

Supplemental Table 1: Library characteristics of metatranscriptomes sequenced from Chesapeake Bay microbial plankton.

Date	Depth (m)	Replicate	Volume (L)	Total Reads (# x 10⁷)	Total Length (bp x 10⁸)	Reads Matching Contigs (# x 10⁶)	Total Contig Length (bp x 10⁸)	Total Contigs (# x 10³)	Mean Contig Length (bp)	%rRNA
5/17/2010	13	A	10	3.09	28.68	8.07	6.26	20.8	719	1.35
5/17/2010	13	B	10	0.39	3.83	1.25	1.23	20.6	517	37.98
5/17/2010	3	A	2	0.25	2.42	0.97	0.93	7.6	1085	22.53
5/17/2010	3	B	2	2.11	20.83	6.54	6.47	124.3	384	19.88
6/7/2010	16	-	12.5	0.23	2.27	0.55	0.54	17.8	452	15.89
6/16/2010	17	-	12	2.13	20.92	5.84	5.73	63.4	413	37.78
7/11/2010	18	A	9	0.72	6.98	1.62	1.57	22.7	583	18.09
7/11/2010	18	B	9	3.61	35.42	6.98	6.83	61.3	379	49.17
7/11/2010	3	A	3	2.65	25.87	7.16	6.86	48.6	373	35.96
7/11/2010	3	B	3	3.94	38.84	9.02	8.87	74.0	376	45.90
8/5/2010	22	A	6	0.24	2.31	0.97	0.94	10.9	829	22.75
8/5/2010	22	B	6	2.62	25.74	10.19	10.00	74.6	429	39.60
8/30/2010	3	A	3	3.24	31.85	9.75	9.56	88.4	389	2.34
8/30/2010	3	B	3	0.37	3.66	1.00	0.98	24.7	348	37.97
8/30/2010	20	A	3	3.04	29.73	8.89	8.69	88.8	384	43.85
8/30/2010	20	B	3	0.41	4.07	1.33	1.30	13.1	370	55.28
10/18/2010	13	A	5	0.77	7.52	2.14	2.10	112.3	337	41.62
10/18/2010	13	B	5	0.09	0.85	0.21	0.20	6.8	337	56.13
4/18/2011	14	A	3.75	5.78	60.19	52.79	55.18	54.3	201	12.76
4/18/2011	14	B	3.75	3.42	36.31	30.67	32.70	15.2	176	10.00
5/24/2011	18	A	4.35	3.30	36.66	29.49	33.11	10.4	171	8.35
5/24/2011	18	B	4.35	4.24	48.95	36.13	42.58	19.4	188	12.87
6/14/2011	3	A	0.9	4.20	46.43	32.96	37.26	21.7	188	10.47
6/14/2011	3	B	1.05	2.78	31.67	23.51	27.39	10.6	129	7.94
6/14/2011	18	A	4	3.74	44.94	29.82	37.32	66.7	210	7.58
6/14/2011	18	B	3.5	3.33	38.36	27.19	32.19	56.7	209	17.14

8/8/2011	18	-	1.4	2.50	25.90	20.36	21.23	101.5	201	18.85
9/21/2011	17	A	4.1	4.67	49.80	38.79	41.83	43.0	200	7.35
9/21/2011	17	B	4	4.30	48.72	31.44	37.06	15.1	201	8.18
8/30/2011	3	A	1.75	4.87	52.78	42.46	46.48	14.9	193	11.27
8/30/2011	3	B	1.75	2.12	22.09	17.38	18.27	14.3	204	5.13
8/30/2011	18	-	4	2.21	22.61	20.51	21.02	5.8	192	0.93
7/8/2011	3	A	3	3.27	37.46	20.37	25.06	2.4	197	13.82
7/8/2011	3	B	3	2.97	37.46	23.02	30.77	2.3	202	6.83

Supplemental Figure 1: Representation of significant changes in metatranscriptomes between surface waters and deep oxic + anoxic waters (A), surface and deep oxic waters (B), surface and deep anoxic waters (C), and between deep oxic waters and deep anoxic waters (D). Significant changes were determined by comparing the expression levels in each subsystem between all samples from both 2010 and 2011 in each water state by Student's t-tests corrected for Type-II error with a critical p-value of 0.0001. Only significantly changing subsystems are illustrated.

