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Effects of sea animal colonization on the coupling between dynamics and activity of soil ammonia-oxidizing bacteria and archaea in maritime Antarcticas

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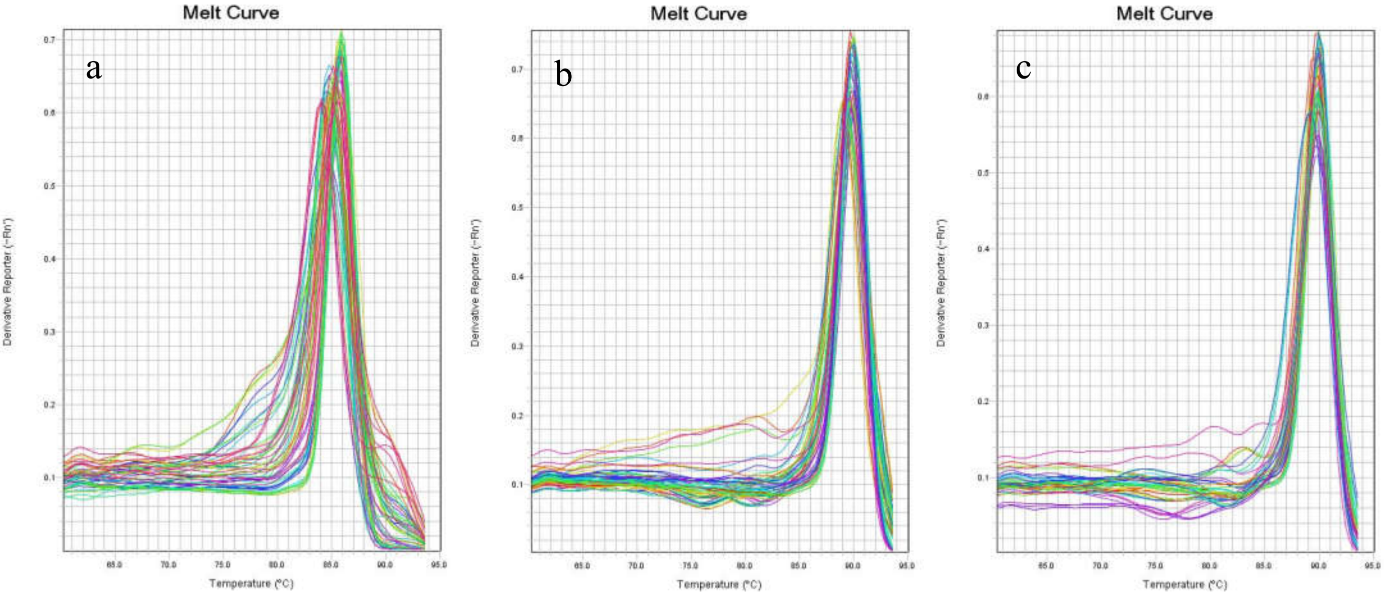

Fig. S1. Melting curve analysis had only one observable peak at a melting temperature (Tm=84.9 °C for AOA (a), Tm=89.6 °C for β-AOB (b, c)), no detectable peaks associated with primer-dimer artifacts or other non-specific PCR amplification products were observed.

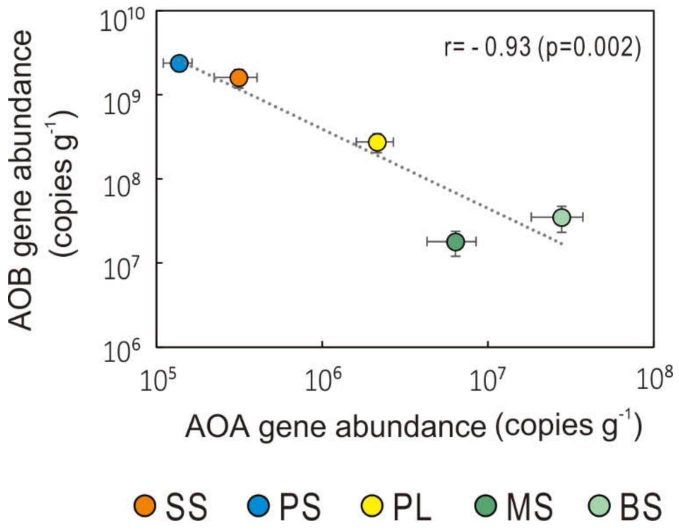

Fig. S2. The correlation between the abundances of AOB and AOA amoA genes across all the tundra patches.

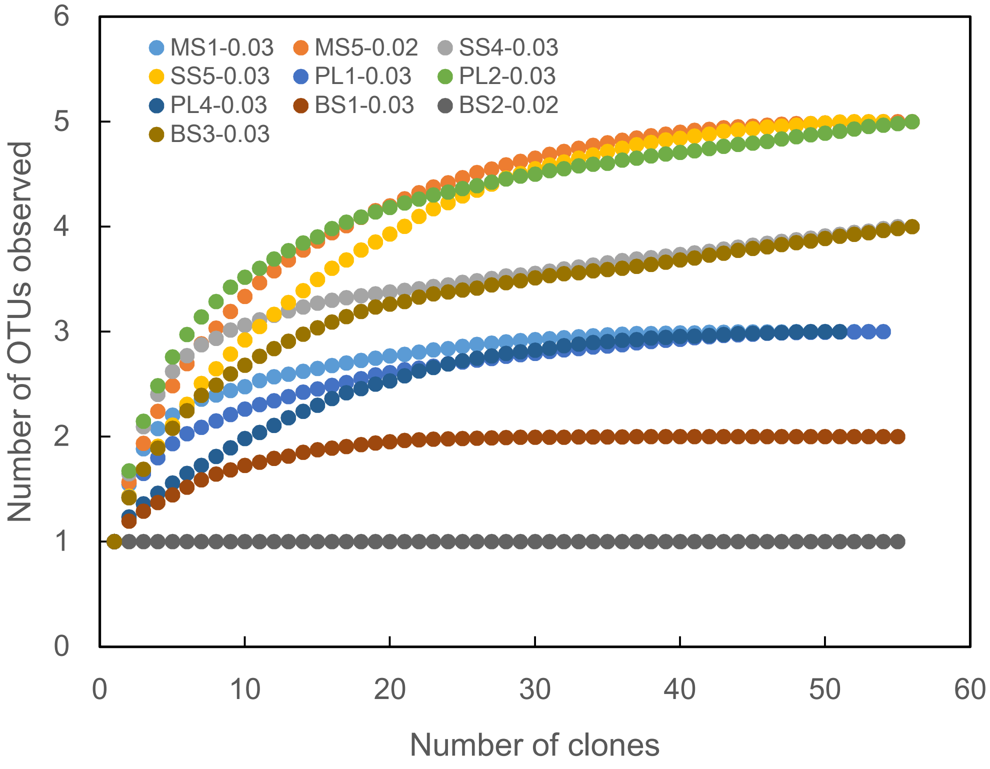

Fig. S3. Rarefaction curves of the ammonia oxidizing archaeal (AOA) clone libraries. OTUs are defined at 3 % divergence in nucleotides.

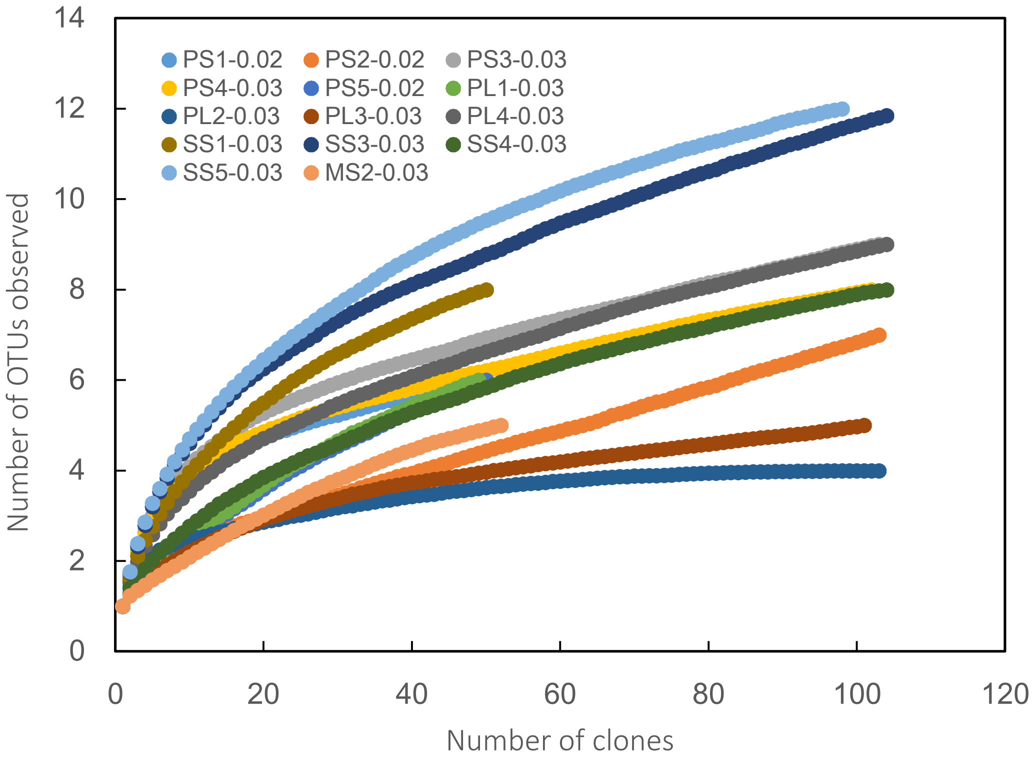

Fig. S4. Rarefaction curves of the ammonia oxidizing bacteria (AOB) clone libraries. OTUs are defined at 3 % divergence in nucleotides.

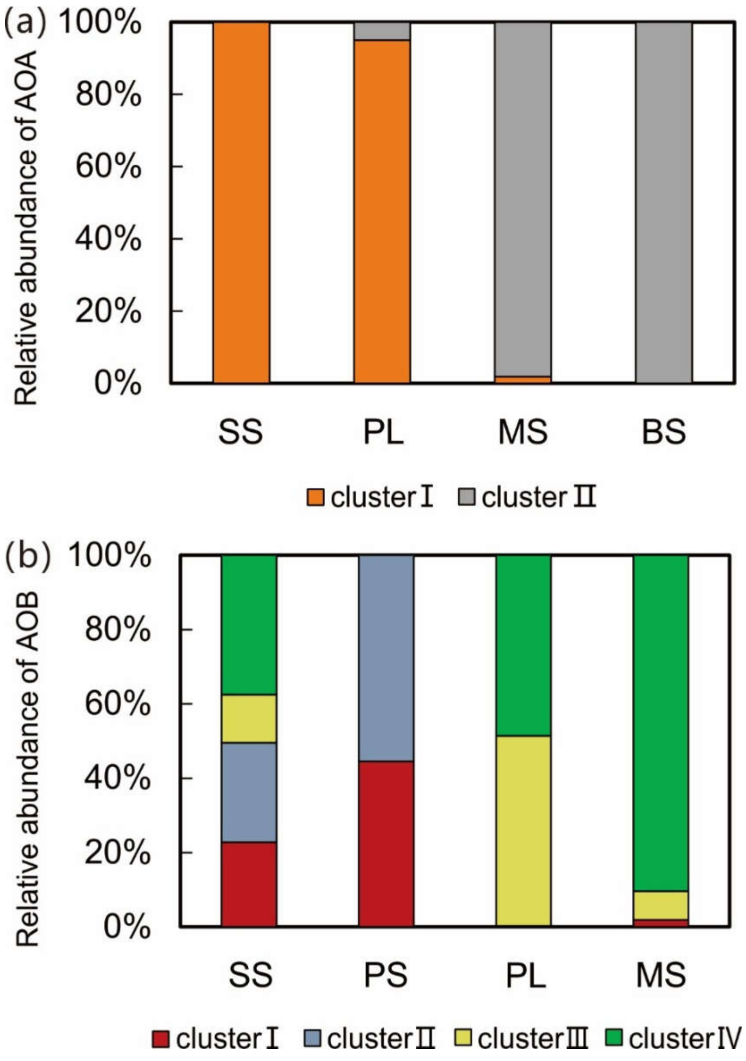

Fig. S5. Relative abundance of partial AOA (a) and AOB (b) sequences retrieved from five tundra patch soils subjected to different effects of sea animal activities, as related to different *Nitrososphaera* or *Nitrosospira* clusters.

Table S1. Diversity characteristics of clone libraries of AOB and AOA.

Sample	No. of clones	OTUs[a]	Chao1[b]	Shannon-Wiener[c]	1/Simpson[d]	Coverage (%)[e]
AOA						
SS4	55	5	6	1.16	2.89	83.3%
SS5	54	6	6	0.91	1.71	100.0%
PL1	54	4	4	0.75	1.67	100.0%
PL2	57	5	5	1.25	3.05	100.0%
PL4	51	3	3	0.44	1.28	100.0%
MS1	53	5	6	1.02	2.44	83.3%
MS5	56	5	5	1.10	2.32	100.0%
BS1	55	4	5	0.48	1.30	80.0%
BS2	55	1	1	0.00	1.00	100.0%
BS3	54	4	5	0.28	1.12	80.0%
AOB						
SS1	50	8	9.5	1.59	4.31	84.2%
SS3	107	15	25	1.82	4.23	60.0%
SS4	104	8	9	0.64	1.33	88.9%
SS5	98	15	18	2.17	6.97	83.3%
PS1	49	7	8	1.10	4.69	87.5%
PS2	103	7	9	0.77	1.68	77.8%
PS3	103	13	18	1.73	3.92	72.2%
PS4	102	13	16.3	1.77	3.89	79.6%
PS5	50	6	7.5	0.68	1.42	80.0%
PL1	49	9	11	1.55	3.69	81.8%
PL2	103	7	7	1.14	2.52	100.0%
PL3	101	7	7.5	0.78	1.51	93.3%
PL4	104	11	14	1.84	5.24	78.6%
MS2	52	7	10	1.10	2.32	70.0%

a. OTUs are defined at 3% nucleotide acid divergence.

b. Nonparametric statistical predictions of total richness of OTUs based on distribution of singletons and doubles.

c. Shannon diversity index. A higher number represents more diversity.

d. Reciprocal of Simpson’s diversity index. A higher number represents more diversity.

e. Percentage of coverage: percentage of observed number of OTUs divided by Chao1 estimate.