

Tabel S1. Raw and cleaned sequence information base on universal SSU rDNA primers from Illumina HiSeq run for samples collected from Weizhou island.

Sample ID	Raw sequence number	Cleaned sequence number	Filtered chimeras sequence number	Number of ASVs	Annotated ASVs number	Cyanobacteria ASVs number	Proportion of cyanobacteria
S2-1	125847	104470	43753	3063	1056	47	4.45%
S2-2	134917	114863	39347	3214	1041	21	2.02%
S2-3	136667	115279	56185	3284	1402	23	1.64%
S4-1	120404	99543	30647	2792	888	16	1.80%
S4-2	137914	118673	36628	3069	1133	107	9.44%
S4-3	117332	101961	36149	1766	691	5	0.72%
S6-1	136310	113267	45839	3124	1274	81	6.36%
S6-2	124796	100044	42095	2622	1199	82	6.84%
S6-3	132730	109727	26287	2274	892	75	8.41%
T2-1	132306	110509	53589	2504	1376	77	5.60%
T2-2	135027	113895	40385	1907	1056	65	6.16%
T2-3	121737	101892	36830	2102	1077	63	5.85%
T4-1	124860	86779	42793	1160	869	18	2.07%
T4-2	121054	101106	35811	1668	955	84	8.80%
T4-3	135890	101673	50310	1375	986	62	6.29%
T6-1	134161	101867	41974	1476	854	36	4.22%
T6-2	125434	104261	48175	1594	1006	74	7.36%
T6-3	126898	102484	45000	1683	1050	15	1.43%
W2-1	137786	116170	34007	2480	1156	98	8.48%
W2-2	129018	106284	27259	2354	1008	96	9.52%
W2-3	136796	115191	27826	2587	1085	103	9.49%
W4-1	135764	115115	42821	1670	830	103	12.41%
W4-2	135665	115026	43094	1690	780	99	12.69%

W4-3	121005	100965	37041	1617	773	100	12.94%
W6-1	137927	113384	44445	2273	1161	99	8.53%
W6-2	124311	101869	34802	1899	878	103	11.73%
W6-3	136646	113839	44040	2160	993	104	10.47%

Tabel S2. Raw and cleaned sequence information base on cyanobacteria-specific SSU rDNA primers from Illumina HiSeq run for samples collected from Weizhou island.

Sample ID	Raw sequence number	Cleaned sequence number	Filtered chimeras sequence number	Number of ASVs	Annotated ASVs number	Cyanobacteria ASVs number	Proportion of cyanobacteria
SBG	44374	36397	9827	138	133	39	29.32%
SLQ	61982	54997	10345	156	145	50	34.48%
SSLK	44070	35696	17614	103	100	15	15.00%
TBG	59661	45180	16142	148	138	24	17.39%
TLQ	41690	30826	18735	179	174	19	10.92%
TSLK	83848	74439	67270	547	527	37	7.02%
WBG	56822	51219	50395	38	37	8	21.62%
WLQ	79424	69510	61207	96	94	22	23.40%
WSLK	52843	46856	40643	21	21	13	61.90%