

Supplementary Table 2. Frequency that each bacterial phylum was found across each of the environmental categories.

	Aerosol	Brackish	Brackish sediment	Freshwater	Freshwater sediment	Marine	Marine sediment	Hydrothermal vent	Ice	Aquatic other	Digesters	Food-associated	Industrial/mining	Pollution associated	Built other	Plant root	Plant surface	Plant other	Agricultural soil	Desert soil	Permafrost	Other soils	Vertebrate	Arthropod	Other invertebrate	Other zoological	Other	Total	
27	939	88	69	6598	1632	5002	2184	1459	184	1052	7886	7919	2558	3940	2144	3290	929	3399	2616	614	289	9311	369290	2148	678	2085	3179	488703	
49	1922	705	210	37105	4138	53210	11213	5515	1151	4675	11076	3329	9117	18652	4293	11447	2668	3434	3765	576	698	21671	144980	6384	4209	7407	10040	450706	
3	388	31	8	2947	483	3168	2895	172	257	619	842	240	904	6226	1110	2454	567	1016	923	707	447	10720	163309	940	492	269	1693	223506	
9	116	132	39	6360	16052	21074	1943	684	365	752	4511	170	1062	4291	333	693	186	1157	343	190	110	3957	95258	1147	708	323	1596	169868	
17	7	14	6	681	299	11894	1712	295	3	153	3504	11	387	894	124	165	60	97	187	284	21	1614	314	11	331	16	291	23863	
21	20	28	1	1189	34	9100	216	325	33	237	66	38	112	75	72	22	320	44	82	342	147	1001	657	28	198	30	1126	18293	
2	9	6	19	586	264	518	648	174	12	181	504	15	506	1215	97	839	61	134	1563	107	108	7082	462	63	317	8	308	16213	
48	11	16	10	362	156	7518	1464	265	31	311	778	21	346	751	64	196	3	124	130	36	20	1165	499	95	154	81	302	15595	
56	4	7	3	111	77	5803	246	42	1	55	403	3	111	129	18	2	0	3	1	8	0	85	1513	1183	30	10	85	11900	
28	1	0	1	4	7	18	36	17	0	10	24	3	11	2	20	0	0	0	0	0	0	12	8573	3	1	440	15	9540	
64	5	7	1	412	78	3340	107	99	17	94	95	0	119	397	35	200	2	88	66	37	28	735	2208	65	82	71	100	8704	
59	0	1	1	61	16	31	12	8	1	0	257	14	34	57	6	2	68	56	2	0	0	21	2377	94	57	58	17	5789	
40	0	7	3	48	42	2237	163	13	0	14	233	0	21	38	6	0	0	11	1	4	0	32	631	11	39	12	8	3612	
43	10	5	4	399	110	77	291	96	0	237	121	23	277	183	58	98	0	13	55	10	7	671	63	4	43	2	108	3150	
30	1	2	8	51	44	245	176	20	2	16	29	2	102	695	21	123	0	28	178	71	12	738	151	3	30	0	71	2925	
52	4	3	0	53	7	18	4	4	6	22	80	3	43	374	6	29	13	15	11	8	3	183	1634	22	5	8	24	2632	
26	0	1	0	18	12	1429	30	2	0	8	42	2	3	8	2	1	0	3	3	1	0	19	199	721	12	0	7	2542	
8	0	0	0	5	28	79	2223	21	0	0	85	0	31	17	2	0	0	1	0	2	0	13	2	0	0	0	3	2538	
23	14	1	1	62	13	216	16	227	4	30	34	5	162	86	30	8	5	13	11	33	1	198	523	3	2	2	89	2158	
57	1	0	0	6	13	16	4	10	0	1	895	2	95	44	5	0	0	10	1	0	0	18	561	59	0	1	10	1828	
5	0	0	0	20	45	1200	338	22	0	3	30	0	13	20	12	1	0	0	3	1	0	38	0	0	7	0	1	1783	
16	7	21	1	360	64	285	75	88	1	36	155	0	85	73	38	14	1	11	13	1	19	84	28	16	12	0	49	1617	
22	0	0	1	20	11	1058	74	31	0	8	28	0	39	20	1	0	0	1	0	1	0	21	185	5	1	0	1	1549	
7	3	2	0	36	27	424	72	38	2	17	107	4	41	74	5	23	9	30	20	10	7	227	181	2	1	1	23	1425	
46	0	5	0	197	45	328	207	83	1	31	151	0	50	70	16	11	0	9	14	0	1	77	50	0	3	0	22	1385	
41	0	1	0	3	2	1150	42	23	0	7	23	0	5	8	0	2	0	0	0	0	0	20	0	0	0	0	23	1332	
32	4	2	1	139	28	744	52	96	0	18	15	0	11	11	4	1	0	4	0	0	0	21	57	9	5	4	11	1252	
36	0	0	0	1	2	1181	47	1	0	2	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1236	
63	0	0	0	806	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	379	0	0	0	0	1185	
37	0	2	2	16	40	616	137	19	0	5	7	0	23	12	2	9	0	3	7	2	0	71	2	0	0	0	14	1004	
34	1	0	0	13	10	640	70	15	0	12	62	0	10	35	2	4	0	1	17	2	0	18	4	1	3	0	21	958	
6	0	0	0	46	0	2	1	650	0	3	0	0	1	0	0	0	0	0	0	0	0	3	2	0	0	1	71	913	
62	1	1	0	40	19	327	114	7	1	19	36	2	29	34	2	13	0	19	2	0	1	76	19	0	3	9	27	815	
61	0	0	0	7	8	39	9	89	0	2	368	0	106	30	2	2	0	7	1	1	0	22	0	0	0	0	9	806	
42	1	1	0	55	49	172	85	23	0	32	64	0	33	106	13	9	0	8	13	1	1	77	21	0	1	1	14	805	
15	0	0	0	40	6	9	6	0	0	16	1	0	1	1	2	0	0	0	0	0	0	17	159	1	0	2	8	723	
45	1	1	0	42	9	404	85	9	0	13	25	0	16	4	1	1	0	3	0	0	1	6	6	0	3	0	3	637	
12	0	0	0	40	31	234	130	9	0	18	15	0	18	16	2	5	0	1	4	0	0	31	3	0	0	0	9	575	
58	0	0	1	14	15	206	152	24	0	8	114	0	6	11	2	0	0	0	1	0	0	14	0	0	1	0	0	574	
25	0	1	0	90	6	9	15	18	0	13	9	0	18	25	2	7	0	4	9	1	1	58	47	179	0	0	5	524	
20	0	0	0	34	12	13	4	2	0	3	356	2	16	16	1	0	0	0	0	0	0	4	2	7	1	0	1	502	
1	0	2	0	56	7	25	148	18	0	4	3	0	4	3	1	0	0	0	0	5	0	4	0	0	0	0	8	301	
4	0	0	0	21	0	4	234	2	0	1	0	2	1	1	0	0	0	0	0	0	0	5	0	0	0	0	2	280	
10	0	0	0	2	0	142	8	9	0	1	57	0	4	14	1	0	0	3	0	0	0	3	0	0	0	0	5	253	
33	0	0	0	3	6	203	14	6	0	0	6	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	242	
14	0	1	0	4	11	94	44	6	0	8	13	1	30	10	0	0	0	1	1	0	0	5	5	0	0	0	5	240	
13	0	0	0	8	4	124	1	12	0	8	8	0	6	2	0	0	0	0	1	0	0	3	17	2	1	0	0	197	
54	3	0	0	5	4	17	8	1	0	0	13	1	9	4	0	1	0	0	1	0	0	18	83	1	2	1	2	175	
47	0	0	0	3	0	46	10	3	0	0	1	0	2	0	0	0	0	0	0	1	0	2	7	0	42	0	2	172	
66	0	0	0	2	2	0	0	0	1	5	1	0	3	7	0	4	0	0	0	3	0	108	1	0	0	0	1	140	
60	0	0	0	8	0	0	1	85	0	0	0	0	4	1	0	0	0	0	0	0	0	1	0	0	0	0	0	118	
55	0	0	0	9	0	62	6	1	0	0	3	0	0	0	0	15	0	0	1	0	0	3	5	0	0	0	1	107	
65	0	0	0	3	2	1	1	0	0	0	6	0	2	16	1	2	0	1	4	0	0	22	5	0	0	0	2	70	
35	0	0	0	4	3	12	10	0	0	0	0	0	0	4	0	0	0	0	1	0	0	9	0	0	1	0	1	45	
19	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	0	0	0	0	0	1	17	1	0	13	0	42	0	
38	0	0	0	1	2	5	13	1	0	1	0	0	1	0	0	0	0	0	0	0	0	7	0	0	0	0	0	32	0
31	0	0	0	7	3	1	2	1	0	1	2	0	2	1	0	2	0	1	0	0	0	6	0	0	0	0	1	31	0
24	0	0	0	1	0	1	0	11	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0
29	0	0	0	2	0	0	0	9	0	0	0	0	4	0	0	0	0	0	0	0	2	0	0	0	0	0	0	17	0
53	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0
18	0	0	0	0	0	0	3	0	0	0	1	0	2	0	0	0													