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Supplementary Information for

Discovery of widely available abyssal rock patches reveals overlooked habitat type and prompts rethinking deep-sea biodiversity

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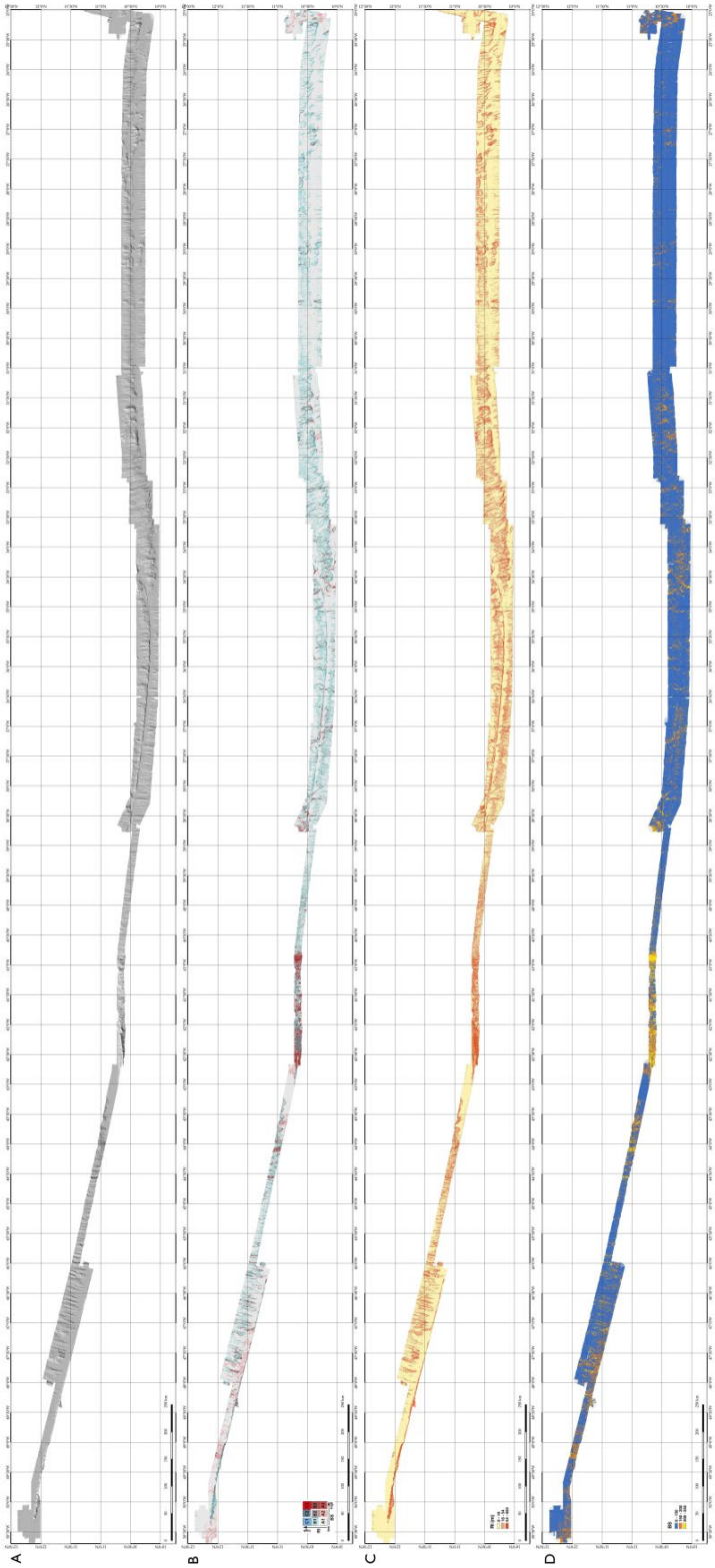

Fig. S1. Entire multibeam dataset of the Vema Fracture Zone. (A) bathymetric grid with 60 m resolution. (B) bivariate choropleth map showing the combination of backscatter (BS) and ruggedness index (RI). (C) distribution of the RI classes. (D) distribution of BS classes.

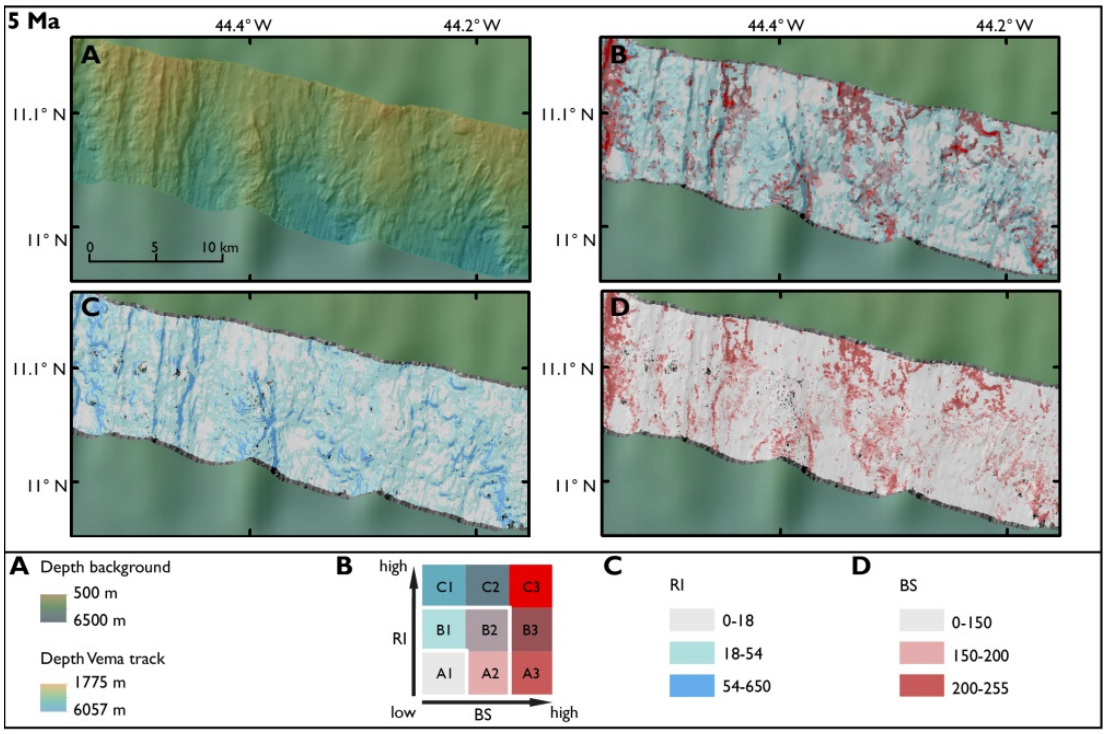

Fig. S2. Vema Fracture Zone seafloor at a crustal age of 5 Ma. (A) bathymetric grid with 60 m resolution. (B) bivariate choropleth map showing the combination of backscatter (BS) and ruggedness index (RI). (C) distribution of the ruggedness index (RI) classes. (D) distribution of backscatter (BS) classes.

Table S1. Seafloor sampling data and photographic/video observations for SO237 stations. Where sampling occurred along a track (trawls, dredges), classes are provided for start and end points. AUV = autonomous underwater vehicle; C = photographic camera; C-EBS = camera epibenthic sledge; DS = chain bag dredge; GC = gravity corer; MUC = multiple corer; MB = multibeam echo sounder; Mn = manganese nodules, SSS = side-scan sonar.

Station #	Latitude (on/off bottom)	Longitude (on/off bottom)	Depth (on/off bottom)	Device	Content / observation	Class	BS	RI
2-2	10°43.11' N	25°03.88' W	5507	GC	Soft sediments	A1	161	1.83
2-3	10°43.112' N	25°03.886' W	5498	MUC	Soft sediments	A1	161	1.83
2-4	10°43.108' N	25°03.888' W	5517	MUC	Soft sediments	A1	161	1.83
2-5	10°43.17' N	25°03.88' W	5518	MUC	Soft sediments, 5 of 12 cores empty, potentially due to manganese crust	A1	124	2.39
2-6	10°42.330' N 10°42.969' N	25°05.580' W 25°04.728' W	5520 5520	EBS	Soft sediments (content only)	A1 A2	61 144	11.76 5.87
2-7	10°41.370' N 10°42.287' N	25°05.137' W 25°03.952' W	5514 5510	EBS	Soft sediments (content only)	A2 A2	80 150	7.43 3.60
3-1	10°39.00' N 10°39.60' N	25°05.60' W 25°05.30' W	5144 4879	DS	Sediment, highly altered pillow basalt with thick Mn-crusts	C2 B2	138 181	72.98 18.17
4-3	10°25.11' N	31°04.61' W	5771	MUC	Soft sediments	A1	124	8.58
4-4	10°25.12' N	31°04.62' W	5759	MUC	Soft sediments	A1	124	8.58
4-5	10°25.12' N	31°04.62' W	5767	MUC	Soft sediments	A1	124	8.58
4-6	10°24.84' N	31°04.54' W	5805	GC	Soft sediments	A1	79	6.99
4-8	10°24.161' N 10°24.950' N	31°06.205' W 31°05.204' W	5735 5725	C-EBS	Soft sediments	A1 A1	78 79	11.39 14.96
4-9	10°24.082' N 10°24.589' N	31°04.795' W 31°04.247' W	5735 5733	C-EBS	Soft sediments	A1 A1	131 64	1.33 1.47
4-10	10°27.48' N	31°05.31' W	5814	GC	Soft sediments	A2	123	14.87
5-1	10°22.515' N 10°22.874' N	32°12.987' N 32°12.755' N	5455 5004	DS	Basalts: lavas and dikes, gabbros, breccias, mudstone, sandstone, Mn, and carbonates. Most dominant rock type basalt (altered). A large piece of highly altered gabbro clogged the dredge.	C1 C1	126 116	55.72 74.42
6-2 Dive1 63	10°20.998' N	36°57.616' W	5136	C+SSS AUV	Almost entirely featureless (besides lebensspuren), flat sediment plain.	A1	99	1.87
6-3	10°21.03' N	36°57.59' W	5138	MUC	Soft sediments	A1	101	1.71
6-4	10°21.03' N	36°57.61' W	5134	MUC	Soft sediments	A1	94	2.55
6-5	10°21.03' N	36°57.61' W	5137	MUC	Soft sediments	A1	94	2.55
6-6	10°21.02' N	36°57.60' W	5135	GC	Soft sediments	A1	101	1.71
6-7	10°20.659' N 10°21.547' N	36°57.010' W 36°55.585' W	5085 5079	C-EBS	Soft sediments	A1 A1	82 91	3.89 6.05
6-8	10°21.542' N 10°22.293' N	36°57.236' W 36°55.852' W	5119 5127	C-EBS	Soft sediments, flat topography, lebensspuren	A1 A1	85 45	1.81 1.69
7-1	10°13.62' N 10°13.763' N	36°31.96' W 36°31.81' W	5063 4760	DS	Basalt with varying degrees of alteration	B1 C1	98 133	26.27 179.35
8-2	10°43.56' N	42°41.59' W	5183	MUC	Soft sediments	A1	159	1.28
8-4	10°43.00' N 10°43.00' N	42°39.91' W 42°39.73' W	5176 5178	C-EBS	Soft sediments	A2 A2	154 121	1.98 1.39
8-9	10°43.67' N	42°41.75' W	5141	GC	Empty except from 5 rock fragments.	A2	164	2.22
8-10	10°42.58' N	42°40.99' W	5117	MUC	Soft sediments	B1	11	41.44
8-11	10°42.59' N	42°41.76' W	5122	MUC	Soft sediments	B2	174	39.84
8-12	10°42.79' N	42°41.76' W	5176	GC	Soft sediments	A1	113	3.07
9-2	11°40.299' N 11°40.410' N	48°00.071' W 47°59.565' W	4995 4986	C-EBS	Manganese nodules and crusts, soft sediments, lebensspuren, flat topography	A2 A1	123 118	4.95 13.16
9-3	11°41.37' N	47°57.36' W	4996	MUC	Soft sediments	A1	146	2.82
9-4	11°41.36' N	47°57.34' W	5000	MUC	Soft sediments	A1	142	2.82
9-5	11°41.35' N	47°57.36' W	4997	MUC	All but one core empty	A1	146	2.82
9-6 Dive1 65	11°42.58' N	47°59.07' W	4977	C AUV	Soft sediments, lebensspuren	A1	134	6.67
9-8	11°39.014' N 11°39.201' N	47°56.168' W 47°54.697' W	5004 5001	C-EBS	Soft sediments	A2 A2	152 158	0.34 0.89
10-1	11°39.96' N 11°40.44' N	48°20.89' W 48°19.56' W	4236 3625	DS	Soft sediments	B1 C1	122 128	24.60 74.75
11-1	12°05.732' N 12°05.727' N	50°30.239' W 50°28.922' W	5093 5088	C-EBS	Soft sediments	A1 A1	151 112	1.81 2.43
11-3 Dive1 66	12°05.99' N	50°28.4' W	5093	C+SSS AUV	Flat topography, soft sediments, sediment fractures and pockmarks.	A2	158	3.43
11-4	12°04.753' N 12°04.791' N	50°30.348' W 50°29.114' W	5130 5108	C-EBS	Soft sediments	A1 A1	125 140	7.26 2.93
11-5	12°05.40' N	50°26.98' W	5091	MUC	Soft sediments	A2	90	3.75
11-6	12°05.42' N	50°26.98' W	5090	MUC	Soft sediments	A2	116	4.35
11-7	12°05.40' N	50°26.97' W	5090	MUC	Soft sediments	A1	139	3.75