



Supplement of

A niche for diverse cable bacteria in continental margin sediments overlain by oxygen-deficient waters

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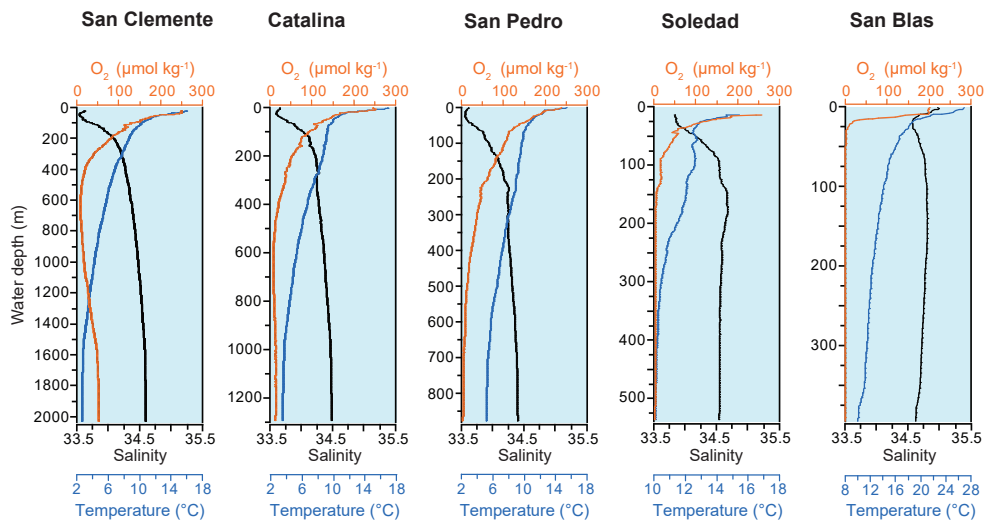
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Figure S1. Image of *Pleuroncodes planipes* at the sediment-surface in a multicore sampled in Soledad basin.



15 **Figure S2. Water depth profiles of oxygen, temperature and salinity for the 5 sampling sites (Table 1).**

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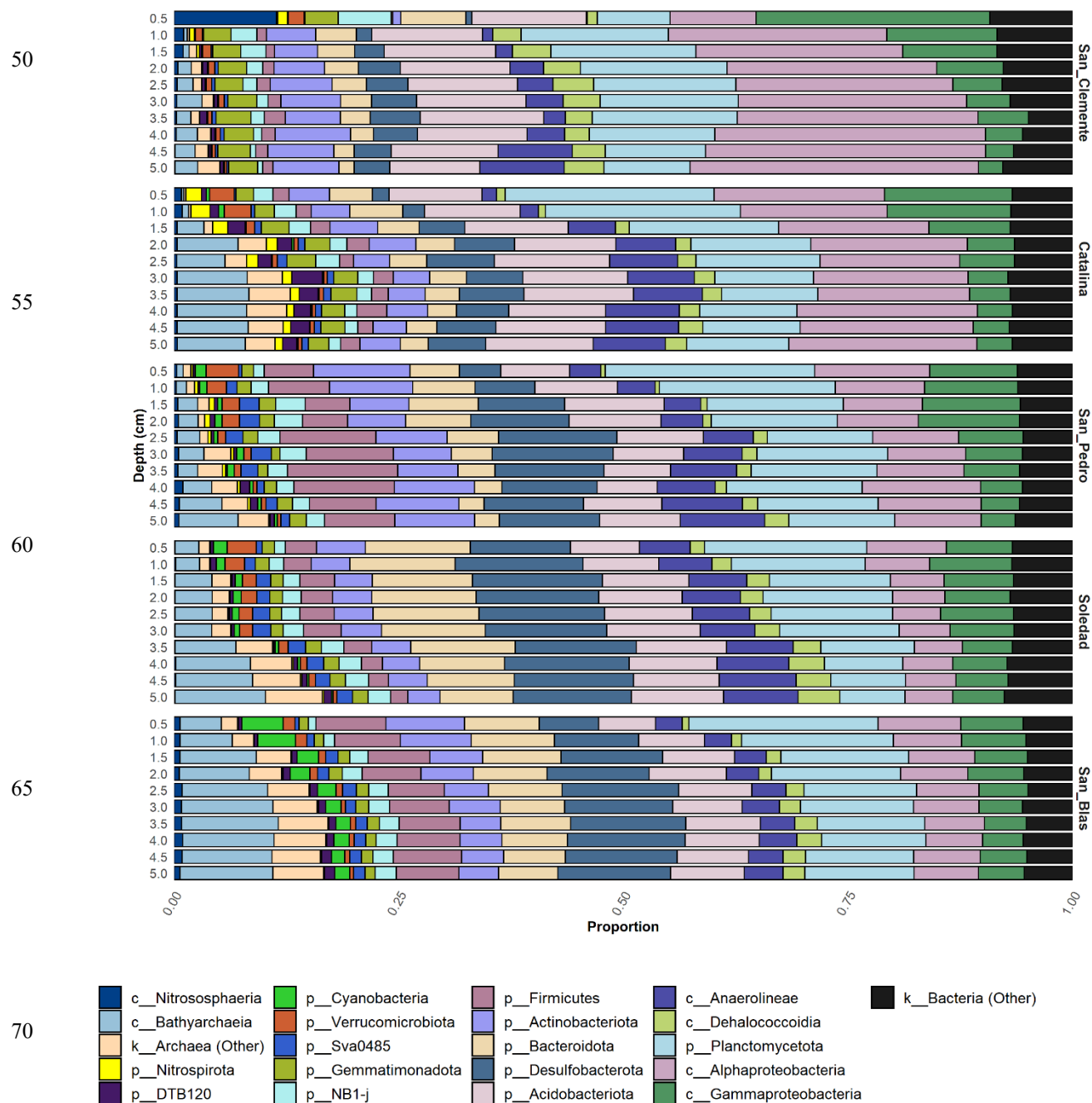
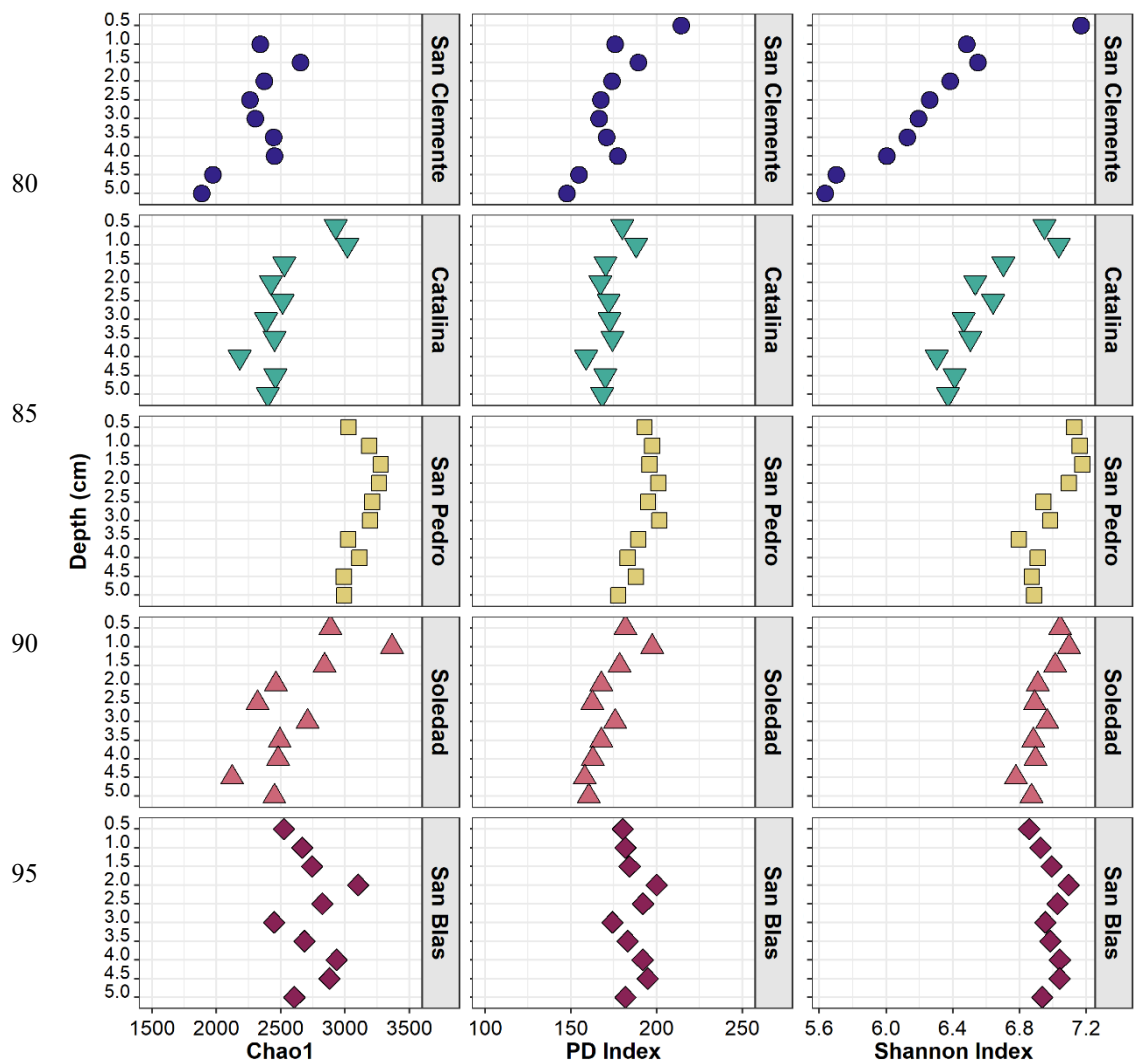


Fig S3. Microbial community composition by site and depth. Phyla representing at least 0.2 % of the entire dataset are shown. The two most abundant classes of Pseudomonadota (Alphaproteobacteria and Gammaproteobacteria) and Chloroflexota (Anaerolineae and Dehalococcoidia) are also shown.



100 **Fig S4.** Within-sample (alpha) diversity, represented by the Chao1 Index (left), Faith's Phylogenetic Diversity Index (PD, center), and Shannon Index (right).

Table S1. Depth profiles of porosity and sediment Fe speciation at the five sites.

Sample depth (cmbsf)	Porosity (vol.%)	Fe(III)-oxides (HCl-Fe(III)) ($\mu\text{mol g}^{-1}$)	Crystalline Fe- oxides (CDB-Fe) ($\mu\text{mol g}^{-1}$)	FeS and FeCO_3 (HCl-Fe(II)) ($\mu\text{mol g}^{-1}$)	Recalcitrant Fe- oxides (Fe-Amm. Ox) ($\mu\text{mol g}^{-1}$)	FeS_2 (Fe- HNO_3) ($\mu\text{mol g}^{-1}$)
San Clemente basin						
0.25	93.7	62	212	8	32	31
0.75	91.9	66	217	7	33	40
1.25	89.3	64	205	7	37	42
1.75	90.6	73	218	8	32	40
2.25	91.8	78	217	7	30	36
2.75	90.8	78	206	9	31	41
3.25	88.0	99	194	10	28	39
3.75	88.2	82	211	30	22	33
4.25	86.2	58	252	38	27	36
4.75	86.5	47	187	45	23	28
5.25	89.7	36	206	51	24	32
5.75	87.5	27	203	54	22	38
6.25	87.2	27	193	55	24	38
6.75	86.2	26	199	58	26	34
7.25	87.0	20	203	55	23	35
7.75	89.0	22	228	67	25	39
8.25	89.3	23	249	59	25	38
8.75	90.1	15	221	57	23	30
9.25	87.5	15	231	60	22	30
9.75	86.4	12	236	66	24	29
11	88.5	15	226	59	24	27
13	90.2	11	223	71	24	31
15	86.4	9	237	65	23	32
17	85.9	15	232	65	25	29
19	86.4	0	206	69	23	33
22	86.1	11	187	54	30	28
26	88.4	11	153	57	26	35
30	85.1	9	184	60	33	44
34	84.9	n.a.	175	n.a.	30	42
Catalina basin						
0.25	95.7	78	181	14	16	21
0.75	92.8	97	140	28	19	35
1.25	89.0	79	119	37	20	28
1.75	89.0	42	109	41	20	32
2.25	89.0	28	141	42	18	36
2.75	87.0	25	168	43	18	39
3.25	87.8	18	111	41	17	42
3.75	87.9	10	131	40	18	37
4.25	86.2	16	119	37	16	33
4.75	85.5	13	143	40	18	40
5.25	90.2	12	103	42	18	39
5.75	87.6		112		19	44
6.25	87.3	29	209	39	18	37
6.75	85.2	15	134	42	16	35
7.25	84.7	29	134	38	16	26

7.75	86.7	13	144	45	15	32
8.25	86.8	9	144	46	15	30
8.75	85.3	10	145	45	17	27
9.25	86.3	9	138	46	17	32
9.75	85.3	11	136	49	14	31
11	86.5	10	129	49	15	35
13	88.2	12	153	45	16	35
15	87.7	13	132	47	15	42
17	88.9	10	73	51	15	44
19	85.9	7	151	51	16	49
22.5	86.1	0	79	58	15	43
San Pedro basin						
0.25	93.7	358	161	57	18	42
0.75	94.9	412	158	63	16	43
1.25	91.5	63	169	59	21	45
1.75	89.6	31	149	60	17	43
2.25	89.0	36	138	76	18	40
2.75	90.6	35	115	87	16	35
3.25	87.5	53	144	81	16	38
3.75	89.4	52	136	81	20	45
4.25	88.8	43	116	68	16	38
4.75	88.2	49	106	74	17	37
5.25	87.6	46	111	84	19	35
5.75	88.0	41	146	62	20	42
6.25	90.5	47	93	65	18	40
6.75	88.5	31	147	57	21	44
7.25	90.2	34	155	60	21	41
7.75	88.8	29	210	56	17	44
8.25	88.1	25	146	58	20	44
8.75	88.3	23	175	72	20	43
9.25	87.7	28	144	49	20	43
9.75	87.8	16	175	62	19	46
11	86.3	14	165	60	20	48
Soledad basin						
0.25	93.9	48	37	33	11	16
0.75	93.5	21	57	35	8	14
1.25	92.4	0	52	38	8	33
1.75	93.4	0	55	45	9	49
2.25	90.4	1	49	44	8	47
2.75	91.8	0	49	43	8	40
3.25	90.9	2	66	29	6	30
3.75	90.6	4	57	41	8	35
4.25	89.6	3	51	39	8	33
4.75	88.9	5	62	36	8	32
5.25	89.5	7	60	42	9	38
5.75	89.4	3	56	49	9	56
6.25	88.9	6	59	37	8	43
6.75	88.6	3	51	43	8	47
7.25	88.9	3	46	37	8	38
7.75	89.5	1	49	37	8	64
8.25	91.2	5	48	40	8	41
8.75	91.6	0	58	45	8	45
9.25	91.0	3	50	41		86

9.75	89.9	5	55	40	8	56
11	89.8	9	49	29	8	59
13	91.6	1	49	41	8	51
15	91.3	0	45	39	8	41
17	90.9	0	51	46	8	60
19	91.2	7	39	48	6	48
San Blas basin						
0.25	97.8	245	121	66	12	2
0.75	95.0	31	129	49	16	20
1.25	95.8	27	114	52	13	11
1.75	95.7	18	109	50	16	20
2.25	94.3	21	103	47	17	21
2.75	94.1	13	117	55	17	33
3.25	93.6	26	140	52	19	19
3.75	90.9	24	116	39	20	25
4.25	93.2	13	107	47	19	20
4.75	93.3	12	95	44	20	25
5.25	91.5	12	107	49	14	20
5.75	93.4	8	108	49	16	19
6.25	92.3	5	97	45	16	18
6.75	93.1	9	107	49	17	18
7.25	92.0	8	91	45	17	16
7.75	90.9	3	109	46	15	17
8.25	92.2	1	88	52	18	16
8.75	91.6	5	108	51	20	30
9.25	90.5	6	80	49	20	20
9.75	90.7	4	73	49	18	16
11	92.0	10	72	44	17	14
13	90.9	11	58	46	20	22
15	91.8	8	72	45	19	26