

**Supplementary Table 3. Frequency that each archaeal 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
Euryarchaeota	2	488	138	598	726	1295	6	4099	5409	535	3688	117	1026	378	511	22	33	0	78	3	5261	1030	646	87	21	53	71	28414
Thaumarchaeota	0	687	274	546	280	805	36	6666	5505	146	843	0	156	36	173	0	108	0	149	35	126	752	116	0	42	0	129	17885
Miscellaneous Crenarchaeotic Group	0	92	107	101	224	357	0	102	2117	36	148	0	43	24	22	0	3	0	9	0	2	272	55	0	4	0	0	3738
Crenarchaeota	0	0	1	24	15	803	0	11	17	2	72	0	10	2	1	0	0	0	0	0	0	20	16	0	0	1	0	1185
Woesearchaeota	0	61	0	75	9	56	0	19	365	3	5	0	4	0	5	0	2	0	0	0	0	1	6	0	0	0	0	624
Aenigmarchaeota	0	8	2	24	59	70	0	21	100	25	1	0	0	0	0	0	0	0	1	0	0	0	20	0	0	0	0	341
Algarchoeota	0	7	0	12	0	201	0	2	20	4	1	0	4	4	0	0	0	0	0	0	0	2	13	0	0	0	0	310
Marine Hydrothermal Vent Group	0	6	3	2	3	13	0	5	218	5	0	0	0	0	0	0	0	0	0	0	0	3	8	0	0	0	0	267
Korarchaeota	0	0	0	2	0	159	0	3	21	0	6	0	0	0	0	0	0	0	8	1	0	3	2	0	0	0	0	214
Ancient Archaeal Group	0	0	0	0	0	0	0	0	191	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	191
Nanoarchaeota	0	0	0	132	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	138
Miscellaneous Euryarchaeotic Group	0	0	0	6	4	10	0	1	61	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	85
Nanohaloarchaeota	0	5	0	11	0	0	0	48	2	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79
Diapherotrites	0	13	0	1	2	4	0	3	6	1	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	41
SM1K20	0	1	0	6	2	6	0	0	14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33
Marine Hydrothermal Vent Group 1	0	0	0	0	0	10	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Parvarchoeota	0	0	0	0	0	0	0	1	3	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	9
Marine Hydrothermal Vent Group 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Unclassified	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
TVG8AR30	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	2	1368	525	1540	1324	3797	42	10983	14049	772	4764	117	1245	444	716	22	146	0	245	39	5389	2091	882	87	67	54	200	53575