

Table S1. Structural diversity indices of bacterial communities in seawater samples and abalone intestine samples.

Sample ID	Reads	0.97				
		OTU	Ace	Chao	Shannon	Simpson
XBS-12-10	6958	652	984	956	4.46	0.0467
XBS-12-11	7031	760	1086	1045	4.53	0.0545
XBS-12-12	6818	656	927	905	4.74	0.0356
XBS-13-1	6204	565	799	749	4.48	0.0502
XBS-13-3	5334	454	662	649	4.02	0.0746
XBS-13-4	4871	516	754	747	3.9	0.1483
XBS-13-5	5586	141	248	281	2.84	0.1084
XBS-13-6	6681	499	874	719	4.63	0.0235
XBS-13-7	6416	475	678	688	4.49	0.0356
XBS-13-8	6575	729	1015	946	5.28	0.0156
XBS-13-9	5394	815	1183	1108	5.26	0.0188
XBS-13-10	5700	651	1145	939	5.11	0.0154
XBB-13-4	5492	285	407	403	3.18	0.1235
XBB-13-5	6784	305	395	380	3.32	0.136
XBB-13-7	10819	338	426	413	3.62	0.128
DSS-12-10	6657	470	656	643	4.26	0.0569
DSS-12-11	7107	525	700	705	4.72	0.0277
DSS-12-12	7089	527	696	706	4.62	0.0277
DSS-13-1	5734	474	628	607	4.71	0.0232
DSS-13-3	4823	398	551	582	4.06	0.0602
DSS-13-4	3986	398	540	499	4.19	0.048
DSS-13-5	5769	754	902	874	5.6	0.0085
DSS-13-7	5193	465	834	628	4.52	0.0534
DSS-13-9	6934	635	1177	969	4.71	0.0387

DSS-13-10	6955	628	1178	976	4.63	0.0341
DSB-13-3	10330	243	376	418	2.79	0.1346
DSB-13-4	6202	46	100	132	1.69	0.3375
DSB-13-5	6942	94	300	213	1.2	0.5663
DSB-13-6	11606	467	566	616	4.22	0.053
DSB-13-7	13401	298	392	397	2.67	0.1554
DSB-13-8	10259	803	907	967	5.12	0.0127
DSB-13-10	13678	211	302	274	1.76	0.4247

Table S2. Bacterial community structure at the phylum level in seawater samples and abalone intestine samples.

Taxon	XBS-12-10	XBS-12-11	XBS-12-12	XBS-13-1	XBS-13-3
Acidobacteria	0.008715209	0.002361439	0.001560726	0.000307172	0.00017854
Actinobacteria	0.0534158	0.019447145	0.055760499	0.028413454	0.00392787
Armatimonadetes	0	0	0	0	0
BD1-5	0.005482148	0.007362134	0.006668558	0.053140839	0.008926977
BHI80-139	0	0.000416725	0.000141884	0	0
Bacteroidetes	0.23896542	0.109042923	0.176220204	0.266472124	0.188359222
CK-1C4-19	0	0	0	0	0
Caldiserica	0	0	0	0	0
Candidate_division_BRC1	0	0	0	0	0

Candidate_division_OD1	0.014478493	0.011390471	0.006810443	0.007986484	0.00410641
Candidate_division_OP11	0	0.000277816	0	0.000460759	0
Candidate_division_OP3	0.001686815	0.000277816	0	0.001382276	0.002499554
Candidate_division_SR1	0.000702839	0	0	0	0
Candidate_division_TM7	0.082513354	0.005556327	0.016742338	0.035478421	0.012140689
Candidate_division_WS3	0	0	0	0.000307172	0
Chlorobi	0.000702839	0.000694541	0.000851305	0.000153586	0
Chloroflexi	0.017852123	0.004167245	0.005675369	0.00368607	0.000357079
Cyanobacteria	0.025302221	0.036116127	0.019438138	0.014744279	0.004642028
Deferribacteres	0.000983975	0.000555633	0.006101022	0	0.000357079
Deinococcus-Thermus	0.000281136	0.001111265	0	0	0
Elusimicrobia	0	0	0	0	0
Fibrobacteres	0.000281136	0.000416725	0.001560726	0.000460759	0.000357079
Firmicutes	0.071549058	0.020975135	0.008087401	0.005682691	0.010355294
Fusobacteria	0.111610908	0.284761772	0.010925085	0.012286899	0.233172648
Gemmatimonadetes	0	0	0.001135074	0.000767931	0
Lentisphaerae	0.001265111	0.000416725	0	0.00122869	0
NPL-UPA2	0.000140568	0.000138908	0	0.000153586	0
Nitrospirae	0.000562272	0.000416725	0	0.000307172	0.00017854
Planctomycetes	0.009418049	0.007778858	0.005959137	0.005836277	0.002321014
Proteobacteria	0.298144504	0.457841367	0.653944381	0.55490708	0.50401714
RF3	0	0	0	0	0
SM2F11	0	0	0	0.000153586	0
Spirochaetae	0.004638741	0.000972357	0.001135074	0	0
Synergistetes	0	0	0	0	0
TA06	0	0	0	0.000460759	0
TM6	0.000281136	0	0	0.000460759	0
Tenericutes	0.048495924	0.020836227	0.01645857	0.001996621	0.022138904

Unclassified	0.002249086	0.003333796	0.003830874	0.00245738	0.001963935
Verrucomicrobia	0.000281136	0.003333796	0.00099319	0.000307172	0

Taxon	XBS-13-4	XBS-13-5	XBS-13-6	XBS-13-7	XBS-13-8
Acidobacteria	0.001769912	0	0.000155267	0	0.000608365
Actinobacteria	0.029105211	0	0.018864995	0.03829986	0.026768061
Armatimonadetes	0	0	0	0	0
BD1-5	0.008849558	0	0.077090288	0.003892262	0.011102662
BHI80-139	0	0	0	0	0
Bacteroidetes	0.152015733	0.439649123	0.154102942	0.216565468	0.340836502
CK-1C4-19	0	0	0	0	0
Caldiserica	0	0	0	0	0
Candidate_division_BRC1	0	0	0	0	0
Candidate_division_OD1	0.030481809	0.000175439	0.001863209	0.002335357	0.002129278
Candidate_division_OP11	0	0	0.000155267	0	0
Candidate_division_OP3	0.001573255	0	0	0.000467071	0.000304183
Candidate_division_SR1	0	0	0	0	0.000152091
Candidate_division_TM7	0.072173058	0.000175439	0.000465802	0.014868442	0.000760456
Candidate_division_WS3	0	0	0.000155267	0	0
Chlorobi	0.000196657	0	0.000155267	7.78E-05	0.000304183
Chloroflexi	0.003343166	0	7.76E-05	0.002413203	0.006539924
Cyanobacteria	0.018879056	0.000175439	0.006133064	0.050832944	0.00486692
Deferribacteres	0	0	0	0.003892262	0
Deinococcus-Thermus	0	0	0	0	0
Elusimicrobia	0	0	0	0	0
Fibrobacteres	0.000393314	0	0.001009238	0.000856298	0.001368821
Firmicutes	0.013569322	0.000526316	0.119090133	0.00801806	0.018098859
Fusobacteria	0.412586037	0.43245614	0.051238258	0.00163475	0.048821293

Gemmatimonadetes	0.000393314	0	0	0.001323369	0
Lentisphaerae	0.000196657	0	0	0	0
NPL-UPA2	0	0	0	0	0
Nitrospirae	0	0	7.76E-05	0	0
Planctomycetes	0.005899705	0	0.008694977	0.009886346	0.007756654
Proteobacteria	0.218289086	0.073684211	0.509121963	0.633193212	0.51756654
RF3	0	0	0	0	0
SM2F11	0	0	0	0	0
Spirochaetae	0	0	0.000310535	0	0.000456274
Synergistetes	0	0	0	0	0
TA06	0	0	0	7.78E-05	0
TM6	0	0	0	0	0
Tenericutes	0.02359882	0.052807018	0.050617188	0.005760548	0.007908745
Unclassified	0.005506391	0.000350877	0.00062107	0.004437179	0.003346008
Verrucomicrobia	0.001179941	0	0	0.001167679	0.000304183

Taxon	XBS-13-9	XBS-13-10	XBB-13-4	XBB-13-5	XBB-13-7
Acidobacteria	0.000350693	0.001335559	0.000879817	0.0004363	0
Actinobacteria	0.017709977	0.022704508	0.043814887	0.011198371	0.023939366
Armatimonadetes	0	0	0	0	0
BD1-5	0.017885324	0.005175292	0	0	0
BHI80-139	0	0	0	0	0
Bacteroidetes	0.146589514	0.206677796	0.07196903	0.045084351	0.013587208
CK-1C4-19	0	0	0	0	0
Caldiserica	0	0	0	0.000727167	0
Candidate_division_BRC1	0.000175346	0.000166945	0	0	0
Candidate_division_OD1	0.01472909	0.007512521	0	0	0
Candidate_division_OP11	0	0	0	0	0

Candidate_division_OP3	0.00140277	0.00033389	0	0	0
Candidate_division_SR1	0.000350693	0	0	0	0
Candidate_division_TM7	0.009468701	0.005676127	0.000175963	0.000290867	0
Candidate_division_WS3	0	0	0.000351927	0	0
Chlorobi	0.000350693	0.00033389	0	0	0
Chloroflexi	0.005085043	0.005175292	0.001231744	0.001163467	0
Cyanobacteria	0.015079783	0.006844741	0.004575048	0.001163467	0.003142619
Deferribacteres	0.000876732	0.00066778	0	0	0
Deinococcus-Thermus	0.000350693	0	0.000879817	0.000290867	0
Elusimicrobia	0	0	0	0	0
Fibrobacteres	0.000526039	0	0	0	0
Firmicutes	0.038225495	0.006844741	0.01706845	0.006689936	0.008041409
Fusobacteria	0.03752411	0.098831386	0.004047158	0.011052938	0.007301969
Gemmatimonadetes	0	0	0	0	0
Lentisphaerae	0.000175346	0.001335559	0	0	0
NPL-UPA2	0.000876732	0	0	0	0
Nitrospirae	0.000175346	0	0	0	0
Planctomycetes	0.009293354	0.007345576	0.029209924	0.148196626	0.17774286
Proteobacteria	0.659477468	0.567779633	0.342776702	0.647033159	0.361216379
RF3	0	0	0.000175963	0.0004363	0
SM2F11	0	0	0	0	0
Spirochaetae	0.000526039	0.000500835	0.00052789	0.000581734	0
Synergistetes	0	0	0	0.0004363	0
TA06	0	0	0	0	0
TM6	0.000350693	0	0	0	0
Tenericutes	0.014378397	0.030717863	0.481435861	0.124200116	0.404566041
Unclassified	0.004559004	0.023706177	0.000703854	0.000727167	0.00036972
Verrucomicrobia	0.003506926	0.00033389	0.000175963	0.000290867	9.24E-05

Taxon	DSS-12-10	DSS-12-11	DSS-12-12	DSS-13-1	DSS-13-3
Acidobacteria	0	0	0.000409333	0	0.000202143
Actinobacteria	0.063694268	0.06757131	0.052258153	0.032335139	0.048514251
Armatimonadetes	0	0	0	0	0
BD1-5	0.000296252	0.00166159	0.00095511	0.000796432	0.002425713
BHI80-139	0	0	0	0	0
Bacteroidetes	0.183824619	0.157158682	0.173420658	0.24625677	0.210430564
CK-1C4-19	0	0	0	0	0
Caldiserica	0	0	0	0	0
Candidate_division_BRC1	0	0	0	0	0
Candidate_division_OD1	0	0.000276932	0	0.001115005	0.000202143
Candidate_division_OP11	0	0	0	0	0
Candidate_division_OP3	0	0	0	0.000159286	0
Candidate_division_SR1	0	0	0	0	0
Candidate_division_TM7	0.000148126	0.010384935	0.000682221	0.000637146	0.000404285
Candidate_division_WS3	0	0	0	0	0
Chlorobi	0.000148126	0	0	0	0
Chloroflexi	0.001481262	0.003461645	0.004229772	0.000159286	0.002021427
Cyanobacteria	0.151977485	0.174051509	0.178332651	0.203727302	0.234485547
Deferribacteres	0.011109465	0.020216007	0.022376859	0.012742912	0.005053568
Deinococcus-Thermus	0	0	0	0	0
Elusimicrobia	0	0	0	0	0
Fibrobacteres	0.000148126	0.000138466	0.000545777	0.000159286	0.000404285
Firmicutes	0.001481262	0.004015508	0.003274662	0.001592864	0.000808571
Fusobacteria	0.001481262	0.00166159	0.000682221	0.000318573	0.003032141
Gemmatimonadetes	0.000740631	0.001523124	0.00095511	0.00223001	0
Lentisphaerae	0.000740631	0.000415397	0.000409333	0.000318573	0

NPL-UPA2	0.000296252	0	0	0	0
Nitrospirae	0.000296252	0.000415397	0.000136444	0	0
Planctomycetes	0.002814398	0.004707837	0.005730659	0.002070723	0.014352133
Proteobacteria	0.556510147	0.530739407	0.529403739	0.480248487	0.467353952
RF3	0	0	0	0	0
SM2F11	0	0	0	0	0
Spirochaetae	0	0.000276932	0	0	0
Synergistetes	0	0	0	0	0
TA06	0	0	0	0	0
TM6	0	0.000138466	0	0.000159286	0
Tenericutes	0.002221893	0.003323179	0.001637331	0.003504301	0.000606428
Unclassified	0.01170197	0.014954306	0.021421749	0.009238611	0.005457853
Verrucomicrobia	0.008887572	0.002907782	0.003138218	0.00223001	0.004244997

Taxon	DSS-13-4	DSS-13-5	DSS-13-7	DSS-13-9	DSS-13-10
Acidobacteria	0	0.005620848	0	0	0.000818554
Actinobacteria	0.010752688	0.089592914	0.031195841	0.007234727	0.022510232
Armatimonadetes	0	0.000340657	0	0	0
BD1-5	0.000477897	0.019928462	0.034469478	0.009378349	0.002046385
BHI80-139	0	0.001192301	0	0	0
Bacteroidetes	0.175866189	0.07136774	0.298478721	0.239817792	0.241336971
CK-1C4-19	0	0	0	0	0
Caldiserica	0	0	0	0	0
Candidate_division_BRC1	0	0	0	0	0
Candidate_division_OD1	0.000238949	0.061659002	0	0.006162915	0.021828104
Candidate_division_OP11	0	0.003065917	0	0	0.000136426
Candidate_division_OP3	0	0.012604326	0	0	0.000272851
Candidate_division_SR1	0	0	0	0	0

Candidate_division_TM7	0.000238949	0.065235905	0	0.146302251	0.005866303
Candidate_division_WS3	0	0	0	0	0
Chlorobi	0.001433692	0.005109862	0	0.000133976	0.000136426
Chloroflexi	0.000238949	0.021120763	0	0.001339764	0.007639836
Cyanobacteria	0.084587814	0.008857094	0.030425573	0.001205788	0.00627558
Deferribacteres	0.00167264	0.002895588	0.001347968	0	0
Deinococcus-Thermus	0	0.000510986	0	0.000401929	0
Elusimicrobia	0	0.000851644	0	0.000133976	0
Fibrobacteres	0.000238949	0	0	0.000535906	0
Firmicutes	0.066666667	0.062680974	0.005391874	0.011254019	0.062892224
Fusobacteria	0.001194743	0.018225175	0.001347968	0.086012862	0.0526603
Gemmatimonadetes	0.000238949	0.002895588	0	0	0
Lentisphaerae	0	0.002554931	0	0.000267953	0
NPL-UPA2	0	0.002043945	0	0	0
Nitrospirae	0	0.001021972	0	0	0
Planctomycetes	0.002389486	0.008346108	0.002695937	0.00750268	0.006139154
Proteobacteria	0.64516129	0.501788452	0.592913537	0.464094319	0.534106412
RF3	0	0	0	0	0
SM2F11	0	0.002895588	0	0	0
Spirochaetae	0	0.000170329	0	0.000267953	0.000818554
Synergistetes	0	0	0	0	0
TA06	0	0	0	0	0
TM6	0	0.001873616	0	0	0
Tenericutes	0.000716846	0.001192301	0.000770268	0.008038585	0.019781719
Unclassified	0.007885305	0.022994379	0.000770268	0.009244373	0.012414734
Verrucomicrobia	0	0.00136263	0.000192567	0.000669882	0.002319236

Taxon	DSB-13-3	DSB-13-4	DSB-13-5	DSB-13-6	DSB-13-7
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Acidobacteria	0.000193611	0	0	8.38E-05	0
Actinobacteria	0.003872217	0.00016129	0.002015549	0.005277708	0.009246246
Armatimonadetes	0	0	0	0	0
BD1-5	0	0	0	8.38E-05	0
BHI80-139	0	0	0	0	0
Bacteroidetes	0.003969022	0.001290323	0.000431903	0.005780347	0.002514979
CK-1C4-19	0	0	0	0	0
Caldiserica	0	0	0	0	0
Candidate_division_BRC1	0	0	0	0	0
Candidate_division_OD1	0	0	0	0	0
Candidate_division_OP11	0	0	0	0	0
Candidate_division_OP3	0	0	0	0	0
Candidate_division_SR1	0	0	0	0	0
Candidate_division_TM7	0	0	0	0	0
Candidate_division_WS3	0	0	0	0	0
Chlorobi	0	0	0	0	0
Chloroflexi	0.000193611	0	0	0	0.00014794
Cyanobacteria	0.021684414	0.00016129	0.000719839	0.062578537	0.027294918
Deferribacteres	0	0	0	0	0
Deinococcus-Thermus	0	0	0	0.000335093	0
Elusimicrobia	0	0	0	0	0
Fibrobacteres	0	0	0	0	0
Firmicutes	0.000580833	0	0.001727613	0.001507917	0.00066573
Fusobacteria	0.002516941	0.00016129	0.000863807	0.00134037	0.008654486
Gemmatimonadetes	0	0	0	0	0
Lentisphaerae	0	0	0	0	0
NPL-UPA2	0	0	0	0	0
Nitrospirae	0	0	0	0	0

Planctomycetes	0.020232333	0.000645161	0.003743162	0.533551144	0.025297729
Proteobacteria	0.551113262	0.052419355	0.065073424	0.217726397	0.082180635
RF3	0	0	0	0	0
SM2F11	0	0	0	0	0
Spirochaetae	0.001839303	0.000967742	0.000143968	8.38E-05	7.40E-05
Synergistetes	0	0	0	0	0
TA06	0	0	0	0	0
TM6	0	0	0	0	0
Tenericutes	0.392836399	0.941774194	0.923985027	0.16210103	0.842148088
Unclassified	0.000968054	0.002419355	0.00129571	0.000251319	0.001257489
Verrucomicrobia	0	0	0	0.009298819	0.00051779

Taxon	DSB-13-8	DSB-13-10
Acidobacteria	0.00126718	0
Actinobacteria	0.031971927	0.00538848
Armatimonadetes	0	0
BD1-5	0.000389902	0
BHI80-139	0	0
Bacteroidetes	0.026318355	0.00269424
CK-1C4-19	0	0
Caldiserica	0	0
Candidate_division_BRC1	0	0
Candidate_division_OD1	0.000194951	0
Candidate_division_OP11	0	0
Candidate_division_OP3	0	0
Candidate_division_SR1	0	0
Candidate_division_TM7	0.001169705	0
Candidate_division_WS3	0	0

Chlorobi	0	0
Chloroflexi	0.001754557	0
Cyanobacteria	0.038307827	0.009539066
Deferribacteres	0	0
Deinococcus-Thermus	0.000389902	0
Elusimicrobia	0	0
Fibrobacteres	0	0
Firmicutes	0.020859733	0.001019442
Fusobacteria	0.01120967	0.022500546
Gemmatimonadetes	0.000194951	0
Lentisphaerae	0	0.000582538
NPL-UPA2	0	0
Nitrospirae	0	0
Planctomycetes	0.254313286	0.007208913
Proteobacteria	0.389804074	0.05424889
RF3	0	0
SM2F11	0	0
Spirochaetae	0.000487377	0.000728173
Synergistetes	0	0
TA06	0	0
TM6	0.000974754	0
Tenericutes	0.213276148	0.895361538
Unclassified	0.001852032	0.000582538
Verrucomicrobia	0.005263671	0.000145635

Sample names: subgroup name-year-month.

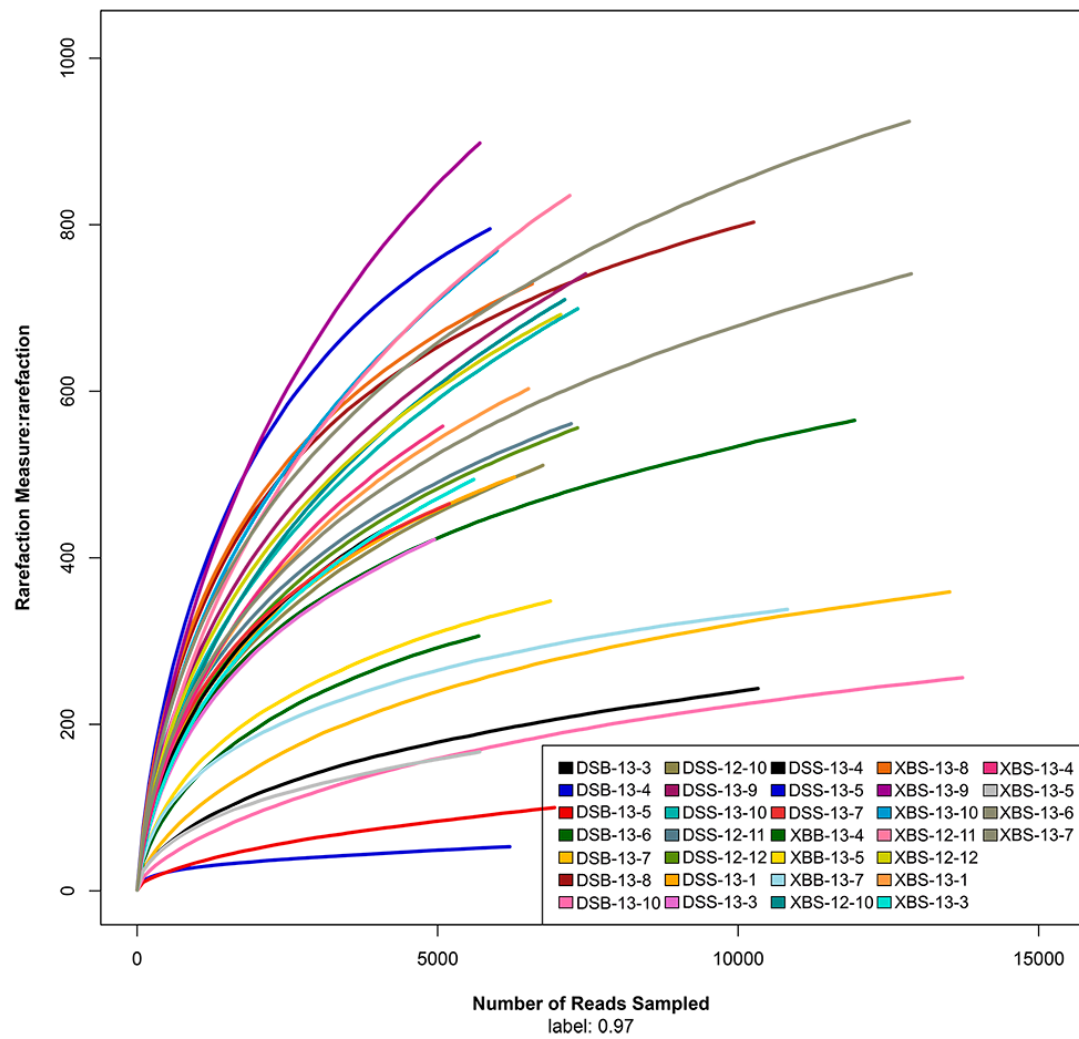


Figure S1. The rarefaction curves for seawater samples and abalone intestine samples. Sample names: subgroup name-year-month.

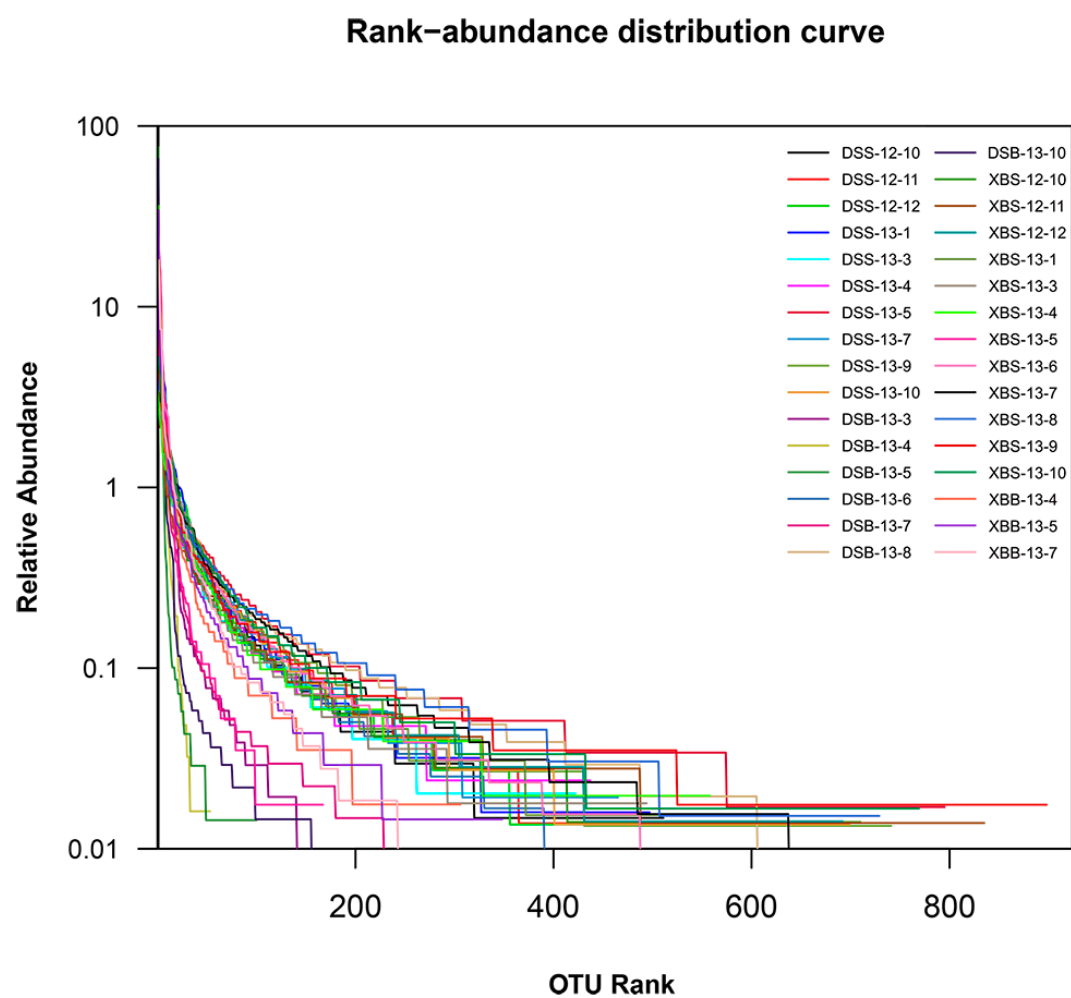


Figure S2. The rank abundance curve for seawater samples and abalone intestine samples. Sample names: subgroup name-year-month.