

1 **Table S1.** Diversity indices of β -AOB *amoA*, AOA *amoA* and *nirS* genes based on 5% DNA cutoff. n: the number of sequences; OTU:
 2 operational taxonomic unit; C: coverage; H': Shannon-Wiener Index; 1/D: Simpson's diversity Index.

Clone library	β -AOB <i>amoA</i>						AOA <i>amoA</i>						<i>nirS</i>					
	n	No. of OTUs	C (%)	H'	1/D	Chao1	n	No. of OTUs	C (%)	H'	1/D	Chao1	n	No. of OTUs	C (%)	H'	1/D	Chao1
AprY1SF	37	6	94.6	1.38	3.43	7	-						-					
AprY1BF	40	3	100.0	0.81	1.91	3	-						-					
AprY2SF	38	3	100.0	0.70	1.65	3	-						-					
AprY2BF	38	5	94.7	1.02	2.15	6	-						62	28	69.4	2.80	10.62	57
AprY3SF	39	2	100.0	0.59	1.71	2	-						-					
AprY3BF	40	4	95.0	0.69	1.60	5	40	2	100.0	0.68	2.01	2	83	50	56.6	3.66	43.08	120
AprY4SF	-						-						-					
AprY4BF	40	2	100.0	0.61	1.76	2	31	4	93.5	0.89	2.15	5	94	58	57.4	3.87	64.28	136
AprY5SF	-						-						-					
AprY5BF	40	5	100.0	1.43	4.02	5	40	4	97.5	0.84	2.06	5	100	59	54.0	3.72	33.90	232
AugY0SP	34	9	91.1	1.93	6.76	11	40	3	97.5	0.78	2.13	3	N					
AugY0SF	35	4	97.1	0.69	1.55	4	39	3	97.4	0.71	1.83	3	N					
AugY0BP	38	6	94.7	1.38	3.40	7	39	3	100.0	0.82	1.99	3	N					
AugY0BF	36	9	88.9	1.76	4.67	15	40	4	95.0	0.83	1.99	5	N					
AugY3SP	36	9	91.7	1.82	5.48	10	-						N					
AugY3SF	36	3	100.0	0.43	1.27	3	-						N					
AugY3BP	32	6	96.9	1.60	5.01	6	40	4	95.0	0.75	1.76	5	N					
AugY3BF	37	3	97.3	0.33	1.19	3	-						N					
AugY5SP	15	2	100.0	0.64	1.91	2	-						N					
AugY5SF	-						-						N					

AugY5BP	37	3	97.3	0.70	1.80	3	39	4	94.9	0.88	2.21	5	N
AugY5BF	37	5	100.0	1.51	4.50	5	39	7	94.9	1.48	3.74	7	N

- 1 -, PCR reactions were not successful.
- 2 N, Samples were not detected using PCR and clone library.