

Supplemental Table 1. Surface water variables of water temperature (SST; °C) and salinity (SSS), and variables of averaged value over euphotic depth include nitrate (NO_3^- ; μM), phosphate (PO_4^{3-} ; μM), chlorophyll *a* (Chl *a*; mg Chl m^{-3}), as well as plankton community respiration (CR; $\text{mg C m}^{-3} \text{d}^{-1}$) at stations in the spring of 2009. Locations (longitude and latitude) of sampling station are also included for reference.

Stations	Longitude	Latitude	SST	SSS	NO_3^-	PO_4^{3-}	Chl <i>a</i>	CR
1	122.2058	25.4212	23.1	34.33	3.90	0.21	0.6	60.33
2	121.4942	25.6705	21.3	34.28	2.39	0.14	1.0	48.50
3	120.7938	25.9172	22.4	34.22	0.19	0.01	1.0	107.93
4	120.0842	26.1773	17.7	31.02	11.84	0.30	2.1	122.27
5	121.0188	26.9028	18.9	31.92	0.85	0.05	2.2	128.44
6	121.5017	27.7517	17.9	29.75	4.17	0.07	6.4	238.35
7	122.2752	27.4572	21.9	34.09	0.71	0.06	0.6	15.24
8	123.0418	27.1675	21.6	34.24	0.08	0.04	0.7	69.75
9	123.8133	26.8753	19.7	33.91	0.03	0.00	0.5	264.06
10	124.5847	26.5842	20.8	34.26	1.08	0.13	0.4	229.76
12	125.1257	27.5012	23.0	34.53	0.60	0.04	0.4	193.99
14	125.6695	28.4217	20.0	33.97	0.47	0.06	0.5	83.32
15	124.8962	28.7107	19.8	33.68	1.01	0.08	1.0	74.25
16	124.1292	29.0008	18.6	32.09	1.06	0.04	2.1	125.74
17	123.3535	29.2978	18.0	31.34	2.28	0.07	1.6	132.08
18	122.6622	29.5548	18.4	28.95	8.85	0.13	6.4	307.32
19	123.1472	31.6277	16.8	29.61	7.44	0.06	2.8	175.14
19A	122.6623	31.1738	18.5	29.80	15.38	0.47	1.8	-
20	123.9155	31.3335	15.7	32.52	1.47	0.07	5.7	111.83
21	124.6917	31.0460	17.1	32.74	1.14	0.08	2.2	125.51
22	125.4593	30.7498	17.2	33.04	3.33	0.16	0.6	45.44
23	126.2298	30.4617	16.5	33.04	4.16	0.13	1.0	104.53
24	127.0017	30.1678	20.2	34.38	0.85	0.04	0.3	33.75
26	126.3368	29.3002	19.9	34.45	1.20	0.05	0.5	50.23
27	125.3030	29.6748	18.1	33.69	1.09	0.06	0.5	158.84
28	124.2757	30.0692	17.7	33.64	1.29	0.03	1.5	24.02
29	123.2488	30.4625	17.8	29.60	6.95	0.04	2.8	71.51
30	122.1633	28.6198	18.4	27.93	25.57	0.39	7.9	-
31	123.0690	28.2793	17.7	31.06	3.68	0.00	0.9	-
32	124.0978	27.8892	18.8	33.10	1.39	0.00	1.5	65.09
34	122.6382	26.2807	25.3	34.11	1.15	0.07	0.8	29.22
35	121.7358	26.6168	23.4	34.20	0.33	0.04	0.3	43.38

-: no data

Supplemental Table 2. Surface water variables of water temperature (SST; °C) and salinity (SSS), and variables of averaged value over euphotic depth include nitrate (NO_3^- ; μM), phosphate (PO_4^{3-} ; μM), chlorophyll *a* (Chl *a*; mg Chl m^{-3}), as well as plankton community respiration (CR; $\text{mg C m}^{-3} \text{d}^{-1}$) at stations in the spring of 2010. Locations (longitude and latitude) of sampling station are also included for reference.

Stations	Longitude	Latitude	SST	SSS	NO_3^-	PO_4^{3-}	Chl <i>a</i>	CR
1	122.2155	25.4623	21.2	34.54	2.85	0.24	2.7	31.07
3	120.7865	25.9227	17.1	32.89	7.48	0.34	0.8	24.59
4	120.0903	26.1715	13.4	29.11	28.11	0.98	1.9	113.24
5	120.9998	26.8993	15.5	32.38	9.68	0.44	1.5	12.59
6	121.5027	27.7520	12.0	29.59	25.28	0.85	1.4	44.33
7	122.2702	27.4588	18.0	33.72	4.64	0.28	1.8	31.61
8	123.0425	27.1673	21.2	34.44	0.52	0.10	1.3	129.80
9	123.8133	26.8727	23.4	34.72	1.46	0.12	0.6	43.07
10	124.5880	26.5848	22.8	34.64	2.23	0.23	0.5	22.64
12	125.1208	27.4862	20.4	34.65	0.40	0.10	0.8	24.72
12A	125.9008	27.2333	24.5	34.76	0.08	0.05	0.5	11.66
15	124.8985	28.7067	16.6	33.37	2.38	0.15	5.9	134.96
16	124.1140	28.9923	13.7	32.23	6.18	0.16	2.0	52.06
18	122.6718	29.5818	12.4	30.88	13.49	0.35	0.7	25.54
19	123.1405	31.6218	10.6	32.31	13.29	0.73	0.7	219.96
19A	122.6640	31.1580	12.9	18.35	59.51	2.41	1.1	242.62
19B	122.8140	31.3652	11.7	26.24	30.52	0.83	0.5	6.85
21	124.6920	31.0412	11.3	32.84	9.35	0.63	0.9	15.78
26	126.0058	29.2895	18.9	34.48	1.53	0.05	1.7	11.26
27	125.2790	29.7088	13.9	33.07	3.18	0.03	2.1	15.83
28	124.2857	30.0710	12.7	32.18	5.55	0.18	1.1	12.21
29	123.2450	30.5648	11.5	30.28	16.54	0.36	0.4	5.25
30	122.1633	28.6198	11.8	29.33	25.55	0.68	0.1	4.23
31	123.0697	28.2797	17.7	33.05	2.35	0.12	1.6	46.91
32	124.0938	27.8902	18.0	34.16	2.52	0.21	1.6	41.12
33	123.1895	26.0868	24.7	34.53	2.49	0.08	0.7	18.40
34	122.6383	26.2808	25.3	34.67	1.39	0.09	0.7	-
35	121.7320	26.6273	19.6	34.17	2.90	0.27	0.6	25.46

-: no data