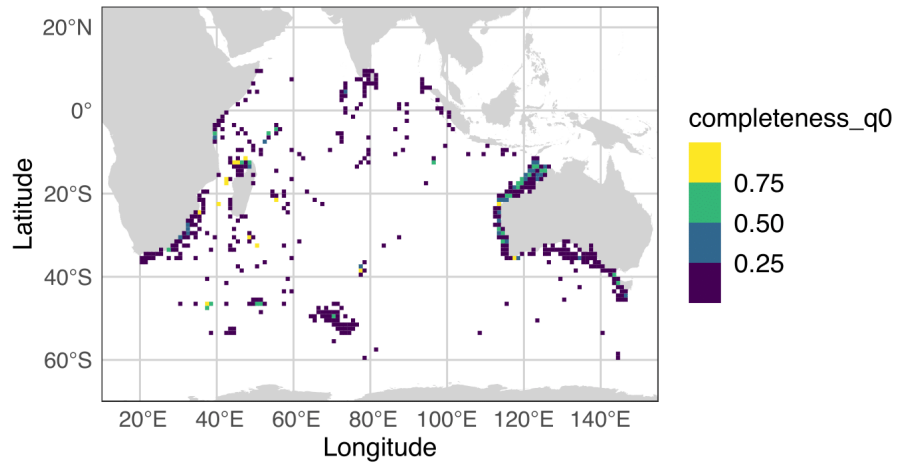


e. 5° - Undetected diversity (evaluated cells only)

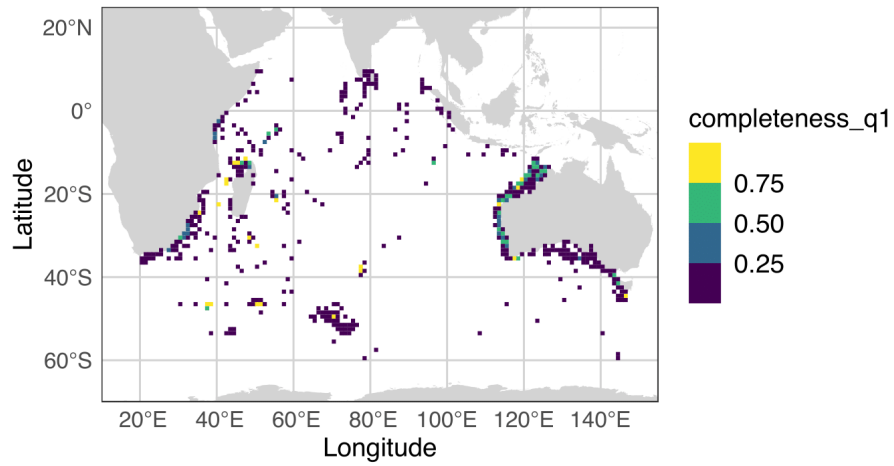


100 Figure S3. Boxplots of percentage of undetected diversity calculated for all q diversity orders
101 of cells with sufficient samples at 1° to 5° spatial resolution. Evaluated sampled cells are cells
102 at each spatial resolution that have enough samples, that is, cells that have more than two
103 sampled sub-cells (of 0.01° spatial resolution), not only singletons, and strictly more than ten
104 species.

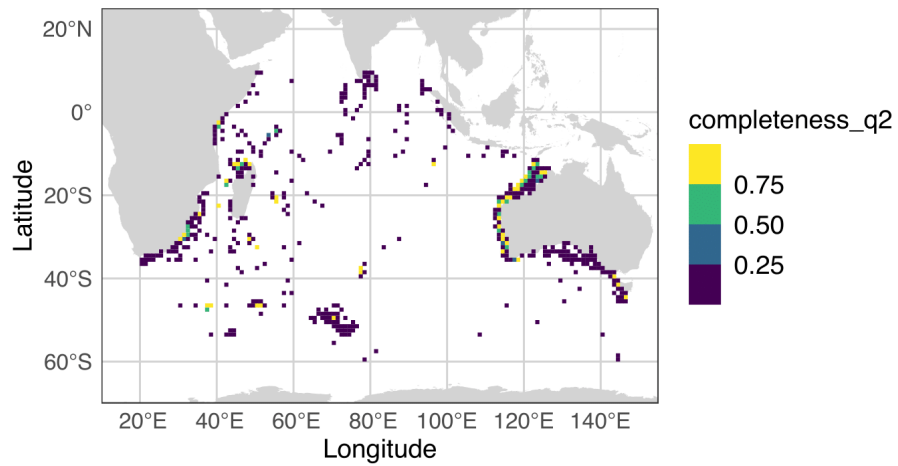
a. completeness at $q = 0$



b. completeness at $q = 1$



c. completeness at $q = 2$



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Figure S4. Maps of sample completeness for all q diversity orders at 1° spatial resolution.

107 Table S1. List of the top 20 indicator species for each of the four bioregions detected at the first hierarchical level of the bioregionalization. *Ai*:
 108 affinity of a species to its region; *Fi*: fidelity of species to its region; *IndVal*: indicator value (calculated as $Ai*Fi$).

Species	Bioregion	Ai	Fi	IndVal	Endemism	Family	Order
<i>Plesiastrea versipora</i>	1	0.16	1.00	0.16	TRUE	Plesiastreidae	Scleractinia
<i>Pocillopora damicornis</i>	1	0.15	1.00	0.15	TRUE	Pocilloporidae	Scleractinia
<i>Pocillopora verrucosa</i>	1	0.15	1.00	0.15	TRUE	Pocilloporidae	Scleractinia
<i>Fungia fungites</i>	1	0.15	1.00	0.15	TRUE	Fungiidae	Scleractinia
<i>Favites abdita</i>	1	0.14	1.00	0.14	TRUE	Merulinidae	Scleractinia
<i>Pavona varians</i>	1	0.14	1.00	0.14	TRUE	Agariciidae	Scleractinia
<i>Galaxea fascicularis</i>	1	0.14	1.00	0.14	TRUE	Euphylliidae	Scleractinia
<i>Goniastrea pectinata</i>	1	0.14	1.00	0.14	TRUE	Merulinidae	Scleractinia
<i>Favites pentagona</i>	1	0.14	1.00	0.14	TRUE	Merulinidae	Scleractinia
<i>Porites lutea</i>	1	0.14	1.00	0.14	TRUE	Poritidae	Scleractinia
<i>Platygyra daedalea</i>	1	0.13	1.00	0.13	TRUE	Merulinidae	Scleractinia
<i>Cyphastrea microphthalma</i>	1	0.13	1.00	0.13	TRUE	Merulinidae	Scleractinia
<i>Lobophyllia hemprichii</i>	1	0.13	1.00	0.13	TRUE	Lobophylliidae	Scleractinia
<i>Leptastrea transversa</i>	1	0.13	1.00	0.13	TRUE	Leptastreidae	Scleractinia
<i>Goniastrea retiformis</i>	1	0.12	1.00	0.12	TRUE	Merulinidae	Scleractinia
<i>Dipsastraea pallida</i>	1	0.12	1.00	0.12	TRUE	Merulinidae	Scleractinia
<i>Leptoria phrygia</i>	1	0.12	1.00	0.12	TRUE	Merulinidae	Scleractinia
<i>Psammocora contigua</i>	1	0.12	1.00	0.12	TRUE	Psammocoridae	Scleractinia
<i>Hydnophora exesa</i>	1	0.12	1.00	0.12	TRUE	Merulinidae	Scleractinia
<i>Dipsastraea favus</i>	1	0.12	1.00	0.12	TRUE	Merulinidae	Scleractinia
<i>Ctenocidaris (Eurocidaris) nutrix</i>	2	0.40	1.00	0.40	TRUE	Ctenocidaridae	Cidaroida
<i>Gorgonocephalus</i>	2	0.32	1.00	0.32	TRUE	Gorgonocephalidae	Euryalida

Species	Bioregion	Ai	Fi	IndVal	Endemism	Family	Order	
<i>chilensis</i>								
<i>Aerothyris kerguelensis</i>		2	0.27	1.00	0.27	TRUE	Terebratulidae	Terebratulida
<i>Antarctotetilla leptoderma</i>		2	0.22	0.95	0.21	FALSE	Tetillidae	Tetractinellida
<i>Promachocrinus kerguelensis</i>		2	0.21	1.00	0.21	TRUE	Antedonidae	Comatulida
<i>Plicatellopsis antarctica</i>		2	0.20	1.00	0.20	TRUE	Suberitidae	Suberitida
<i>Astrotoma agassizii</i>		2	0.21	0.93	0.19	FALSE	Gorgonocephalidae	Euryalida
<i>Stylocordyla borealis</i>		2	0.18	0.93	0.17	FALSE	Stylocordylidae	Suberitida
<i>Serpula narconensis</i>		2	0.16	1.00	0.16	TRUE	Serpulidae	Sabellida
<i>Pemphixina pyxidata</i>		2	0.16	1.00	0.16	TRUE	Hemithirididae	Rhynchonellida
<i>Malakosaria sinclairii</i>		2	0.13	1.00	0.13	TRUE	Calwelliidae	Cheilostomatida
<i>Megaciella pilosa</i>		2	0.11	1.00	0.11	TRUE	Acarnidae	Poecilosclerida
<i>Tedania (Tedaniopsis) charcoti</i>		2	0.10	1.00	0.10	TRUE	Tedaniidae	Poecilosclerida
<i>Tedania charcoti</i>		2	0.10	1.00	0.10	TRUE	Tedaniidae	Poecilosclerida
<i>Tentorium papillatum</i>		2	0.10	1.00	0.10	TRUE	Polymastiidae	Polymastiida
<i>Myxilla (Myxilla) basimucronata</i>		2	0.10	1.00	0.10	TRUE	Myxillidae	Poecilosclerida
<i>Myxilla basimucronata</i>		2	0.10	1.00	0.10	TRUE	Myxillidae	Poecilosclerida
<i>Myxilla (Ectomyxilla) kerguelensis</i>		2	0.09	1.00	0.09	TRUE	Myxillidae	Poecilosclerida
<i>Tetilla coronida</i>		2	0.09	1.00	0.09	TRUE	Tetillidae	Tetractinellida
<i>Hymedesmia (Hymedesmia) mariondufresni</i>		2	0.09	1.00	0.09	TRUE	Hymedesmiidae	Poecilosclerida
<i>Bathypathes patula</i>		3	0.34	0.87	0.29	FALSE	Schizopathidae	Antipatharia
<i>Culeolus suhmi</i>		3	0.26	0.94	0.24	FALSE	Pyuridae	Stolidobranchia
<i>Proagnesia depressa</i>		3	0.24	0.92	0.22	FALSE	Agneziidae	Phlebobranchia
<i>Abyssopathes lyra</i>		3	0.22	1.00	0.22	TRUE	Schizopathidae	Antipatharia

Species	Bioregion	Ai	Fi	IndVal	Endemism	Family	Order
<i>Styela calva</i>	3	0.16	1.00	0.16	TRUE	Styelidae	Stolidobranchia
<i>Cnemidocarpa platybranchia</i>	3	0.14	1.00	0.14	TRUE	Styelidae	Stolidobranchia
<i>Columnella delicatissima</i>	3	0.14	1.00	0.14	TRUE	Farciminariidae	Cheilostomatida
<i>Columnella magna</i>	3	0.15	0.89	0.13	FALSE	Farciminariidae	Cheilostomatida
<i>Bathystyeloides enderbyanus</i>	3	0.16	0.80	0.13	FALSE	Styelidae	Stolidobranchia
<i>Styela sericata</i>	3	0.10	1.00	0.10	TRUE	Styelidae	Stolidobranchia
<i>Styela ordinaria</i>	3	0.10	1.00	0.10	TRUE	Styelidae	Stolidobranchia
<i>Columnella graminea</i>	3	0.10	1.00	0.10	TRUE	Farciminariidae	Cheilostomatida
<i>Umbellula thomsoni</i>	3	0.12	0.79	0.09	FALSE	Umbellulidae	Pennatulacea
<i>Domosclerus corrugatus</i>	3	0.09	1.00	0.09	TRUE	Bifaxariidae	Cheilostomatida
<i>Himantozoum (Himantozoum) leontodon</i>	3	0.09	1.00	0.09	TRUE	Bugulidae	Cheilostomatida
<i>Abyssascidia millari</i>	3	0.08	1.00	0.08	TRUE	Corellidae	Phlebobranchia
<i>Molgula pila</i>	3	0.08	1.00	0.08	TRUE	Molgulidae	Stolidobranchia
<i>Polycarpa indiana</i>	3	0.08	1.00	0.08	TRUE	Styelidae	Stolidobranchia
<i>Stannophyllum mollum</i>	3	0.08	1.00	0.08	TRUE	Stannomidae	Phylum_Foraminifera
<i>Himantozoum (Himantozoum) sinuosum</i>	3	0.08	1.00	0.08	TRUE	Bugulidae	Cheilostomatida
<i>Holascus fibulatus</i>	4	0.33	1.00	0.33	TRUE	Euplectellidae	Lyssacinosida
<i>Fungiacyathus (Bathyactis) marenzelleri</i>	4	0.19	1.00	0.19	TRUE	Fungiacyathidae	Scleractinia
<i>Umbellula magniflora</i>	4	0.19	1.00	0.19	TRUE	Umbellulidae	Pennatulacea
<i>Bathydorus laevis</i>	4	0.18	1.00	0.18	TRUE	Rossellidae	Lyssacinosida
<i>Umbellula lindahli</i>	4	0.46	0.38	0.17	FALSE	Umbellulidae	Pennatulacea

Species	Bioregion	Ai	Fi	IndVal	Endemism	Family	Order
<i>Leptopenus discus</i>	4	0.14	1.00	0.14	TRUE	Micrabaciidae	Scleractinia
<i>Umbellula carpenteri</i>	4	0.13	1.00	0.13	TRUE	Umbellulidae	Pennatulacea
<i>Cladorhiza moruliformis</i>	4	0.13	1.00	0.13	TRUE	Cladorhizidae	Poecilosclerida
<i>Hyalonema (Cyliconemaoida) solutum</i>	4	0.10	1.00	0.10	TRUE	Hyalonematidae	Amphidiscosida
<i>Hyalonema (Cyliconemaoida) urna</i>	4	0.10	1.00	0.10	TRUE	Hyalonematidae	Amphidiscosida
<i>Epizoanthus chuni</i>	4	0.10	1.00	0.10	TRUE	Epizoanthidae	Zoantharia
<i>Placopogon solutum</i>	4	0.10	1.00	0.10	TRUE	Euplectellidae	Lyssacosida
<i>Hyalonema (Coscinonema) indicum</i>	4	0.10	1.00	0.10	TRUE	Hyalonematidae	Amphidiscosida
<i>Umbellapathes tenuis</i>	4	0.08	1.00	0.08	TRUE	Schizopathidae	Antipatharia
<i>Bathygorgia abyssicola</i>	4	0.07	1.00	0.07	TRUE	Isididae	Alcyonacea
<i>Bathygorgia tasmaniensis</i>	4	0.07	1.00	0.07	TRUE	Isididae	Alcyonacea
<i>Bathydorus spinosus</i>	4	0.07	1.00	0.07	TRUE	Rosellidae	Lyssacosida
<i>Chondrocladia (Meliiderma) stipitata</i>	4	0.07	1.00	0.07	TRUE	Cladorhizidae	Poecilosclerida
<i>Cladorhiza tridentata</i>	4	0.07	1.00	0.07	TRUE	Cladorhizidae	Poecilosclerida
<i>Cornucopina infundibulata</i>	4	0.07	1.00	0.07	TRUE	Bugulidae	Cheilostomatida

109 Table S2. List of the top 20 indicator species for each of the nine nested subregions detected at the second hierarchical level of the
 110 bioregionalization. *Ai*: affinity of a species to its region; *Fi*: fidelity of species to its region; *IndVal*: indicator value (calculated as $Ai \cdot Fi$).

Species	Subregion	Ai	Fi	IndVal	Endemism	Family	Order
<i>Lobophyllia hemprichii</i>	1.1	0.55	0.98	0.54	FALSE	Lobophylliidae	Scleractinia
<i>Galaxea fascicularis</i>	1.1	0.56	0.93	0.52	FALSE	Euphylliidae	Scleractinia
<i>Favites pentagona</i>	1.1	0.56	0.93	0.52	FALSE	Merulinidae	Scleractinia
<i>Fungia fungites</i>	1.1	0.56	0.90	0.50	FALSE	Fungiidae	Scleractinia
<i>Pavona varians</i>	1.1	0.55	0.91	0.50	FALSE	Agariciidae	Scleractinia
<i>Porites lutea</i>	1.1	0.54	0.93	0.50	FALSE	Poritidae	Scleractinia
<i>Platygyra daedalea</i>	1.1	0.54	0.93	0.50	FALSE	Merulinidae	Scleractinia
<i>Astrea curta</i>	1.1	0.50	0.98	0.49	FALSE	Merulinidae	Scleractinia
<i>Cyphastrea microphthalma</i>	1.1	0.53	0.92	0.49	FALSE	Merulinidae	Scleractinia
<i>Goniastrea pectinata</i>	1.1	0.54	0.89	0.48	FALSE	Merulinidae	Scleractinia
<i>Leptastrea transversa</i>	1.1	0.51	0.94	0.47	FALSE	Leptastreidae	Scleractinia
<i>Pavona explanulata</i>	1.1	0.48	0.98	0.47	FALSE	Agariciidae	Scleractinia
<i>Pocillopora verrucosa</i>	1.1	0.55	0.85	0.47	FALSE	Pocilloporidae	Scleractinia
<i>Porites lobata</i>	1.1	0.47	0.98	0.46	FALSE	Poritidae	Scleractinia
<i>Pocillopora grandis</i>	1.1	0.48	0.96	0.46	FALSE	Pocilloporidae	Scleractinia
<i>Galaxea astreata</i>	1.1	0.48	0.96	0.46	FALSE	Euphylliidae	Scleractinia
<i>Echinopora lamellosa</i>	1.1	0.48	0.96	0.46	FALSE	Merulinidae	Scleractinia
<i>Platygyra pini</i>	1.1	0.46	0.98	0.45	FALSE	Merulinidae	Scleractinia
<i>Pocillopora damicornis</i>	1.1	0.54	0.83	0.45	FALSE	Pocilloporidae	Scleractinia
<i>Psammocora contigua</i>	1.1	0.49	0.91	0.44	FALSE	Psammocoridae	Scleractinia
<i>Flabellum magnificum</i>	1.2	0.56	0.81	0.45	FALSE	Flabellidae	Scleractinia
<i>Stylobates loisetteae</i>	1.2	0.47	0.92	0.43	FALSE	Actiniidae	Actiniaria
<i>Flabellum (Flabellum) magnificum</i>	1.2	0.52	0.76	0.39	FALSE	Flabellidae	Scleractinia

Species	Subregion	Ai	Fi	IndVal	Endemism	Family	Order
<i>Flabellum (Ulocyathus) hoffmeisteri</i>	1.2	0.43	0.65	0.28	FALSE	Flabellidae	Scleractinia
<i>Deltocyathus magnificus</i>	1.2	0.50	0.45	0.23	FALSE	Deltocyathidae	Scleractinia
<i>Rhombopsammia niphada</i>	1.2	0.30	0.70	0.21	FALSE	Micrabaciidae	Scleractinia
<i>Caryophyllia (Caryophyllia) grandis</i>	1.2	0.34	0.62	0.21	FALSE	Caryophylliidae	Scleractinia
<i>Stephanocyathus (Acinocyathus) explanans</i>	1.2	0.39	0.53	0.21	FALSE	Caryophylliidae	Scleractinia
<i>Flabellum (Flabellum) lamellulosum</i>	1.2	0.34	0.58	0.20	FALSE	Flabellidae	Scleractinia
<i>Stephanocyathus explanans</i>	1.2	0.43	0.46	0.20	FALSE	Caryophylliidae	Scleractinia
<i>Madrepora oculata</i>	1.2	0.47	0.41	0.19	FALSE	Oculinidae	Scleractinia
<i>Fungiacyathus (Fungiacyathus) stephanus</i>	1.2	0.29	0.59	0.17	FALSE	Fungiacyathidae	Scleractinia
<i>Asterometra cristata</i>	1.2	0.17	1.00	0.17	TRUE	Asterometridae	Comatulida
<i>Caryophyllia grandis</i>	1.2	0.34	0.50	0.17	FALSE	Caryophylliidae	Scleractinia
<i>Hyalonema (Cyliconema) lanceolata</i>	1.2	0.25	0.67	0.17	FALSE	Hyalonematidae	Amphidiscosida
<i>Balanophyllia (Balanophyllia) generatrix</i>	1.2	0.21	0.72	0.15	FALSE	Dendrophylliidae	Scleractinia
<i>Euplectella aspergillum</i>	1.2	0.21	0.72	0.15	FALSE	Euplectellidae	Lyssacinosa
<i>Caryophyllia (Caryophyllia) atlantica</i>	1.2	0.21	0.71	0.15	FALSE	Caryophylliidae	Scleractinia
<i>Truncatoflabellum paripavoninum</i>	1.2	0.21	0.71	0.15	FALSE	Flabellidae	Scleractinia
<i>Scleranthelia thomsoni</i>	1.3	0.30	1.00	0.30	TRUE	Clavulariidae	Alcyonacea
<i>Narella gilchristi</i>	1.3	0.40	0.67	0.27	FALSE	Primnoidae	Alcyonacea
<i>Kraussina rubra</i>	1.3	0.30	0.86	0.26	FALSE	Kraussinidae	Terebratulida
<i>Bathytelesto tubuliporoides</i>	1.3	0.25	1.00	0.25	TRUE	Clavulariidae	Alcyonacea
<i>Dactylostega prima</i>	1.3	0.25	1.00	0.25	TRUE	Foveolariidae	Cheilostomatida
<i>Sphenotrochus gilchristi</i>	1.3	0.25	1.00	0.25	TRUE	Turbinoliidae	Scleractinia
<i>Isodictya grandis</i>	1.3	0.25	1.00	0.25	TRUE	Isodictyidae	Poecilosclerida

Species	Subregion	Ai	Fi	IndVal	Endemism	Family	Order	
<i>Smitticellaria tectiformis</i>		1.3	0.25	0.83	0.21	FALSE	Cellariidae	Cheilostomatida
<i>Virgularia schultzei</i>		1.3	0.25	0.82	0.20	FALSE	Virgulariidae	Pennatulacea
<i>Arachnopusia corniculata</i>		1.3	0.20	1.00	0.20	TRUE	Arachnopusiidae	Cheilostomatida
<i>Adeonella decipiens</i>		1.3	0.20	1.00	0.20	TRUE	Adeonidae	Cheilostomatida
<i>Foveolaria imbricata</i>		1.3	0.20	1.00	0.20	TRUE	Foveolariidae	Cheilostomatida
<i>Lepidopora diffusa</i>		1.3	0.20	1.00	0.20	TRUE	Stylasteridae	Anthoathecata
<i>Astromuricea fusca</i>		1.3	0.20	1.00	0.20	TRUE	Plexauridae	Alcyonacea
<i>Escharoides contorta</i>		1.3	0.20	1.00	0.20	TRUE	Exochellidae	Cheilostomatida
<i>Adeonella abdita</i>		1.3	0.20	1.00	0.20	TRUE	Adeonidae	Cheilostomatida
<i>Aspidostoma livida</i>		1.3	0.20	1.00	0.20	TRUE	Aspidostomatidae	Cheilostomatida
<i>Calyptotheca nivea</i>		1.3	0.20	1.00	0.20	TRUE	Lanceoporidae	Cheilostomatida
<i>Macropora africana</i>		1.3	0.20	1.00	0.20	TRUE	Macroporidae	Cheilostomatida
<i>Micropora similis</i>		1.3	0.20	1.00	0.20	TRUE	Microporidae	Cheilostomatida
<i>Magellania flavescens</i>		1.5	0.27	0.88	0.24	FALSE	Terebratellidae	Terebratulida
<i>Cancellothyris hedleyi</i>		1.5	0.48	0.50	0.24	FALSE	Cancellothyrididae	Terebratulida
<i>Sycozoa murrayi</i>		1.5	0.20	0.87	0.18	FALSE	Holozoidae	Aplousobranchia
<i>Holopsamma laminaefavosa</i>		1.5	0.24	0.68	0.16	FALSE	Microcionidae	Poecilosclerida
<i>Actinia tenebrosa</i>		1.5	0.20	0.74	0.15	FALSE	Actiniidae	Actiniaria
<i>Halocynthia dumosa</i>		1.5	0.14	1.00	0.14	TRUE	Pyuridae	Stolidobranchia
<i>Botrylloides leachii</i>		1.5	0.28	0.50	0.14	FALSE	Styelidae	Stolidobranchia
<i>Trididemnum titanium</i>		1.5	0.13	1.00	0.13	TRUE	Didemnidae	Aplousobranchia
<i>Herdmania momus</i>		1.5	0.31	0.42	0.13	FALSE	Pyuridae	Stolidobranchia
<i>Polycarpa viridis</i>		1.5	0.21	0.53	0.11	FALSE	Styelidae	Stolidobranchia
<i>Botryllus schlosseri</i>		1.5	0.18	0.61	0.11	FALSE	Styelidae	Stolidobranchia
<i>Stephanocyathus platypus</i>		1.5	0.13	0.79	0.11	FALSE	Caryophylliidae	Scleractinia
<i>Spirobranchus taeniatus</i>		1.5	0.17	0.60	0.10	FALSE	Serpulidae	Sabellida

Species	Subregion	Ai	Fi	IndVal	Endemism	Family	Order	
<i>Polycarpa rigida</i>		1.5	0.10	1.00	0.10	TRUE	Styelidae	Stolidobranchia
<i>Polycarpa flava</i>		1.5	0.14	0.56	0.08	FALSE	Styelidae	Stolidobranchia
<i>Scuticella plagiostoma</i>		1.5	0.11	0.74	0.08	FALSE	Catenicellidae	Cheilostomatida
<i>Anthothoe albocincta</i>		1.5	0.07	1.00	0.07	TRUE	Sagartiidae	Actiniaria
<i>Synoicum citrum</i>		1.5	0.07	1.00	0.07	TRUE	Polyclinidae	Aplousobranchia
<i>Aplidium laticum</i>		1.5	0.07	1.00	0.07	TRUE	Polyclinidae	Aplousobranchia
<i>Rhopalaea meridionalis</i>		1.5	0.07	1.00	0.07	TRUE	Diazonidae	Aplousobranchia
<i>Astrodia tenuispina</i>		1.12	0.40	0.84	0.33	FALSE	Asteronychidae	Euryalida
<i>Caryophyllia (Caryophyllia) planilamellata</i>		1.12	0.53	0.54	0.29	FALSE	Caryophylliidae	Scleractinia
<i>Caryophyllia planilamellata</i>		1.12	0.53	0.47	0.25	FALSE	Caryophylliidae	Scleractinia
<i>Actinernus elongatus</i>		1.12	0.38	0.63	0.24	FALSE	Actinernidae	Actiniaria
<i>Callogorgia flabellum</i>		1.12	0.23	0.75	0.17	FALSE	Primnoidae	Alcyonacea
<i>Paracalliactis rosea</i>		1.12	0.15	1.00	0.15	TRUE	Hormathiidae	Actiniaria
<i>Triadopathes triadocrada</i>		1.12	0.15	1.00	0.15	TRUE	Stylopathidae	Antipatharia
<i>Clavularia ramosa</i>		1.12	0.15	0.65	0.10	FALSE	Clavulariidae	Alcyonacea
<i>Umbellula pellucida</i>		1.12	0.23	0.35	0.08	FALSE	Umbellulidae	Pennatulacea
<i>Laminatubus paulbrooksi</i>		1.12	0.08	1.00	0.08	TRUE	Serpulidae	Sabellida
<i>Neovermilia sphaeropomata</i>		1.12	0.08	1.00	0.08	TRUE	Serpulidae	Sabellida
<i>Actinoscyphia plebeia</i>		1.12	0.08	1.00	0.08	TRUE	Actinoscyphiidae	Actiniaria
<i>Actinernus michaelsarsi</i>		1.12	0.08	1.00	0.08	TRUE	Actinernidae	Actiniaria
<i>Monactis vestita</i>		1.12	0.08	1.00	0.08	TRUE	Hormathiidae	Actiniaria
<i>Cornucopina grandis</i>		1.12	0.15	0.51	0.08	FALSE	Bugulidae	Cheilostomatida
<i>Flabellum australe</i>		1.12	0.08	1.00	0.08	TRUE	Flabellidae	Scleractinia
<i>Anthoptilum grandiflorum</i>		1.12	0.08	0.31	0.02	FALSE	Anthoptilidae	Pennatulacea
<i>Tethya irisae</i>		1.12	0.08	0.25	0.02	FALSE	Tethyidae	Tethyida

Species	Subregion	Ai	Fi	IndVal	Endemism	Family	Order
<i>Dendrobrachia paucispina</i>	1.23	0.40	1.00	0.40	TRUE	Dendrobrachiidae	Alcyonacea
<i>Parantipathes helicosticha</i>	1.23	0.39	0.56	0.22	FALSE	Schizopathidae	Antipatharia
<i>Leiopathes acanthophora</i>	1.23	0.20	1.00	0.20	TRUE	Leiopathidae	Antipatharia
<i>Solenosmilia variabilis</i>	1.23	0.61	0.23	0.14	FALSE	Caryophylliidae	Scleractinia
<i>Farrea ritchieae</i>	1.23	0.10	1.00	0.10	TRUE	Farreidae	Sceptrulophora
<i>Walteria flemmingi</i>	1.23	0.20	0.50	0.10	FALSE	Euplectellidae	Lyssacinosa
<i>Pennatula indica</i>	1.23	0.10	0.50	0.05	FALSE	Pennatulidae	Pennatulacea
<i>Trissopathes tristicha</i>	1.23	0.10	0.30	0.03	FALSE	Cladopathidae	Antipatharia
<i>Farrea occa</i>	1.23	0.10	0.15	0.02	FALSE	Farreidae	Sceptrulophora
<i>Ctenocidaris (Eurocidaris) nutrix</i>	2.1	0.85	0.71	0.60	FALSE	Ctenocidaridae	Cidaroida
<i>Plicatellopsis antarctica</i>	2.1	0.52	0.88	0.46	FALSE	Suberitidae	Suberitida
<i>Pemphixina pyxidata</i>	2.1	0.44	0.93	0.41	FALSE	Hemithirididae	Rhynchonellida
<i>Tentorium papillatum</i>	2.1	0.30	1.00	0.30	TRUE	Polymastiidae	Polymastiida
<i>Aerothyris kerguelensis</i>	2.1	0.48	0.61	0.30	FALSE	Terebratellidae	Terebratulida
<i>Myxilla (Myxilla) basimucronata</i>	2.1	0.29	1.00	0.29	TRUE	Myxillidae	Poecilosclerida
<i>Myxilla basimucronata</i>	2.1	0.29	1.00	0.29	TRUE	Myxillidae	Poecilosclerida
<i>Antarctotetilla leptoderma</i>	2.1	0.45	0.65	0.29	FALSE	Tetillidae	Tetractinellida
<i>Promachocrinus kerguelensis</i>	2.1	0.41	0.66	0.27	FALSE	Antedonidae	Comatulida
<i>Myxilla (Ectomyxilla) kerguelensis</i>	2.1	0.26	1.00	0.26	TRUE	Myxillidae	Poecilosclerida
<i>Megaciella pilosa</i>	2.1	0.30	0.88	0.26	FALSE	Acarnidae	Poecilosclerida
<i>Hymedesmia (Hymedesmia) mariondufresni</i>	2.1	0.26	1.00	0.26	TRUE	Hymedesmiidae	Poecilosclerida
<i>Tedania (Tedaniopsis) charcoti</i>	2.1	0.27	0.89	0.24	FALSE	Tedaniidae	Poecilosclerida
<i>Tedania charcoti</i>	2.1	0.27	0.89	0.24	FALSE	Tedaniidae	Poecilosclerida
<i>Bubaris vermiculata</i>	2.1	0.26	0.82	0.21	FALSE	Bubaridae	Bubarida
<i>Tetilla coronida</i>	2.1	0.23	0.87	0.20	FALSE	Tetillidae	Tetractinellida

Species	Subregion	Ai	Fi	IndVal	Endemism	Family	Order
<i>Stylocordyla borealis</i>	2.1	0.33	0.57	0.19	FALSE	Stylocordylidae	Suberitida
<i>Iophon radiatum</i>	2.1	0.19	1.00	0.19	TRUE	Acarnidae	Poecilosclerida
<i>Isodictya kerguelenensis</i>	2.1	0.18	0.84	0.16	FALSE	Isodictyidae	Poecilosclerida
<i>Homaxinella balfourensis</i>	2.1	0.15	1.00	0.15	TRUE	Suberitidae	Suberitida
<i>Astrotoma agassizii</i>	2.3	0.74	0.47	0.35	FALSE	Gorgonocephalidae	Euryalida
<i>Gorgonocephalus chilensis</i>	2.3	0.76	0.34	0.26	FALSE	Gorgonocephalidae	Euryalida
<i>Magellania joubini</i>	2.3	0.10	1.00	0.10	TRUE	Terebratellidae	Terebratulida
<i>Proagnesia depressa</i>	3.1	0.67	0.76	0.51	FALSE	Agneziidae	Phlebobranchia
<i>Styela ordinaria</i>	3.1	0.33	1.00	0.33	TRUE	Styelidae	Stolidobranchia
<i>Umbellula thomsoni</i>	3.1	0.39	0.79	0.31	FALSE	Umbellulidae	Pennatulacea
<i>Styela calva</i>	3.1	0.41	0.75	0.31	FALSE	Styelidae	Stolidobranchia
<i>Abyssopathes lyra</i>	3.1	0.41	0.56	0.23	FALSE	Schizopathidae	Antipatharia
<i>Bathypathes patula</i>	3.1	0.54	0.41	0.22	FALSE	Schizopathidae	Antipatharia
<i>Styela charcoti</i>	3.1	0.21	1.00	0.21	TRUE	Styelidae	Stolidobranchia
<i>Bathystyeloides enderbyanus</i>	3.1	0.32	0.49	0.16	FALSE	Styelidae	Stolidobranchia
<i>Scleroptilum grandiflorum</i>	3.1	0.14	0.52	0.07	FALSE	Scleroptilidae	Pennatulacea
<i>Aplysina holda</i>	3.1	0.07	1.00	0.07	TRUE	Aplysinidae	Verongiida
<i>Adagnesia fissa</i>	3.1	0.07	1.00	0.07	TRUE	Agneziidae	Phlebobranchia

2. List of GBIF occurrence data downloads used for analysis

112 GBIF.org (14 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.9gyvnr>
113 GBIF.org (14 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.5cnauy>
114 GBIF.org (14 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.tpkv6f>
115 GBIF.org (14 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.g7trjv>
116 GBIF.org (14 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.qmg7mm>
117 GBIF.org (14 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.532e4a>
118 GBIF.org (14 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.nfwf4e>
119 GBIF.org (14 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.ujfmwm>
120 GBIF.org (14 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.p3fdas>
121 GBIF.org (14 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.8x49vt>
122 GBIF.org (14 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.s528ag>
123 GBIF.org (07 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.csn8ss>
124 GBIF.org (07 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.4sup3k>
125 GBIF.org (07 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.x3psvp>
126 GBIF.org (07 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.8utndr>
127 GBIF.org (07 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.9db6ad>
128 GBIF.org (07 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.8sjem7>
129 GBIF.org (07 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.p88rng>
130 GBIF.org (07 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.7jckj5>
131 GBIF.org (07 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.dun29p>
132 GBIF.org (07 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.5jmrg4>
133 GBIF.org (07 April 2021) GBIF Occurrence Download <https://doi.org/10.15468/dl.psarr7>
134 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.8kygyt>
135 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.f6hkv7>
136 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.29bzd2>
137 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.qx93xv>
138 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.amhv2z>
139 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.jex2bf>
140 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.kc6f2c>
141 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.2eptnr>
142 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.grub32>
143 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.y5bpdj>
144 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.dhv3xd>
145 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.984ku6>
146 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.xvk58n>
147 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.jz8e93>
148 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.rb2jgj>
149 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.u96fx3>
150 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.nhd8sd>
151 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.ge6bqe>
152 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.s82sx7>
153 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.2nks2p>
154 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.zesz8a>
155 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.vhg2c5>
156 GBIF.org (09 November 2020) GBIF Occurrence Download <https://doi.org/10.15468/dl.em7j8c>
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