

Supplementary Tables S1-S4

Title: "Environmental variability and biodiversity of megabenthos on the Hebrides Terrace Seamount (Northeast Atlantic)"

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Supplementary Table S1: List of all megafauna observed on the Hebrides Terrace Seamount during the ROV surveys

Group	Species: Total = 109 taxonomically distinct megafaunal species
Xenophyophora	<i>Syringammina fragilissima</i> Brady, 1883
Porifera	<i>Aphrocallistes beatrix</i> Gray, 1858 ? <i>Asconema</i> sp. <i>Hymedesmia</i> cf (<i>Hymedesmia</i>) <i>curvichela</i> Lundbeck, 1910 ? <i>Periphragella lusitanica</i> Topsent, 1890 ? <i>Erylus papillatus</i> Topsent, 1927 ? <i>Farrea foliascens</i> Topsent, 1906 ? <i>Farrea occa occa</i> Bowerbank, 1862 ? <i>Geodia atlantica</i> Green encrusted sponges ? <i>Halichondria (Eumastia) sitiens</i> (Schmidt, 1870) ? <i>Hamacantha</i> sp. <i>Hexadella dedritifera</i> Topsent, 1913 <i>Mycale (Mycale) lingua</i> (Bowerbank, 1866) ? <i>Nodastrella asconemaoida</i> Dohrmann, Göcke, Reed & Janussen, 2012 cf <i>Phakellia</i> sp. Red encrusted sponges Spheric white sponge ? <i>Stelletta tuberosa</i> (Topsent, 1892) ? <i>Tedania (Tedania) suctoria</i> (Schmidt, 1870) ? <i>Tretodictyum tubulosum</i> Schulze, 1886 White sponge sp. 1 White sponge sp. 2

Cnidaria

Bathypathes sp.
Bright Orange Anemone
cf *Acanthogorgia* sp.
cf *Isidella* indet.
Clavulariidae indet.
Epizoanthus sp.
Kophobelemnon sp.
large Isididae indet.
Lepidisis sp. 1
Orange solitary coral
Paramuricea biscaya Grasshoff, 1977
Paramuricea sp. 2
Parantipathes hirondelle Molodtsova, 2006
Pennatulacea indet.
Phanopathes sp.
Pink solitary cup coral
Red Anemone sp.
Red sea pen
Red solitary coral
Red tube forming anemone sp.
Red zoanthid
Solenosmilia variabilis Duncan, 1873
Stauropathes punctata (Roule, 1905)
Stichopathes cf *abyssicola* Roule, 1902
Umbellula lindahli Kölliker, 1875
White anemone sp.1
White anemone sp. 2

Bryozoa

encrusting bryozoan indet. sp.

Mollusca

Gastropoda
Muusoctopus normani (Massy, 1907)
Scallop

Brachiopoda	Brachiopoda
Crustacea	Barnacle Hermit crab sp. 1 Hermit crab sp. 2 Shrimp Squat lobster
Pycnogonida	<i>Colossendeis arcuata</i> A. Milne-Edwards, 1885
Polychaeta	Polychaete tube Sabellid worm
Echinodermata	Asteroid sp. 1 Asteroid sp. 2 Brisingiid sp. 1 Brisingiid sp. 2 <i>Cidaris</i> sp. Crinoid 1 Crinoid 2 Crinoid 3 Crinoid 4 Crinoid 5 Ophiuroida <i>Pentametrocrinus atlanticus</i> (Perrier, 1883) Red echinoid sp. Sea cucumber White asteroid sp White echinoid sp. Yellow asteroid sp. Yellow long stalked crinoid
Tunicata	Tunicata indet. sp.
Vertebrata	Anguilliformes indet.

Gadiformes indet.
Halosauridae indet.
Lepidion eques (Günther, 1887)
Macrourinae indet. sp. 1
Macrourinae indet. sp. 2
Macrourinae indet. sp. 3
Neocyttus helgae (Holt & Byrne, 1908)
Pisces indet. sp. 1
Pisces indet. sp. 2
Pisces indet. sp. 3
Rajella bathyphila (Holt & Byrne, 1908)
Synaphobranchus kaupii Johnson, 1862

Indeterminate

Indet. sp. 1
Indet. sp. 2 (white hydroid- like organism)
Indet. sp. 3
Indet. sp. 4
Indet. sp. 5
Indet. sp. 6
Indet. sp. 7
Indet. sp. 8
Indet. sp. 9
Indet. sp. 10
Indet. sp. 11
Indet. sp. 12
Indet. sp. 13
Indet. sp. 14 (cf *Anthomastus*)

Supplementary Table S2: ANOSIM and SIMPER results of community dissimilarity between categories of substratum and oceanographic variability. Statistical significance was set at $p < 0.05$; (equivalent p-value calculated using the significance level / 100).

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SUBSTRATUM

ANOSIM

Global Test

Sample statistic (Global R): 0.319

Significance level of sample statistic: 0.1%

Number of permutations: 999 (Random sample from a large number)

Number of permuted statistics greater than or equal to Global R: 0

Pairwise Tests

Groups	R Statistic	Significance Level %	Possible Permutations	Actual Permutations	Number >= Observed
Coarse sand, Cobble	0.257	0.1	Very large	999	0
Coarse sand, Bedrock	0.555	0.1	Very large	999	0
Coarse sand, Coral framework	0.621	0.1	Very large	999	0
Coarse sand, Very coarse gravel	0.386	0.1	Very large	999	0
Cobble, Bedrock	-0.058	88.8	Very large	999	887
Cobble, Coral framework	0.18	0.1	Very large	999	0
Cobble, Very coarse gravel	0.017	40	Very large	999	399
Bedrock, Coral framework	0.113	1.4	Very large	999	13
Bedrock, Very coarse gravel	0.303	0.1	Very large	999	0
Coral framework, Very coarse gravel	0.489	0.1	Very large	999	0

SIMPER

Group Coarse sand (n=123; 1281-1694 m water depth)

Average similarity: 37.37

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Syringammina fragilissima	0.92	18.86	1.85	50.48	50.48
?Periphragella lusitanica	0.54	5.55	0.59	14.84	65.32
Barnacle	0.37	2.41	0.38	6.44	71.76
Ophiuroid indet.	0.36	2.12	0.36	5.68	77.45
Red tube-forming anemone sp.	0.33	2.06	0.34	5.52	82.97
Red encrusted sponge sp.	0.28	1.54	0.28	4.13	87.1
Hexadella dedritifera	0.26	1.01	0.26	2.7	89.8
Cidarid sp.	0.23	0.96	0.22	2.56	92.36

Group Cobble (n=91; 1272-1695 m water depth)

Average similarity: 33.99

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Syringammina fragilissima	0.68	5.83	0.84	17.14	17.14
?Periphragella lusitanica	0.65	4.57	0.81	13.45	30.59
Hexadella dedritifera	0.62	3.87	0.75	11.39	41.98
Ophiuroid indet.	0.59	3.58	0.69	10.52	52.5
Hamacantha sp.	0.57	3.56	0.64	10.48	62.97
Stichopathes cf abyssicola	0.45	2.05	0.48	6.03	69
Green encrusted sponge sp.	0.4	1.7	0.42	5.01	74.01
Bright orange anemone	0.36	1.51	0.36	4.44	78.45
Red tube-forming anemone sp.	0.29	1.03	0.29	3.04	81.49
Hymedesmia cf (Hymedesmia) curvichela	0.33	1	0.33	2.95	84.44
Solenosmilia variabilis	0.3	0.83	0.31	2.46	86.9
Crinoid 1	0.28	0.66	0.29	1.94	88.84
Orange solitary coral	0.24	0.6	0.23	1.76	90.6

Group Bedrock (n=27; 1281-1694 m water depth)

Average similarity: 50.94

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Hexadella dedritifera	0.96	7.3	2.98	14.33	14.33
Hamacantha sp.	0.89	6.35	1.78	12.46	26.8
Stichopathes cf abyssicola	0.85	5.37	1.56	10.55	37.34
Ophiuroid indet.	0.81	5.01	1.34	9.83	47.17
?Periphragella lusitanica	0.74	4.02	1.06	7.88	55.06
Green encrusted sponge sp.	0.7	3.63	0.95	7.12	62.18
Red solitary coral	0.59	3	0.7	5.89	68.07
Orange solitary coral	0.59	2.86	0.7	5.6	73.67
Tunicata indet.	0.56	2.14	0.64	4.2	77.87
Hymedesmia cf (Hymedesmia) curvichela	0.52	2.04	0.58	4	81.87
Solenosmilia variabilis	0.52	1.94	0.59	3.8	85.67
Crinoid 1	0.52	1.88	0.58	3.69	89.36
Bright orange anemone	0.37	0.99	0.38	1.94	91.3

Group Coral framework (n=64; 1365-1654 m water depth)

Average similarity: 45.96

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Hexadella dedritifera	0.95	6.94	2.65	15.09	15.09
?Periphragella lusitanica	0.92	6.56	2.07	14.28	29.37
Solenosmilia variabilis	0.88	5.65	1.68	12.29	41.66
Ophiuroid indet.	0.88	5.62	1.66	12.22	53.88
Tunicata indet.	0.7	3.52	0.95	7.65	61.54
Crinoid 1	0.64	2.84	0.81	6.17	67.71
Aphrocallistes beatrix	0.47	1.42	0.52	3.1	70.81

Stichopathes cf abyssicola	0.44	1.33	0.47	2.88	73.69
Syringammina fragilissima	0.41	1.19	0.43	2.58	76.27
cf Isidella indet.	0.42	1.13	0.45	2.45	78.72
Hamacantha sp.	0.39	1.06	0.41	2.3	81.02
Red solitary coral	0.38	0.99	0.39	2.14	83.16
Green encrusted sponge sp.	0.38	0.92	0.39	2	85.16
Mycale lingua	0.36	0.86	0.37	1.86	87.02
Hymesdesmia cf (Hymesdesmia) curvichela	0.33	0.75	0.34	1.63	88.66
Spheric white sponge	0.31	0.64	0.32	1.39	90.05

Group Very coarse gravel (n=14; 1388-1592 m water depth)

Average similarity: 34.67

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
?Periphragella lusitanica	0.71	7.8	0.79	22.51	22.51
Green encrusted sponge sp.	0.71	5.73	0.94	16.52	39.03
Hamacantha sp.	0.64	4.32	0.78	12.45	51.47
Hexadella dedritifera	0.64	4.15	0.79	11.96	63.43
Ophiuroid indet.	0.57	4.05	0.62	11.7	75.13
Bright orange anemone	0.43	1.73	0.44	5	80.13
Stichopathes cf abyssicola	0.36	1.15	0.34	3.32	83.45
Syringammina fragilissima	0.29	0.94	0.25	2.71	86.16
Red tube-forming anemone sp.	0.29	0.89	0.25	2.57	88.73
Red encrusted sponge sp.	0.29	0.74	0.26	2.14	90.86

Groups Coarse sand & Cobble

Average dissimilarity = 71.31

Species	Group Coarse sand Frequency	Group Cobble Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
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Hexadella dedritifera	0.26	0.62	4.12	1.03	5.77	5.77
Hamacantha sp.	0.24	0.57	4.1	0.97	5.75	11.53
Ophiuroid indet.	0.36	0.59	4.03	0.95	5.65	17.17
?Periphragella lusitanica	0.54	0.65	3.98	0.86	5.58	22.76
Red tube-forming anemone sp.	0.33	0.29	3.39	0.79	4.76	27.52
Bright orange anemone	0.2	0.36	3.26	0.76	4.57	32.08
Barnacle	0.37	0.21	3.26	0.77	4.57	36.65
Stichopathes cf abyssicola	0.05	0.45	3.19	0.85	4.47	41.12
Green encrusted sponge sp.	0.05	0.4	2.96	0.78	4.15	45.27
Red encrusted sponge sp.	0.28	0.21	2.88	0.71	4.03	49.31
Syringammina fragilissima	0.92	0.68	2.79	0.61	3.91	53.22
Hymesdesmia cf (Hymesdesmia) curvichela	0.15	0.33	2.64	0.73	3.71	56.93
Orange solitary coral	0.18	0.24	2.45	0.65	3.44	60.37
Solenosmilia variabilis	0.06	0.3	2.13	0.66	2.98	63.35
Red solitary coral	0.09	0.24	2.01	0.58	2.82	66.17
Cidarid sp.	0.23	0.08	2	0.56	2.8	68.97
Crinoid 1	0.02	0.28	1.79	0.63	2.51	71.48
Pentametrocrinus atlanticus	0.02	0.18	1.22	0.48	1.71	73.19
Spheric white sponge	0.04	0.15	1.18	0.44	1.66	74.85
Tunicata indet.	0.02	0.17	1.13	0.47	1.58	76.43
Red anemone sp.	0.02	0.11	1.13	0.35	1.58	78.01
Pink solitary cup coral	0.05	0.09	0.91	0.36	1.28	79.29
Mycale lingua	0.06	0.09	0.85	0.38	1.19	80.48
Hermit crab sp. 2	0.03	0.08	0.84	0.32	1.18	81.65
White echinoid sp.	0.01	0.09	0.66	0.31	0.92	82.57
Red sea pen	0.02	0.07	0.6	0.27	0.84	83.42
Shrimp	0.02	0.07	0.58	0.28	0.82	84.24
Erylus papillatus	0.02	0.09	0.58	0.33	0.81	85.04
Brachiopods	0.02	0.05	0.54	0.28	0.76	85.81
White sponge sp. 2	0	0.08	0.54	0.27	0.76	86.56

White sponge sp. 1	0.01	0.08	0.53	0.29	0.75	87.31
Asteroid sp. 1	0.01	0.08	0.52	0.29	0.72	88.03
Aphrocallistes beatrix	0.01	0.08	0.51	0.29	0.72	88.75
Bathypathes sp.	0	0.07	0.47	0.26	0.65	89.4
Mystery sp. 2 (white hydroid-like organism)	0.03	0.03	0.46	0.25	0.65	90.05

Groups Coarse sand & Bedrock

Average dissimilarity = 78.80

Species	Group Coarse sand Frequency	Group Bedrock Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Stichopathes cf abyssicola	0.05	0.85	4.55	1.97	5.78	5.78
Hexadella dedritifera	0.26	0.96	4.31	1.49	5.47	11.25
Hamacantha sp.	0.24	0.89	4.24	1.43	5.38	16.63
Syringammina fragilissima	0.92	0.22	4.22	1.54	5.35	21.98
Green encrusted sponge sp.	0.05	0.7	3.8	1.39	4.83	26.81
Red solitary coral	0.09	0.59	3.57	1.1	4.54	31.34
Ophiuroid indet.	0.36	0.81	3.45	1.14	4.38	35.72
Orange solitary coral	0.18	0.59	3.36	1.06	4.26	39.99
Tunicata indet.	0.02	0.56	2.97	1.07	3.76	43.75
Hymesdesmia cf (Hymesdesmia) curvichela	0.15	0.52	2.95	0.99	3.75	47.5
Solenosmilia variabilis	0.06	0.52	2.86	1	3.63	51.12
?Periphragella lusitanica	0.54	0.74	2.85	0.93	3.62	54.75
Crinoid 1	0.02	0.52	2.81	1	3.56	58.31
Bright orange anemone	0.2	0.37	2.41	0.82	3.06	61.36
Barnacle	0.37	0.07	2.21	0.75	2.81	64.17
Cidarid sp.	0.23	0.26	2.06	0.74	2.61	66.78
Red encrusted sponge sp.	0.28	0.19	2.04	0.73	2.58	69.37
Red tube-forming anemone sp.	0.33	0	1.88	0.69	2.39	71.75
Aphrocallistes beatrix	0.01	0.3	1.7	0.64	2.15	73.91

Phakellia sp.	0.02	0.3	1.6	0.64	2.03	75.93
Mycale lingua	0.06	0.3	1.57	0.67	1.99	77.92
Shrimp	0.02	0.22	1.32	0.54	1.68	79.6
Pentametrocrinus atlanticus	0.02	0.22	1.3	0.54	1.65	81.25
Bathypathes sp.	0	0.22	1.27	0.53	1.61	82.86
White echinoid sp.	0.01	0.19	1	0.47	1.27	84.13
Pink solitary cup coral	0.05	0.15	1	0.46	1.27	85.4
Spheric white sponge	0.04	0.15	0.83	0.46	1.06	86.46
cf Isidella indet.	0	0.15	0.78	0.41	0.99	87.45
Clavulariidae indet.	0.02	0.11	0.61	0.37	0.77	88.22
Brachiopods	0.02	0.11	0.59	0.38	0.75	88.97
Erylus papillatus	0.02	0.07	0.51	0.3	0.64	89.61
White sponge sp. 1	0.01	0.07	0.48	0.29	0.61	90.22

Groups Cobble & Bedrock

Average dissimilarity = 63.08

Species	Group Cobble Frequency	Group Bedrock Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Syringammina fragilissima	0.68	0.22	2.9	1.15	4.61	4.61
Red solitary coral	0.24	0.59	2.79	1.03	4.42	9.03
Orange solitary coral	0.24	0.59	2.73	1.03	4.33	13.36
Stichopathes cf abyssicola	0.45	0.85	2.68	1.03	4.25	17.6
Green encrusted sponge sp.	0.4	0.7	2.63	1.03	4.17	21.78
Tunicata indet.	0.17	0.56	2.48	1.03	3.94	25.72
Hymesdesmia cf (Hymesdesmia) curvichela	0.33	0.52	2.46	0.96	3.9	29.61
Solenosmilia variabilis	0.3	0.52	2.42	0.97	3.83	33.44
Crinoid 1	0.28	0.52	2.39	0.97	3.79	37.23
Ophiuroid indet.	0.59	0.81	2.29	0.86	3.64	40.87
Hamacantha sp.	0.57	0.89	2.28	0.85	3.61	44.47

Bright orange anemone	0.36	0.37	2.23	0.88	3.54	48.02
?Periphragella lusitanica	0.65	0.74	2.19	0.83	3.47	51.49
Hexadella dedritifera	0.62	0.96	2.12	0.76	3.37	54.85
Aphrocallistes beatrix	0.08	0.3	1.55	0.67	2.45	57.31
Pentametrocrinus atlanticus	0.18	0.22	1.48	0.67	2.34	59.64
Red encrusted sponge sp.	0.21	0.19	1.45	0.66	2.29	61.94
Red tube-forming anemone sp.	0.29	0	1.42	0.62	2.25	64.19
Mycale lingua	0.09	0.3	1.41	0.69	2.24	66.43
Phakellia sp.	0.04	0.3	1.41	0.65	2.23	68.66
Cidaris sp.	0.08	0.26	1.34	0.63	2.12	70.78
Barnacle	0.21	0.07	1.25	0.55	1.99	72.77
Bathypathes sp.	0.07	0.22	1.24	0.58	1.96	74.72
Shrimp	0.07	0.22	1.23	0.58	1.95	76.68
Spheric white sponge	0.15	0.15	1.1	0.57	1.74	78.42
White echinoid sp.	0.09	0.19	1.08	0.55	1.71	80.13
Pink solitary cup coral	0.09	0.15	0.94	0.5	1.49	81.62
cf Isidella indet.	0.03	0.15	0.76	0.44	1.2	82.82
Red anemone sp.	0.11	0.04	0.69	0.38	1.09	83.91
Erylus papillatus	0.09	0.07	0.66	0.4	1.05	84.96
White sponge sp. 1	0.08	0.07	0.64	0.39	1.01	85.98
Brachiopods	0.05	0.11	0.61	0.42	0.97	86.95
Clavulariidae indet.	0.02	0.11	0.55	0.37	0.87	87.82
White Asteroid sp	0.05	0.07	0.51	0.36	0.8	88.62
Brisingiid sp. 1	0.05	0.07	0.49	0.36	0.78	89.4
White sponge sp. 2	0.08	0.04	0.46	0.34	0.73	90.13

Groups Coarse sand & Coral framework

Average dissimilarity = 79.23

Group Coarse sand

Group Coral framework

Species	Frequency	Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Solenosmilia variabilis	0.06	0.88	4.64	1.95	5.85	5.85
Hexadella dedritifera	0.26	0.95	4.19	1.45	5.28	11.13
Tunicata indet.	0.02	0.7	3.76	1.39	4.74	15.88
Ophiuroid indet.	0.36	0.88	3.49	1.15	4.41	20.29
Syringammina fragilissima	0.92	0.41	3.38	1.07	4.27	24.56
Crinoid 1	0.02	0.64	3.34	1.24	4.22	28.78
?Periphragella lusitanica	0.54	0.92	2.75	0.88	3.47	32.24
Hamacantha sp.	0.24	0.39	2.42	0.83	3.05	35.3
Stichopathes cf abyssicola	0.05	0.44	2.36	0.85	2.98	38.27
Aphrocallistes beatrix	0.01	0.47	2.36	0.92	2.97	41.25
Red solitary coral	0.09	0.38	2.15	0.77	2.71	43.96
Red tube-forming anemone sp.	0.33	0.13	2.14	0.73	2.7	46.67
cf Isidella indet.	0	0.42	2.09	0.82	2.64	49.31
Hymesdesmia cf (Hymesdesmia) curvichela	0.15	0.33	2.06	0.75	2.6	51.91
Barnacle	0.37	0.03	2.05	0.74	2.58	54.49
Green encrusted sponge sp.	0.05	0.38	1.98	0.77	2.5	56.99
Orange solitary coral	0.18	0.31	1.96	0.76	2.48	59.46
Mycale lingua	0.06	0.36	1.95	0.75	2.46	61.93
Red encrusted sponge sp.	0.28	0.13	1.85	0.68	2.34	64.27
Bright orange anemone	0.2	0.17	1.69	0.62	2.13	66.4
Spheric white sponge	0.04	0.31	1.68	0.68	2.11	68.51
Brisingiid sp. 1	0.02	0.28	1.61	0.61	2.04	70.55
Pentametrocrinus atlanticus	0.02	0.28	1.54	0.62	1.94	72.49
Cidarid sp.	0.23	0.06	1.45	0.57	1.82	74.31
Red anemone sp.	0.02	0.23	1.32	0.55	1.67	75.98
Shrimp	0.02	0.22	1.16	0.53	1.46	77.44
White sponge sp. 2	0	0.2	1.14	0.49	1.44	78.88
Asteroid sp. 1	0.01	0.19	1	0.47	1.26	80.14
Clavulariidae indet.	0.02	0.17	0.98	0.46	1.24	81.37

Phakellia sp.	0.02	0.17	0.93	0.46	1.18	82.55
White echinoid sp.	0.01	0.16	0.87	0.42	1.1	83.65
White anemone sp. 1	0.02	0.11	0.69	0.37	0.87	84.52
Erylus papillatus	0.02	0.11	0.68	0.36	0.86	85.37
Hermit crab sp. 1	0.02	0.09	0.58	0.34	0.73	86.11
Parantipathes hirondele	0	0.11	0.54	0.34	0.68	86.79
Brisingiid sp. 2	0	0.11	0.52	0.35	0.66	87.44
Crinoid 4	0	0.11	0.51	0.35	0.64	88.09
Neocyttus helgae	0	0.09	0.5	0.32	0.63	88.71
Stauropathes punctata	0	0.08	0.43	0.28	0.54	89.25
Lepidisis sp. 1	0	0.06	0.39	0.25	0.49	89.74
White sponge sp. 1	0.01	0.06	0.38	0.27	0.49	90.22

Groups Cobble & Coral framework

Average dissimilarity = 66.88

Species	Group Cobble	Group Coral framework				
	Frequency	Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Solenosmilia variabilis	0.3	0.88	3.15	1.25	4.71	4.71
Tunicata indet.	0.17	0.7	2.95	1.22	4.41	9.12
Crinoid 1	0.28	0.64	2.61	1.07	3.91	13.03
Syringammina fragilissima	0.68	0.41	2.57	0.99	3.84	16.87
Hamacantha sp.	0.57	0.39	2.43	0.96	3.64	20.51
Stichopathes cf abyssicola	0.45	0.44	2.31	0.93	3.45	23.96
Ophiuroid indet.	0.59	0.88	2.22	0.82	3.32	27.28
Green encrusted sponge sp.	0.4	0.38	2.19	0.9	3.28	30.55
Hexadella dedritifera	0.62	0.95	2.08	0.76	3.11	33.67
Aphrocallistes beatrix	0.08	0.47	2.06	0.92	3.08	36.74
Hymedesmia cf (Hymedesmia) curvichela	0.33	0.33	2.01	0.84	3.01	39.75
Red solitary coral	0.24	0.38	2.01	0.83	3	42.75

?Periphragella lusitanica	0.65	0.92	1.92	0.72	2.87	45.62
Bright orange anemone	0.36	0.17	1.92	0.78	2.87	48.49
cf Isidella indet.	0.03	0.42	1.82	0.83	2.73	51.22
Orange solitary coral	0.24	0.31	1.8	0.78	2.69	53.9
Mycale lingua	0.09	0.36	1.7	0.76	2.55	56.45
Red tube-forming anemone sp.	0.29	0.13	1.68	0.68	2.51	58.96
Spheric white sponge	0.15	0.31	1.64	0.74	2.45	61.41
Pentametrocrinus atlanticus	0.18	0.28	1.61	0.72	2.4	63.81
Brisingiid sp. 1	0.05	0.28	1.42	0.63	2.13	65.94
Red anemone sp.	0.11	0.23	1.38	0.61	2.07	68.01
Red encrusted sponge sp.	0.21	0.13	1.26	0.6	1.88	69.89
White sponge sp. 2	0.08	0.2	1.16	0.56	1.74	71.62
Shrimp	0.07	0.22	1.11	0.57	1.66	73.29
Barnacle	0.21	0.03	1.05	0.52	1.57	74.86
Asteroid sp. 1	0.08	0.19	1.03	0.54	1.54	76.4
White echinoid sp.	0.09	0.16	0.97	0.51	1.46	77.86
Phakellia sp.	0.04	0.17	0.87	0.48	1.3	79.16
Clavulariidae indet.	0.02	0.17	0.85	0.46	1.28	80.44
Erylus papillatus	0.09	0.11	0.79	0.45	1.18	81.62
White anemone sp. 1	0.03	0.11	0.6	0.38	0.89	82.51
White sponge sp. 1	0.08	0.06	0.57	0.37	0.85	83.35
Cidaris sp.	0.08	0.06	0.55	0.37	0.83	84.18
Parantipathes hirondelle	0.02	0.11	0.53	0.37	0.79	84.97
Hermit crab sp. 1	0.02	0.09	0.51	0.35	0.77	85.74
White Asteroid sp	0.05	0.08	0.49	0.37	0.74	86.47
Neocyttus helgae	0.02	0.09	0.49	0.35	0.73	87.21
Bathypathes sp.	0.07	0.05	0.48	0.33	0.72	87.93
Brisingiid sp. 2	0	0.11	0.45	0.34	0.67	88.6
Stauropathes punctata	0.02	0.08	0.44	0.31	0.66	89.26
Crinoid 4	0	0.11	0.44	0.34	0.66	89.92

Pink solitary cup coral	0.09	0.02	0.42	0.32	0.63	90.55
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Groups Bedrock & Coral framework

Average dissimilarity = 56.08

Species	Group Bedrock Frequency	Group Coral framework Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Hamacantha sp.	0.89	0.39	2.35	1.14	4.19	4.19
Green encrusted sponge sp.	0.7	0.38	2.17	1.07	3.87	8.06
Stichopathes cf abyssicola	0.85	0.44	2.16	1.05	3.86	11.91
Orange solitary coral	0.59	0.31	2.14	1.02	3.82	15.74
Red solitary coral	0.59	0.38	2.1	1	3.74	19.47
Hymesdesmia cf (Hymesdesmia) curvichela	0.52	0.33	1.98	0.98	3.53	23.01
Crinoid 1	0.52	0.64	1.96	0.96	3.5	26.5
Solenosmilia variabilis	0.52	0.88	1.95	0.94	3.49	29.99
Tunicata indet.	0.56	0.7	1.92	0.93	3.42	33.41
Aphrocallistes beatrix	0.3	0.47	1.85	0.95	3.3	36.71
Syringammia fragilissima	0.22	0.41	1.75	0.87	3.11	39.82
Mycale lingua	0.3	0.36	1.65	0.87	2.95	42.77
cf Isidella indet.	0.15	0.42	1.63	0.87	2.91	45.68
Bright orange anemone	0.37	0.17	1.61	0.82	2.87	48.55
Pentametrocrinus atlanticus	0.22	0.28	1.44	0.76	2.57	51.12
Phakellia sp.	0.3	0.17	1.36	0.74	2.43	53.55
Spheric white sponge	0.15	0.31	1.35	0.75	2.41	55.96
Shrimp	0.22	0.22	1.3	0.71	2.33	58.28
?Periphragella lusitanica	0.74	0.92	1.25	0.63	2.23	60.52
Brisingiid sp. 1	0.07	0.28	1.19	0.65	2.13	62.65
Ophiuroid indet.	0.81	0.88	1.14	0.58	2.03	64.67
Cidaris sp.	0.26	0.06	1.09	0.62	1.94	66.61
White echinoid sp.	0.19	0.16	1.06	0.61	1.89	68.5

Bathypathes sp.	0.22	0.05	0.96	0.56	1.72	70.22
Red encrusted sponge sp.	0.19	0.13	0.96	0.59	1.71	71.93
Red anemone sp.	0.04	0.23	0.96	0.57	1.7	73.64
Clavulariidae indet.	0.11	0.17	0.91	0.56	1.63	75.26
White sponge sp. 2	0.04	0.2	0.86	0.53	1.54	76.8
Asteroid sp. 1	0.04	0.19	0.77	0.51	1.38	78.18
Erylus papillatus	0.07	0.11	0.66	0.44	1.18	79.36
Pink solitary cup coral	0.15	0.02	0.58	0.42	1.04	80.4
Red tube-forming anemone sp.	0	0.13	0.54	0.37	0.97	81.37
Lepidisis sp. 1	0.07	0.06	0.51	0.37	0.91	82.28
White anemone sp. 1	0.04	0.11	0.5	0.39	0.9	83.18
White Asteroid sp	0.07	0.08	0.5	0.4	0.9	84.08
Hermit crab sp. 1	0.04	0.09	0.5	0.37	0.9	84.97
Parantipathes hironnelle	0.04	0.11	0.5	0.39	0.89	85.86
White sponge sp. 1	0.07	0.06	0.5	0.37	0.89	86.75
Brisingiid sp. 2	0.04	0.11	0.48	0.4	0.86	87.61
Barnacle	0.07	0.03	0.44	0.32	0.78	88.39
Brachiopods	0.11	0.02	0.39	0.37	0.7	89.09
Crinoid 4	0	0.11	0.38	0.35	0.67	89.76
Isididae indet.	0.04	0.06	0.37	0.32	0.67	90.42

Groups Coarse sand & Very coarse gravel

Average dissimilarity = 74.68

Species	Group Coarse sand		Group Very coarse gravel		Av.Diss	Diss/SD	Contrib%	Cum.%
	Frequency		Frequency					
Syringammina fragilissima	0.92		0.29		6.17	1.1	8.27	8.27
Green encrusted sponge sp.	0.05		0.71		5.31	1.35	7.11	15.38
Ophiuroid indet.	0.36		0.57		4.55	0.9	6.09	21.47

Hamacantha sp.	0.24	0.64	4.52	1.05	6.05	27.52
?Periphragella lusitanica	0.54	0.71	4.45	0.8	5.96	33.48
Hexadella dedritifera	0.26	0.64	4.42	1.04	5.93	39.4
Red tube-forming anemone sp.	0.33	0.29	3.71	0.77	4.96	44.36
Bright orange anemone	0.2	0.43	3.58	0.81	4.8	49.16
Red encrusted sponge sp.	0.28	0.29	3.42	0.73	4.58	53.74
Barnacle	0.37	0.07	3.18	0.71	4.26	58
Stichopathes cf abyssicola	0.05	0.36	2.65	0.72	3.55	61.54
Orange solitary coral	0.18	0.29	2.6	0.7	3.48	65.03
Hymedesmia cf (Hymedesmia) curvichela	0.15	0.29	2.58	0.69	3.45	68.48
Red solitary coral	0.09	0.29	2.19	0.66	2.93	71.41
Solenosmilia variabilis	0.06	0.29	2.05	0.65	2.75	74.16
Cidarid sp.	0.23	0	1.93	0.49	2.59	76.75
Tunicata indet.	0.02	0.21	1.57	0.52	2.1	78.84
Brisingiid sp. 1	0.02	0.14	1.02	0.43	1.37	80.21
Hermit crab sp. 2	0.03	0.07	0.96	0.32	1.29	81.5
Paramuricea biscaya	0	0.14	0.93	0.4	1.25	82.74
cf Isidella indet.	0	0.14	0.93	0.4	1.25	83.99
White anemone sp. 1	0.02	0.07	0.79	0.31	1.06	85.06
Mycale lingua	0.06	0.07	0.78	0.36	1.05	86.11
Asteroid sp. 1	0.01	0.07	0.78	0.28	1.04	87.15
White echinoid sp.	0.01	0.07	0.67	0.28	0.9	88.05
Pentametrocrinus atlanticus	0.02	0.07	0.59	0.31	0.79	88.84
Crinoid 1	0.02	0.07	0.58	0.31	0.78	89.62
Phakellia sp.	0.02	0.07	0.57	0.29	0.76	90.38

Groups Cobble & Very coarse gravel

Average dissimilarity = 66.46

Group Cobble

Group Very coarse

Species	gravel		Av.Diss	Diss/SD	Contrib%	Cum.%
	Frequency	Frequency				
Syringammina fragilissima	0.68	0.29	3.97	0.96	5.98	5.98
Green encrusted sponge sp.	0.4	0.71	3.62	0.97	5.45	11.42
Ophiuroid indet.	0.59	0.57	3.39	0.84	5.1	16.53
Hamacantha sp.	0.57	0.64	3.35	0.85	5.05	21.57
Hexadella dedritifera	0.62	0.64	3.29	0.86	4.95	26.52
?Periphragella lusitanica	0.65	0.71	3.21	0.64	4.83	31.35
Bright orange anemone	0.36	0.43	3.12	0.85	4.69	36.04
Stichopathes cf abyssicola	0.45	0.36	3.11	0.88	4.68	40.72
Red tube-forming anemone sp.	0.29	0.29	2.79	0.74	4.2	44.92
Hymesdesmia cf (Hymesdesmia) curvichela	0.33	0.29	2.58	0.8	3.89	48.8
Solenosmilia variabilis	0.3	0.29	2.45	0.8	3.68	52.49
Red encrusted sponge sp.	0.21	0.29	2.37	0.7	3.56	56.05
Orange solitary coral	0.24	0.29	2.34	0.72	3.51	59.57
Red solitary coral	0.24	0.29	2.31	0.73	3.48	63.05
Tunicata indet.	0.17	0.21	1.81	0.65	2.73	65.78
Crinoid 1	0.28	0.07	1.71	0.65	2.57	68.35
Barnacle	0.21	0.07	1.62	0.52	2.43	70.78
Pentametrocrinus atlanticus	0.18	0.07	1.25	0.52	1.87	72.65
Hermit crab sp. 2	0.08	0.07	1.01	0.37	1.53	74.18
Brisingiid sp. 1	0.05	0.14	1.01	0.46	1.52	75.7
White echinoid sp.	0.09	0.07	0.93	0.39	1.39	77.09
Asteroid sp. 1	0.08	0.07	0.91	0.37	1.37	78.46
cf Isidella indet.	0.03	0.14	0.9	0.43	1.36	79.81
Spheric white sponge	0.15	0	0.89	0.39	1.34	81.15
Red anemone sp.	0.11	0	0.86	0.31	1.29	82.44
Mycale lingua	0.09	0.07	0.8	0.4	1.21	83.65
Paramuricea biscaya	0	0.14	0.77	0.4	1.16	84.81
White anemone sp. 1	0.03	0.07	0.63	0.32	0.95	85.76

Phakellia sp.	0.04	0.07	0.6	0.34	0.9	86.66
Red echinoid sp.	0.02	0.07	0.5	0.31	0.75	87.41
Pink solitary cup coral	0.09	0	0.5	0.29	0.74	88.15
Neocyttus helgae	0.02	0.07	0.49	0.31	0.74	88.9
Parantipathes hirondelle	0.02	0.07	0.48	0.31	0.73	89.63
White sponge sp. 2	0.08	0	0.47	0.27	0.71	90.33

Groups Bedrock & Very coarse gravel

Average dissimilarity = 61.64

Species	Group Bedrock Frequency	Group Very coarse gravel Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Stichopathes cf abyssicola	0.85	0.36	3.14	1.15	5.1	5.1
Red solitary coral	0.59	0.29	2.94	0.99	4.78	9.87
Orange solitary coral	0.59	0.29	2.89	0.99	4.69	14.56
Tunicata indet.	0.56	0.21	2.61	1.01	4.24	18.8
Hymesdesmia cf (Hymesdesmia) curvichela	0.52	0.29	2.6	0.96	4.22	23.02
Solenosmilia variabilis	0.52	0.29	2.55	0.97	4.13	27.15
Crinoid 1	0.52	0.07	2.51	0.98	4.07	31.22
Ophiuroid indet.	0.81	0.57	2.41	0.86	3.92	35.13
Bright orange anemone	0.37	0.43	2.39	0.92	3.88	39.02
Green encrusted sponge sp.	0.7	0.71	2.28	0.8	3.69	42.71
Hamacantha sp.	0.89	0.64	2.27	0.75	3.68	46.39
Hexadella dedritifera	0.96	0.64	2.25	0.73	3.66	50.04
?Periphragella lusitanica	0.74	0.71	2.11	0.76	3.42	53.46
Syngammina fragilissima	0.22	0.29	2	0.74	3.24	56.71
Red encrusted sponge sp.	0.19	0.29	1.75	0.73	2.84	59.55
Phakellia sp.	0.3	0.07	1.53	0.67	2.48	62.02
Aphrocallistes beatrix	0.3	0	1.49	0.62	2.42	64.45

Red tube-forming anemone sp.	0	0.29	1.45	0.61	2.35	66.79
Mycale lingua	0.3	0.07	1.44	0.67	2.34	69.13
Pentametrocrinus atlanticus	0.22	0.07	1.28	0.57	2.07	71.2
Cidaris sp.	0.26	0	1.24	0.57	2.02	73.21
cf Isidella indet.	0.15	0.14	1.15	0.56	1.86	75.07
Bathypathes sp.	0.22	0	1.13	0.52	1.83	76.9
Shrimp	0.22	0	1.12	0.52	1.82	78.72
White echinoid sp.	0.19	0.07	1.11	0.53	1.8	80.53
Brisingiid sp. 1	0.07	0.14	0.84	0.49	1.37	81.89
Barnacle	0.07	0.07	0.74	0.37	1.2	83.09
Paramuricea biscaya	0.04	0.14	0.72	0.45	1.17	84.26
Pink solitary cup coral	0.15	0	0.7	0.4	1.14	85.41
Spheric white sponge	0.15	0	0.63	0.41	1.03	86.43
Asteroid sp. 1	0.04	0.07	0.54	0.33	0.88	87.31
Hermit crab sp. 1	0.04	0.07	0.5	0.32	0.81	88.12
White anemone sp. 1	0.04	0.07	0.5	0.33	0.81	88.93
Clavulariidae indet.	0.11	0	0.49	0.35	0.79	89.72
Parantipathes hironnelle	0.04	0.07	0.47	0.33	0.76	90.49

Groups Coral framework & Very coarse gravel

Average dissimilarity = 66.77

Species	Group Coral framework Frequency	Group Very coarse gravel Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Solenosmilia variabilis	0.88	0.29	3.42	1.27	5.12	5.12
Tunicata indet.	0.7	0.21	3.04	1.16	4.55	9.67
Crinoid 1	0.64	0.07	2.95	1.19	4.41	14.08
Green encrusted sponge sp.	0.38	0.71	2.75	1.04	4.12	18.2
Hamacantha sp.	0.39	0.64	2.62	0.98	3.92	22.12

Stichopathes cf abyssicola	0.44	0.36	2.35	0.91	3.52	25.64
Ophiuroid indet.	0.88	0.57	2.33	0.82	3.49	29.13
Syringammina fragilissima	0.41	0.29	2.29	0.86	3.43	32.56
Hexadella dedritifera	0.95	0.64	2.2	0.72	3.3	35.87
Red solitary coral	0.38	0.29	2.14	0.85	3.21	39.07
Bright orange anemone	0.17	0.43	2.11	0.86	3.17	42.24
Aphrocallistes beatrix	0.47	0	2.11	0.9	3.16	45.4
Hymesdesmia cf (Hymesdesmia) curvichela	0.33	0.29	2.04	0.82	3.06	48.46
cf Isidella indet.	0.42	0.14	2.03	0.85	3.03	51.5
Orange solitary coral	0.31	0.29	1.91	0.82	2.85	54.35
Mycale lingua	0.36	0.07	1.76	0.74	2.64	56.99
Red tube-forming anemone sp.	0.13	0.29	1.74	0.66	2.6	59.6
Brisingiid sp. 1	0.28	0.14	1.67	0.68	2.5	62.09
Red encrusted sponge sp.	0.13	0.29	1.58	0.68	2.37	64.47
?Periphragella lusitanica	0.92	0.71	1.55	0.65	2.32	66.78
Pentametrocrinus atlanticus	0.28	0.07	1.47	0.64	2.19	68.98
Spheric white sponge	0.31	0	1.44	0.65	2.15	71.13
Asteroid sp. 1	0.19	0.07	1.14	0.53	1.7	72.83
Red anemone sp.	0.23	0	1.13	0.53	1.69	74.52
White sponge sp. 2	0.2	0	1.01	0.49	1.52	76.03
White echinoid sp.	0.16	0.07	1	0.49	1.5	77.53
Phakellia sp.	0.17	0.07	0.99	0.51	1.48	79
Shrimp	0.22	0	0.98	0.51	1.47	80.48
Clavulariidae indet.	0.17	0	0.83	0.44	1.24	81.72
Paramuricea biscaya	0.06	0.14	0.81	0.47	1.21	82.93
White anemone sp. 1	0.11	0.07	0.8	0.43	1.2	84.13
Parantipathes hirondelle	0.11	0.07	0.73	0.43	1.1	85.23
Crinoid 4	0.11	0.07	0.71	0.44	1.07	86.3
Neocyttus helgae	0.09	0.07	0.7	0.41	1.05	87.35
Hermit crab sp. 1	0.09	0.07	0.7	0.41	1.04	88.39

Red echinoid sp.	0.06	0.07	0.57	0.37	0.85	89.24
Erylus papillatus	0.11	0	0.55	0.34	0.83	90.07

OCEANOGRAPHIC VARIABILITY

ANOSIM

Global Test

Sample statistic (Global R): 0.169

Significance level of sample statistic: 0.1%

Number of permutations: 999 (Random sample from a large number)

Number of permuted statistics greater than or equal to Global R: 0

SIMPER

Group Dynamic (n=155; 1237-1497 m water depth)

Average similarity: 34.45

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Syringammia fragilissima	0.81	12.56	1.15	36.47	36.47
?Periphragella lusitanica	0.69	6.64	0.81	19.27	55.74
Hexadella dedritifera	0.47	2.36	0.49	6.86	62.61
Ophiuroid indet.	0.45	2.29	0.45	6.64	69.24
Hamacantha sp.	0.4	1.71	0.4	4.97	74.21
Red encrusted sponge sp.	0.29	1.3	0.28	3.77	77.98
Barnacle	0.26	1.2	0.26	3.47	81.45
Red tube-forming anemone sp.	0.26	1.12	0.25	3.26	84.72
Cidarid sp.	0.26	0.99	0.25	2.87	87.59
Bright orange anemone	0.26	0.82	0.24	2.38	89.97
Hymesdesmia cf (Hymesdesmia) curvichela	0.25	0.63	0.24	1.83	91.8

Group Stable (n=164; 1501-1695 m water depth)

Average similarity: 32.99

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Ophiuroid indet.	0.7	4.61	0.89	13.97	13.97
?Periphragella lusitanica	0.65	4.14	0.79	12.55	26.52
Hexadella dedritifera	0.68	4.09	0.88	12.41	38.93
Syringammina fragilissima	0.52	3.33	0.55	10.1	49.03
Hamacantha sp.	0.47	2.19	0.5	6.64	55.68
Stichopathes cf abyssicola	0.47	2	0.51	6.06	61.74
Solenosmilia variabilis	0.49	1.98	0.55	6.01	67.75
Red solitary coral	0.4	1.44	0.41	4.37	72.12
Crinoid 1	0.4	1.25	0.43	3.79	75.91
Green encrusted sponge sp.	0.35	1.17	0.35	3.53	79.44
Bright orange anemone	0.27	0.86	0.26	2.6	82.04
Hymesdesmia cf (Hymesdesmia) curvichela	0.29	0.78	0.29	2.36	84.4
Red tube-forming anemone sp.	0.24	0.76	0.23	2.32	86.72
Orange solitary coral	0.3	0.75	0.3	2.28	89
Tunicata indet.	0.3	0.68	0.3	2.05	91.04

Groups Dynamic & Stable

Average dissimilarity = 71.41

Species	Group Dynamic Frequency	Group Stable Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Ophiuroid indet.	0.45	0.7	3.53	0.91	4.94	4.94
Hexadella dedritifera	0.47	0.68	3.4	0.93	4.76	9.7
Hamacantha sp.	0.4	0.47	3.2	0.86	4.48	14.17
?Periphragella lusitanica	0.69	0.65	3.19	0.77	4.46	18.63
Syringammina fragilissima	0.81	0.52	3.17	0.8	4.44	23.08
Stichopathes cf abyssicola	0.17	0.47	2.85	0.88	3.99	27.07

Solenosmilia variabilis	0.18	0.49	2.8	0.92	3.92	30.98
Red tube-forming anemone sp.	0.26	0.24	2.63	0.69	3.68	34.67
Bright orange anemone	0.26	0.27	2.57	0.69	3.6	38.27
Green encrusted sponge sp.	0.25	0.35	2.53	0.77	3.55	41.82
Red solitary coral	0.07	0.4	2.45	0.76	3.42	45.24
Barnacle	0.26	0.17	2.41	0.65	3.37	48.62
Hymesdesmia cf (Hymesdesmia) curvichela	0.25	0.29	2.37	0.74	3.31	51.93
Red encrusted sponge sp.	0.29	0.16	2.36	0.66	3.3	55.23
Orange solitary coral	0.23	0.3	2.34	0.71	3.28	58.51
Crinoid 1	0.12	0.4	2.26	0.81	3.17	61.68
Tunicata indet.	0.21	0.3	2	0.75	2.8	64.48
Cidarid sp.	0.26	0.03	1.77	0.55	2.47	66.95
Pentametrocrinus atlanticus	0.05	0.22	1.34	0.54	1.88	68.83
Mycale lingua	0.19	0.1	1.27	0.55	1.78	70.61
Spheric white sponge	0.08	0.19	1.25	0.52	1.75	72.36
Aphrocallistes beatrix	0.11	0.18	1.2	0.55	1.68	74.04
Red anemone sp.	0.02	0.16	1.06	0.4	1.49	75.53
cf Isidella indet.	0.07	0.15	0.95	0.48	1.33	76.87
Brisingiid sp. 1	0.06	0.13	0.88	0.43	1.23	78.1
Shrimp	0.03	0.14	0.87	0.41	1.22	79.32
White echinoid sp.	0.07	0.08	0.77	0.38	1.07	80.39
Phakellia sp.	0.1	0.07	0.74	0.4	1.04	81.43
Pink solitary cup coral	0.08	0.04	0.69	0.32	0.96	82.4
White sponge sp. 2	0.01	0.12	0.69	0.36	0.96	83.36
Asteroid sp. 1	0.03	0.11	0.68	0.36	0.95	84.31
Erylus papillatus	0.01	0.1	0.6	0.34	0.84	85.15
Clavulariidae indet.	0.04	0.07	0.54	0.33	0.76	85.91
Hermit crab sp. 2	0.03	0.04	0.53	0.26	0.74	86.64
White anemone sp. 1	0.05	0.04	0.5	0.29	0.7	87.34
Bathypathes sp.	0.03	0.06	0.49	0.3	0.68	88.02

White sponge sp. 1	0.03	0.05	0.46	0.29	0.64	88.66
Brachiopods	0.03	0.04	0.42	0.25	0.59	89.25
Hermit crab sp. 1	0.02	0.05	0.39	0.27	0.55	89.8
Red sea pen	0.01	0.04	0.34	0.21	0.48	90.28

DIVE 037

SUBSTRATUM

ANOSIM

Global Test

Sample statistic (Global R): 0.147

Significance level of sample statistic: 0.1%

Number of permutations: 999 (Random sample from a large number)

Number of permuted statistics greater than or equal to Global R: 0

Pairwise Tests

Groups	R Statistic	Significance Level %	Possible Permutations	Actual Permutations	Number >= Observed
Coarse sand, Cobble	0.132	0.1	Very large	999	0
Coarse sand, Bedrock	0.313	0.1	Very large	999	0
Coarse sand, Coral framework	0.011	42.2	21374050	999	421
Coarse sand, Fine sand	-0.002	48.7	Very large	999	486
Cobble, Bedrock	0.051	10.6	Very large	999	105
Cobble, Coral framework	-0.064	66	2225895	999	659
Cobble, Fine sand	0.255	0.1	Very large	999	0
Bedrock, Coral framework	0.483	0.3	91390	999	2
Bedrock, Fine sand	0.72	0.1	Very large	999	0
Coral framework, Fine sand	0.248	6.1	14950	999	60

SIMPER

Group Coarse sand (n=148; 1234-1651 m water depth)

Average similarity: 38.43

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Syringammina fragilissima	0.89	15.32	1.63	39.88	39.88
?Periphragella lusitanica	0.61	6.56	0.73	17.07	56.95
Ophiuroid indet.	0.56	5.19	0.65	13.51	70.46
Hexadella dedritifera	0.45	2.96	0.49	7.69	78.15
Hamacantha sp.	0.38	2.05	0.39	5.33	83.49
Stichopathes cf abyssicola	0.32	1.5	0.32	3.9	87.39
Barnacle	0.26	1.17	0.25	3.05	90.44

Group Cobble (n=82; 1247-1576 m water depth)

Average similarity: 43.32

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Hexadella dedritifera	0.76	7	1.09	16.15	16.15
Hamacantha sp.	0.72	6.85	0.97	15.81	31.96
Stichopathes cf abyssicola	0.65	5.34	0.8	12.32	44.28
Syringammina fragilissima	0.61	5.04	0.74	11.63	55.91
?Periphragella lusitanica	0.61	4.69	0.74	10.84	66.74
Ophiuroid indet.	0.61	4.48	0.74	10.35	77.09
Orange solitary coral	0.43	2.28	0.46	5.25	82.35
Bright orange anemone	0.43	2.21	0.46	5.11	87.45
Green encrusted sponge sp.	0.43	1.97	0.46	4.54	91.99

Group Bedrock (n=36; 1275-1571 m water depth)

Average similarity: 55.60

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Stichopathes cf abyssicola	1	8.89	5.53	15.99	15.99
Hexadella dedritifera	0.97	8.21	3.44	14.77	30.76
Hamacantha sp.	0.94	7.79	2.58	14.01	44.77
?Periphragella lusitanica	0.92	7.3	2.08	13.12	57.9
Green encrusted sponge sp.	0.75	4.76	1.1	8.57	66.46
Ophiuroid indet.	0.72	4.29	1	7.72	74.19
Bright orange anemone	0.58	2.9	0.69	5.22	79.41
Red solitary coral	0.47	1.86	0.52	3.35	82.76
Tunicata indet.	0.47	1.86	0.52	3.34	86.1
Mycale lingua	0.44	1.51	0.48	2.72	88.82
Hymesdesmia cf (Hymedesmia) curvichela	0.39	1.2	0.4	2.17	90.99

Group Coral framework (n=4; 1527-1555 m water depth)

Average similarity: 49.20

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Hamacantha sp.	1	10.36	2.93	21.05	21.05
Hexadella dedritifera	1	10.36	2.93	21.05	42.1
Syringamina fragilissima	1	10.36	2.93	21.05	63.16
White echinoid sp.	0.75	4.03	0.89	8.19	71.35
Ophiuroid indet.	0.75	4.03	0.89	8.19	79.55
?Periphragella lusitanica	0.75	4.03	0.89	8.19	87.74
Bright orange anemone	0.5	1.59	0.41	3.23	90.97

Group Fine sand (n=22; 1652-1661 m water depth)

Average similarity: 44.56

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
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Syringammina fragilissima	1	21.02	3.58	47.18	47.18
Stichopathes cf abyssicola	0.64	7.2	0.78	16.16	63.35
Ophiuroid indet.	0.55	5.05	0.61	11.32	74.67
?Periphragella lusitanica	0.45	3.09	0.49	6.93	81.6
Hamacantha sp.	0.45	2.99	0.49	6.71	88.31
Red solitary coral	0.36	2.29	0.36	5.14	93.44

Groups Coarse sand & Cobble

Average dissimilarity = 64.60

Species	Group Coarse sand Frequency	Group Cobble Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Hamacantha sp.	0.38	0.72	4.54	1.01	7.03	7.03
Stichopathes cf abyssicola	0.32	0.65	4.41	1.01	6.83	13.86
Hexadella dedritifera	0.45	0.76	4.3	0.97	6.65	20.51
Ophiuroid indet.	0.56	0.61	3.95	0.89	6.11	26.62
?Periphragella lusitanica	0.61	0.61	3.88	0.85	6	32.63
Bright orange anemone	0.19	0.43	3.46	0.86	5.35	37.98
Orange solitary coral	0.13	0.43	3.39	0.85	5.25	43.23
Syringammina fragilissima	0.89	0.61	3.35	0.71	5.19	48.42
Green encrusted sponge sp.	0.12	0.43	3.16	0.85	4.89	53.3
Red tube-forming anemone sp.	0.26	0.24	2.87	0.73	4.44	57.74
Barnacle	0.26	0.13	2.51	0.63	3.88	61.63
Red solitary coral	0.07	0.24	2.14	0.58	3.31	64.94
Hymesdesmia cf (Hymesdesmia) curvichela	0.08	0.22	1.79	0.57	2.77	67.71
Hermit crab sp. 2	0.14	0.1	1.53	0.49	2.38	70.09
Spheric white sponge	0.06	0.14	1.31	0.46	2.03	72.11
Indet. sp. 5	0.15	0	1.25	0.39	1.94	74.05
Pentametrocrinus atlanticus	0.08	0.11	1.2	0.43	1.85	75.9
Shrimp	0.07	0.1	1.15	0.4	1.79	77.68

Tunicata indet.	0.03	0.16	1.14	0.45	1.77	79.45
Mystery sp. 2 (white hydroid-like organism)	0.11	0.05	1.13	0.39	1.74	81.2
Red encrusted sponge sp.	0.06	0.1	1.02	0.4	1.58	82.78
Mycale lingua	0.05	0.12	1.02	0.42	1.58	84.36
White echinoid sp.	0.03	0.12	0.99	0.4	1.53	85.89
Red anemone sp.	0.04	0.1	0.88	0.36	1.37	87.26
Cidaris sp.	0.11	0	0.83	0.33	1.28	88.54
White Asteroid sp	0.03	0.07	0.7	0.32	1.08	89.62
Squat lobster	0.03	0.06	0.62	0.31	0.96	90.58

Groups Coarse sand & Bedrock

Average dissimilarity = 70.21

Species	Group Coarse sand Frequency	Group Bedrock Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Syringammina fragilissima	0.89	0.14	4.68	1.73	6.66	6.66
Stichopathes cf abyssicola	0.32	1	4.28	1.35	6.1	12.77
Green encrusted sponge sp.	0.12	0.75	4.12	1.41	5.87	18.63
Hamacantha sp.	0.38	0.94	3.84	1.18	5.47	24.1
Hexadella dedritifera	0.45	0.97	3.5	1.05	4.99	29.09
Bright orange anemone	0.19	0.58	3.33	1.05	4.74	33.83
Ophiuroid indet.	0.56	0.72	2.94	0.9	4.19	38.02
Red solitary coral	0.07	0.47	2.83	0.92	4.03	42.05
Tunicata indet.	0.03	0.47	2.81	0.91	4	46.04
?Periphragella lusitanica	0.61	0.92	2.56	0.79	3.64	49.68
Mycale lingua	0.05	0.44	2.53	0.88	3.6	53.28
Hymesdesmia cf (Hymesdesmia) curvichela	0.08	0.39	2.36	0.8	3.37	56.65
Solenosmilia variabilis	0.03	0.39	2.15	0.79	3.07	59.72
Orange solitary coral	0.13	0.31	2.04	0.72	2.9	62.62
Pentametrocrinus atlanticus	0.08	0.25	1.62	0.62	2.31	64.93

Barnacle	0.26	0	1.53	0.57	2.18	67.1
Red anemone sp.	0.04	0.25	1.51	0.59	2.16	69.26
Cidarid sp.	0.11	0.19	1.51	0.58	2.16	71.41
Red tube-forming anemone sp.	0.26	0	1.49	0.58	2.13	73.54
Crinoid 1	0	0.28	1.48	0.61	2.11	75.65
Spheric white sponge	0.06	0.22	1.42	0.57	2.02	77.67
Hermit crab sp. 2	0.14	0.03	0.99	0.41	1.41	79.08
White echinoid sp.	0.03	0.17	0.99	0.47	1.41	80.49
Indet. sp. 5	0.15	0	0.94	0.41	1.33	81.82
Clavulariidae indet.	0	0.17	0.91	0.44	1.29	83.12
Parantipathes hirondele	0.01	0.14	0.83	0.41	1.18	84.3
Red encrusted sponge sp.	0.06	0.08	0.82	0.38	1.17	85.47
White sponge sp. 2	0	0.14	0.79	0.39	1.13	86.6
Phakellia sp.	0.01	0.11	0.67	0.36	0.95	87.55
White Asteroid sp	0.03	0.08	0.64	0.35	0.92	88.47
Shrimp	0.07	0.06	0.64	0.36	0.91	89.38
Mystery sp. 2 (white hydroid-like organism)	0.11	0	0.62	0.34	0.88	90.26

Groups Cobble & Bedrock

Average dissimilarity = 55.64

Species	Group Cobble Frequency	Group Bedrock Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Syringammina fragilissima	0.61	0.14	3.11	1.12	5.59	5.59
Green encrusted sponge sp.	0.43	0.75	2.95	1.02	5.3	10.89
Bright orange anemone	0.43	0.58	2.76	0.97	4.96	15.84
Red solitary coral	0.24	0.47	2.58	0.93	4.64	20.49
Tunicata indet.	0.16	0.47	2.54	0.92	4.56	25.05
Ophiuroid indet.	0.61	0.72	2.51	0.86	4.5	29.55
Orange solitary coral	0.43	0.31	2.5	0.91	4.49	34.05

Mycale lingua	0.12	0.44	2.31	0.89	4.15	38.2
?Periphragella lusitanica	0.61	0.92	2.27	0.78	4.09	42.28
Hymesdesmia cf (Hymesdesmia) curvichela	0.22	0.39	2.27	0.85	4.07	46.35
Stichopathes cf abyssicola	0.65	1	1.98	0.7	3.56	49.91
Solenosmilia variabilis	0.06	0.39	1.96	0.8	3.52	53.43
Hamacantha sp.	0.72	0.94	1.69	0.63	3.04	56.48
Hexadella dedritifera	0.76	0.97	1.57	0.57	2.82	59.3
Spheric white sponge	0.14	0.22	1.51	0.64	2.71	62.01
Crinoid 1	0.08	0.28	1.51	0.66	2.71	64.72
Pentametrocrinus atlanticus	0.11	0.25	1.49	0.64	2.69	67.4
Red anemone sp.	0.1	0.25	1.48	0.63	2.66	70.06
Red tube-forming anemone sp.	0.24	0	1.26	0.55	2.26	72.32
White echinoid sp.	0.12	0.17	1.21	0.56	2.17	74.49
Cidaris sp.	0	0.19	0.99	0.48	1.79	76.28
Clavulariidae indet.	0.02	0.17	0.9	0.46	1.62	77.9
Red encrusted sponge sp.	0.1	0.08	0.84	0.43	1.5	79.41
Parantipathes hirondele	0.02	0.14	0.76	0.42	1.37	80.78
Shrimp	0.1	0.06	0.73	0.4	1.31	82.08
White Asteroid sp	0.07	0.08	0.72	0.4	1.29	83.37
White sponge sp. 2	0	0.14	0.71	0.39	1.28	84.65
Barnacle	0.13	0	0.69	0.38	1.24	85.89
Hermit crab sp. 2	0.1	0.03	0.67	0.35	1.21	87.1
Phakellia sp.	0.02	0.11	0.64	0.37	1.15	88.25
Squat lobster	0.06	0.08	0.63	0.39	1.13	89.38
Bathypathes sp.	0.06	0.08	0.6	0.39	1.07	90.46

Groups Coarse sand & Coral framework

Average dissimilarity = 61.55

Group Coarse sand

Group Coral framework

Species	Frequency	Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Hamacantha sp.	0.38	1	4.7	1.06	7.64	7.64
White echinoid sp.	0.03	0.75	4.29	1.48	6.97	14.61
Hexadella dedritifera	0.45	1	4.23	0.93	6.87	21.47
Ophiuroid indet.	0.56	0.75	3.42	0.85	5.56	27.03
?Periphragella lusitanica	0.61	0.75	3.34	0.8	5.43	32.46
Bright orange anemone	0.19	0.5	3.32	0.93	5.4	37.85
Stichopathes cf abyssicola	0.32	0.25	3.26	0.71	5.29	43.14
Green encrusted sponge sp.	0.12	0.5	2.66	0.94	4.31	47.46
Red encrusted sponge sp.	0.06	0.5	2.59	0.94	4.2	51.66
Spheric white sponge	0.06	0.5	2.57	0.95	4.18	55.84
Crinoid 1	0	0.5	2.47	0.98	4.01	59.85
Indet. sp. 5	0.15	0.25	2.39	0.65	3.89	63.73
Orange solitary coral	0.13	0.25	1.79	0.66	2.91	66.64
Barnacle	0.26	0	1.78	0.53	2.88	69.52
Red tube-forming anemone sp.	0.26	0	1.71	0.55	2.78	72.3
Pentametrocrinus atlanticus	0.08	0.25	1.68	0.61	2.73	75.03
Red solitary coral	0.07	0.25	1.41	0.61	2.29	77.32
Mycale lingua	0.05	0.25	1.32	0.59	2.15	79.48
Solenosmilia variabilis	0.03	0.25	1.23	0.59	1.99	81.47
Tunicata indet.	0.03	0.25	1.22	0.59	1.99	83.46
Pink solitary cup coral	0.03	0.25	1.21	0.59	1.97	85.42
White sponge sp. 1	0.01	0.25	1.15	0.57	1.87	87.29
Indet. sp. 3	0	0.25	1.11	0.57	1.81	89.1
Hermit crab sp. 2	0.14	0	0.9	0.37	1.47	90.57

Groups Cobble & Coral framework

Average dissimilarity = 54.51

Group Cobble

Group Coral framework

Species	Frequency	Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
White echinoid sp.	0.12	0.75	3.67	1.33	6.74	6.74
Stichopathes cf abyssicola	0.65	0.25	3.3	0.97	6.06	12.8
Bright orange anemone	0.43	0.5	2.99	0.91	5.49	18.28
Ophiuroid indet.	0.61	0.75	2.87	0.82	5.26	23.54
?Periphragella lusitanica	0.61	0.75	2.86	0.81	5.25	28.79
Green encrusted sponge sp.	0.43	0.5	2.79	0.93	5.12	33.91
Orange solitary coral	0.43	0.25	2.71	0.85	4.98	38.89
Spheric white sponge	0.14	0.5	2.42	0.95	4.45	43.33
Syringammina fragilissima	0.61	1	2.39	0.68	4.39	47.72
Red encrusted sponge sp.	0.1	0.5	2.35	0.96	4.31	52.03
Crinoid 1	0.08	0.5	2.32	0.97	4.25	56.28
Red solitary coral	0.24	0.25	1.97	0.69	3.61	59.89
Hamacantha sp.	0.72	1	1.78	0.54	3.26	63.15
Hexadella dedritifera	0.76	1	1.73	0.5	3.17	66.33
Indet. sp. 5	0	0.25	1.63	0.56	2.99	69.31
Pentametrocrinus atlanticus	0.11	0.25	1.54	0.64	2.83	72.15
Tunicata indet.	0.16	0.25	1.53	0.67	2.81	74.96
Red tube-forming anemone sp.	0.24	0	1.41	0.53	2.59	77.55
Mycale lingua	0.12	0.25	1.39	0.65	2.55	80.1
Solenosmilia variabilis	0.06	0.25	1.18	0.61	2.17	82.27
Pink solitary cup coral	0.05	0.25	1.17	0.6	2.15	84.42
Hymedesmia cf (Hymedesmia) curvichela	0.22	0	1.14	0.49	2.09	86.51
White sponge sp. 1	0.01	0.25	1.06	0.58	1.94	88.44
Indet. sp. 3	0	0.25	1.02	0.57	1.87	90.31

Groups Bedrock & Coral framework

Average dissimilarity = 53.56

Group Bedrock

Group Coral framework

Species	Frequency	Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Syringammina fragilissima	0.14	1	4.13	1.99	7.71	7.71
Stichopathes cf abyssicola	1	0.25	3.22	1.59	6.01	13.72
White echinoid sp.	0.17	0.75	2.97	1.32	5.54	19.26
Green encrusted sponge sp.	0.75	0.5	2.66	0.95	4.97	24.23
Bright orange anemone	0.58	0.5	2.45	0.92	4.58	28.8
Red solitary coral	0.47	0.25	2.32	0.91	4.33	33.13
Tunicata indet.	0.47	0.25	2.32	0.91	4.33	37.46
Mycale lingua	0.44	0.25	2.16	0.9	4.03	41.49
Crinoid 1	0.28	0.5	2.15	0.96	4.01	45.5
Spheric white sponge	0.22	0.5	2.11	0.95	3.94	49.44
Ophiuroid indet.	0.72	0.75	2.11	0.76	3.94	53.38
Red encrusted sponge sp.	0.08	0.5	2	0.95	3.74	57.12
Solenosmilia variabilis	0.39	0.25	1.97	0.85	3.67	60.79
Orange solitary coral	0.31	0.25	1.85	0.78	3.46	64.25
Hymesdesmia cf (Hymesdesmia) curvichela	0.39	0	1.83	0.75	3.41	67.66
?Periphragella lusitanica	0.92	0.75	1.8	0.62	3.35	71.01
Pentametrocrinus atlanticus	0.25	0.25	1.67	0.74	3.11	74.13
Indet. sp. 5	0	0.25	1.3	0.57	2.43	76.56
Red anemone sp.	0.25	0	1.13	0.55	2.12	78.67
Pink solitary cup coral	0.06	0.25	1.07	0.59	1.99	80.67
Cidaris sp.	0.19	0	0.91	0.47	1.69	82.36
White sponge sp. 1	0	0.25	0.88	0.57	1.65	84
Indet. sp. 3	0	0.25	0.88	0.57	1.65	85.65
Clavulariidae indet.	0.17	0	0.75	0.43	1.39	87.05
White sponge sp. 2	0.14	0	0.65	0.38	1.21	88.25
Parantipathes hirondelle	0.14	0	0.63	0.38	1.17	89.42
Phakellia sp.	0.11	0	0.51	0.34	0.95	90.37

Groups Coarse sand & Fine sand

Average dissimilarity = 61.28

Species	Group Coarse sand Frequency	Group Fine sand Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Stichopathes cf abyssicola	0.32	0.64	5.41	1.03	8.82	8.82
?Periphragella lusitanica	0.61	0.45	5.18	0.95	8.45	17.27
Ophiuroid indet.	0.56	0.55	4.99	0.92	8.14	25.41
Hamacantha sp.	0.38	0.45	4.55	0.93	7.42	32.84
Hexadella dedritifera	0.45	0.18	4.37	0.85	7.13	39.97
Red tube-forming anemone sp.	0.26	0.27	3.77	0.75	6.16	46.13
Red solitary coral	0.07	0.36	3.67	0.73	5.98	52.11
Barnacle	0.26	0.05	2.76	0.58	4.5	56.62
Hermit crab sp. 2	0.14	0.18	2.57	0.58	4.2	60.81
Indet. sp. 5	0.15	0.09	2.14	0.5	3.49	64.3
Bright orange anemone	0.19	0.09	2.11	0.54	3.45	67.75
Mystery sp. 2 (white hydroid-like organism)	0.11	0.09	1.65	0.45	2.69	70.44
Shrimp	0.07	0.14	1.61	0.46	2.63	73.07
Green encrusted sponge sp.	0.12	0.05	1.43	0.4	2.33	75.4
Syringammina fragilissima	0.89	1	1.08	0.32	1.76	77.16
Cidaris sp.	0.11	0	1.02	0.33	1.67	78.83
Red sea pen	0.01	0.09	0.97	0.31	1.59	80.42
Orange solitary coral	0.13	0	0.97	0.37	1.59	82.01
Red anemone sp.	0.04	0.05	0.9	0.28	1.47	83.48
Brachiopods	0.01	0.09	0.82	0.32	1.33	84.81
Pentametrocrinus atlanticus	0.08	0	0.74	0.29	1.21	86.03
White Asteroid sp	0.03	0.05	0.69	0.28	1.12	87.15
Indet. sp. 7	0.03	0.05	0.68	0.27	1.11	88.26
Hymesdesmia cf (Hymesdesmia) curvichela	0.08	0	0.68	0.28	1.11	89.37
Hermit crab sp. 1	0.04	0.05	0.67	0.29	1.09	90.46

Groups Cobble & Fine sand

Average dissimilarity = 64.07

Species	Group Cobble Frequency	Group Fine sand Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Hexadella dedritifera	0.76	0.18	5.24	1.23	8.18	8.18
Hamacantha sp.	0.72	0.45	4.51	0.96	7.04	15.22
?Periphragella lusitanica	0.61	0.45	4.26	0.95	6.65	21.88
Ophiuroid indet.	0.61	0.55	4.13	0.9	6.45	28.33
Stichopathes cf abyssicola	0.65	0.64	3.95	0.84	6.17	34.5
Red solitary coral	0.24	0.36	3.5	0.79	5.46	39.96
Bright orange anemone	0.43	0.09	3.42	0.86	5.33	45.29
Orange solitary coral	0.43	0	3.37	0.83	5.27	50.56
Syringammia fragilissima	0.61	1	3.31	0.69	5.17	55.72
Green encrusted sponge sp.	0.43	0.05	3.2	0.82	5	60.72
Red tube-forming anemone sp.	0.24	0.27	3.1	0.73	4.85	65.57
Hermit crab sp. 2	0.1	0.18	1.94	0.54	3.02	68.59
Shrimp	0.1	0.14	1.59	0.49	2.48	71.07
Hymesdesmia cf (Hymesdesmia) curvichela	0.22	0	1.49	0.51	2.33	73.39
Barnacle	0.13	0.05	1.35	0.43	2.1	75.49
Mystery sp. 2 (white hydroid-like organism)	0.05	0.09	1.06	0.37	1.66	77.15
Tunicata indet.	0.16	0	1.04	0.42	1.62	78.77
Red anemone sp.	0.1	0.05	1.03	0.36	1.61	80.38
Spheric white sponge	0.14	0	1.03	0.4	1.61	81.98
White echinoid sp.	0.12	0	0.87	0.36	1.36	83.34
White Asteroid sp	0.07	0.05	0.8	0.34	1.25	84.59
Mycale lingua	0.12	0	0.75	0.36	1.18	85.76
Red sea pen	0	0.09	0.73	0.29	1.14	86.91
Pentametrocrinus atlanticus	0.11	0	0.72	0.34	1.13	88.03
Indet. sp. 5	0	0.09	0.69	0.31	1.08	89.11

Brachiopods	0	0.09	0.66	0.31	1.03	90.14
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Groups Bedrock & Fine sand

Average dissimilarity = 70.68

Species	Group Bedrock Frequency	Group Fine sand Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Syringammina fragilissima	0.14	1	5.28	2.19	7.47	7.47
Hexadella dedritifera	0.97	0.18	4.9	1.82	6.93	14.4
Green encrusted sponge sp.	0.75	0.05	4.41	1.53	6.24	20.64
Hamacantha sp.	0.94	0.45	3.6	1.04	5.1	25.74
?Periphragella lusitanica	0.92	0.45	3.55	1.02	5.03	30.76
Bright orange anemone	0.58	0.09	3.53	1.09	4.99	35.75
Ophiuroid indet.	0.72	0.55	3.08	0.92	4.36	40.11
Red solitary coral	0.47	0.36	3.06	0.94	4.33	44.44
Tunicata indet.	0.47	0	2.88	0.91	4.08	48.52
Mycale lingua	0.44	0	2.55	0.88	3.61	52.13
Stichopathes cf abyssicola	1	0.64	2.44	0.72	3.45	55.57
Hymesdesmia cf (Hymedesmia) curvichela	0.39	0	2.32	0.77	3.29	58.86
Solenosmilia variabilis	0.39	0	2.17	0.78	3.07	61.93
Orange solitary coral	0.31	0	1.82	0.64	2.58	64.51
Red tube-forming anemone sp.	0	0.27	1.67	0.59	2.36	66.87
Red anemone sp.	0.25	0.05	1.61	0.6	2.27	69.15
Crinoid 1	0.28	0	1.52	0.61	2.15	71.3
Pentametrocrinus atlanticus	0.25	0	1.4	0.56	1.99	73.29
Hermit crab sp. 2	0.03	0.18	1.3	0.48	1.84	75.13
Spheric white sponge	0.22	0	1.26	0.52	1.78	76.91
Cidarid sp.	0.19	0	1.15	0.48	1.62	78.53
Shrimp	0.06	0.14	1	0.46	1.41	79.94
Clavulariidae indet.	0.17	0	0.94	0.44	1.32	81.27

White echinoid sp.	0.17	0	0.9	0.44	1.28	82.55
White sponge sp. 2	0.14	0	0.82	0.39	1.16	83.7
Parantipathes hironnelle	0.14	0	0.79	0.39	1.12	84.83
White Asteroid sp	0.08	0.05	0.72	0.37	1.02	85.84
Phakellia sp.	0.11	0	0.64	0.34	0.91	86.75
Brachiopods	0.03	0.09	0.64	0.35	0.9	87.65
Red sea pen	0	0.09	0.55	0.3	0.78	88.43
Mystery sp. 2 (white hydroid-like organism)	0	0.09	0.54	0.31	0.76	89.19
Red encrusted sponge sp.	0.08	0	0.54	0.29	0.76	89.95
Indet. sp. 5	0	0.09	0.53	0.31	0.75	90.71

Groups Coral framework & Fine sand

Average dissimilarity = 62.97

Species	Group Coral	Group Fine sand	Av.Diss	Diss/SD	Contrib%	Cum.%	
	framework	Frequency					Frequency
Hexadella dedritifera		1	0.18	5.93	1.55	9.42	9.42
White echinoid sp.		0.75	0	4.48	1.53	7.12	16.54
Hamacantha sp.		1	0.45	4.42	0.93	7.02	23.56
Stichopathes cf abyssicola		0.25	0.64	3.92	0.94	6.23	29.78
?Periphragella lusitanica		0.75	0.45	3.72	0.96	5.91	35.69
Ophiuroid indet.		0.75	0.55	3.58	0.86	5.69	41.38
Bright orange anemone		0.5	0.09	3.37	0.95	5.35	46.73
Red solitary coral		0.25	0.36	2.9	0.76	4.6	51.34
Green encrusted sponge sp.		0.5	0.05	2.67	0.91	4.25	55.58
Crinoid 1		0.5	0	2.54	0.98	4.03	59.61
Spheric white sponge		0.5	0	2.54	0.98	4.03	63.64
Red encrusted sponge sp.		0.5	0	2.54	0.98	4.03	67.66
Indet. sp. 5		0.25	0.09	2.23	0.62	3.55	71.21

Red tube-forming anemone sp.	0	0.27	1.95	0.55	3.1	74.31
Orange solitary coral	0.25	0	1.4	0.57	2.22	76.53
Pentametrocrinus atlanticus	0.25	0	1.4	0.57	2.22	78.74
Hermit crab sp. 2	0	0.18	1.3	0.44	2.06	80.81
Solenosmilia variabilis	0.25	0	1.14	0.57	1.81	82.61
Pink solitary cup coral	0.25	0	1.14	0.57	1.81	84.42
White sponge sp. 1	0.25	0	1.14	0.57	1.81	86.23
Mycale lingua	0.25	0	1.14	0.57	1.81	88.04
Tunicata indet.	0.25	0	1.14	0.57	1.81	89.85
Indet. sp. 3	0.25	0	1.14	0.57	1.81	91.66

OCEANOGRAPHIC VARIABILITY

ANOSIM

Global Test

Sample statistic (Global R): 0.144

Significance level of sample statistic: 0.1%

Number of permutations: 999 (Random sample from a large number)

Number of permuted statistics greater than or equal to Global R: 0

SIMPER

Group Dynamic (n=133; 1234-1489 m water depth)

Average similarity: 34.25

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
?Periphragella lusitanica	0.7	6.77	0.86	19.77	19.77
Syringammina fragilissima	0.56	6.48	0.62	18.93	38.71
Hexadella dedritifera	0.59	3.94	0.68	11.5	50.21
Ophiuroid indet.	0.53	3.77	0.56	11	61.2
Hamacantha sp.	0.55	3.39	0.62	9.89	71.09

Green encrusted sponge sp.	0.41	1.76	0.43	5.14	76.23
Barnacle	0.31	1.62	0.31	4.73	80.96
Bright orange anemone	0.35	1.3	0.35	3.79	84.75
Stichopathes cf abyssicola	0.36	1.26	0.37	3.68	88.43
Red tube-forming anemone sp.	0.2	0.65	0.2	1.91	90.33

Group Stable (n=159; 1501-1661 m water depth)

Average similarity: 43.19

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Syringammina fragilissima	0.87	12.06	1.53	27.92	27.92
Stichopathes cf abyssicola	0.65	6.1	0.81	14.11	42.03
Ophiuroid indet.	0.66	5.78	0.82	13.38	55.41
?Periphragella lusitanica	0.59	4.88	0.7	11.29	66.7
Hexadella dedritifera	0.59	4.6	0.7	10.65	77.35
Hamacantha sp.	0.57	4.4	0.66	10.18	87.53
Bright orange anemone	0.27	0.92	0.27	2.13	89.66
Red solitary coral	0.25	0.8	0.24	1.86	91.51

Groups Dynamic & Stable

Average dissimilarity = 64.76

Species	Group Dynamic Frequency	Group Stable Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Stichopathes cf abyssicola	0.36	0.65	4.38	0.98	6.76	6.76
Ophiuroid indet.	0.53	0.66	3.97	0.88	6.13	12.89
Hamacantha sp.	0.55	0.57	3.94	0.9	6.09	18.98
Hexadella dedritifera	0.59	0.59	3.91	0.88	6.04	25.02
?Periphragella lusitanica	0.7	0.59	3.82	0.83	5.9	30.92
Syringammina fragilissima	0.56	0.87	3.21	0.77	4.95	35.88

Bright orange anemone	0.35	0.27	3.06	0.8	4.73	40.6
Green encrusted sponge sp.	0.41	0.18	2.95	0.83	4.55	45.15
Barnacle	0.31	0.06	2.71	0.65	4.18	49.33
Red tube-forming anemone sp.	0.2	0.24	2.68	0.67	4.13	53.46
Orange solitary coral	0.19	0.26	2.41	0.69	3.73	57.19
Red solitary coral	0.13	0.25	2.22	0.62	3.43	60.62
Hymesdesmia cf (Hymesdesmia) curvichela	0.2	0.11	1.71	0.57	2.64	63.26
Hermit crab sp. 2	0.03	0.18	1.58	0.47	2.44	65.7
Indet. sp. 5	0.16	0.03	1.56	0.43	2.41	68.12
Tunicata indet.	0.19	0.07	1.35	0.53	2.08	70.19
Mycale lingua	0.2	0.06	1.34	0.52	2.07	72.27
Cidarid sp.	0.17	0.01	1.25	0.42	1.93	74.19
Pentametrocrinus atlanticus	0.06	0.14	1.23	0.44	1.91	76.1
Spheric white sponge	0.09	0.12	1.2	0.45	1.85	77.95
Mystery sp. 2 (white hydroid-like organism)	0.05	0.09	1.09	0.38	1.68	79.64
Red anemone sp.	0.14	0.03	1.06	0.41	1.64	81.28
Shrimp	0.02	0.13	1.05	0.38	1.62	82.9
Red encrusted sponge sp.	0.11	0.04	1.02	0.39	1.58	84.48
Solenosmilia variabilis	0.14	0.04	0.89	0.43	1.38	85.86
White echinoid sp.	0.05	0.11	0.88	0.4	1.36	87.22
White Asteroid sp	0.04	0.06	0.65	0.31	1	88.22
Crinoid 1	0.08	0.06	0.64	0.37	0.98	89.2
Squat lobster	0.08	0.02	0.59	0.3	0.92	90.12

DIVES 035, 036 & 037

SUMMIT VERSUS FLANK

ANOSIM

Global Test

Sample statistic (Global R): 0.323

Significance level of sample statistic: 0.1%

Number of permutations: 999 (Random sample from a large number)

Number of permuted statistics greater than or equal to Global R: 0

SIMPER

Group summit

Average similarity: 56.05

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Barnacle	0.98	22.04	3.06	39.33	39.33
Ophiuroid indet.	0.86	16.81	1.54	29.98	69.31
Cidarid sp.	0.67	9.47	0.86	16.89	86.21
Syringammina fragilissima	0.44	3.9	0.48	6.95	93.16

Group flank

Average similarity: 33.23

Species	Frequency	Av.Sim	Sim/SD	Contrib%	Cum.%
Syringammina fragilissima	0.69	8.08	0.85	24.31	24.31
?Periphragella lusitanica	0.66	5.46	0.77	16.45	40.75
Ophiuroid indet.	0.59	4.03	0.66	12.13	52.89
Hexadella dedritifera	0.58	3.7	0.67	11.13	64.01
Hamacantha sp.	0.49	2.82	0.53	8.48	72.49
Stichopathes cf abyssicola	0.42	1.89	0.43	5.69	78.18
Bright orange anemone	0.28	0.97	0.28	2.91	81.09
Red tube-forming anemone sp.	0.24	0.84	0.23	2.52	83.6
Green encrusted sponge sp.	0.29	0.82	0.29	2.47	86.08
Orange solitary coral	0.25	0.64	0.24	1.92	88
Barnacle	0.19	0.6	0.19	1.81	89.81

Red solitary coral	0.22	0.49	0.21	1.47	91.28
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Groups summit & flank

Average dissimilarity = 76.19

Species	Group summit Frequency	Group flank Frequency	Av.Diss	Diss/SD	Contrib%	Cum.%
Barnacle	0.98	0.19	7.15	1.46	9.38	9.38
Cidarid sp.	0.67	0.11	5.6	1.12	7.35	16.73
?Periphragella lusitanica	0.01	0.66	5.47	1.17	7.18	23.91
Syringammina fragilissima	0.44	0.69	4.98	0.91	6.54	30.45
Ophiuroid indet.	0.86	0.59	4.51	0.8	5.93	36.38
Hexadella dedritifera	0.04	0.58	4.4	1.05	5.77	42.15
Hamacantha sp.	0.32	0.49	4.26	0.9	5.6	47.75
Stichopathes cf abyssicola	0	0.42	3.15	0.78	4.13	51.88
Bright orange anemone	0.18	0.28	3.02	0.69	3.97	55.84
Green encrusted sponge sp.	0.13	0.29	2.63	0.67	3.45	59.29
Red tube-forming anemone sp.	0.08	0.24	2.55	0.59	3.34	62.64
Red encrusted sponge sp.	0.14	0.15	2.21	0.54	2.89	65.53
Orange solitary coral	0.07	0.25	2.17	0.59	2.85	68.38
Hymedesmia cf (Hymedesmia) curvichela	0.06	0.21	1.83	0.54	2.41	70.79
Red solitary coral	0.04	0.22	1.79	0.52	2.34	73.13
Solenosmilia variabilis	0	0.22	1.32	0.51	1.74	74.87
Tunicata indet.	0	0.19	1.15	0.47	1.51	76.38
Crinoid 1	0	0.17	0.98	0.44	1.28	77.66
Pink solitary cup coral	0.07	0.05	0.97	0.33	1.28	78.94
Mycale lingua	0	0.13	0.83	0.38	1.09	80.03
Pentametrocrinus atlanticus	0	0.12	0.82	0.36	1.08	81.1
Spheric white sponge	0	0.12	0.79	0.35	1.03	82.14
Red anemone sp.	0.01	0.09	0.75	0.3	0.98	83.11

Macrourinae indet. 3	0.08	0.01	0.73	0.3	0.96	84.07
Shrimp	0.01	0.08	0.7	0.3	0.92	84.99
Hermit crab sp. 2	0	0.07	0.69	0.27	0.9	85.89
Asteroid sp. 1	0.04	0.05	0.65	0.28	0.85	86.74
Lepidion eques	0.06	0.01	0.61	0.26	0.8	87.55
White echinoid sp.	0	0.08	0.52	0.28	0.69	88.23
Indet. sp. 5	0	0.04	0.47	0.21	0.62	88.85
Mystery sp. 2 (white hydroid-like organism)	0	0.05	0.45	0.22	0.59	89.45
Aphrocallistes beatrix	0	0.08	0.41	0.28	0.54	89.99
White Asteroid sp	0.01	0.04	0.4	0.23	0.53	90.52

Supplementary Table S3: Variance partitioning results obtained by using partial redundancy analyses for ROV dives on the summit (dive 036) and flanks of the HTS (dives 035 and 037). Adjusted explained variation is an adjusted coefficient of determination summarising the variability in species composition explained by purely environmental (environment), purely geographic distance (space), or by the fraction of spatially structured environmental (environment*space) fractions along with their degrees of freedom (df; number of variables including their categories). NA refers to the value being not applicable because it cannot be computed.

Dive	Fraction	R2adj	Contribution of fraction to total variation (%)	Mean square	df	p-value
35	environment	0.06	6	0.013	6	0.002
	space	0.006	0.6	0.006	2	0.002
	environment*space	0.072	7.2	NA	NA	NA
	all variables	0.137	13.7	0.02	8	0.002
36	environment	0.004	0.4	0.016	1	0.188
	space	0.001	0.1	0.012	2	0.414
	environment*space	0.026	2.6	NA	NA	NA
	all variables	0.031	3.1	0.022	3	0.002
37	environment	0.09	9	0.0158	7	0.002
	space	0.004	0.4	0.0049	2	0.01
	environment*space	0.029	2.9	NA	NA	NA
	all variables	0.123	12.3	0.0167	9	0.002

Supplementary Table S4: Granulometric categories of predominant sedimentary facies observed from ROV images on the Hebrides Terrace Seamount (after Wentworth, 1922).

Median grain diameter (mm)	Modified Wentworth class	Present on seamount
>256	Bedrock	*
>256	Coral Framework	*
>256	Boulder	
64-256	Cobble	*
32-64	Very coarse gravel	*
16-32	Coarse gravel	*
8-16	Medium gravel	
4-8	Fine gravel	
2-4	Very fine gravel	
1-2	Very coarse sand	
1/2-1	Coarse sand	*
1/4-1/2	Medium sand	
0.125-0.250	Fine sand	*