

**Limnological parameters in Skarvsnes lakes between the 49th and 50th Japanese
Antarctic Research Expeditions in 2008–2009
—Long-term monitoring study—**

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1. Introduction

This is a report on the limnological parameters which were continuously recorded by means of mooring data-logger arrays in two Skarvsnes lakes, Oyako Ike and Naga Ike (Fig. 1) during the 49th and 50th Japanese Antarctic Research Expeditions (JARE) in 2008–2009. This study was one of our “Long-term monitoring studies on Antarctic terrestrial ecosystem” which were started in 2006, under the umbrella of the VII term of Antarctic research expedition plans. Water temperature, photosynthetically active radiation (PAR), chlorophyll fluorescence and turbidity in lakes were measured and recorded automatically at intervals of 60 min. Trials of similar continuous observation of limnological parameters in shallow lakes using prototype mooring arrays have been reported by Kudoh *et al.* (2003), and Tanabe *et al.* (2008).

2. Materials and Methods

Design of the mooring array: The mooring array consisted of temperature loggers (NWT, Nichiyu Giken Kogyo), PAR loggers (ALW-CMP, JFE Advantech) and chlorophyll-turbidity loggers (ACLW-CMP, JFE Advantech). These equipments were attached at given depths of a rope which was connected to a plastic float and a sinker on both sides, as shown in Fig. 2. The array was moored at the lake center where the nearly-maximum depth was detected. Exact depths at the mooring sites were 7.5 m and 10.0 m in Oyako Ike and Naga Ike, respectively. The positions measured by a portable GPS (GPSMAP 60CSx, Garmin) were 69°28.514'S, 39°36.154'E and 69°29.240'S, 39°35.854'E in Lake

Oyako Ike and L. Naga Ike, respectively.

Settings of the data loggers: Temperature data were sampled every 60 minutes from 15:00 (local time) on 19 January 2008 to 0:00 on 1 January 2009 in Oyako Ike, and from 12:00 on 12 February 2008 to 0:00 on 1 January 2009 in Naga Ike. PAR data were recorded at 60 minute intervals, and the chlorophyll fluorescence and turbidity data were recorded at 60 minute intervals during the same periods of the temperature loggers in both lakes. All loggers were pre- and post-calibrated by the manufacturers, who found no significant drifts in the measurements over the course of the study. Units of recorded data were °C and $\mu\text{mol}/\text{m}^2/\text{s}$ for temperature and PAR, respectively. Fluorescence from chlorophyll *a* was recorded as relative intensity against fluorescein sodium (Uranine) concentration, and turbidity was recorded as Formazin Nephelometric Units (FTU).

3. Data

Temperature data collected at three different depths in Oyako Ike are illustrated in Fig. 3, and the monthly summarized data are listed in Tables 1-1 to 1-12. From the middle of January to the end of February in 2008, and from the middle of October to the end of 2008, temperatures at three different depths took almost the same values, then, the three lines in Fig. 3 during these periods overlapped. Temperature data at six different depths of Naga Ike are illustrated in Fig. 4, and listed in Tables 2-1 to 2-11. Temperatures at six separate depths took almost the same values during February in 2008, and from the middle of October to the end of 2008. PAR data at 6.1 m depth in Oyako Ike are illustrated in Fig. 5, and the monthly summarized data are listed in Tables 3-1 to 3-12. PAR at 1.5 m depths in Naga Ike are illustrated in Fig. 6, and the monthly summarized data are listed in Tables 4-1 to 4-11. Chlorophyll fluorescence and turbidity data in Oyako Ike are illustrated in Fig. 7, and the monthly summarized data are listed in Table 5-1 to 5-12. Those for Naga Ike data are in Fig. 8 and Tables 6-1 to 6-11. Extra-ordinary high values over 100 units and low values of chlorophyll fluorescence and turbidity data were recorded in Oyako Ike from the end of May to the end of December. Possible reasons for such high fluorescence and turbidity were that, firstly, some photobenthos mats lifted-off and floated in the water column, and those might attach to the wiper of the chlorophyll-turbidity logger for a while. Lift-off mat assemblages are a commonly recognized feature in Skarvsnes lakes and also in Antarctic lakes even in ice-covered seasons (Quesada *et al.*, 2008). Secondly, the logger might be incorporated into the developed ice cover on a lake surface.

4. Scientists who carried out the field study

Installation of the mooring arrays was carried out by Yukiko Tanabe and Sakae Kudoh (the 49th JARE members) and the retrieval of the arrays was carried out by Yukiko Tanabe, Takashi Osono, Masaki Uchida, and Sakae Kudoh (the 51st JARE members).

5. Data policy

Before using the data for publication or presentation in any media, please request permission in writing. Inquiries should be addressed to:

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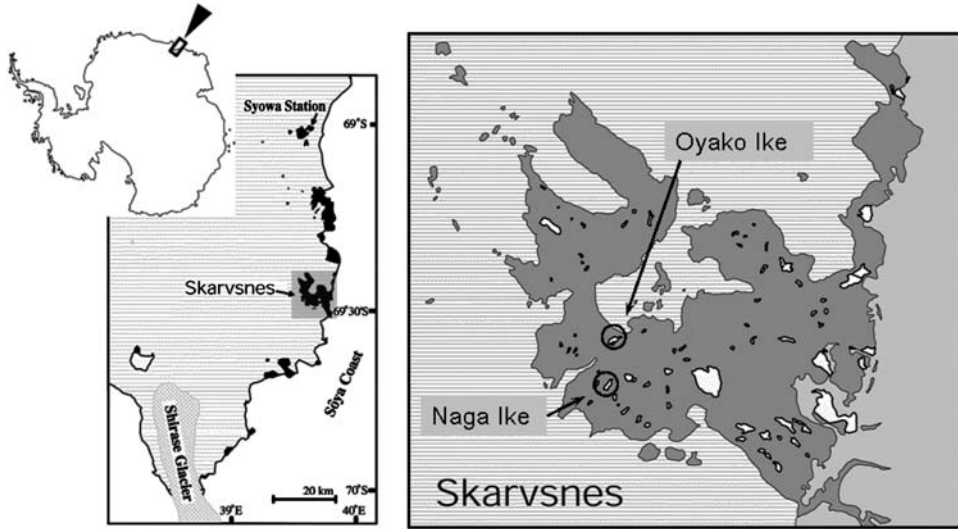


Fig. 1. Maps of studied lakes.

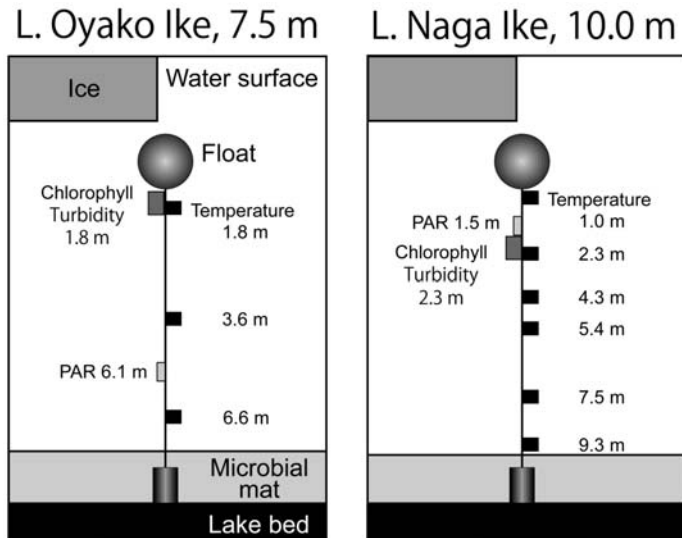


Fig. 2. Designs of mooring arrays set in Oyako Ike (left) and Naga Ike (right).

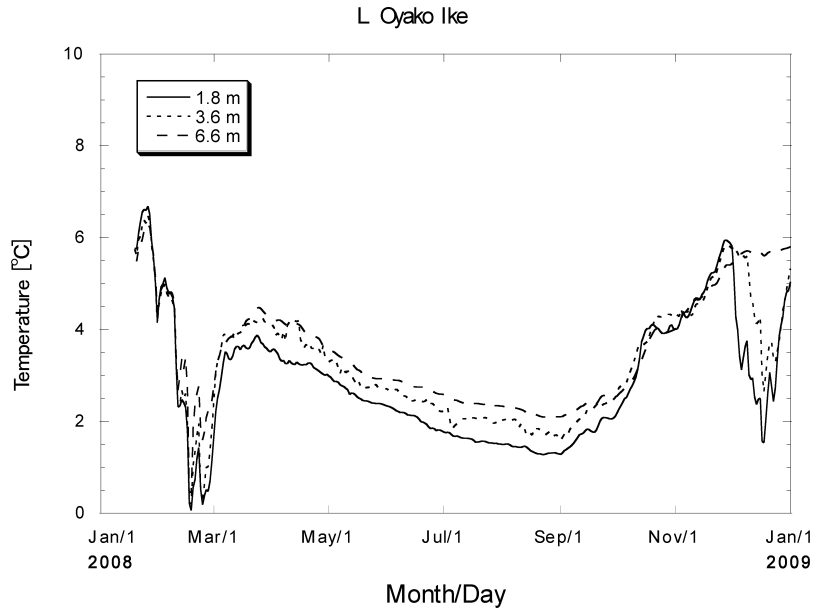


Fig. 3. Seasonal changes of water temperature at three depths in Oyako Ike (2008–2009). Daily average data.

Table 1-1 Water temperature data (°C) at 3 depths in Oyako Ike, January 2008.

Depth Date	1.8 m			3.6 m			6.6 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/1/19	5.773	5.717	5.817	5.747	5.685	5.802	5.746	5.580	5.810
2008/1/20	5.765	5.318	6.394	5.620	5.183	6.067	5.491	4.986	5.759
2008/1/21	6.096	5.655	6.724	5.965	5.607	6.396	5.752	5.550	5.934
2008/1/22	6.334	5.784	7.069	6.032	5.468	6.509	5.844	5.599	6.028
2008/1/23	6.557	5.985	7.233	6.276	5.871	6.782	5.960	5.716	6.210
2008/1/24	6.619	6.130	7.232	6.384	5.990	6.696	6.155	5.775	6.420
2008/1/25	6.599	5.978	7.104	6.318	5.783	6.739	6.167	5.778	6.327
2008/1/26	6.689	6.188	7.334	6.477	6.063	7.056	6.302	6.014	6.561
2008/1/27	6.512	5.938	6.978	6.363	5.844	6.809	6.229	5.733	6.567
2008/1/28	5.930	5.267	6.658	5.822	5.261	6.635	5.908	5.501	6.460
2008/1/29	5.556	5.323	6.078	5.493	5.272	5.956	5.609	5.285	5.970
2008/1/30	5.013	4.629	5.415	4.991	4.630	5.363	5.155	4.761	5.421
2008/1/31	4.183	3.822	4.656	4.155	3.776	4.577	4.402	4.124	4.663
<i>Monthly</i>	5.971	3.822	7.334	5.819	3.776	7.056	5.748	4.124	6.567

Table 1-2. Water temperature data (°C) at 3 depths in Oyako Ike, February 2008.

Depth Date	1.8 m			3.6 m			6.6 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/2/1	1.697	1.452	2.026	2.505	2.224	2.960	2.765	2.646	2.954
2008/2/2	2.222	1.852	2.432	3.075	2.858	3.298	3.091	2.963	3.258
2008/2/3	2.507	2.453	2.562	3.327	3.260	3.387	3.306	3.264	3.374
2008/2/4	2.704	2.568	2.869	3.437	3.352	3.546	3.439	3.378	3.566
2008/2/5	2.978	2.809	3.206	3.644	3.400	3.787	3.611	3.563	3.714
2008/2/6	3.276	3.167	3.470	3.886	3.675	4.030	3.721	3.712	3.738
2008/2/7	3.520	3.453	3.581	3.902	3.840	3.956	3.704	3.676	3.743
2008/2/8	3.477	3.393	3.564	3.934	3.895	4.012	3.762	3.737	3.817
2008/2/9	3.363	3.313	3.408	3.928	3.677	4.015	3.818	3.796	3.852
2008/2/10	3.351	3.269	3.454	3.841	3.703	3.934	3.840	3.826	3.858
2008/2/11	3.426	3.266	3.522	3.861	3.747	3.921	3.869	3.850	3.917
2008/2/12	3.577	3.522	3.676	3.800	3.689	3.878	3.938	3.917	3.994
2008/2/13	3.633	3.547	3.768	3.881	3.855	3.910	4.015	3.998	4.049
2008/2/14	3.636	3.582	3.680	3.922	3.874	3.969	4.062	4.042	4.111
2008/2/15	3.566	3.545	3.610	3.939	3.926	3.953	4.109	4.103	4.115
2008/2/16	3.638	3.561	3.755	3.974	3.946	4.000	4.092	4.084	4.108
2008/2/17	3.660	3.586	3.840	4.064	4.000	4.129	4.095	4.067	4.159
2008/2/18	3.611	3.587	3.692	4.103	4.061	4.143	4.180	4.162	4.222
2008/2/19	3.585	3.568	3.605	4.134	4.073	4.203	4.222	4.215	4.233
2008/2/20	3.604	3.545	3.670	4.120	4.082	4.142	4.237	4.219	4.273
2008/2/21	3.702	3.603	3.889	4.206	4.121	4.268	4.291	4.267	4.347
2008/2/22	3.760	3.651	3.942	4.195	4.000	4.307	4.369	4.348	4.418
2008/2/23	3.835	3.702	4.004	4.171	4.052	4.300	4.428	4.408	4.469
2008/2/24	3.879	3.737	4.008	4.159	3.698	4.346	4.473	4.455	4.502
2008/2/25	3.823	3.763	3.888	4.214	3.978	4.346	4.485	4.475	4.503
2008/2/26	3.717	3.682	3.765	4.244	4.069	4.327	4.456	4.434	4.480
2008/2/27	3.691	3.671	3.742	4.246	4.172	4.300	4.409	4.389	4.432
2008/2/28	3.628	3.591	3.663	4.172	3.943	4.297	4.362	4.342	4.386
2008/2/29	3.597	3.567	3.640	4.164	4.100	4.216	4.319	4.303	4.340
<i>Monthly</i>	3.402	3.311	3.515	3.898	3.768	3.996	3.982	3.953	4.032

Table 1-3. Water temperature data (°C) at 3 depths in Oyako Ike, March 2008.

Depth Date	1.8 m			3.6 m			6.6 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/3/1	1.697	1.452	2.026	2.505	2.224	2.960	2.765	2.646	2.954
2008/3/2	2.222	1.852	2.432	3.075	2.858	3.298	3.091	2.963	3.258
2008/3/3	2.507	2.453	2.562	3.327	3.260	3.387	3.306	3.264	3.374
2008/3/4	2.704	2.568	2.869	3.437	3.352	3.546	3.439	3.378	3.566
2008/3/5	2.978	2.809	3.206	3.644	3.400	3.787	3.611	3.563	3.714
2008/3/6	3.276	3.167	3.470	3.886	3.675	4.030	3.721	3.712	3.738
2008/3/7	3.520	3.453	3.581	3.902	3.840	3.956	3.704	3.676	3.743
2008/3/8	3.477	3.393	3.564	3.934	3.895	4.012	3.762	3.737	3.817
2008/3/9	3.363	3.313	3.408	3.928	3.677	4.015	3.818	3.796	3.852
2008/3/10	3.351	3.269	3.454	3.841	3.703	3.934	3.840	3.826	3.858
2008/3/11	3.426	3.266	3.522	3.861	3.747	3.921	3.869	3.850	3.917
2008/3/12	3.577	3.522	3.676	3.800	3.689	3.878	3.938	3.917	3.994
2008/3/13	3.633	3.547	3.768	3.881	3.855	3.910	4.015	3.998	4.049
2008/3/14	3.636	3.582	3.680	3.922	3.874	3.969	4.062	4.042	4.111
2008/3/15	3.566	3.545	3.610	3.939	3.926	3.953	4.109	4.103	4.115
2008/3/16	3.638	3.561	3.755	3.974	3.946	4.000	4.092	4.084	4.108
2008/3/17	3.660	3.586	3.840	4.064	4.000	4.129	4.095	4.067	4.159
2008/3/18	3.611	3.587	3.692	4.103	4.061	4.143	4.180	4.162	4.222
2008/3/19	3.585	3.568	3.605	4.134	4.073	4.203	4.222	4.215	4.233
2008/3/20	3.604	3.545	3.670	4.120	4.082	4.142	4.237	4.219	4.273
2008/3/21	3.702	3.603	3.889	4.206	4.121	4.268	4.291	4.267	4.347
2008/3/22	3.760	3.651	3.942	4.195	4.000	4.307	4.369	4.348	4.418
2008/3/23	3.835	3.702	4.004	4.171	4.052	4.300	4.428	4.408	4.469
2008/3/24	3.879	3.737	4.008	4.159	3.698	4.346	4.473	4.455	4.502
2008/3/25	3.823	3.763	3.888	4.214	3.978	4.346	4.485	4.475	4.503
2008/3/26	3.717	3.682	3.765	4.244	4.069	4.327	4.456	4.434	4.480
2008/3/27	3.691	3.671	3.742	4.246	4.172	4.300	4.409	4.389	4.432
2008/3/28	3.628	3.591	3.663	4.172	3.943	4.297	4.362	4.342	4.386
2008/3/29	3.597	3.567	3.640	4.164	4.100	4.216	4.319	4.303	4.340
2008/3/30	3.542	3.514	3.571	4.166	4.071	4.262	4.282	4.267	4.301
2008/3/31	3.520	3.509	3.531	4.127	3.984	4.198	4.247	4.232	4.265
<i>Monthly</i>	3.410	3.323	3.517	3.914	3.785	4.011	4.000	3.972	4.048

Table 1-4. Water temperature data (°C) at 3 depths in Oyako Ike, April 2008.

Depth Date	1.8 m			3.6 m			6.6 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/4/1	3.565	3.525	3.604	4.102	3.975	4.192	4.213	4.199	4.230
2008/4/2	3.577	3.510	3.696	4.046	3.804	4.330	4.187	4.177	4.197
2008/4/3	3.529	3.473	3.629	3.883	3.729	4.211	4.197	4.187	4.214
2008/4/4	3.474	3.436	3.515	3.927	3.705	4.156	4.209	4.200	4.218
2008/4/5	3.364	3.318	3.433	3.850	3.739	4.120	4.209	4.203	4.218
2008/4/6	3.314	3.304	3.323	3.786	3.706	3.963	4.187	4.172	4.203
2008/4/7	3.332	3.304	3.356	3.962	3.669	4.148	4.153	4.136	4.170
2008/4/8	3.263	3.227	3.321	3.754	3.605	4.028	4.118	4.106	4.135
2008/4/9	3.263	3.234	3.326	4.100	3.954	4.251	4.089	4.077	4.105
2008/4/10	3.328	3.265	3.503	4.161	4.024	4.274	4.074	4.064	4.092
2008/4/11	3.279	3.219	3.373	4.162	4.113	4.256	4.098	4.088	4.120
2008/4/12	3.251	3.223	3.314	4.189	4.135	4.245	4.118	4.112	4.126
2008/4/13	3.240	3.180	3.293	4.193	4.126	4.257	4.124	4.117	4.133
2008/4/14	3.294	3.188	3.368	4.179	4.118	4.219	4.129	4.122	4.134
2008/4/15	3.258	3.134	3.323	4.195	4.132	4.242	4.115	4.106	4.131
2008/4/16	3.236	3.182	3.320	3.780	3.595	4.147	4.083	4.064	4.105
2008/4/17	3.229	3.109	3.287	3.707	3.595	3.792	4.028	4.001	4.062
2008/4/18	3.241	3.197	3.272	3.613	3.470	3.760	3.966	3.948	3.998
2008/4/19	3.239	3.215	3.267	3.683	3.593	3.751	3.926	3.910	3.946
2008/4/20	3.272	3.238	3.330	3.601	3.529	3.717	3.900	3.896	3.909
2008/4/21	3.275	3.242	3.311	3.657	3.577	3.720	3.893	3.889	3.898
2008/4/22	3.247	3.089	3.306	3.593	3.457	3.687	3.888	3.882	3.897
2008/4/23	3.176	3.148	3.185	3.590	3.451	3.671	3.869	3.861	3.881
2008/4/24	3.151	3.129	3.183	3.642	3.537	3.731	3.845	3.839	3.859
2008/4/25	3.122	3.107	3.153	3.581	3.511	3.670	3.828	3.822	3.839
2008/4/26	3.092	3.066	3.109	3.562	3.486	3.626	3.798	3.775	3.821
2008/4/27	3.060	3.034	3.097	3.469	3.342	3.695	3.728	3.678	3.773
2008/4/28	3.033	3.006	3.050	3.657	3.528	3.722	3.645	3.623	3.675
2008/4/29	3.007	2.995	3.020	3.397	3.263	3.536	3.606	3.594	3.622
2008/4/30	3.028	3.010	3.049	3.328	3.297	3.352	3.582	3.574	3.593
<i>Monthly</i>	3.258	3.210	3.311	3.812	3.692	3.949	3.993	3.981	4.010

Table 1-5. Water temperature data (°C) at 3 depths in Oyako Ike, May 2008.

Depth Date	1.8 m			3.6 m			6.6 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/5/1	2.991	2.943	3.030	3.302	3.292	3.321	3.563	3.556	3.573
2008/5/2	2.964	2.946	2.988	3.327	3.283	3.353	3.545	3.539	3.555
2008/5/3	2.913	2.893	2.942	3.342	3.275	3.400	3.530	3.525	3.538
2008/5/4	2.868	2.850	2.894	3.281	3.250	3.350	3.509	3.495	3.524
2008/5/5	2.874	2.858	2.895	3.304	3.237	3.388	3.473	3.457	3.493
2008/5/6	2.857	2.808	2.876	3.165	3.008	3.262	3.439	3.425	3.455
2008/5/7	2.799	2.771	2.823	3.052	2.996	3.203	3.410	3.403	3.423
2008/5/8	2.779	2.765	2.810	3.184	3.122	3.221	3.395	3.387	3.403
2008/5/9	2.761	2.741	2.778	3.127	2.996	3.207	3.367	3.349	3.386
2008/5/10	2.723	2.698	2.760	3.063	2.900	3.149	3.332	3.324	3.348
2008/5/11	2.694	2.640	2.732	3.102	3.051	3.173	3.312	3.305	3.323
2008/5/12	2.592	2.572	2.637	3.073	3.046	3.121	3.298	3.288	3.304
2008/5/13	2.620	2.578	2.647	3.014	2.902	3.092	3.266	3.250	3.287
2008/5/14	2.617	2.608	2.632	2.932	2.815	3.069	3.230	3.202	3.249
2008/5/15	2.584	2.559	2.606	2.861	2.724	3.022	3.180	3.157	3.200
2008/5/16	2.541	2.525	2.557	2.928	2.853	2.969	3.135	3.123	3.154
2008/5/17	2.509	2.496	2.526	2.854	2.768	2.959	3.116	3.108	3.122
2008/5/18	2.496	2.460	2.524	2.762	2.720	2.820	3.092	3.064	3.107
2008/5/19	2.461	2.445	2.476	2.815	2.763	2.845	3.038	3.018	3.062
2008/5/20	2.453	2.441	2.463	2.762	2.735	2.807	3.002	2.991	3.017
2008/5/21	2.450	2.443	2.454	2.733	2.726	2.743	2.981	2.974	2.990
2008/5/22	2.441	2.430	2.450	2.751	2.744	2.762	2.969	2.965	2.974
2008/5/23	2.423	2.412	2.435	2.728	2.720	2.743	2.962	2.960	2.964
2008/5/24	2.406	2.401	2.410	2.734	2.720	2.750	2.954	2.948	2.960
2008/5/25	2.402	2.395	2.408	2.768	2.752	2.798	2.943	2.939	2.948
2008/5/26	2.393	2.389	2.397	2.809	2.786	2.823	2.937	2.935	2.939
2008/5/27	2.393	2.388	2.399	2.747	2.724	2.784	2.933	2.932	2.935
2008/5/28	2.394	2.390	2.400	2.715	2.711	2.723	2.933	2.932	2.933
2008/5/29	2.384	2.375	2.392	2.716	2.713	2.718	2.934	2.933	2.934
2008/5/30	2.370	2.359	2.378	2.714	2.708	2.718	2.932	2.930	2.934
2008/5/31	2.352	2.344	2.359	2.716	2.708	2.723	2.929	2.927	2.931
<i>Monthly</i>	2.597	2.578	2.615	2.948	2.895	3.001	3.182	3.172	3.192

Table 1-6. Water temperature data (°C) at 3 depths in Oyako Ike, June 2008.

Depth Date	1.8 m			3.6 m			6.6 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/6/1	2.339	2.333	2.346	2.711	2.686	2.725	2.926	2.925	2.927
2008/6/2	2.328	2.319	2.337	2.663	2.648	2.684	2.925	2.924	2.925
2008/6/3	2.310	2.300	2.319	2.641	2.637	2.647	2.921	2.916	2.924
2008/6/4	2.289	2.277	2.305	2.642	2.636	2.661	2.909	2.904	2.915
2008/6/5	2.262	2.241	2.278	2.692	2.664	2.710	2.900	2.897	2.903
2008/6/6	2.232	2.226	2.241	2.702	2.683	2.710	2.896	2.895	2.897
2008/6/7	2.218	2.207	2.228	2.662	2.646	2.678	2.897	2.894	2.898
2008/6/8	2.197	2.187	2.209	2.620	2.587	2.644	2.884	2.874	2.893
2008/6/9	2.198	2.191	2.205	2.557	2.546	2.583	2.865	2.857	2.874
2008/6/10	2.192	2.182	2.200	2.556	2.547	2.565	2.847	2.838	2.856
2008/6/11	2.172	2.162	2.180	2.549	2.518	2.566	2.831	2.825	2.837
2008/6/12	2.142	2.126	2.160	2.489	2.460	2.515	2.811	2.796	2.824
2008/6/13	2.142	2.123	2.163	2.441	2.437	2.455	2.783	2.774	2.795
2008/6/14	2.132	2.122	2.141	2.448	2.441	2.452	2.767	2.762	2.774
2008/6/15	2.133	2.123	2.141	2.452	2.449	2.458	2.758	2.755	2.762
2008/6/16	2.115	2.104	2.123	2.471	2.458	2.488	2.754	2.753	2.756
2008/6/17	2.095	2.083	2.104	2.494	2.488	2.501	2.752	2.751	2.753
2008/6/18	2.050	2.014	2.087	2.487	2.465	2.501	2.753	2.751	2.754
2008/6/19	1.994	1.979	2.016	2.445	2.430	2.463	2.753	2.752	2.754
2008/6/20	1.987	1.981	1.992	2.433	2.429	2.437	2.751	2.749	2.752
2008/6/21	1.964	1.957	1.982	2.443	2.436	2.460	2.745	2.742	2.748
2008/6/22	1.938	1.911	1.956	2.477	2.462	2.489	2.740	2.736	2.742
2008/6/23	1.883	1.852	1.914	2.473	2.438	2.488	2.729	2.718	2.735
2008/6/24	1.848	1.842	1.856	2.396	2.376	2.432	2.699	2.683	2.716
2008/6/25	1.855	1.845	1.878	2.395	2.377	2.414	2.666	2.651	2.682
2008/6/26	1.844	1.804	1.880	2.354	2.309	2.391	2.637	2.626	2.650
2008/6/27	1.802	1.793	1.813	2.275	2.258	2.306	2.617	2.611	2.625
2008/6/28	1.817	1.800	1.829	2.249	2.240	2.259	2.605	2.600	2.610
2008/6/29	1.815	1.807	1.822	2.228	2.213	2.240	2.597	2.596	2.600
2008/6/30	1.797	1.784	1.810	2.215	2.209	2.224	2.596	2.595	2.596
<i>Monthly</i>	2.070	2.056	2.084	2.489	2.472	2.505	2.777	2.772	2.783

Table 1-7. Water temperature data (°C) at 3 depths in Oyako Ike, July 2008.

Depth Date	1.8 m			3.6 m			6.6 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/7/1	1.774	1.758	1.786	2.246	2.225	2.265	2.588	2.578	2.594
2008/7/2	1.760	1.753	1.767	2.285	2.268	2.307	2.566	2.555	2.577
2008/7/3	1.766	1.763	1.770	2.325	2.288	2.336	2.546	2.541	2.554
2008/7/4	1.759	1.748	1.765	2.085	1.945	2.313	2.541	2.540	2.542
2008/7/5	1.721	1.696	1.747	1.880	1.828	1.920	2.514	2.494	2.538
2008/7/6	1.687	1.679	1.697	1.869	1.827	1.933	2.480	2.472	2.492
2008/7/7	1.679	1.675	1.684	1.917	1.906	1.934	2.469	2.467	2.471
2008/7/8	1.685	1.680	1.691	1.951	1.935	1.968	2.464	2.456	2.468
2008/7/9	1.673	1.664	1.683	1.995	1.970	2.021	2.444	2.433	2.455
2008/7/10	1.652	1.640	1.664	2.047	2.024	2.060	2.424	2.417	2.432
2008/7/11	1.640	1.637	1.642	2.060	2.057	2.061	2.410	2.404	2.416
2008/7/12	1.637	1.633	1.640	2.059	2.055	2.065	2.400	2.396	2.404
2008/7/13	1.638	1.635	1.641	2.066	2.065	2.067	2.393	2.391	2.396
2008/7/14	1.633	1.629	1.637	2.070	2.067	2.073	2.390	2.389	2.391
2008/7/15	1.627	1.623	1.631	2.077	2.074	2.081	2.390	2.389	2.391
2008/7/16	1.616	1.604	1.626	2.083	2.081	2.085	2.393	2.391	2.395
2008/7/17	1.584	1.556	1.601	2.081	2.077	2.083	2.396	2.394	2.396
2008/7/18	1.549	1.539	1.560	2.071	2.069	2.077	2.396	2.395	2.397
2008/7/19	1.553	1.549	1.559	2.068	2.067	2.072	2.393	2.391	2.395
2008/7/20	1.562	1.556	1.571	2.068	2.067	2.071	2.389	2.385	2.391
2008/7/21	1.571	1.566	1.577	2.073	2.070	2.076	2.381	2.377	2.385
2008/7/22	1.570	1.565	1.575	2.077	2.075	2.079	2.375	2.373	2.376
2008/7/23	1.568	1.559	1.574	2.087	2.079	2.090	2.372	2.370	2.373
2008/7/24	1.549	1.540	1.559	2.071	2.042	2.088	2.364	2.358	2.369
2008/7/25	1.537	1.532	1.540	2.009	1.986	2.038	2.351	2.346	2.357
2008/7/26	1.537	1.533	1.542	1.973	1.966	1.984	2.345	2.345	2.346
2008/7/27	1.529	1.524	1.535	1.962	1.960	1.966	2.345	2.345	2.346
2008/7/28	1.522	1.518	1.526	1.968	1.961	1.976	2.346	2.345	2.347
2008/7/29	1.525	1.517	1.541	1.985	1.977	1.992	2.347	2.346	2.347
2008/7/30	1.512	1.506	1.520	1.999	1.991	2.007	2.344	2.342	2.346
2008/7/31	1.511	1.502	1.518	2.018	2.007	2.032	2.339	2.338	2.342
<i>Monthly</i>	1.617	1.609	1.625	2.049	2.033	2.068	2.416	2.412	2.420

Table 1-8. Water temperature data (°C) at 3 depths in Oyako Ike, August 2008.

Depth Date	1.8 m			3.6 m			6.6 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/8/1	1.286	1.278	1.293	1.600	1.528	1.670	2.105	2.103	2.107
2008/8/2	1.314	1.280	1.364	1.651	1.508	1.752	2.110	2.104	2.127
2008/8/3	1.367	1.322	1.442	1.723	1.681	1.786	2.135	2.127	2.157
2008/8/4	1.391	1.368	1.426	1.684	1.655	1.722	2.152	2.144	2.160
2008/8/5	1.423	1.393	1.480	1.737	1.674	1.789	2.165	2.158	2.182
2008/8/6	1.451	1.427	1.480	1.836	1.794	1.871	2.182	2.176	2.192
2008/8/7	1.483	1.449	1.531	1.885	1.872	1.915	2.195	2.187	2.212
2008/8/8	1.529	1.481	1.610	1.921	1.880	1.995	2.218	2.208	2.242
2008/8/9	1.590	1.531	1.683	1.972	1.935	2.043	2.244	2.232	2.266
2008/8/10	1.649	1.602	1.721	2.013	1.988	2.066	2.270	2.259	2.297
2008/8/11	1.714	1.657	1.797	2.053	2.006	2.119	2.304	2.292	2.335
2008/8/12	1.728	1.712	1.744	2.060	2.036	2.087	2.332	2.325	2.340
2008/8/13	1.743	1.710	1.787	2.082	2.027	2.150	2.341	2.332	2.365
2008/8/14	1.795	1.740	1.860	2.144	2.089	2.193	2.377	2.365	2.412
2008/8/15	1.833	1.802	1.875	2.244	2.178	2.295	2.416	2.410	2.425
2008/8/16	1.828	1.812	1.841	2.268	2.250	2.293	2.417	2.411	2.426
2008/8/17	1.797	1.781	1.819	2.283	2.250	2.300	2.402	2.393	2.410
2008/8/18	1.776	1.764	1.787	2.275	2.240	2.291	2.383	2.378	2.392
2008/8/19	1.764	1.759	1.768	2.318	2.291	2.332	2.374	2.371	2.378
2008/8/20	1.813	1.751	1.910	2.363	2.324	2.428	2.380	2.365	2.427
2008/8/21	1.913	1.825	2.031	2.411	2.360	2.506	2.442	2.424	2.490
2008/8/22	2.008	1.927	2.095	2.404	2.374	2.438	2.507	2.492	2.551
2008/8/23	2.074	2.028	2.136	2.351	2.244	2.445	2.559	2.550	2.575
2008/8/24	2.088	2.079	2.099	2.383	2.361	2.405	2.569	2.565	2.575
2008/8/25	2.087	2.073	2.101	2.395	2.364	2.438	2.563	2.562	2.565
2008/8/26	2.073	2.063	2.085	2.429	2.384	2.445	2.558	2.552	2.563
2008/8/27	2.062	2.052	2.081	2.439	2.413	2.453	2.542	2.537	2.551
2008/8/28	2.059	2.048	2.070	2.452	2.408	2.474	2.532	2.528	2.537
2008/8/29	2.070	2.036	2.187	2.476	2.464	2.501	2.522	2.517	2.528
2008/8/30	2.115	2.069	2.156	2.521	2.463	2.602	2.533	2.528	2.548
2008/8/31	1.286	1.278	1.293	1.600	1.528	1.670	2.105	2.103	2.107
<i>Monthly</i>	1.745	1.713	1.792	2.128	2.083	2.177	2.353	2.345	2.369

Table 1-9. Water temperature data (°C) at 3 depths in Oyako Ike, September 2008.

Depth Date	1.8 m			3.6 m			6.6 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/9/1	1.286	1.278	1.293	1.600	1.528	1.670	2.105	2.103	2.107
2008/9/2	1.314	1.280	1.364	1.651	1.508	1.752	2.110	2.104	2.127
2008/9/3	1.367	1.322	1.442	1.723	1.681	1.786	2.135	2.127	2.157
2008/9/4	1.391	1.368	1.426	1.684	1.655	1.722	2.152	2.144	2.160
2008/9/5	1.423	1.393	1.480	1.737	1.674	1.789	2.165	2.158	2.182
2008/9/6	1.451	1.427	1.480	1.836	1.794	1.871	2.182	2.176	2.192
2008/9/7	1.483	1.449	1.531	1.885	1.872	1.915	2.195	2.187	2.212
2008/9/8	1.529	1.481	1.610	1.921	1.880	1.995	2.218	2.208	2.242
2008/9/9	1.590	1.531	1.683	1.972	1.935	2.043	2.244	2.232	2.266
2008/9/10	1.649	1.602	1.721	2.013	1.988	2.066	2.270	2.259	2.297
2008/9/11	1.714	1.657	1.797	2.053	2.006	2.119	2.304	2.292	2.335
2008/9/12	1.728	1.712	1.744	2.060	2.036	2.087	2.332	2.325	2.340
2008/9/13	1.743	1.710	1.787	2.082	2.027	2.150	2.341	2.332	2.365
2008/9/14	1.795	1.740	1.860	2.144	2.089	2.193	2.377	2.365	2.412
2008/9/15	1.833	1.802	1.875	2.244	2.178	2.295	2.416	2.410	2.425
2008/9/16	1.828	1.812	1.841	2.268	2.250	2.293	2.417	2.411	2.426
2008/9/17	1.797	1.781	1.819	2.283	2.250	2.300	2.402	2.393	2.410
2008/9/18	1.776	1.764	1.787	2.275	2.240	2.291	2.383	2.378	2.392
2008/9/19	1.764	1.759	1.768	2.318	2.291	2.332	2.374	2.371	2.378
2008/9/20	1.813	1.751	1.910	2.363	2.324	2.428	2.380	2.365	2.427
2008/9/21	1.913	1.825	2.031	2.411	2.360	2.506	2.442	2.424	2.490
2008/9/22	2.008	1.927	2.095	2.404	2.374	2.438	2.507	2.492	2.551
2008/9/23	2.074	2.028	2.136	2.351	2.244	2.445	2.559	2.550	2.575
2008/9/24	2.088	2.079	2.099	2.383	2.361	2.405	2.569	2.565	2.575
2008/9/25	2.087	2.073	2.101	2.395	2.364	2.438	2.563	2.562	2.565
2008/9/26	2.073	2.063	2.085	2.429	2.384	2.445	2.558	2.552	2.563
2008/9/27	2.062	2.052	2.081	2.439	2.413	2.453	2.542	2.537	2.551
2008/9/28	2.059	2.048	2.070	2.452	2.408	2.474	2.532	2.528	2.537
2008/9/29	2.070	2.036	2.187	2.476	2.464	2.501	2.522	2.517	2.528
2008/9/30	2.115	2.069	2.156	2.521	2.463	2.602	2.533	2.528	2.548
<i>Monthly</i>	1.761	1.727	1.809	2.146	2.101	2.193	2.361	2.353	2.378

Table 1-10. Water temperature data (°C) at 3 depths in Oyako Ike, October 2008.

Depth Date	1.8 m			3.6 m			6.6 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/10/1	2.188	2.130	2.256	2.642	2.535	2.752	2.558	2.547	2.588
2008/10/2	2.268	2.190	2.383	2.731	2.646	2.825	2.601	2.585	2.635
2008/10/3	2.341	2.263	2.439	2.775	2.745	2.826	2.641	2.628	2.669
2008/10/4	2.420	2.335	2.507	2.781	2.739	2.845	2.680	2.666	2.715
2008/10/5	2.502	2.411	2.594	2.803	2.759	2.856	2.731	2.717	2.772
2008/10/6	2.526	2.489	2.571	2.857	2.811	2.891	2.781	2.775	2.785
2008/10/7	2.612	2.514	2.732	2.961	2.887	3.018	2.791	2.779	2.822
2008/10/8	2.706	2.601	2.838	3.084	2.996	3.159	2.838	2.823	2.877
2008/10/9	2.775	2.684	2.872	3.199	3.107	3.292	2.897	2.880	2.939
2008/10/10	2.867	2.772	2.984	3.315	3.223	3.421	2.964	2.942	3.018
2008/10/11	2.973	2.877	3.121	3.457	3.342	3.584	3.054	3.021	3.123
2008/10/12	3.134	2.965	3.375	3.593	3.463	3.782	3.149	3.128	3.203
2008/10/13	3.382	3.131	3.722	3.670	3.555	3.809	3.224	3.201	3.284
2008/10/14	3.732	3.543	3.923	3.681	3.556	3.866	3.331	3.290	3.410
2008/10/15	3.852	3.708	3.981	3.677	3.583	3.791	3.449	3.415	3.519
2008/10/16	3.980	3.859	4.106	3.709	3.573	3.909	3.559	3.523	3.635
2008/10/17	4.024	3.961	4.097	3.739	3.621	3.852	3.680	3.641	3.751
2008/10/18	4.023	3.891	4.146	3.853	3.726	3.948	3.781	3.756	3.840
2008/10/19	4.090	4.009	4.183	3.983	3.866	4.155	3.853	3.830	3.907
2008/10/20	4.119	4.020	4.221	4.090	3.800	4.204	3.928	3.905	3.983
2008/10/21	4.078	4.037	4.126	4.229	4.118	4.470	3.999	3.987	4.026
2008/10/22	4.044	4.007	4.087	4.221	4.164	4.267	4.018	4.010	4.026
2008/10/23	4.019	3.969	4.114	4.295	4.233	4.338	4.014	4.006	4.025
2008/10/24	3.960	3.919	4.010	4.277	4.244	4.295	3.988	3.974	4.014
2008/10/25	3.919	3.896	3.951	4.288	4.254	4.309	3.950	3.940	3.972
2008/10/26	3.921	3.889	3.956	4.309	4.284	4.327	3.930	3.922	3.942
2008/10/27	3.932	3.899	3.978	4.321	4.302	4.335	3.929	3.922	3.939
2008/10/28	3.961	3.894	4.098	4.336	4.305	4.357	3.942	3.935	3.957
2008/10/29	4.082	3.912	4.131	4.336	4.226	4.384	3.961	3.955	3.976
2008/10/30	4.104	4.058	4.198	4.317	4.216	4.391	3.979	3.973	3.991
2008/10/31	4.012	3.898	4.183	4.340	4.264	4.397	3.996	3.988	4.014
<i>Monthly</i>	3.437	3.346	3.545	3.673	3.585	3.763	3.426	3.409	3.463

Table 1-11. Water temperature data (°C) at 3 depths in Oyako Ike, November 2008.

Depth Date	1.8 m			3.6 m			6.6 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/11/1	5.816	5.676	5.933	5.766	5.688	5.891	5.439	5.425	5.474
2008/11/2	5.214	4.695	5.787	5.815	5.712	5.875	5.508	5.476	5.565
2008/11/3	4.291	3.874	4.830	5.739	5.654	5.805	5.590	5.568	5.624
2008/11/4	3.996	3.761	4.334	5.671	5.651	5.707	5.630	5.622	5.649
2008/11/5	3.426	2.878	4.222	5.572	5.357	5.700	5.650	5.641	5.665
2008/11/6	3.128	2.929	3.277	5.553	5.515	5.603	5.657	5.644	5.677
2008/11/7	3.380	3.268	3.560	5.611	5.546	5.702	5.682	5.669	5.704
2008/11/8	3.631	3.447	3.770	5.564	5.468	5.659	5.704	5.694	5.721
2008/11/9	3.757	3.654	3.928	5.597	5.547	5.667	5.717	5.711	5.722
2008/11/10	3.020	2.658	3.600	5.160	4.543	5.619	5.709	5.702	5.721
2008/11/11	2.916	2.789	3.184	4.689	4.463	4.926	5.687	5.671	5.709
2008/11/12	2.950	2.601	3.474	4.607	4.334	5.005	5.694	5.683	5.708
2008/11/13	2.540	2.265	2.891	4.281	3.879	4.704	5.713	5.704	5.730
2008/11/14	2.372	2.230	2.518	4.129	3.814	4.384	5.712	5.698	5.732
2008/11/15	2.488	2.403	2.613	4.175	3.936	4.661	5.702	5.695	5.711
2008/11/16	2.507	2.233	2.607	4.277	4.023	4.770	5.682	5.670	5.698
2008/11/17	1.570	1.340	2.159	3.030	2.342	4.598	5.651	5.621	5.686
2008/11/18	1.539	1.273	1.829	2.663	2.387	3.249	5.607	5.592	5.622
2008/11/19	2.060	1.728	2.463	3.083	2.590	3.624	5.630	5.611	5.673
2008/11/20	2.626	2.365	3.061	3.450	3.224	3.751	5.677	5.666	5.698
2008/11/21	3.070	2.886	3.193	3.713	3.533	3.909	5.697	5.689	5.705
2008/11/22	2.782	2.458	3.160	3.741	3.640	3.909	5.685	5.667	5.706
2008/11/23	2.440	2.095	2.826	3.390	3.034	3.894	5.662	5.642	5.682
2008/11/24	2.730	2.324	3.571	3.289	3.030	3.527	5.681	5.665	5.704
2008/11/25	3.341	3.145	3.585	3.517	3.308	4.071	5.705	5.692	5.723
2008/11/26	3.854	3.602	4.058	3.743	3.556	4.020	5.721	5.710	5.738
2008/11/27	4.084	3.591	4.317	4.058	3.795	4.279	5.735	5.721	5.756
2008/11/28	4.280	3.908	4.491	4.426	4.100	4.780	5.751	5.736	5.768
2008/11/29	4.649	4.382	5.001	4.591	4.420	4.953	5.766	5.756	5.779
2008/11/30	4.823	4.388	5.031	4.882	4.589	5.134	5.771	5.756	5.791
Monthly	3.309	3.028	3.642	4.459	4.223	4.779	5.674	5.660	5.695

Table 1-12. Water temperature data (°C) at 3 depths in Oyako Ike, December 2008.

Depth Date	1.8 m			3.6 m			6.6 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/12/1	5.816	5.676	5.933	5.766	5.688	5.891	5.439	5.425	5.474
2008/12/2	5.214	4.695	5.787	5.815	5.712	5.875	5.508	5.476	5.565
2008/12/3	4.291	3.874	4.830	5.739	5.654	5.805	5.590	5.568	5.624
2008/12/4	3.996	3.761	4.334	5.671	5.651	5.707	5.630	5.622	5.649
2008/12/5	3.426	2.878	4.222	5.572	5.357	5.700	5.650	5.641	5.665
2008/12/6	3.128	2.929	3.277	5.553	5.515	5.603	5.657	5.644	5.677
2008/12/7	3.380	3.268	3.560	5.611	5.546	5.702	5.682	5.669	5.704
2008/12/8	3.631	3.447	3.770	5.564	5.468	5.659	5.704	5.694	5.721
2008/12/9	3.757	3.654	3.928	5.597	5.547	5.667	5.717	5.711	5.722
2008/12/10	3.020	2.658	3.600	5.160	4.543	5.619	5.709	5.702	5.721
2008/12/11	2.916	2.789	3.184	4.689	4.463	4.926	5.687	5.671	5.709
2008/12/12	2.950	2.601	3.474	4.607	4.334	5.005	5.694	5.683	5.708
2008/12/13	2.540	2.265	2.891	4.281	3.879	4.704	5.713	5.704	5.730
2008/12/14	2.372	2.230	2.518	4.129	3.814	4.384	5.712	5.698	5.732
2008/12/15	2.488	2.403	2.613	4.175	3.936	4.661	5.702	5.695	5.711
2008/12/16	2.507	2.233	2.607	4.277	4.023	4.770	5.682	5.670	5.698
2008/12/17	1.570	1.340	2.159	3.030	2.342	4.598	5.651	5.621	5.686
2008/12/18	1.539	1.273	1.829	2.663	2.387	3.249	5.607	5.592	5.622
2008/12/19	2.060	1.728	2.463	3.083	2.590	3.624	5.630	5.611	5.673
2008/12/20	2.626	2.365	3.061	3.450	3.224	3.751	5.677	5.666	5.698
2008/12/21	3.070	2.886	3.193	3.713	3.533	3.909	5.697	5.689	5.705
2008/12/22	2.782	2.458	3.160	3.741	3.640	3.909	5.685	5.667	5.706
2008/12/23	2.440	2.095	2.826	3.390	3.034	3.894	5.662	5.642	5.682
2008/12/24	2.730	2.324	3.571	3.289	3.030	3.527	5.681	5.665	5.704
2008/12/25	3.341	3.145	3.585	3.517	3.308	4.071	5.705	5.692	5.723
2008/12/26	3.854	3.602	4.058	3.743	3.556	4.020	5.721	5.710	5.738
2008/12/27	4.084	3.591	4.317	4.058	3.795	4.279	5.735	5.721	5.756
2008/12/28	4.280	3.908	4.491	4.426	4.100	4.780	5.751	5.736	5.768
2008/12/29	4.649	4.382	5.001	4.591	4.420	4.953	5.766	5.756	5.779
2008/12/30	4.823	4.388	5.031	4.882	4.589	5.134	5.771	5.756	5.791
2008/12/31	4.856	4.456	5.146	5.132	5.008	5.449	5.790	5.779	5.808
Monthly	3.359	3.074	3.691	4.481	4.248	4.801	5.678	5.664	5.698

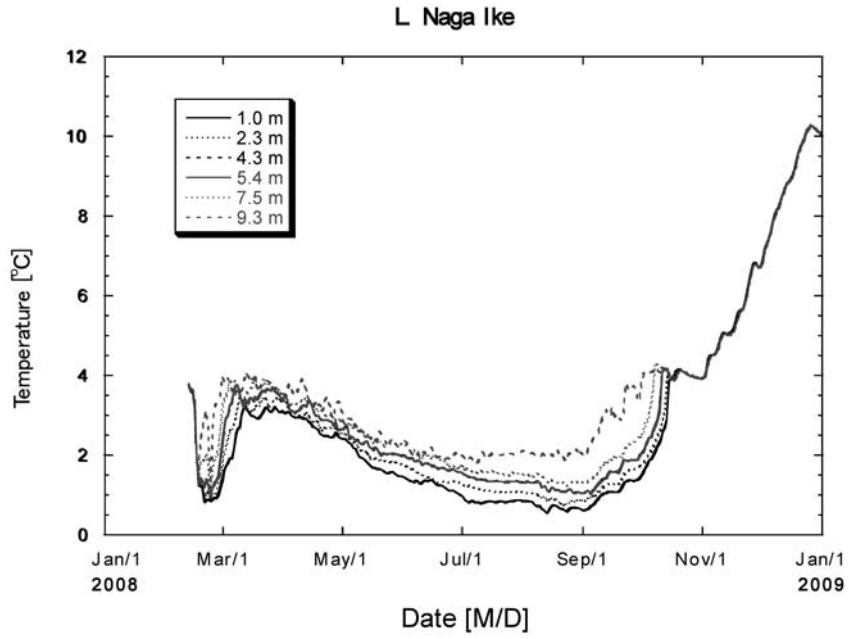


Fig. 4. Seasonal changes of water temperature at six depths in Naga Ike (2008–2009).
Daily average data.

Table 2-1. Water temperature data (°C) at 6 depths in Naga Ike, February 2008.

Depth Date	1.0 m		2.3 m		4.3 m		5.35 m		7.5 m		9.3 m							
	daily average	minimum maximum	daily average	minimum maximum	daily average	minimum maximum	daily average	minimum maximum	daily average	minimum maximum	daily average	minimum maximum						
2008/2/13	3.748	3.445	4.116	3.770	3.462	4.143	3.765	3.469	4.115	3.782	3.480	4.114	3.789	3.512	4.028	3.794	3.509	4.004
2008/2/14	3.585	3.380	3.797	3.607	3.429	3.813	3.599	3.416	3.818	3.596	3.413	3.816	3.642	3.437	3.883	3.641	3.439	3.841
2008/2/15	3.573	3.221	3.837	3.625	3.268	3.882	3.630	3.279	3.866	3.638	3.283	3.865	3.706	3.464	3.865	3.714	3.561	3.918
2008/2/16	3.196	2.891	3.578	3.228	2.910	3.606	3.242	2.932	3.607	3.235	2.926	3.598	3.298	2.944	3.645	3.351	2.954	3.646
2008/2/17	2.104	1.410	2.773	2.124	1.425	2.793	2.124	1.422	2.790	2.121	1.418	2.786	2.140	1.433	2.800	2.141	1.424	2.794
2008/2/18	1.215	1.068	1.340	1.237	1.076	1.361	1.254	1.069	1.435	1.248	1.067	1.432	1.316	1.090	1.586	1.450	1.164	2.108
2008/2/19	1.280	1.045	1.510	1.328	1.067	1.532	1.431	1.192	1.618	1.428	1.179	1.607	1.783	1.593	2.251	2.267	1.713	3.836
2008/2/20	1.134	0.933	1.373	1.208	0.973	1.394	1.351	1.190	1.599	1.340	1.181	1.594	1.900	1.524	2.269	2.646	1.965	3.690
2008/2/21	0.807	0.539	0.979	0.911	0.605	1.272	1.165	0.905	1.607	1.170	0.901	1.960	1.825	1.367	2.282	2.939	1.970	3.975
2008/2/22	0.884	0.769	0.925	1.098	0.919	1.182	1.396	1.123	1.665	1.391	1.122	1.661	2.037	1.771	2.395	3.105	2.023	3.728
2008/2/23	0.866	0.718	0.939	1.013	0.728	1.185	1.233	0.778	1.560	1.224	0.774	1.946	1.719	0.880	2.246	2.640	0.869	3.784
2008/2/24	0.831	0.691	1.014	0.867	0.717	1.067	0.925	0.754	1.242	0.915	0.749	1.231	1.119	0.792	1.529	1.356	0.793	2.108
2008/2/25	0.886	0.683	1.048	1.003	0.829	1.209	1.154	0.961	1.482	1.156	0.959	1.482	1.531	1.128	1.920	2.347	1.823	3.755
2008/2/26	0.928	0.690	1.103	1.025	0.742	1.279	1.288	0.929	1.635	1.281	0.944	1.625	1.910	1.576	2.240	3.182	2.154	3.865
2008/2/27	0.909	0.758	1.011	1.003	0.838	1.194	1.353	1.097	1.686	1.343	1.072	1.690	1.930	1.594	2.288	3.297	2.345	3.902
2008/2/28	1.000	0.870	1.099	1.201	1.073	1.281	1.467	1.303	1.598	1.459	1.296	1.607	2.140	1.803	2.352	3.390	2.621	4.052
2008/2/29	1.153	1.033	1.300	1.422	1.232	1.602	1.888	1.590	2.100	1.862	1.581	2.071	2.527	2.161	3.142	3.461	3.222	3.831
Monthly	1.653	0.539	4.116	1.745	0.605	4.143	1.899	0.754	4.115	1.892	0.749	4.114	2.254	0.792	4.028	2.872	0.793	4.052

Table 2-2. Water temperature data (°C) at 6 depths in Naga Ike, March 2008.

Depth Date	1.0 m			2.3 m			4.3 m			5.35 m			7.5 m			9.3 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/3/1	1.375	1.186	1.613	1.703	1.469	1.965	2.307	2.057	2.555	2.302	2.044	2.706	3.215	2.909	3.609	3.975	3.439	4.256
2008/3/2	1.605	1.474	1.746	2.086	1.853	2.242	2.673	2.478	3.078	2.662	2.331	3.065	3.380	3.048	3.648	3.809	3.452	4.320
2008/3/3	1.705	1.651	1.866	2.204	2.106	2.291	2.948	2.829	3.032	2.915	2.789	3.002	3.479	3.022	3.924	3.803	3.616	3.966
2008/3/4	1.806	1.650	2.074	2.401	2.215	2.572	2.997	2.850	2.989	2.822	2.733	3.153	3.614	3.405	3.969	3.929	3.481	4.224
2008/3/5	1.919	1.763	2.171	2.604	2.386	2.858	3.243	2.959	3.534	3.235	2.961	3.520	3.886	3.658	4.197	3.779	3.414	4.276
2008/3/6	1.908	1.862	1.949	2.647	2.514	2.880	3.332	3.064	3.577	3.300	3.049	3.491	3.808	3.609	4.006	3.610	3.373	3.809
2008/3/7	2.120	1.896	2.416	2.724	2.617	2.880	3.622	3.551	3.700	3.601	3.531	3.696	3.883	3.542	4.067	3.488	3.277	3.789
2008/3/8	2.505	2.429	2.573	2.959	2.886	3.016	3.741	3.684	3.845	3.737	3.657	3.843	3.844	3.663	4.016	3.595	3.328	4.022
2008/3/9	2.647	2.569	2.719	3.206	2.990	3.544	3.747	3.516	3.875	3.760	3.542	3.902	3.591	3.444	3.747	3.612	3.310	3.826
2008/3/10	2.700	2.689	2.735	3.463	3.405	3.507	3.495	3.422	3.565	3.509	3.417	3.585	3.447	3.326	3.686	3.525	3.249	3.830
2008/3/11	3.014	2.684	3.289	3.359	3.296	3.473	3.322	3.057	3.384	3.325	3.104	3.387	3.436	3.313	3.680	3.566	3.560	3.898
2008/3/12	3.188	3.142	3.228	3.262	3.179	3.350	3.157	2.985	3.308	3.162	2.973	3.300	3.335	3.228	3.418	3.814	3.623	4.215
2008/3/13	3.161	3.057	3.204	3.237	3.160	3.317	3.369	3.161	3.539	3.407	3.163	3.628	3.519	3.452	3.627	4.080	3.787	4.361
2008/3/14	3.116	3.057	3.204	3.148	3.091	3.254	3.267	3.171	3.407	3.273	3.175	3.386	3.585	3.453	3.829	3.997	3.741	4.175
2008/3/15	3.035	3.004	3.061	3.109	3.008	3.212	3.425	3.284	3.502	3.418	3.253	3.500	3.589	3.487	3.665	3.846	3.730	3.971
2008/3/16	2.971	2.945	3.007	3.063	3.004	3.130	3.435	3.345	3.529	3.434	3.337	3.527	3.720	3.492	3.867	3.917	3.780	4.020
2008/3/17	2.971	2.841	3.043	3.136	3.059	3.218	3.332	3.256	3.408	3.346	3.253	3.603	3.898	3.753	4.140	3.871	3.627	4.039
2008/3/18	2.930	2.898	3.026	3.201	3.149	3.283	3.472	3.355	3.657	3.469	3.352	3.638	3.967	3.697	4.170	3.834	3.575	4.144
2008/3/19	2.907	2.852	2.975	3.235	3.166	3.341	3.394	3.194	3.713	3.362	3.183	3.694	3.679	3.345	4.034	3.596	3.343	3.940
2008/3/20	2.940	2.839	3.021	3.239	3.189	3.306	3.489	3.263	3.881	3.502	3.272	3.881	3.728	3.416	4.072	3.619	3.400	3.929
2008/3/21	2.998	2.805	3.209	3.400	3.303	3.503	3.570	3.395	3.811	3.586	3.404	3.812	3.658	3.400	3.940	3.791	3.501	4.094
2008/3/22	3.098	2.866	3.251	3.410	3.186	3.622	3.606	3.313	3.870	3.619	3.387	3.892	3.902	3.517	4.226	3.864	3.649	4.109
2008/3/23	3.179	3.061	3.517	3.465	3.201	3.860	3.601	3.245	3.851	3.574	3.242	3.867	3.745	3.505	4.013	3.837	3.648	3.981
2008/3/24	3.199	3.074	3.323	3.353	3.091	3.627	3.654	3.481	3.958	3.665	3.471	3.992	3.765	3.598	3.976	3.854	3.724	3.977
2008/3/25	3.093	3.066	3.147	3.178	3.092	3.330	3.647	3.438	3.871	3.638	3.431	3.842	3.762	3.551	4.086	3.825	3.682	4.008
2008/3/26	3.066	3.045	3.084	3.294	3.149	3.376	3.616	3.462	3.836	3.605	3.425	3.776	3.677	3.465	3.894	3.764	3.551	3.914
2008/3/27	3.129	3.040	3.287	3.353	3.277	3.436	3.694	3.694	3.769	3.686	3.502	3.768	3.707	3.558	3.821	3.663	3.571	3.755
2008/3/28	3.215	3.112	3.281	3.329	3.265	3.431	3.618	3.470	3.691	3.622	3.464	3.693	3.567	3.480	3.680	3.685	3.645	3.710
2008/3/29	3.135	3.065	3.211	3.434	3.352	3.463	3.521	3.398	3.521	3.392	3.260	3.660	3.576	3.461	3.715	3.682	3.511	3.749
2008/3/30	3.078	3.056	3.117	3.441	3.350	3.547	3.511	3.398	3.714	3.514	3.402	3.679	3.641	3.535	3.784	3.510	3.320	3.680
2008/3/31	3.067	3.049	3.089	3.332	3.295	3.389	3.430	3.342	3.591	3.437	3.352	3.563	3.492	3.312	3.659	3.522	3.431	3.619
Monthly	2.735	2.644	2.853	3.064	2.946	3.186	3.394	3.216	3.577	3.393	3.215	3.582	3.648	3.452	3.876	3.754	3.521	3.991

Table 2-3. Water temperature data (°C) at 6 depths in Naga Ike, April 2008.

Date	1.0 m			2.3 m			4.3 m			5.35 m			15 m			9.3 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/4/1	3.110	3.077	3.163	3.374	3.343	3.416	3.329	3.310	3.417	3.328	3.311	3.360	3.402	3.264	3.347	3.330	3.467	3.616
2008/4/2	3.022	2.959	3.139	3.323	3.286	3.383	3.428	3.340	3.465	3.352	3.347	3.363	3.367	3.249	3.303	3.340	3.470	3.567
2008/4/3	3.070	2.997	3.123	3.257	3.200	3.305	3.428	3.220	3.362	3.415	3.205	3.048	3.407	3.296	3.354	3.644	3.498	3.740
2008/4/4	3.080	3.037	3.141	3.142	3.030	3.225	3.179	3.106	3.249	3.163	3.081	3.243	3.273	3.186	3.357	3.766	3.738	3.792
2008/4/5	3.004	2.983	3.017	3.013	2.984	3.031	3.128	3.087	3.162	3.120	3.082	3.154	3.254	3.218	3.288	3.780	3.621	3.855
2008/4/6	2.957	2.944	2.988	2.968	2.956	2.992	3.107	3.029	3.144	3.106	3.024	3.146	3.274	3.267	3.285	3.503	3.322	3.685
2008/4/7	2.942	2.834	2.948	2.953	2.949	2.957	3.051	3.027	3.080	3.044	3.018	3.090	3.256	3.240	3.272	3.537	3.265	3.723
2008/4/8	2.836	2.830	2.952	2.951	2.945	2.973	3.091	3.019	3.186	3.090	3.009	3.180	3.266	3.210	3.325	3.533	3.430	3.655
2008/4/9	2.933	2.830	2.936	2.961	2.946	2.995	3.104	3.087	3.146	3.101	3.087	3.144	3.316	3.279	3.328	3.748	3.665	3.792
2008/4/10	2.942	2.895	3.068	2.894	2.908	3.057	3.188	3.134	3.260	3.186	3.134	3.255	3.326	3.265	3.418	3.814	3.751	3.909
2008/4/11	2.898	2.872	2.952	2.917	2.881	2.966	3.231	3.164	3.282	3.227	3.175	3.276	3.376	3.323	3.522	3.920	3.836	3.992
2008/4/12	2.917	2.884	2.969	2.990	2.905	3.110	3.254	3.171	3.411	3.411	3.166	3.401	3.429	3.293	3.597	3.776	3.279	3.977
2008/4/13	2.850	2.871	3.010	3.061	2.994	3.180	3.213	3.083	3.372	3.207	3.072	3.368	3.347	3.150	3.691	3.585	3.184	3.930
2008/4/14	2.850	2.777	3.045	3.007	2.858	3.185	3.357	3.223	3.514	3.349	3.211	3.511	3.324	3.019	3.525	3.420	3.144	3.551
2008/4/15	2.793	2.737	2.862	2.908	2.755	3.073	3.338	3.125	3.466	3.324	3.114	3.447	3.284	2.992	3.519	3.351	3.031	3.646
2008/4/16	2.710	2.681	2.766	2.737	2.690	2.799	3.047	2.839	3.261	3.040	2.826	3.245	3.201	2.955	3.567	3.277	3.132	3.464
2008/4/17	2.688	2.670	2.724	2.845	2.705	2.922	2.963	2.838	3.208	2.957	2.834	3.202	3.151	3.000	3.261	3.368	3.234	3.592
2008/4/18	2.665	2.631	2.700	2.883	2.848	2.926	2.963	2.833	3.208	2.992	2.895	3.137	3.104	2.932	3.330	3.234	3.067	3.457
2008/4/19	2.621	2.552	2.689	2.833	2.710	2.903	3.003	2.831	3.154	2.982	2.896	3.174	3.160	3.002	3.298	3.081	3.467	3.577
2008/4/20	2.522	2.494	2.552	2.687	2.567	2.720	2.912	2.828	2.985	2.905	2.896	2.974	3.109	2.937	3.218	3.069	2.946	3.318
2008/4/21	2.491	2.478	2.527	2.618	2.529	2.680	2.883	2.847	2.938	2.876	2.841	2.920	3.042	2.920	3.200	3.248	3.086	3.373
2008/4/22	2.478	2.467	2.489	2.680	2.616	2.697	2.889	2.856	2.887	2.861	2.848	2.878	2.970	2.814	3.063	3.456	3.386	3.496
2008/4/23	2.466	2.476	2.510	2.684	2.661	2.707	2.884	2.874	2.896	2.873	2.862	2.892	2.980	2.876	3.150	3.372	3.307	3.415
2008/4/24	2.460	2.455	2.548	2.690	2.668	2.721	2.885	2.870	2.922	2.871	2.854	2.902	2.980	2.823	3.078	3.199	3.093	3.302
2008/4/25	2.437	2.417	2.479	2.677	2.659	2.691	2.842	2.823	2.868	2.840	2.820	2.874	2.992	2.892	3.167	2.959	2.712	3.195
2008/4/26	2.443	2.409	2.506	2.684	2.632	2.733	2.838	2.740	2.926	2.830	2.731	2.933	2.992	2.892	3.167	2.959	2.712	3.195
2008/4/27	2.460	2.352	2.571	2.627	2.532	2.675	2.707	2.650	2.819	2.698	2.647	2.815	2.937	2.803	3.058	2.913	2.758	2.976
2008/4/28	2.574	2.554	2.594	2.668	2.547	2.722	2.838	2.611	3.022	2.834	2.607	3.015	2.872	2.727	3.089	3.266	2.973	3.472
2008/4/29	2.475	2.373	2.541	2.528	2.490	2.558	2.611	2.528	2.730	2.605	2.524	2.712	2.877	2.714	2.984	3.326	3.181	3.456
2008/4/30	2.422	2.371	2.468	2.534	2.526	2.558	2.627	2.591	2.652	2.623	2.587	2.652	2.886	2.801	2.961	3.345	3.210	3.476
Monthly	2.744	2.707	2.799	2.872	2.811	2.929	3.055	2.963	3.152	3.048	2.957	3.143	3.181	3.049	3.325	3.432	3.263	3.576

Table 2-4. Water temperature data (°C) at 6 depths in Naga Ike, May 2008.

Date	1.0 m			2.3 m			4.3 m			5.35 m			7.5 m			9.3 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/5/1	2.397	2.311	2.444	2.529	2.517	2.549	2.652	2.633	2.670	2.645	2.628	2.664	2.814	2.754	2.884	3.057	2.821	3.211
2008/5/2	2.406	2.377	2.435	2.550	2.535	2.570	2.658	2.641	2.679	2.663	2.635	2.677	2.849	2.750	2.986	2.760	2.688	2.834
2008/5/3	2.392	2.371	2.408	2.548	2.539	2.566	2.723	2.675	2.774	2.718	2.665	2.759	2.743	2.516	3.018	2.808	2.762	2.850
2008/5/4	2.338	2.288	2.389	2.442	2.307	2.553	2.691	2.619	2.735	2.684	2.610	2.730	2.757	2.547	2.946	2.895	2.825	3.106
2008/5/5	2.303	2.257	2.365	2.415	2.390	2.431	2.429	2.353	2.555	2.429	2.344	2.578	2.811	2.687	2.922	2.905	2.871	2.949
2008/5/6	2.256	2.159	2.362	2.382	2.278	2.454	2.460	2.375	2.530	2.456	2.368	2.522	2.726	2.698	2.751	2.913	2.774	2.989
2008/5/7	2.166	2.094	2.216	2.312	2.173	2.388	2.434	2.327	2.510	2.425	2.319	2.501	2.637	2.560	2.726	2.724	2.629	2.860
2008/5/8	2.159	2.096	2.222	2.293	2.200	2.337	2.334	2.262	2.437	2.325	2.251	2.420	2.745	2.595	2.873	2.782	2.692	2.821
2008/5/9	2.058	2.014	2.192	2.245	2.180	2.304	2.400	2.202	2.547	2.387	2.308	2.469	2.630	2.469	2.782	2.637	2.500	2.743
2008/5/10	1.949	1.917	2.023	2.109	2.088	2.210	2.319	2.228	2.469	2.308	2.222	2.454	2.578	2.452	2.654	2.563	2.495	2.626
2008/5/11	1.932	1.907	1.955	2.109	2.085	2.142	2.266	2.176	2.442	2.284	2.174	2.431	2.668	2.547	2.707	2.577	2.517	2.610
2008/5/12	1.906	1.865	1.951	2.102	2.076	2.123	2.290	2.182	2.377	2.282	2.174	2.365	2.547	2.478	2.622	2.606	2.547	2.660
2008/5/13	1.862	1.810	1.897	2.097	2.022	2.139	2.351	2.297	2.372	2.322	2.266	2.383	2.444	2.389	2.507	2.516	2.465	2.555
2008/5/14	1.805	1.768	1.834	2.042	1.978	2.115	2.353	2.261	2.391	2.339	2.237	2.383	2.511	2.335	2.677	2.493	2.411	2.940
2008/5/15	1.756	1.724	1.797	1.987	1.955	2.044	2.221	2.112	2.299	2.206	2.099	2.281	2.499	2.331	2.626	2.439	2.383	2.943
2008/5/16	1.698	1.672	1.756	1.864	1.796	1.967	2.178	2.046	2.261	2.172	2.039	2.249	2.402	2.299	2.603	2.399	2.274	2.952
2008/5/17	1.673	1.652	1.702	1.910	1.852	1.931	2.126	2.106	2.149	2.118	2.099	2.141	2.264	2.163	2.418	2.295	2.260	2.356
2008/5/18	1.681	1.648	1.758	1.890	1.873	1.908	2.184	2.149	2.203	2.174	2.130	2.194	2.399	2.302	2.441	2.340	2.256	2.421
2008/5/19	1.651	1.637	1.669	1.919	1.886	1.951	2.175	2.150	2.204	2.165	2.144	2.199	2.284	2.176	2.390	2.353	2.231	2.469
2008/5/20	1.654	1.636	1.669	1.874	1.817	1.906	2.063	1.925	2.161	2.051	1.912	2.146	2.322	2.297	2.346	2.596	2.475	2.704
2008/5/21	1.630	1.608	1.656	1.874	1.835	1.895	1.986	1.955	2.011	1.977	1.947	1.999	2.326	2.297	2.346	2.531	2.482	2.588
2008/5/22	1.600	1.586	1.625	1.866	1.850	1.875	2.041	2.037	2.016	2.056	2.027	2.003	2.045	2.250	2.205	2.314	2.475	2.495
2008/5/23	1.562	1.553	1.578	1.832	1.813	1.852	2.041	2.007	2.064	2.032	1.998	2.055	2.219	2.189	2.300	2.450	2.123	2.524
2008/5/24	1.546	1.529	1.558	1.834	1.821	1.840	2.039	2.032	2.063	2.027	1.975	2.029	2.330	2.299	2.349	2.199	2.112	2.232
2008/5/25	1.547	1.535	1.561	1.824	1.819	1.834	2.039	2.032	2.063	2.027	2.019	2.040	2.325	2.308	2.343	2.276	2.224	2.305
2008/5/26	1.564	1.546	1.576	1.815	1.812	1.818	2.040	2.030	2.050	2.029	2.021	2.039	2.275	2.258	2.306	2.356	2.307	2.387
2008/5/27	1.574	1.547	1.596	1.826	1.814	1.834	2.030	2.027	2.033	2.019	2.016	2.024	2.270	2.254	2.285	2.371	2.340	2.401
2008/5/28	1.543	1.510	1.584	1.827	1.813	1.833	2.036	2.032	2.040	2.023	2.019	2.028	2.303	2.281	2.337	2.391	2.359	2.405
2008/5/29	1.493	1.473	1.512	1.802	1.792	1.811	2.029	2.029	2.033	2.019	2.022	2.022	2.275	2.253	2.309	2.249	2.181	2.351
2008/5/30	1.466	1.458	1.475	1.781	1.774	1.789	2.021	2.005	2.029	2.009	1.993	2.019	2.309	2.299	2.315	2.195	2.167	2.232
2008/5/31	1.456	1.447	1.468	1.778	1.772	1.786	1.997	1.988	2.008	1.983	1.974	1.995	2.278	2.260	2.296	2.261	2.238	2.274
Monthly	1.839	1.806	1.878	2.055	2.014	2.089	2.244	2.198	2.296	2.235	2.178	2.287	2.477	2.394	2.565	2.529	2.447	2.600

Table 2-5. Water temperature data (°C) at 6 depths in Naga Ike, June 2008.

Depth Date	1.0 m			2.3 m			4.3 m			5.35 m			7.5 m			9.3 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/6/1	1435	1440	1471	1709	1745	1788	1989	1991	2008	1984	1979	1993	2263	2228	2276	2281	2265	2308
2008/6/2	1422	1408	1446	1737	1728	1788	1989	1979	1995	1976	1968	1982	2268	2228	2276	2342	2312	2355
2008/6/3	1411	1383	1447	1716	1710	1724	1961	1950	1976	1961	1939	1965	2241	2196	2269	2327	2265	2347
2008/6/4	1369	1312	1409	1698	1677	1725	1926	1911	1951	1915	1901	1939	2149	2090	2198	2184	2149	2251
2008/6/5	1349	1303	1396	1668	1657	1677	1931	1893	1979	1916	1880	1964	2108	2065	2150	2107	2069	2146
2008/6/6	1326	1280	1361	1650	1638	1661	1932	1843	1979	1924	1843	1964	2042	2004	2076	1999	1957	2060
2008/6/7	1314	1248	1371	1619	1602	1638	1835	1793	1876	1833	1787	1873	2107	2062	2200	2038	1968	2129
2008/6/8	1358	1244	1417	1584	1570	1615	1863	1849	1879	1848	1837	1860	2135	2008	2224	2082	2000	2228
2008/6/9	1330	1215	1398	1553	1518	1576	1871	1886	1871	1886	1854	1869	2064	2032	2088	1975	1935	2024
2008/6/10	1260	1193	1326	1506	1488	1518	1824	1758	1869	1829	1789	1861	1885	1770	2072	2062	2003	2124
2008/6/11	1303	1281	1327	1500	1476	1519	1737	1694	1826	1728	1685	1815	1917	1820	1979	2143	2077	2163
2008/6/12	1339	1299	1418	1468	1456	1512	1776	1762	1806	1762	1748	1789	2002	1945	2040	2028	1964	2107
2008/6/13	1366	1290	1424	1443	1417	1475	1805	1793	1818	1777	1767	1806	2005	1988	2017	2081	2033	2119
2008/6/14	1322	1299	1366	1423	1411	1437	1789	1778	1793	1783	1777	1783	1992	1972	2009	2065	2023	2088
2008/6/15	1369	1351	1382	1441	1417	1458	1776	1753	1784	1761	1741	1770	1932	1906	1960	2131	2067	2165
2008/6/16	1359	1338	1374	1419	1395	1438	1726	1706	1750	1711	1692	1738	1913	1898	1947	2197	2158	2218
2008/6/17	1324	1296	1361	1351	1319	1413	1737	1714	1759	1721	1699	1740	1966	1904	2016	1988	1932	2135
2008/6/18	1271	1238	1294	1293	1259	1327	1711	1676	1733	1700	1685	1721	1933	1910	1965	1979	1954	2002
2008/6/19	1243	1230	1258	1289	1258	1331	1662	1645	1648	1648	1630	1663	1962	1897	1998	1933	1850	1985
2008/6/20	1240	1204	1265	1289	1258	1340	1693	1683	1683	1673	1634	1688	1917	1885	1972	1978	1866	2047
2008/6/21	1237	1206	1250	1329	1312	1340	1677	1673	1687	1670	1664	1681	1870	1834	1899	1975	1853	1998
2008/6/22	1201	1191	1213	1323	1304	1350	1672	1666	1677	1661	1657	1666	1828	1818	1843	1928	1884	1982
2008/6/23	1171	1153	1208	1310	1289	1324	1651	1640	1665	1643	1630	1657	1829	1820	1843	1871	1854	1899
2008/6/24	1127	1114	1168	1314	1283	1325	1626	1615	1640	1615	1604	1628	1767	1729	1822	1923	1866	1964
2008/6/25	1088	1074	1111	1307	1288	1342	1610	1592	1634	1598	1581	1624	1707	1674	1730	1918	1838	1965
2008/6/26	1099	1087	1111	1351	1337	1365	1642	1631	1650	1631	1617	1639	1737	1721	1755	2023	1943	2095
2008/6/27	1108	1084	1117	1342	1308	1356	1639	1623	1644	1627	1610	1632	1720	1704	1732	1994	1967	2053
2008/6/28	1071	1052	1086	1314	1306	1328	1608	1600	1621	1599	1580	1609	1692	1684	1704	2031	1990	2070
2008/6/29	1041	1026	1050	1306	1300	1308	1574	1568	1587	1574	1568	1587	1633	1609	1682	2099	2073	2121
2008/6/30	1014	1000	1037	1316	1304	1326	1581	1578	1584	1570	1568	1572	1729	1666	1753	2095	2013	2128
Monthly	1263	1228	1296	1455	1434	1476	1761	1740	1781	1750	1730	1769	1944	1903	1983	2059	2008	2109

Table 2-6. Water temperature data (°C) at 6 depths in Naga Ike, July 2008.

Date	1.0 m			2.3 m			4.3 m			5.35 m			7.5 m			9.3 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/7/1	0.865	1.007	1.304	1.269	1.325	1.578	1.539	1.578	1.569	1.531	1.569	1.716	1.676	1.745	1.992	1.965	2.012	
2008/7/2	0.934	0.966	1.235	1.214	1.266	1.525	1.516	1.537	1.517	1.506	1.529	1.725	1.641	1.757	1.957	1.898	2.016	
2008/7/3	0.868	0.837	1.215	1.207	1.225	1.503	1.495	1.488	1.495	1.488	1.506	1.679	1.509	1.689	1.919	1.900	1.937	
2008/7/4	0.826	0.841	1.214	1.200	1.238	1.478	1.466	1.497	1.468	1.457	1.485	1.679	1.665	1.693	1.826	1.766	1.901	
2008/7/5	0.812	0.799	1.242	1.234	1.255	1.464	1.455	1.471	1.453	1.443	1.461	1.652	1.621	1.677	1.895	1.772	1.946	
2008/7/6	0.838	0.815	1.223	1.215	1.229	1.443	1.431	1.455	1.431	1.420	1.442	1.595	1.563	1.639	1.940	1.916	1.966	
2008/7/7	0.853	0.814	1.191	1.166	1.223	1.435	1.427	1.453	1.423	1.417	1.439	1.887	1.554	1.592	1.887	1.770	1.966	
2008/7/8	0.814	0.791	1.156	1.129	1.185	1.425	1.405	1.452	1.411	1.392	1.437	1.575	1.555	1.611	1.778	1.744	1.803	
2008/7/9	0.801	0.838	1.143	1.133	1.149	1.400	1.394	1.407	1.395	1.376	1.394	1.542	1.530	1.562	1.776	1.750	1.821	
2008/7/10	0.815	0.763	1.141	1.136	1.147	1.404	1.401	1.407	1.390	1.386	1.393	1.608	1.570	1.622	1.885	1.827	1.958	
2008/7/11	0.778	0.802	1.128	1.117	1.137	1.388	1.385	1.400	1.385	1.381	1.388	1.608	1.562	1.624	2.003	1.943	2.068	
2008/7/12	0.796	0.780	1.115	1.110	1.118	1.392	1.387	1.399	1.378	1.373	1.384	1.570	1.565	1.580	2.081	2.063	2.088	
2008/7/13	0.814	0.809	1.114	1.109	1.118	1.380	1.370	1.389	1.366	1.358	1.375	1.570	1.566	1.580	1.854	1.821	2.055	
2008/7/14	0.825	0.820	1.109	1.105	1.113	1.361	1.352	1.371	1.349	1.340	1.356	1.570	1.544	1.582	1.912	1.902	1.929	
2008/7/15	0.834	0.829	1.107	1.104	1.109	1.350	1.348	1.353	1.338	1.335	1.341	1.604	1.575	1.624	2.006	1.984	2.031	
2008/7/16	0.838	0.834	1.088	1.077	1.098	1.345	1.342	1.348	1.333	1.330	1.336	1.606	1.591	1.619	2.047	2.034	2.053	
2008/7/17	0.825	0.815	1.088	1.075	1.088	1.341	1.340	1.344	1.329	1.327	1.330	1.570	1.557	1.589	2.031	2.019	2.043	
2008/7/18	0.814	0.811	1.078	1.075	1.081	1.341	1.340	1.345	1.331	1.328	1.333	1.550	1.546	1.556	2.008	1.998	2.020	
2008/7/19	0.820	0.815	1.076	1.072	1.080	1.343	1.340	1.345	1.332	1.328	1.335	1.544	1.529	1.544	1.996	1.992	2.000	
2008/7/20	0.831	0.822	1.074	1.071	1.079	1.343	1.341	1.345	1.328	1.326	1.331	1.517	1.513	1.528	1.988	1.982	1.997	
2008/7/21	0.830	0.834	1.071	1.067	1.077	1.340	1.338	1.344	1.328	1.326	1.331	1.514	1.496	1.519	1.990	1.984	1.997	
2008/7/22	0.830	0.823	1.064	1.061	1.067	1.335	1.331	1.338	1.324	1.320	1.328	1.520	1.520	1.550	2.016	1.998	2.027	
2008/7/23	0.818	0.823	1.059	1.055	1.064	1.330	1.327	1.333	1.319	1.317	1.321	1.520	1.490	1.550	2.017	2.001	2.027	
2008/7/24	0.815	0.812	1.054	1.051	1.056	1.329	1.328	1.332	1.318	1.316	1.319	1.495	1.470	1.525	2.007	1.999	2.023	
2008/7/25	0.822	0.817	1.056	1.052	1.068	1.331	1.327	1.338	1.319	1.315	1.326	1.484	1.469	1.531	2.026	2.013	2.050	
2008/7/26	0.837	0.828	1.066	1.065	1.075	1.338	1.331	1.345	1.327	1.320	1.334	1.561	1.534	1.571	2.023	2.014	2.041	
2008/7/27	0.847	0.840	1.068	1.064	1.072	1.340	1.336	1.348	1.329	1.326	1.332	1.546	1.514	1.561	2.020	2.014	2.028	
2008/7/28	0.848	0.841	1.067	1.062	1.078	1.338	1.335	1.342	1.326	1.322	1.332	1.530	1.507	1.544	2.035	2.012	2.055	
2008/7/29	0.860	0.855	1.077	1.066	1.083	1.344	1.339	1.346	1.332	1.315	1.339	1.528	1.505	1.548	2.060	2.037	2.072	
2008/7/30	0.860	0.854	1.074	1.069	1.083	1.337	1.328	1.346	1.327	1.320	1.335	1.526	1.505	1.544	2.060	2.037	2.072	
2008/7/31	0.859	0.852	1.072	1.068	1.081	1.327	1.321	1.340	1.317	1.313	1.328	1.523	1.509	1.537	2.081	2.072	2.092	
Monthly	0.838	0.825	1.122	1.113	1.132	1.385	1.378	1.393	1.373	1.367	1.381	1.572	1.547	1.597	1.971	1.943	2.000	

Table 2-7. Water temperature data (°C) at 6 depths in Naga Ike, August 2008.

Date	1.0 m		2.3 m		4.3 m		5.35 m		7.5 m		9.3 m						
	daily average	minimum maximum	daily average	minimum maximum	daily average	minimum maximum	daily average	minimum maximum	daily average	minimum maximum	daily average	minimum maximum					
2008/8/1	0.852	0.846	0.861	0.067	1.321	1.309	1.328	1.309	1.302	1.314	1.511	1.489	1.535	2.093	2.086	2.100	
2008/8/2	0.846	0.840	0.854	1.060	1.054	1.069	1.312	1.302	1.295	1.311	1.516	1.489	1.543	2.102	2.097	2.110	
2008/8/3	0.847	0.840	0.854	1.054	1.049	1.063	1.331	1.302	1.317	1.324	1.503	1.482	1.520	2.098	2.093	2.104	
2008/8/4	0.842	0.835	0.849	1.050	1.044	1.063	1.337	1.324	1.321	1.335	1.511	1.499	1.534	2.093	2.083	2.101	
2008/8/5	0.831	0.815	0.844	1.040	1.034	1.046	1.310	1.292	1.332	1.328	1.468	1.414	1.502	2.053	2.032	2.080	
2008/8/6	0.822	0.814	0.834	1.036	1.028	1.048	1.299	1.286	1.316	1.294	1.412	1.389	1.432	2.054	2.029	2.075	
2008/8/7	0.782	0.735	0.808	1.031	1.020	1.046	1.315	1.309	1.331	1.304	1.468	1.365	1.679	2.028	2.015	2.039	
2008/8/8	0.723	0.663	0.762	1.024	1.001	1.050	1.330	1.316	1.301	1.333	1.478	1.427	1.552	1.986	1.941	2.029	
2008/8/9	0.693	0.647	0.716	0.980	0.931	1.008	1.346	1.338	1.331	1.350	1.527	1.482	1.562	1.973	1.933	2.012	
2008/8/10	0.733	0.696	0.756	0.954	0.935	0.972	1.304	1.289	1.324	1.300	1.469	1.472	1.522	1.967	1.941	2.014	
2008/8/11	0.637	0.604	0.704	0.945	0.919	0.961	1.162	1.128	1.266	1.143	1.480	1.329	1.370	2.019	1.967	2.095	
2008/8/12	0.637	0.583	0.684	0.940	0.918	0.967	1.212	1.203	1.223	1.196	1.445	1.301	1.328	2.037	1.958	2.097	
2008/8/13	0.575	0.525	0.655	0.923	0.864	0.973	1.220	1.196	1.245	1.207	1.485	1.248	1.483	1.864	1.831	2.069	
2008/8/14	0.521	0.501	0.545	0.832	0.797	0.863	1.109	1.047	1.190	1.101	1.303	1.180	1.257	1.799	1.869	2.074	
2008/8/15	0.632	0.503	0.673	0.908	0.834	0.948	1.092	1.080	1.100	1.082	1.305	1.249	1.381	1.949	1.890	2.045	
2008/8/16	0.703	0.665	0.727	0.908	0.895	0.937	1.180	1.103	1.206	1.159	1.381	1.281	1.450	2.019	1.939	2.074	
2008/8/17	0.741	0.721	0.758	0.892	0.884	0.908	1.172	1.104	1.207	1.169	1.333	1.229	1.435	1.979	1.924	2.054	
2008/8/18	0.711	0.681	0.733	0.875	0.866	0.890	1.122	1.075	1.159	1.115	1.349	1.274	1.410	2.054	2.027	2.075	
2008/8/19	0.711	0.681	0.733	0.875	0.866	0.890	1.122	1.075	1.159	1.115	1.349	1.274	1.410	2.054	2.027	2.075	
2008/8/20	0.668	0.649	0.682	0.813	0.775	0.850	1.126	1.101	1.146	1.115	1.301	1.244	1.404	1.961	1.903	2.128	
2008/8/21	0.649	0.639	0.659	0.762	0.735	0.784	1.087	1.082	1.099	1.071	1.093	1.314	1.276	1.386	2.016	1.930	2.070
2008/8/22	0.651	0.631	0.677	0.777	0.757	0.802	1.089	1.085	1.094	1.080	1.319	1.271	1.367	1.956	1.838	2.067	
2008/8/23	0.602	0.574	0.632	0.748	0.742	0.758	1.076	1.051	1.092	1.063	1.264	1.203	1.308	1.840	1.808	1.937	
2008/8/24	0.583	0.555	0.624	0.759	0.710	0.808	1.104	1.061	1.133	1.055	1.174	1.272	1.159	1.280	1.308	1.840	
2008/8/25	0.646	0.621	0.682	0.816	0.791	0.849	1.147	1.118	1.132	1.105	1.174	1.272	1.159	1.280	1.308	1.840	
2008/8/26	0.672	0.659	0.695	0.836	0.822	0.863	1.148	1.094	1.171	1.140	1.164	1.291	1.112	1.432	2.042	2.007	
2008/8/27	0.681	0.669	0.689	0.840	0.834	0.851	1.048	1.036	1.083	1.049	1.066	1.326	1.300	3.008	1.995	1.979	
2008/8/28	0.681	0.668	0.702	0.844	0.831	0.868	1.056	1.039	1.091	1.047	1.076	1.297	1.268	3.321	2.039	1.974	
2008/8/29	0.657	0.642	0.679	0.843	0.838	0.852	1.075	1.057	1.088	1.067	1.048	1.314	1.257	3.343	2.146	2.068	
2008/8/30	0.657	0.640	0.669	0.871	0.850	0.888	1.073	1.032	1.088	1.071	1.038	1.313	1.257	3.419	1.987	2.053	
2008/8/31	0.634	0.619	0.649	0.869	0.860	0.879	1.026	1.015	1.037	1.029	1.020	1.333	1.294	1.411	2.076	2.011	
Month	0.698	0.671	0.723	0.909	0.888	0.931	1.183	1.157	1.207	1.175	1.198	1.378	1.314	1.445	2.021	1.974	2.081

Table 2-8. Water temperature data (°C) at 6 depths in Naga Ike, September 2008.

Date	1.0 m			2.3 m			4.3 m			5.35 m			7.5 m			9.3 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/9/1	0.619	0.575	0.661	0.843	0.781	0.883	1.038	1.010	1.074	1.028	0.980	1.080	1.297	1.237	1.360	1.879	1.837	2.019
2008/9/2	0.632	0.568	0.685	0.868	0.784	0.915	1.036	1.006	1.089	1.025	0.985	1.064	1.313	1.069	1.364	2.034	1.973	2.098
2008/9/3	0.648	0.624	0.680	0.911	0.843	0.939	1.102	1.058	1.150	1.096	1.043	1.172	1.319	1.099	1.508	2.032	1.945	2.115
2008/9/4	0.714	0.656	0.765	0.933	0.915	0.971	1.026	0.968	1.111	1.014	0.964	1.102	1.348	1.266	1.424	2.172	2.066	2.266
2008/9/5	0.732	0.712	0.756	0.941	0.917	0.980	1.095	1.038	1.158	1.077	1.018	1.148	1.409	1.219	1.472	2.223	2.183	2.268
2008/9/6	0.781	0.742	0.843	0.976	0.939	1.031	1.149	1.104	1.188	1.094	1.178	1.447	1.409	1.368	1.508	2.386	2.283	2.452
2008/9/7	0.843	0.782	0.943	1.035	0.983	1.134	1.230	1.184	1.282	1.208	1.163	1.257	1.521	1.431	1.595	2.433	2.401	2.458
2008/9/8	0.912	0.846	1.054	1.082	1.027	1.203	1.283	1.212	1.418	1.277	1.213	1.379	1.548	1.408	1.708	2.489	2.436	2.550
2008/9/9	0.958	0.906	1.032	1.122	1.070	1.201	1.321	1.217	1.405	1.310	1.211	1.379	1.658	1.603	1.696	2.551	2.474	2.790
2008/9/10	1.015	0.963	1.075	1.180	1.125	1.260	1.399	1.332	1.470	1.386	1.327	1.436	1.722	1.642	1.828	2.793	2.753	2.830
2008/9/11	1.031	1.015	1.048	1.125	1.109	1.235	1.420	1.410	1.430	1.470	1.411	1.399	1.722	1.642	1.828	2.917	2.848	3.037
2008/9/12	1.040	1.025	1.067	1.228	1.210	1.254	1.434	1.418	1.456	1.420	1.404	1.443	1.807	1.777	1.842	3.054	2.885	3.256
2008/9/13	1.076	1.027	1.176	1.274	1.220	1.368	1.518	1.458	1.586	1.502	1.444	1.567	1.874	1.833	1.961	3.143	3.095	3.187
2008/9/14	1.077	1.056	1.099	1.278	1.258	1.308	1.595	1.568	1.610	1.590	1.569	1.615	1.874	1.759	1.993	3.008	2.802	3.181
2008/9/15	1.078	1.073	1.081	1.280	1.276	1.282	1.574	1.498	1.613	1.569	1.490	1.601	1.905	1.755	1.977	2.998	2.728	3.234
2008/9/16	1.070	1.061	1.075	1.278	1.272	1.281	1.583	1.513	1.625	1.570	1.494	1.615	1.947	1.877	1.985	3.178	3.041	3.282
2008/9/17	1.063	1.055	1.067	1.269	1.264	1.273	1.584	1.560	1.601	1.547	1.570	1.591	1.926	1.874	1.993	2.991	2.848	3.063
2008/9/18	1.066	1.060	1.075	1.266	1.244	1.273	1.567	1.548	1.585	1.552	1.531	1.570	1.930	1.908	1.981	2.932	2.824	3.091
2008/9/19	1.104	1.053	1.226	1.276	1.215	1.371	1.634	1.553	1.741	1.617	1.544	1.705	1.958	1.854	2.074	3.016	2.791	3.115
2008/9/20	1.202	1.102	1.406	1.435	1.319	1.641	1.763	1.675	1.852	1.756	1.662	1.888	1.938	1.699	2.230	2.895	2.707	3.076
2008/9/21	1.287	1.220	1.356	1.508	1.494	1.583	1.878	1.813	1.965	1.866	1.796	1.888	2.064	1.887	2.234	2.891	2.638	3.416
2008/9/22	1.325	1.288	1.393	1.561	1.514	1.644	1.862	1.808	1.948	1.865	1.807	1.983	2.185	2.078	2.332	3.096	2.915	3.468
2008/9/23	1.354	1.335	1.372	1.607	1.585	1.621	1.859	1.853	1.873	1.847	1.837	1.861	2.259	2.169	2.311	3.069	3.055	3.536
2008/9/24	1.368	1.357	1.385	1.629	1.617	1.642	1.864	1.846	1.891	1.857	1.835	1.877	2.274	2.245	2.304	3.169	3.165	3.656
2008/9/25	1.354	1.347	1.360	1.631	1.628	1.635	1.876	1.850	1.903	1.876	1.857	1.892	2.264	2.238	2.311	3.372	3.306	3.804
2008/9/26	1.354	1.345	1.367	1.648	1.636	1.670	1.870	1.854	1.896	1.867	1.851	1.890	2.317	2.302	2.338	3.745	3.681	3.784
2008/9/27	1.355	1.346	1.366	1.654	1.647	1.662	1.875	1.861	1.886	1.868	1.851	1.882	2.331	2.303	2.349	3.660	3.551	3.744
2008/9/28	1.355	1.346	1.366	1.654	1.647	1.662	1.875	1.861	1.886	1.868	1.851	1.882	2.331	2.303	2.349	3.660	3.551	3.744
2008/9/29	1.372	1.346	1.402	1.664	1.644	1.704	1.882	1.859	1.926	1.864	1.840	1.902	2.381	2.336	2.450	3.397	3.269	3.534
2008/9/30	1.420	1.377	1.467	1.703	1.663	1.786	1.936	1.936	2.078	1.972	1.911	2.033	2.450	2.391	2.517	3.350	3.223	3.614
Monthly	1.048	1.015	1.101	1.271	1.236	1.324	1.514	1.470	1.566	1.504	1.458	1.556	1.848	1.746	1.932	2.939	2.818	3.079

Table 2-9. Water temperature data (°C) at 6 depths in Naga Ike, October 2008.

Date	1.0 m			2.3 m			4.3 m			5.35 m			7.5 m			9.3 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/10/1	1.479	1.421	1.561	1.735	1.695	1.790	2.027	1.958	2.114	2.036	1.960	2.127	2.462	2.404	2.563	3.825	3.508	4.116
2008/10/2	1.487	1.829	1.829	1.801	1.740	1.967	2.092	2.031	2.180	2.084	2.016	2.175	2.588	2.464	2.810	4.057	3.692	4.278
2008/10/3	1.671	1.575	1.772	1.874	1.795	1.934	2.205	2.121	2.304	2.194	2.103	2.315	2.808	2.593	2.972	4.030	3.771	4.290
2008/10/4	1.762	1.667	1.852	1.934	1.850	2.022	2.338	2.220	2.439	2.333	2.207	2.478	2.831	2.648	2.991	4.101	3.869	4.246
2008/10/5	1.862	1.778	1.956	2.048	1.948	2.141	2.442	2.338	2.600	2.439	2.333	2.608	3.045	2.781	3.273	4.064	3.809	4.245
2008/10/6	1.888	1.863	1.930	2.114	2.085	2.158	2.455	2.381	2.521	2.445	2.372	2.506	3.310	3.009	3.534	4.096	3.987	4.170
2008/10/7	1.882	1.879	2.096	2.208	2.108	2.329	2.620	2.480	2.822	2.625	2.455	2.862	3.636	3.220	4.118	4.075	3.913	4.252
2008/10/8	2.100	1.991	2.227	2.326	2.208	2.451	2.746	2.587	2.912	2.735	2.576	2.956	4.304	4.158	4.555	4.194	4.051	4.342
2008/10/9	2.200	2.100	2.292	2.446	2.327	2.559	2.860	2.713	2.977	2.847	2.700	2.988	4.272	4.122	4.414	4.122	3.783	4.379
2008/10/10	2.307	2.199	2.418	2.570	2.443	2.708	3.105	2.898	3.279	3.083	2.868	3.343	4.709	4.006	4.412	4.084	3.700	4.409
2008/10/11	2.389	2.302	2.592	2.671	2.552	2.780	3.704	3.281	4.213	3.640	3.193	4.197	3.999	3.999	4.366	4.052	3.708	4.338
2008/10/12	2.596	2.519	2.733	2.869	2.694	3.069	4.195	4.062	4.327	4.196	4.074	4.338	4.093	3.905	4.254	4.092	3.709	4.429
2008/10/13	2.710	2.559	2.891	3.108	2.860	3.351	4.144	4.023	4.263	4.157	4.044	4.283	4.107	3.819	4.239	4.175	3.610	4.460
2008/10/14	2.887	2.709	3.098	3.300	3.007	3.428	4.039	3.891	4.204	4.047	3.887	4.196	4.188	3.953	4.443	4.123	3.630	4.384
2008/10/15	3.857	2.879	4.176	4.055	3.898	4.226	4.039	3.804	4.058	3.905	3.795	4.059	3.949	3.812	4.424	4.009	3.858	4.163
2008/10/16	3.904	3.814	3.969	3.926	3.826	4.057	3.904	3.804	4.068	3.904	3.773	4.137	3.856	3.684	4.104	3.992	3.773	4.181
2008/10/17	3.928	3.799	4.099	3.951	3.809	4.109	3.889	3.766	4.097	3.881	3.714	4.035	3.920	3.668	4.185	3.830	3.668	3.961
2008/10/18	4.010	3.881	4.175	4.066	3.876	4.276	3.885	3.717	4.021	3.881	3.714	4.035	4.103	3.875	4.374	4.019	3.869	4.170
2008/10/19	4.106	3.995	4.250	4.109	4.013	4.247	4.041	3.909	4.191	4.053	3.910	4.216	4.094	3.999	4.264	4.038	3.911	4.152
2008/10/20	4.152	4.057	4.274	4.164	4.076	4.280	4.091	4.026	4.202	4.107	4.030	4.247	4.122	4.077	4.209	4.092	4.033	4.148
2008/10/21	4.126	4.100	4.159	4.148	4.108	4.173	4.123	4.088	4.173	4.121	4.085	4.173	4.122	4.077	4.209	4.092	4.060	4.125
2008/10/22	4.090	4.060	4.135	4.081	4.083	4.139	4.095	4.076	4.120	4.083	4.072	4.121	4.124	4.083	4.201	4.092	4.060	4.125
2008/10/23	4.064	4.040	4.119	4.081	4.054	4.111	4.073	4.042	4.109	4.071	4.042	4.112	4.107	4.060	4.187	4.068	4.050	4.106
2008/10/24	4.031	4.001	4.062	4.050	4.020	4.079	4.040	4.012	4.058	4.035	4.009	4.056	4.066	4.024	4.114	4.028	3.998	4.054
2008/10/25	3.998	3.966	4.034	4.012	3.985	4.029	4.006	3.980	4.029	4.004	3.975	4.034	4.034	3.992	4.077	3.995	3.982	4.013
2008/10/26	3.974	3.950	4.013	3.989	3.969	4.022	3.978	3.963	3.996	3.976	3.959	3.998	4.008	3.971	4.067	3.977	3.954	4.006
2008/10/27	3.958	3.934	3.984	3.976	3.957	4.012	3.966	3.948	4.001	3.963	3.944	4.010	4.004	3.962	4.078	3.962	3.950	3.982
2008/10/28	3.944	3.920	3.981	3.960	3.935	3.999	3.950	3.930	3.981	3.953	3.930	3.998	3.975	3.933	4.062	3.946	3.909	3.973
2008/10/29	3.935	3.916	3.971	3.951	3.932	3.990	3.940	3.923	3.964	3.936	3.920	3.994	3.977	3.915	4.076	3.926	3.887	3.970
2008/10/30	3.927	3.908	3.949	3.943	3.922	3.968	3.928	3.911	3.964	3.933	3.912	3.975	3.932	3.908	3.955	3.909	3.894	3.932
2008/10/31	3.915	3.893	3.947	3.935	3.903	3.978	3.918	3.901	3.944	3.917	3.895	3.945	3.937	3.912	3.989	3.911	3.880	3.933
<i>Monthly</i>	3.139	3.034	3.241	3.291	3.193	3.400	3.513	3.418	3.624	3.511	3.412	3.638	3.818	3.675	3.986	4.027	3.861	4.173

Table 2-11. Water temperature data (°C) at 6 depths in Naga Ike, December 2008.

Depth Date	1.0 m			2.3 m			4.3 m			5.35 m			7.5 m			9.3 m		
	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum	daily average	minimum	maximum
2008/12/1	6.729	6.651	6.817	6.735	6.666	6.810	6.716	6.657	6.773	6.717	6.654	6.791	6.670	6.679	6.711	6.627	6.775	
2008/12/2	6.932	6.775	7.101	6.921	6.751	7.051	6.895	6.703	7.031	6.891	6.747	7.031	6.928	6.769	7.082	6.892	7.010	
2008/12/3	7.174	6.996	7.378	7.174	7.037	7.273	7.148	7.013	7.251	7.151	7.009	7.253	7.172	7.014	7.289	7.132	7.000	
2008/12/4	7.308	7.262	7.378	7.310	7.256	7.357	7.293	7.220	7.384	7.309	7.220	7.373	7.309	7.216	7.426	7.283	7.358	
2008/12/5	7.427	7.336	7.502	7.427	7.354	7.517	7.427	7.344	7.500	7.425	7.340	7.515	7.445	7.351	7.532	7.427	7.336	
2008/12/6	7.599	7.487	7.728	7.610	7.504	7.717	7.597	7.498	7.706	7.489	7.404	7.694	7.617	7.505	7.765	7.591	7.483	
2008/12/7	7.846	7.696	7.960	7.848	7.715	7.969	7.823	7.697	7.937	7.831	7.694	7.942	7.833	7.695	7.929	7.808	7.677	
2008/12/8	8.035	7.966	8.156	8.035	7.961	8.114	8.008	7.923	8.083	8.017	7.923	8.104	8.018	7.914	8.109	7.997	7.898	
2008/12/9	8.133	8.103	8.158	8.142	8.117	8.167	8.128	8.096	8.158	8.132	8.095	8.155	8.138	8.084	8.176	8.125	8.070	
2008/12/10	8.371	8.272	8.468	8.225	8.163	8.298	8.212	8.153	8.281	8.212	8.152	8.283	8.232	8.160	8.311	8.216	8.149	
2008/12/11	8.506	8.432	8.609	8.511	8.448	8.595	8.499	8.432	8.566	8.500	8.437	8.579	8.517	8.447	8.605	8.497	8.435	
2008/12/12	8.650	8.556	8.748	8.655	8.563	8.750	8.656	8.553	8.725	8.633	8.552	8.712	8.675	8.574	8.810	8.643	8.563	
2008/12/13	8.773	8.698	8.854	8.787	8.714	8.876	8.770	8.706	8.850	8.768	8.704	8.840	8.797	8.723	8.908	8.766	8.703	
2008/12/14	8.840	8.799	8.886	8.852	8.813	8.894	8.842	8.808	8.909	8.838	8.805	8.882	8.867	8.822	8.959	8.840	8.811	
2008/12/15	8.907	8.844	8.980	8.914	8.850	8.995	8.889	8.843	8.952	8.887	8.844	8.952	8.929	8.844	9.048	8.891	8.835	
2008/12/16	8.994	8.924	9.070	9.000	8.937	9.088	8.982	8.926	9.050	8.980	8.923	9.046	9.011	8.938	9.111	8.882	8.828	
2008/12/17	9.122	9.014	9.259	9.127	9.028	9.259	9.104	9.018	9.214	9.101	9.015	9.206	9.151	9.036	9.310	9.107	9.024	
2008/12/18	9.361	9.200	9.530	9.368	9.223	9.513	9.343	9.205	9.473	9.348	9.204	9.487	9.374	9.217	9.509	9.333	9.184	
2008/12/19	9.563	9.469	9.665	9.575	9.484	9.677	9.556	9.462	9.564	9.548	9.458	9.659	9.570	9.453	9.691	9.546	9.430	
2008/12/20	9.712	9.646	9.785	9.729	9.664	9.794	9.716	9.656	9.778	9.715	9.656	9.779	9.732	9.659	9.800	9.713	9.637	
2008/12/21	9.804	9.750	9.862	9.817	9.760	9.881	9.806	9.751	9.876	9.801	9.748	9.863	9.838	9.777	9.927	9.808	9.763	
2008/12/22	9.916	9.823	10.025	9.926	9.837	10.037	9.909	9.827	10.008	9.908	9.822	10.006	9.944	9.845	10.064	9.904	9.770	
2008/12/23	10.071	9.981	10.163	10.086	9.994	10.174	10.074	9.986	10.154	10.071	9.984	10.157	10.111	10.000	10.202	10.069	9.986	
2008/12/24	10.179	10.123	10.231	10.198	10.134	10.273	10.181	10.123	10.244	10.175	10.123	10.228	10.225	10.138	10.315	10.180	10.097	
2008/12/25	10.232	10.180	10.283	10.247	10.201	10.304	10.232	10.187	10.295	10.231	10.182	10.288	10.271	10.193	10.363	10.219	10.106	
2008/12/26	10.241	10.183	10.288	10.256	10.202	10.326	10.242	10.186	10.307	10.240	10.185	10.320	10.282	10.205	10.360	10.231	10.155	
2008/12/27	10.201	10.151	10.243	10.216	10.165	10.268	10.205	10.153	10.255	10.202	10.156	10.247	10.246	10.159	10.326	10.197	10.137	
2008/12/28	10.179	10.129	10.221	10.186	10.132	10.231	10.167	10.125	10.203	10.165	10.121	10.203	10.205	10.159	10.277	10.163	10.125	
2008/12/29	10.171	10.145	10.221	10.182	10.132	10.231	10.167	10.125	10.203	10.165	10.121	10.203	10.205	10.159	10.277	10.163	10.125	
2008/12/30	10.091	10.045	10.121	10.106	10.062	10.148	10.093	10.036	10.153	10.092	10.029	10.147	10.138	10.056	10.238	10.087	9.993	
2008/12/31	10.070	10.019	10.101	10.091	10.047	10.137	10.073	10.020	10.117	10.072	10.017	10.128	10.116	10.034	10.183	10.054	9.966	
Monthly	8.877	8.795	8.961	8.886	8.810	8.987	8.888	8.794	8.946	8.889	8.792	8.946	8.898	8.805	9.000	8.864	8.778	

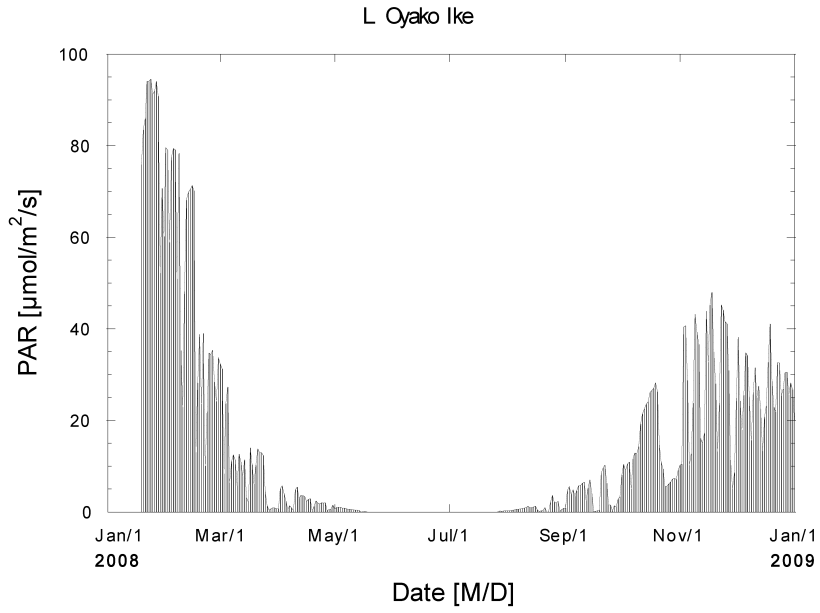


Fig. 5. Seasonal changes of photosynthetically active radiation (PAR) at 6.1 m depth in Oyako Ike (2008–2009). Daily average data.

Table 3-1. Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 6.1 m depth in Oyako Ike, January 2008.

Depth	6.1 m		
Date	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/1/19	76	3	356
2008/1/20	84	2	219
2008/1/21	86	1	273
2008/1/22	94	1	246
2008/1/23	94	1	249
2008/1/24	95	1	247
2008/1/25	91	1	250
2008/1/26	92	1	240
2008/1/27	94	1	260
2008/1/28	91	0	247
2008/1/29	52	0	135
2008/1/30	71	0	226
2008/1/31	60	0	244
<i>Monthly</i>	83	1	246

Table 3-2. Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 6.1 m depth in Oyako Ike, February 2008.

Depth	6.1 m		
Date	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/2/1	80	0	210
2008/2/2	79	0	223
2008/2/3	59	0	157
2008/2/4	78	0	283
2008/2/5	79	0	222
2008/2/6	79	0	225
2008/2/7	51	0	174
2008/2/8	78	0	226
2008/2/9	35	0	132
2008/2/10	23	0	58
2008/2/11	48	0	197
2008/2/12	68	0	211
2008/2/13	70	0	212
2008/2/14	70	0	213
2008/2/15	71	0	213
2008/2/16	70	0	210
2008/2/17	13	0	46
2008/2/18	28	0	96
2008/2/19	39	0	109
2008/2/20	24	0	77
2008/2/21	39	0	110
2008/2/22	10	0	28
2008/2/23	22	0	67
2008/2/24	35	0	110
2008/2/25	34	0	107
2008/2/26	35	0	105
2008/2/27	28	0	83
2008/2/28	24	0	77
2008/2/29	34	0	116
<i>Monthly</i>	48	0	148

Table 3-3. Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 6.1 m depth in Oyako Ike, March 2008.

Depth	6.1 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/3/1	0	0	0
2008/3/2	0	0	0
2008/3/3	0	0	0
2008/3/4	0	0	0
2008/3/5	0	0	0
2008/3/6	0	0	0
2008/3/7	0	0	0
2008/3/8	0	0	0
2008/3/9	0	0	0
2008/3/10	0	0	0
2008/3/11	0	0	0
2008/3/12	0	0	0
2008/3/13	0	0	0
2008/3/14	0	0	0
2008/3/15	0	0	0
2008/3/16	0	0	0
2008/3/17	0	0	0
2008/3/18	0	0	0
2008/3/19	0	0	0
2008/3/20	0	0	0
2008/3/21	0	0	0
2008/3/22	0	0	0
2008/3/23	0	0	0
2008/3/24	0	0	0
2008/3/25	0	0	0
2008/3/26	0	0	0
2008/3/27	0	0	1
2008/3/28	0	0	2
2008/3/29	0	0	2
2008/3/30	0	0	2
2008/3/31	0	0	3
<i>Monthly</i>	0	0	0

Table 3-4. Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 6.1 m depth in Oyako Ike, April 2008.

Depth	6.1 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/4/1	0	0	0
2008/4/2	0	0	0
2008/4/3	0	0	0
2008/4/4	0	0	0
2008/4/5	0	0	0
2008/4/6	0	0	0
2008/4/7	0	0	0
2008/4/8	0	0	0
2008/4/9	0	0	0
2008/4/10	0	0	0
2008/4/11	0	0	0
2008/4/12	0	0	0
2008/4/13	0	0	0
2008/4/14	0	0	0
2008/4/15	0	0	0
2008/4/16	0	0	0
2008/4/17	0	0	0
2008/4/18	0	0	0
2008/4/19	0	0	0
2008/4/20	0	0	0
2008/4/21	0	0	0
2008/4/22	0	0	0
2008/4/23	0	0	0
2008/4/24	0	0	0
2008/4/25	0	0	0
2008/4/26	0	0	0
2008/4/27	0	0	1
2008/4/28	0	0	2
2008/4/29	0	0	2
2008/4/30	0	0	2
<i>Monthly</i>	0	0	0

Table 3-5. Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 6.1 m depth in Oyako Ike, May 2008.

Depth	6.1 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
Date			
2008/5/1	0	0	0
2008/5/2	0	0	0
2008/5/3	0	0	0
2008/5/4	0	0	0
2008/5/5	0	0	0
2008/5/6	0	0	0
2008/5/7	0	0	0
2008/5/8	0	0	0
2008/5/9	0	0	0
2008/5/10	0	0	0
2008/5/11	0	0	0
2008/5/12	0	0	0
2008/5/13	0	0	0
2008/5/14	0	0	0
2008/5/15	0	0	0
2008/5/16	0	0	0
2008/5/17	0	0	0
2008/5/18	0	0	0
2008/5/19	0	0	0
2008/5/20	0	0	0
2008/5/21	0	0	0
2008/5/22	0	0	0
2008/5/23	0	0	0
2008/5/24	0	0	0
2008/5/25	0	0	0
2008/5/26	0	0	0
2008/5/27	0	0	1
2008/5/28	0	0	2
2008/5/29	0	0	2
2008/5/30	0	0	2
2008/5/31	0	0	3
<i>Monthly</i>	0	0	0

Table 3-6. Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 6.1 m depth in Oyako Ike, June 2008.

Depth	6.1 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
Date			
2008/6/1	0	0	0
2008/6/2	0	0	0
2008/6/3	0	0	0
2008/6/4	0	0	0
2008/6/5	0	0	0
2008/6/6	0	0	0
2008/6/7	0	0	0
2008/6/8	0	0	0
2008/6/9	0	0	0
2008/6/10	0	0	0
2008/6/11	0	0	0
2008/6/12	0	0	0
2008/6/13	0	0	0
2008/6/14	0	0	0
2008/6/15	0	0	0
2008/6/16	0	0	0
2008/6/17	0	0	0
2008/6/18	0	0	0
2008/6/19	0	0	0
2008/6/20	0	0	0
2008/6/21	0	0	0
2008/6/22	0	0	0
2008/6/23	0	0	0
2008/6/24	0	0	0
2008/6/25	0	0	0
2008/6/26	0	0	0
2008/6/27	0	0	1
2008/6/28	0	0	2
2008/6/29	0	0	2
2008/6/30	0	0	2
<i>Monthly</i>	0	0	0

Table 3-7. Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 6.1 m depth in Oyako Ike, July 2008.

Depth	6.1 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/7/1	0	0	0
2008/7/2	0	0	0
2008/7/3	0	0	0
2008/7/4	0	0	0
2008/7/5	0	0	0
2008/7/6	0	0	0
2008/7/7	0	0	0
2008/7/8	0	0	0
2008/7/9	0	0	0
2008/7/10	0	0	0
2008/7/11	0	0	0
2008/7/12	0	0	0
2008/7/13	0	0	0
2008/7/14	0	0	0
2008/7/15	0	0	0
2008/7/16	0	0	0
2008/7/17	0	0	0
2008/7/18	0	0	0
2008/7/19	0	0	0
2008/7/20	0	0	0
2008/7/21	0	0	0
2008/7/22	0	0	0
2008/7/23	0	0	0
2008/7/24	0	0	0
2008/7/25	0	0	0
2008/7/26	0	0	0
2008/7/27	0	0	1
2008/7/28	0	0	2
2008/7/29	0	0	2
2008/7/30	0	0	2
2008/7/31	0	0	3
<i>Monthly</i>	0	0	0

Table 3-8. Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 6.1 m depth in Oyako Ike, August 2008.

Depth	6.1 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/8/1	0	0	2
2008/8/2	0	0	2
2008/8/3	0	0	3
2008/8/4	0	0	3
2008/8/5	1	0	3
2008/8/6	1	0	4
2008/8/7	1	0	4
2008/8/8	1	0	4
2008/8/9	1	0	5
2008/8/10	1	0	5
2008/8/11	1	0	6
2008/8/12	1	0	9
2008/8/13	1	0	6
2008/8/14	1	0	6
2008/8/15	1	0	8
2008/8/16	1	0	7
2008/8/17	1	0	4
2008/8/18	0	0	1
2008/8/19	0	0	2
2008/8/20	0	0	2
2008/8/21	1	0	5
2008/8/22	0	0	0
2008/8/23	0	0	1
2008/8/24	2	0	15
2008/8/25	4	0	22
2008/8/26	2	0	11
2008/8/27	2	0	11
2008/8/28	2	0	13
2008/8/29	0	0	2
2008/8/30	1	0	3
2008/8/31	1	0	4
<i>Monthly</i>	1	0	6

Table 3-9. Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 6.1 m depth in Oyako Ike, September 2008.

Depth Date	6.1 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/9/1	1	0	4
2008/9/2	5	0	22
2008/9/3	6	0	25
2008/9/4	4	0	19
2008/9/5	5	0	19
2008/9/6	4	0	15
2008/9/7	5	0	19
2008/9/8	6	0	26
2008/9/9	6	0	27
2008/9/10	6	0	26
2008/9/11	7	0	27
2008/9/12	3	0	11
2008/9/13	5	0	22
2008/9/14	7	0	34
2008/9/15	4	0	17
2008/9/16	0	0	1
2008/9/17	0	0	1
2008/9/18	0	0	1
2008/9/19	0	0	2
2008/9/20	9	0	32
2008/9/21	10	0	36
2008/9/22	10	0	36
2008/9/23	6	0	27
2008/9/24	2	0	7
2008/9/25	2	0	6
2008/9/26	0	0	1
2008/9/27	1	0	10
2008/9/28	1	0	4
2008/9/29	3	0	19
2008/9/30	3	0	11
<i>Monthly</i>	4	0	17

Table 3-10. Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 6.1 m depth in Oyako Ike, October 2008.

Depth Date	6.1 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/10/1	10	0	27
2008/10/2	10	0	28
2008/10/3	40	0	103
2008/10/4	41	0	104
2008/10/5	29	0	85
2008/10/6	10	0	28
2008/10/7	13	0	37
2008/10/8	24	0	81
2008/10/9	43	0	106
2008/10/10	39	0	115
2008/10/11	37	0	105
2008/10/12	16	0	64
2008/10/13	15	0	40
2008/10/14	17	0	39
2008/10/15	44	0	111
2008/10/16	33	0	91
2008/10/17	45	0	113
2008/10/18	48	0	114
2008/10/19	35	0	105
2008/10/20	28	0	65
2008/10/21	13	0	32
2008/10/22	24	0	76
2008/10/23	45	1	105
2008/10/24	44	1	103
2008/10/25	42	1	97
2008/10/26	41	1	102
2008/10/27	31	0	87
2008/10/28	11	0	41
2008/10/29	5	0	14
2008/10/30	9	0	27
2008/10/31	10	0	27
<i>Monthly</i>	28	0	73

Table 3-11. Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 6.1 m depth in Oyako Ike, November 2008.

Depth	6.1 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/11/1	10	0	27
2008/11/2	10	0	28
2008/11/3	40	0	103
2008/11/4	41	0	104
2008/11/5	29	0	85
2008/11/6	10	0	28
2008/11/7	13	0	37
2008/11/8	24	0	81
2008/11/9	43	0	106
2008/11/10	39	0	115
2008/11/11	37	0	105
2008/11/12	16	0	64
2008/11/13	15	0	40
2008/11/14	17	0	39
2008/11/15	44	0	111
2008/11/16	33	0	91
2008/11/17	45	0	113
2008/11/18	48	0	114
2008/11/19	35	0	105
2008/11/20	28	0	65
2008/11/21	13	0	32
2008/11/22	24	0	76
2008/11/23	45	1	105
2008/11/24	44	1	103
2008/11/25	42	1	97
2008/11/26	41	1	102
2008/11/27	31	0	87
2008/11/28	11	0	41
2008/11/29	5	0	14
2008/11/30	9	0	27
<i>Monthly</i>	28	0	75

Table 3-12. Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 6.1 m depth in Oyako Ike, December 2008.

Depth	6.1 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/12/1	25	1	57
2008/12/2	38	1	126
2008/12/3	24	1	61
2008/12/4	18	1	44
2008/12/5	26	0	55
2008/12/6	35	1	103
2008/12/7	34	2	79
2008/12/8	25	1	88
2008/12/9	16	1	35
2008/12/10	26	1	66
2008/12/11	32	2	83
2008/12/12	25	1	63
2008/12/13	28	1	90
2008/12/14	23	1	56
2008/12/15	13	1	31
2008/12/16	21	1	49
2008/12/17	23	1	62
2008/12/18	33	1	90
2008/12/19	41	2	110
2008/12/20	29	1	77
2008/12/21	23	2	65
2008/12/22	22	1	60
2008/12/23	33	1	81
2008/12/24	33	2	76
2008/12/25	25	2	61
2008/12/26	27	1	63
2008/12/27	30	1	70
2008/12/28	31	1	70
2008/12/29	26	2	62
2008/12/30	28	2	65
2008/12/31	27	1	64
<i>Monthly</i>	27	1	70

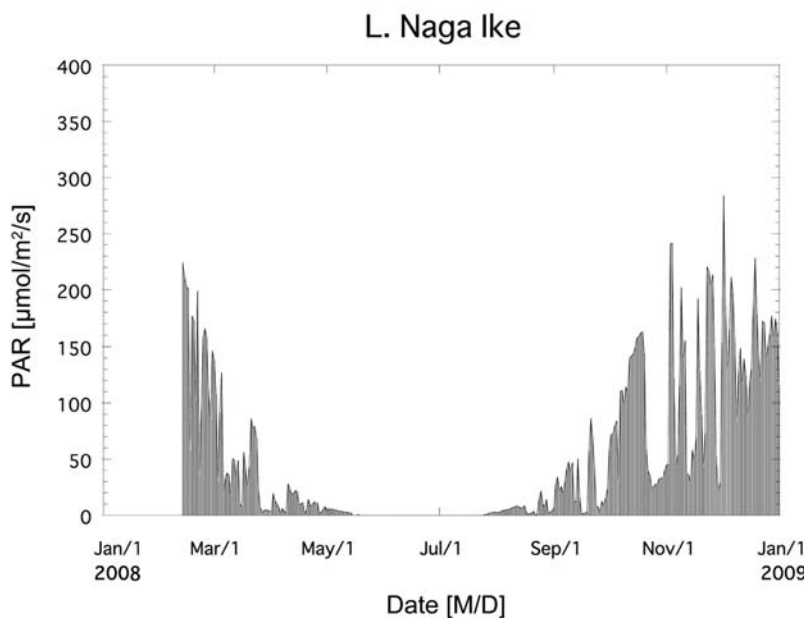


Fig. 6. Seasonal changes of photosynthetically active radiation (PAR) at 1.5 m depth in Naga Ike (2008–2009). Daily average data.

Table 4-1 Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 1.5 m depth in Naga Ike, February 2008.

Depth	1.5 m		
	daily average	minimum	maximum
2008/2/12	149	0	648
2008/2/13	224	0	570
2008/2/14	211	0	615
2008/2/15	203	0	562
2008/2/16	201	0	582
2008/2/17	58	0	147
2008/2/18	177	0	944
2008/2/19	172	0	514
2008/2/20	102	0	351
2008/2/21	199	0	633
2008/2/22	36	0	104
2008/2/23	95	0	275
2008/2/24	159	0	524
2008/2/25	166	0	553
2008/2/26	157	0	515
2008/2/27	110	0	421
2008/2/28	86	0	262
2008/2/29	147	0	447
<i>Monthly</i>	147	0	482

Table 4-2 Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 1.5 m depth in Naga Ike, March 2008.

Depth	1.5 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
<i>Date</i>			
2008/3/1	138	0	419
2008/3/2	108	0	348
2008/3/3	30	0	114
2008/3/4	92	0	313
2008/3/5	127	0	404
2008/3/6	20	0	71
2008/3/7	33	0	128
2008/3/8	38	0	123
2008/3/9	35	0	111
2008/3/10	17	0	74
2008/3/11	51	0	198
2008/3/12	49	0	170
2008/3/13	33	0	114
2008/3/14	49	0	171
2008/3/15	10	0	33
2008/3/16	7	0	26
2008/3/17	56	0	205
2008/3/18	42	0	158
2008/3/19	26	0	109
2008/3/20	43	0	186
2008/3/21	86	0	376
2008/3/22	78	0	307
2008/3/23	79	0	293
2008/3/24	69	0	290
2008/3/25	23	0	97
2008/3/26	7	0	32
2008/3/27	2	0	10
2008/3/28	4	0	20
2008/3/29	5	0	23
2008/3/30	5	0	21
2008/3/31	4	0	14
<i>Monthly</i>	44	0	160

Table 4-3 Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 1.5 m depth in Naga Ike, April 2008.

Depth	1.5 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
<i>Date</i>			
2008/4/1	4	0	19
2008/4/2	6	0	34
2008/4/3	6	0	30
2008/4/4	6	0	35
2008/4/5	5	0	29
2008/4/6	5	0	27
2008/4/7	4	0	25
2008/4/8	4	0	23
2008/4/9	4	0	25
2008/4/10	3	0	22
2008/4/11	3	0	20
2008/4/12	3	0	19
2008/4/13	2	0	19
2008/4/14	2	0	18
2008/4/15	0	0	0
2008/4/16	0	0	1
2008/4/17	0	0	1
2008/4/18	0	0	4
2008/4/19	0	0	0
2008/4/20	0	0	0
2008/4/21	0	0	1
2008/4/22	0	0	0
2008/4/23	0	0	0
2008/4/24	0	0	0
2008/4/25	0	0	0
2008/4/26	0	0	0
2008/4/27	0	0	0
2008/4/28	0	0	0
2008/4/29	0	0	0
2008/4/30	0	0	0
<i>Monthly</i>	2	0	12

Table 4-4 Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 1.5 m depth in Naga Ike, May 2008.

Depth	1.5 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
Date			
2008/5/1	4	0	19
2008/5/2	6	0	34
2008/5/3	6	0	30
2008/5/4	6	0	35
2008/5/5	5	0	29
2008/5/6	5	0	27
2008/5/7	4	0	25
2008/5/8	4	0	23
2008/5/9	4	0	25
2008/5/10	3	0	22
2008/5/11	3	0	20
2008/5/12	3	0	19
2008/5/13	2	0	19
2008/5/14	2	0	18
2008/5/15	0	0	0
2008/5/16	0	0	1
2008/5/17	0	0	1
2008/5/18	0	0	4
2008/5/19	0	0	0
2008/5/20	0	0	0
2008/5/21	0	0	1
2008/5/22	0	0	0
2008/5/23	0	0	0
2008/5/24	0	0	0
2008/5/25	0	0	0
2008/5/26	0	0	0
2008/5/27	0	0	0
2008/5/28	0	0	0
2008/5/29	0	0	0
2008/5/30	0	0	0
2008/5/31	0	0	0
<i>Monthly</i>	2	0	11

Table 4-5 Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 1.5 m depth in Naga Ike, June 2008.

Depth	1.5 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
Date			
2008/6/1	0	0	0
2008/6/2	0	0	0
2008/6/3	0	0	0
2008/6/4	0	0	0
2008/6/5	0	0	0
2008/6/6	0	0	0
2008/6/7	0	0	0
2008/6/8	0	0	0
2008/6/9	0	0	0
2008/6/10	0	0	0
2008/6/11	0	0	0
2008/6/12	0	0	0
2008/6/13	0	0	0
2008/6/14	0	0	0
2008/6/15	0	0	0
2008/6/16	0	0	0
2008/6/17	0	0	0
2008/6/18	0	0	0
2008/6/19	0	0	0
2008/6/20	0	0	0
2008/6/21	0	0	0
2008/6/22	0	0	0
2008/6/23	0	0	0
2008/6/24	0	0	0
2008/6/25	0	0	0
2008/6/26	0	0	0
2008/6/27	0	0	0
2008/6/28	0	0	1
2008/6/29	0	0	1
2008/6/30	0	0	1
<i>Monthly</i>	0	0	0

Table 4-6 Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 1.5 m depth in Naga Ike, July 2008.

Depth	1.5 m		
Date	daily average	minimum	maximum
2008/7/1	0	0	0
2008/7/2	0	0	0
2008/7/3	0	0	0
2008/7/4	0	0	0
2008/7/5	0	0	0
2008/7/6	0	0	0
2008/7/7	0	0	0
2008/7/8	0	0	0
2008/7/9	0	0	0
2008/7/10	0	0	0
2008/7/11	0	0	0
2008/7/12	0	0	0
2008/7/13	0	0	0
2008/7/14	0	0	0
2008/7/15	0	0	0
2008/7/16	0	0	0
2008/7/17	0	0	0
2008/7/18	0	0	0
2008/7/19	0	0	0
2008/7/20	0	0	0
2008/7/21	0	0	0
2008/7/22	0	0	1
2008/7/23	0	0	0
2008/7/24	0	0	0
2008/7/25	0	0	2
2008/7/26	1	0	7
2008/7/27	1	0	6
2008/7/28	2	0	17
2008/7/29	2	0	17
2008/7/30	3	0	19
2008/7/31	3	0	22
<i>Monthly</i>	0	0	3

Table 4-7 Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 1.5 m depth in Naga Ike, August 2008.

Depth	1.5 m		
Date	daily average	minimum	maximum
2008/8/1	3	0	18
2008/8/2	3	0	17
2008/8/3	3	0	18
2008/8/4	4	0	27
2008/8/5	4	0	27
2008/8/6	5	0	30
2008/8/7	5	0	29
2008/8/8	6	0	31
2008/8/9	6	0	36
2008/8/10	7	0	45
2008/8/11	8	0	46
2008/8/12	8	0	71
2008/8/13	8	0	40
2008/8/14	7	0	36
2008/8/15	6	0	43
2008/8/16	9	0	45
2008/8/17	3	0	20
2008/8/18	1	0	5
2008/8/19	2	0	9
2008/8/20	2	0	10
2008/8/21	4	0	18
2008/8/22	1	0	3
2008/8/23	1	0	4
2008/8/24	15	0	97
2008/8/25	22	0	133
2008/8/26	10	0	52
2008/8/27	7	0	31
2008/8/28	14	0	82
2008/8/29	2	0	11
2008/8/30	3	0	14
2008/8/31	4	0	18
<i>Monthly</i>	6	0	34

Table 4-8 Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 1.5 m depth in Naga Ike, September 2008.

Depth	1.5 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
Date			
2008/9/1	6	0	31
2008/9/2	28	0	129
2008/9/3	34	0	144
2008/9/4	21	0	97
2008/9/5	26	0	98
2008/9/6	19	0	81
2008/9/7	31	0	137
2008/9/8	41	0	160
2008/9/9	47	0	206
2008/9/10	39	0	159
2008/9/11	47	0	226
2008/9/12	11	0	49
2008/9/13	13	0	53
2008/9/14	50	0	312
2008/9/15	15	0	61
2008/9/16	1	0	6
2008/9/17	2	0	7
2008/9/18	2	0	8
2008/9/19	3	0	11
2008/9/20	58	0	202
2008/9/21	86	0	348
2008/9/22	70	0	244
2008/9/23	43	0	191
2008/9/24	7	0	33
2008/9/25	8	0	28
2008/9/26	2	0	6
2008/9/27	13	0	104
2008/9/28	9	0	28
2008/9/29	15	0	107
2008/9/30	23	0	96
<i>Monthly</i>	26	0	112

Table 4-9 Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 1.5 m depth in Naga Ike, October 2008.

Depth	1.5 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
Date			
2008/10/1	58	0	225
2008/10/2	72	0	360
2008/10/3	72	0	318
2008/10/4	80	0	343
2008/10/5	84	0	392
2008/10/6	29	0	95
2008/10/7	110	0	444
2008/10/8	111	0	474
2008/10/9	99	0	294
2008/10/10	114	0	464
2008/10/11	110	0	348
2008/10/12	140	0	481
2008/10/13	142	0	483
2008/10/14	144	0	517
2008/10/15	149	0	535
2008/10/16	158	0	558
2008/10/17	159	0	564
2008/10/18	162	0	542
2008/10/19	163	0	524
2008/10/20	144	0	501
2008/10/21	59	0	153
2008/10/22	40	0	97
2008/10/23	36	0	92
2008/10/24	25	0	68
2008/10/25	25	0	71
2008/10/26	28	0	76
2008/10/27	28	0	82
2008/10/28	32	0	86
2008/10/29	33	0	88
2008/10/30	33	0	81
2008/10/31	40	0	114
<i>Monthly</i>	86	0	305

Table 4-10 Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 1.5 m depth in Naga Ike, November 2008.

Depth	1.5 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2011/11/1	154	7	348
2011/11/2	284	11	877
2011/11/3	185	13	471
2011/11/4	129	8	309
2011/11/5	165	6	357
2011/11/6	211	10	734
2011/11/7	198	13	478
2011/11/8	154	11	624
2011/11/9	84	6	188
2011/11/10	128	5	464
2011/11/11	149	11	377
2011/11/12	117	9	291
2011/11/13	139	9	399
2011/11/14	125	7	273
2011/11/15	87	9	221
2011/11/16	120	8	275
2011/11/17	130	7	340
2011/11/18	186	10	495
2011/11/19	228	16	575
2011/11/20	178	11	462
2011/11/21	141	13	389
2011/11/22	120	5	325
2011/11/23	172	9	417
2011/11/24	170	13	392
2011/11/25	140	12	332
2011/11/26	152	8	346
2011/11/27	162	9	361
2011/11/28	177	10	391
2011/11/29	157	11	383
2011/11/30	174	13	383
<i>Monthly</i>	157	10	409

Table 4-11 Photosynthetic active radiation data ($\mu\text{mol}/\text{m}^2/\text{s}$) at 1.5 m depth in Naga Ike, December 2008.

Depth	1.5 m		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/12/1	154	7	348
2008/12/2	284	11	877
2008/12/3	185	13	471
2008/12/4	129	8	309
2008/12/5	165	6	357
2008/12/6	211	10	734
2008/12/7	198	13	478
2008/12/8	154	11	624
2008/12/9	84	6	188
2008/12/10	128	5	464
2008/12/11	149	11	377
2008/12/12	117	9	291
2008/12/13	139	9	399
2008/12/14	125	7	273
2008/12/15	87	9	221
2008/12/16	120	8	275
2008/12/17	130	7	340
2008/12/18	186	10	495
2008/12/19	228	16	575
2008/12/20	178	11	462
2008/12/21	141	13	389
2008/12/22	120	5	325
2008/12/23	172	9	417
2008/12/24	170	13	392
2008/12/25	140	12	332
2008/12/26	152	8	346
2008/12/27	162	9	361
2008/12/28	177	10	391
2008/12/29	157	11	383
2008/12/30	174	13	383
2008/12/31	164	10	367
<i>Monthly</i>	157	10	408

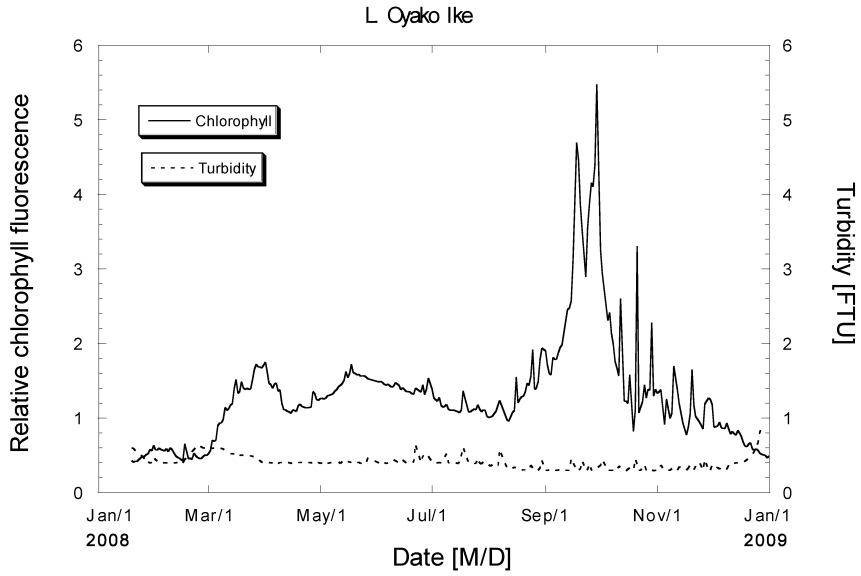


Fig. 7. Seasonal changes of chlorophyll fluorescence and turbidity at 1.8 m depth in Oyako Ike (2008–2009). Daily average data.

Table 5-1 Chlorophyll *a* fluorescence and turbidity data at 1.8 m depth in Oyako Ike, January 2008.

Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/1/19	0.43	0.38	0.51	0.60	0.60	0.60
2008/1/20	0.41	0.28	0.58	0.60	0.50	0.60
2008/1/21	0.42	0.31	0.58	0.56	0.50	0.60
2008/1/22	0.42	0.28	0.60	0.53	0.50	0.60
2008/1/23	0.45	0.31	0.63	0.50	0.50	0.60
2008/1/24	0.47	0.32	0.66	0.50	0.50	0.50
2008/1/25	0.48	0.32	0.69	0.49	0.40	0.50
2008/1/26	0.49	0.32	0.75	0.46	0.40	0.50
2008/1/27	0.51	0.33	0.73	0.41	0.40	0.50
2008/1/28	0.52	0.32	0.79	0.41	0.40	0.50
2008/1/29	0.58	0.38	0.81	0.40	0.40	0.40
2008/1/30	0.56	0.32	0.87	0.40	0.40	0.50
2008/1/31	0.64	0.35	0.91	0.48	0.40	0.50
<i>Monthly</i>	0.49	0.28	0.91	0.49	0.40	0.60

Table 5-2 Chlorophyll *a* fluorescence and turbidity data at 1.8 m depth in Oyako Ike, February 2008.

Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/2/1	0.58	0.32	0.89	0.45	0.40	0.50
2008/2/2	0.57	0.33	0.87	0.43	0.40	0.50
2008/2/3	0.60	0.39	0.87	0.41	0.40	0.50
2008/2/4	0.58	0.31	0.92	0.41	0.40	0.50
2008/2/5	0.57	0.32	0.89	0.40	0.40	0.40
2008/2/6	0.56	0.31	0.89	0.40	0.40	0.40
2008/2/7	0.59	0.35	0.85	0.40	0.40	0.40
2008/2/8	0.55	0.35	0.87	0.40	0.40	0.40
2008/2/9	0.60	0.38	0.81	0.40	0.40	0.40
2008/2/10	0.58	0.37	0.82	0.40	0.40	0.40
2008/2/11	0.54	0.31	0.72	0.40	0.40	0.40
2008/2/12	0.50	0.28	0.77	0.40	0.40	0.40
2008/2/13	0.48	0.29	0.70	0.40	0.40	0.50
2008/2/14	0.46	0.28	0.69	0.40	0.40	0.50
2008/2/15	0.44	0.25	0.64	0.40	0.40	0.40
2008/2/16	0.43	0.27	0.63	0.40	0.40	0.40
2008/2/17	0.66	0.35	1.45	0.45	0.40	0.60
2008/2/18	1.80	0.41	5.49	0.88	0.80	0.90
2008/2/19	0.46	0.30	0.64	0.83	0.80	0.90
2008/2/20	0.46	0.32	0.61	0.79	0.70	0.80
2008/2/21	0.45	0.29	0.62	0.78	0.70	0.90
2008/2/22	0.53	0.45	0.64	0.73	0.70	0.80
2008/2/23	0.50	0.33	0.77	0.69	0.60	0.80
2008/2/24	0.47	0.32	0.64	0.63	0.60	0.70
2008/2/25	0.46	0.31	0.63	0.62	0.60	0.70
2008/2/26	0.46	0.29	0.62	0.62	0.60	0.70
2008/2/27	0.48	0.33	0.62	0.60	0.60	0.60
2008/2/28	0.51	0.36	0.65	0.60	0.60	0.60
2008/2/29	0.50	0.31	0.66	0.60	0.60	0.60
<i>Monthly</i>	0.56	0.25	5.49	0.53	0.40	0.90

Table 5-3 Chlorophyll *a* fluorescence and turbidity data at 1.8 m depth in Oyako Ike, March 2008.

Date	Chlorophyll (relative)			Turbidity (FTU)		
	daily average	minimum	maximum	daily average	minimum	maximum
2008/3/1	0.53	0.33	0.72	0.60	0.60	0.70
2008/3/2	0.57	0.39	0.76	0.60	0.60	0.60
2008/3/3	0.70	0.51	0.90	0.60	0.50	0.60
2008/3/4	0.69	0.46	0.94	0.60	0.60	0.60
2008/3/5	0.70	0.44	0.94	0.60	0.60	0.60
2008/3/6	0.90	0.64	1.11	0.60	0.60	0.60
2008/3/7	0.93	0.62	1.12	0.60	0.60	0.60
2008/3/8	0.94	0.62	1.17	0.60	0.50	0.60
2008/3/9	0.98	0.67	1.22	0.59	0.50	0.60
2008/3/10	1.14	0.77	1.35	0.57	0.50	0.60
2008/3/11	1.11	0.69	1.38	0.57	0.50	0.60
2008/3/12	1.13	0.74	1.42	0.54	0.40	0.60
2008/3/13	1.18	0.81	1.46	0.53	0.50	0.60
2008/3/14	1.19	0.78	1.49	0.53	0.50	0.60
2008/3/15	1.40	1.26	1.57	0.52	0.50	0.60
2008/3/16	1.52	1.38	1.69	0.51	0.50	0.60
2008/3/17	1.34	0.81	1.71	0.51	0.50	0.60
2008/3/18	1.36	0.85	1.69	0.50	0.50	0.50
2008/3/19	1.49	0.96	1.77	0.50	0.50	0.60
2008/3/20	1.40	0.85	1.76	0.50	0.50	0.50
2008/3/21	1.39	0.76	1.76	0.49	0.40	0.50
2008/3/22	1.40	0.82	1.76	0.50	0.40	0.50
2008/3/23	1.39	0.79	1.73	0.49	0.40	0.60
2008/3/24	1.39	0.79	1.75	0.50	0.40	0.50
2008/3/25	1.52	0.97	1.72	0.49	0.40	0.50
2008/3/26	1.66	1.52	1.76	0.48	0.40	0.50
2008/3/27	1.72	1.63	1.86	0.44	0.40	0.50
2008/3/28	1.69	1.54	1.82	0.44	0.40	0.50
2008/3/29	1.69	1.55	1.86	0.43	0.40	0.50
2008/3/30	1.67	1.48	1.79	0.41	0.40	0.50
2008/3/31	1.71	1.58	1.85	0.40	0.40	0.50
<i>Monthly</i>	1.24	0.33	1.86	0.52	0.40	0.70

Table 5-4 Chlorophyll *a* fluorescence and turbidity data at 1.8 m depth in Oyako Ike, April 2008.

Date	Chlorophyll (relative)			Turbidity (FTU)		
	daily average	minimum	maximum	daily average	minimum	maximum
2008/4/1	1.75	1.64	1.90	0.40	0.40	0.50
2008/4/2	1.63	0.98	2.03	0.41	0.40	0.50
2008/4/3	1.47	1.01	1.73	0.40	0.40	0.50
2008/4/4	1.45	1.03	1.62	0.40	0.40	0.40
2008/4/5	1.40	1.02	1.63	0.40	0.40	0.40
2008/4/6	1.46	1.29	1.75	0.40	0.30	0.40
2008/4/7	1.47	1.20	1.73	0.40	0.30	0.40
2008/4/8	1.36	1.16	1.68	0.40	0.30	0.40
2008/4/9	1.38	1.23	1.63	0.40	0.40	0.50
2008/4/10	1.20	0.79	1.55	0.40	0.40	0.50
2008/4/11	1.11	0.82	1.29	0.39	0.30	0.40
2008/4/12	1.11	0.87	1.27	0.40	0.30	0.40
2008/4/13	1.09	0.89	1.20	0.40	0.30	0.40
2008/4/14	1.08	0.87	1.20	0.40	0.40	0.50
2008/4/15	1.07	0.84	1.20	0.40	0.30	0.40
2008/4/16	1.11	0.94	1.24	0.40	0.30	0.50
2008/4/17	1.10	0.92	1.22	0.40	0.40	0.40
2008/4/18	1.09	0.90	1.22	0.41	0.40	0.50
2008/4/19	1.17	1.07	1.29	0.40	0.40	0.50
2008/4/20	1.19	0.98	1.36	0.40	0.40	0.50
2008/4/21	1.16	0.88	1.42	0.41	0.40	0.50
2008/4/22	1.15	0.95	1.31	0.41	0.40	0.50
2008/4/23	1.14	0.95	1.27	0.41	0.40	0.50
2008/4/24	1.14	0.94	1.29	0.40	0.40	0.50
2008/4/25	1.14	0.97	1.27	0.40	0.40	0.50
2008/4/26	1.15	0.94	1.28	0.40	0.40	0.40
2008/4/27	1.36	1.21	1.53	0.41	0.40	0.50
2008/4/28	1.33	1.10	1.65	0.41	0.40	0.50
2008/4/29	1.25	1.12	1.32	0.41	0.40	0.50
2008/4/30	1.24	1.01	1.38	0.40	0.40	0.50
<i>Monthly</i>	1.26	0.79	2.03	0.40	0.30	0.50

Table 5-5 Chlorophyll *a* fluorescence and turbidity data at 1.8 m depth in Oyako Ike, May 2008.

Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/5/1	1.26	1.09	1.45	0.40	0.30	0.40
2008/5/2	1.27	1.07	1.38	0.40	0.40	0.40
2008/5/3	1.26	1.07	1.35	0.40	0.40	0.40
2008/5/4	1.27	1.07	1.38	0.40	0.40	0.40
2008/5/5	1.30	1.11	1.44	0.40	0.30	0.40
2008/5/6	1.31	1.13	1.39	0.40	0.40	0.40
2008/5/7	1.32	1.17	1.46	0.40	0.40	0.50
2008/5/8	1.33	1.13	1.45	0.40	0.40	0.40
2008/5/9	1.36	1.16	1.53	0.40	0.40	0.40
2008/5/10	1.39	1.16	1.50	0.40	0.30	0.50
2008/5/11	1.42	1.23	1.58	0.41	0.40	0.50
2008/5/12	1.44	1.23	1.58	0.40	0.30	0.40
2008/5/13	1.46	1.29	1.61	0.42	0.40	0.50
2008/5/14	1.51	1.31	1.60	0.43	0.40	0.50
2008/5/15	1.63	1.47	2.13	0.41	0.40	0.50
2008/5/16	1.54	1.39	1.65	0.42	0.40	0.50
2008/5/17	1.60	1.35	2.01	0.41	0.40	0.50
2008/5/18	1.72	1.45	2.17	0.41	0.40	0.50
2008/5/19	1.61	1.54	1.70	0.40	0.40	0.50
2008/5/20	1.60	1.53	1.66	0.40	0.40	0.40
2008/5/21	1.58	1.46	1.69	0.40	0.40	0.50
2008/5/22	1.59	1.52	1.66	0.41	0.40	0.50
2008/5/23	1.57	1.51	1.62	0.40	0.30	0.40
2008/5/24	1.57	1.50	1.64	0.40	0.40	0.40
2008/5/25	1.57	1.49	1.64	0.40	0.40	0.40
2008/5/26	1.55	1.49	1.63	0.40	0.40	0.40
2008/5/27	1.53	1.48	1.60	0.47	0.40	0.90
2008/5/28	-	-	-	-	-	-
2008/5/29	-	-	-	-	-	-
2008/5/30	-	-	-	-	-	-
2008/5/31	-	-	-	-	-	-
<i>Monthly</i>	1.46	1.07	2.17	0.41	0.30	0.90

Table 5-6 Chlorophyll *a* fluorescence and turbidity data at 1.8 m depth in Oyako Ike, June 2008.

Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/6/1	-	-	-	-	-	-
2008/6/2	1.49	1.42	1.54	0.40	0.40	0.40
2008/6/3	1.49	1.42	1.60	0.40	0.40	0.40
2008/6/4	1.48	1.44	1.55	0.40	0.40	0.40
2008/6/5	1.45	1.42	1.51	0.40	0.40	0.40
2008/6/6	1.45	1.38	1.51	0.40	0.30	0.40
2008/6/7	1.46	1.39	1.57	0.40	0.40	0.40
2008/6/8	1.44	1.35	1.66	0.40	0.40	0.50
2008/6/9	1.42	1.38	1.46	0.42	0.40	0.80
2008/6/10	1.43	1.38	1.49	0.45	0.40	0.60
2008/6/11	1.48	1.46	1.49	0.65	0.50	0.90
2008/6/12	-	-	-	-	-	-
2008/6/13	1.44	1.35	1.50	0.40	0.40	0.40
2008/6/14	1.38	1.24	1.50	0.44	0.40	0.50
2008/6/15	1.41	1.27	1.49	0.44	0.40	0.50
2008/6/16	-	-	-	-	-	-
2008/6/17	1.36	1.31	1.42	0.40	0.40	0.40
2008/6/18	1.36	1.29	1.44	0.40	0.40	0.40
2008/6/19	1.35	1.27	1.41	0.40	0.40	0.40
2008/6/20	1.33	1.27	1.40	0.40	0.40	0.40
2008/6/21	1.32	1.25	1.38	0.42	0.40	0.60
2008/6/22	1.40	1.33	1.48	0.65	0.50	0.90
2008/6/23	-	-	-	-	-	-
2008/6/24	-	-	-	-	-	-
2008/6/25	1.35	1.26	1.46	0.41	0.40	0.50
2008/6/26	1.45	1.27	1.60	0.50	0.40	0.60
2008/6/27	1.32	1.23	1.43	0.49	0.40	0.50
2008/6/28	1.39	1.26	1.60	0.53	0.50	0.70
2008/6/29	1.54	1.51	1.58	-	-	-
2008/6/30	-	-	-	-	-	-
<i>Monthly</i>	1.41	1.23	1.66	0.44	0.30	0.90

Table 5-7 Chlorophyll *a* fluorescence and turbidity data at 1.8 m depth in Oyako Ike, July 2008.

Date	Chlorophyll (relative)			Turbidity (FTU)		
	daily average	minimum	maximum	daily average	minimum	maximum
2008/7/1	1.39	1.27	1.86	0.42	0.40	0.50
2008/7/2	1.27	1.20	1.34	0.40	0.40	0.40
2008/7/3	1.25	1.20	1.33	0.40	0.40	0.40
2008/7/4	1.23	1.19	1.33	0.40	0.40	0.40
2008/7/5	1.28	1.16	2.91	0.40	0.40	0.50
2008/7/6	1.17	1.10	1.22	0.40	0.40	0.40
2008/7/7	1.15	1.10	1.20	0.46	0.40	0.50
2008/7/8	1.16	1.10	1.22	0.48	0.40	0.50
2008/7/9	1.19	1.16	1.20	0.53	0.50	0.60
2008/7/10	1.12	1.10	1.14	0.40	0.40	0.40
2008/7/11	1.11	1.07	1.16	0.40	0.40	0.40
2008/7/12	1.11	1.07	1.16	0.40	0.40	0.40
2008/7/13	1.11	1.07	1.16	0.40	0.40	0.40
2008/7/14	1.10	1.04	1.16	0.40	0.40	0.40
2008/7/15	1.09	1.03	1.13	0.39	0.30	0.40
2008/7/16	1.07	1.02	1.15	0.41	0.40	0.50
2008/7/17	1.11	1.02	1.21	0.50	0.40	0.60
2008/7/18	1.37	1.12	1.74	0.61	0.50	0.90
2008/7/19	-	-	-	-	-	-
2008/7/20	-	-	-	-	-	-
2008/7/21	1.08	1.03	1.12	0.40	0.40	0.40
2008/7/22	1.09	1.01	1.16	0.40	0.40	0.40
2008/7/23	1.11	1.01	1.17	0.40	0.30	0.40
2008/7/24	1.12	1.04	1.23	0.39	0.30	0.40
2008/7/25	1.11	1.00	1.28	0.40	0.30	0.40
2008/7/26	1.18	1.10	1.29	0.46	0.40	0.50
2008/7/27	1.12	0.95	1.35	0.40	0.40	0.40
2008/7/28	1.09	0.92	1.28	0.39	0.30	0.40
2008/7/29	1.11	0.88	1.27	0.41	0.40	0.50
2008/7/30	1.11	1.11	1.11	0.40	0.40	0.40
2008/7/31	1.02	0.84	1.13	0.38	0.30	0.40
<i>Monthly</i>	1.15	0.84	2.91	0.42	0.30	0.90

Table 5-8 Chlorophyll *a* fluorescence and turbidity data at 1.8 m depth in Oyako Ike, August 2008.

Date	Chlorophyll (relative)			Turbidity (FTU)		
	daily average	minimum	maximum	daily average	minimum	maximum
2008/8/1	1.01	0.87	1.12	0.38	0.30	0.40
2008/8/2	1.02	0.82	1.12	0.36	0.30	0.40
2008/8/3	1.03	0.81	1.14	0.38	0.30	0.40
2008/8/4	1.06	0.84	1.20	0.36	0.30	0.40
2008/8/5	1.10	0.86	1.27	0.34	0.30	0.40
2008/8/6	1.17	0.90	1.38	0.35	0.30	0.40
2008/8/7	1.24	0.95	1.54	0.58	0.30	0.90
2008/8/8	-	-	-	-	-	-
2008/8/9	-	-	-	-	-	-
2008/8/10	-	-	-	-	-	-
2008/8/11	0.97	0.78	1.09	0.33	0.30	0.40
2008/8/12	0.96	0.79	1.08	0.31	0.30	0.40
2008/8/13	1.02	0.85	1.16	0.32	0.30	0.40
2008/8/14	1.08	0.87	1.17	0.33	0.30	0.40
2008/8/15	1.10	0.85	1.42	0.34	0.30	0.40
2008/8/16	1.55	1.53	1.57	0.74	0.60	0.90
2008/8/17	1.21	1.16	1.27	0.32	0.30	0.40
2008/8/18	1.25	1.12	1.41	0.31	0.30	0.40
2008/8/19	1.29	1.10	1.48	0.30	0.30	0.40
2008/8/20	1.30	1.07	1.51	0.31	0.30	0.40
2008/8/21	1.36	1.16	1.58	0.31	0.30	0.40
2008/8/22	1.47	1.23	1.66	0.31	0.30	0.40
2008/8/23	1.44	1.17	1.58	0.31	0.30	0.40
2008/8/24	1.56	1.15	1.90	0.37	0.30	0.50
2008/8/25	1.92	1.68	2.25	0.56	0.40	0.80
2008/8/26	1.39	1.15	1.60	0.30	0.30	0.30
2008/8/27	1.40	1.10	1.59	0.31	0.30	0.40
2008/8/28	1.49	1.10	1.82	0.30	0.30	0.30
2008/8/29	1.78	1.53	1.98	0.34	0.30	0.40
2008/8/30	1.94	1.60	2.50	0.43	0.40	0.60
2008/8/31	-	-	-	-	-	-
<i>Monthly</i>	1.30	0.78	2.50	0.37	0.30	0.90

Table 5-9 Chlorophyll *a* fluorescence and turbidity data at 1.8 m depth in Oyako Ike, September 2008.

Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/9/1	1.90	1.68	2.05	0.30	0.30	0.30
2008/9/2	1.72	1.33	2.03	0.30	0.30	0.30
2008/9/3	1.60	1.14	1.97	0.30	0.30	0.40
2008/9/4	1.58	1.20	1.83	0.31	0.30	0.40
2008/9/5	1.81	1.75	1.86	0.30	0.30	0.30
2008/9/6	1.79	1.35	2.12	0.30	0.30	0.30
2008/9/7	1.79	1.16	2.09	0.30	0.30	0.30
2008/9/8	1.88	1.21	2.30	0.30	0.30	0.40
2008/9/9	1.95	1.17	2.33	0.30	0.30	0.30
2008/9/10	1.98	1.26	2.41	0.30	0.30	0.30
2008/9/11	-	-	-	-	-	-
2008/9/12	-	-	-	-	-	-
2008/9/13	2.46	1.71	3.01	0.30	0.30	0.30
2008/9/14	2.48	1.57	3.52	0.30	0.30	0.30
2008/9/15	2.57	1.71	3.74	0.46	0.30	0.90
2008/9/16	3.13	2.82	3.49	0.64	0.50	0.80
2008/9/17	-	-	-	-	-	-
2008/9/18	4.70	4.48	4.97	0.30	0.30	0.30
2008/9/19	4.47	3.72	5.10	0.31	0.30	0.40
2008/9/20	3.86	2.70	5.16	0.32	0.30	0.40
2008/9/21	3.51	2.38	4.16	0.43	0.40	0.60
2008/9/22	-	-	-	-	-	-
2008/9/23	2.90	2.21	3.47	0.30	0.30	0.30
2008/9/24	3.56	3.15	3.93	0.31	0.30	0.40
2008/9/25	3.88	3.79	4.00	0.39	0.30	0.40
2008/9/26	4.16	3.88	4.42	0.30	0.30	0.40
2008/9/27	4.11	3.17	4.61	0.30	0.30	0.30
2008/9/28	4.39	3.99	4.87	0.31	0.30	0.40
2008/9/29	5.48	4.17	6.21	0.70	0.40	0.90
2008/9/30	-	-	-	-	-	-
<i>Monthly</i>	2.95	1.14	6.21	0.35	0.30	0.90

Table 5-10 Chlorophyll *a* fluorescence and turbidity data at 1.8 m depth in Oyako Ike, October 2008.

Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/10/1	3.26	2.64	3.73	0.37	0.30	0.40
2008/10/2	2.95	2.01	3.78	0.45	0.30	0.90
2008/10/3	-	-	-	-	-	-
2008/10/4	-	-	-	-	-	-
2008/10/5	2.31	1.64	2.65	0.30	0.30	0.30
2008/10/6	2.42	1.78	3.05	0.30	0.30	0.30
2008/10/7	2.14	1.38	2.80	0.30	0.30	0.30
2008/10/8	1.99	1.47	2.41	0.30	0.30	0.30
2008/10/9	1.76	1.27	2.34	0.30	0.30	0.30
2008/10/10	1.67	1.01	2.23	0.30	0.30	0.30
2008/10/11	1.57	0.94	2.13	0.36	0.30	0.60
2008/10/12	2.61	2.14	3.54	0.60	0.50	0.90
2008/10/13	-	-	-	-	-	-
2008/10/14	1.23	0.61	1.93	0.30	0.30	0.30
2008/10/15	1.23	0.60	1.97	0.30	0.20	0.30
2008/10/16	1.20	0.60	1.76	0.32	0.30	0.40
2008/10/17	1.58	1.55	1.60	0.33	0.30	0.40
2008/10/18	-	-	-	-	-	-
2008/10/19	0.82	0.53	1.35	0.30	0.30	0.30
2008/10/20	1.11	0.54	2.40	0.45	0.30	0.90
2008/10/21	3.31	3.11	3.51	0.80	0.80	0.80
2008/10/22	1.07	0.83	1.42	0.30	0.30	0.30
2008/10/23	1.15	0.81	1.48	0.30	0.30	0.30
2008/10/24	1.22	0.89	1.51	0.34	0.30	0.50
2008/10/25	1.45	1.06	1.91	0.38	0.30	0.60
2008/10/26	1.27	0.90	1.61	0.30	0.30	0.30
2008/10/27	1.39	0.94	1.69	0.30	0.30	0.30
2008/10/28	1.38	0.90	1.82	0.33	0.30	0.40
2008/10/29	2.28	1.73	3.50	0.58	0.50	0.60
2008/10/30	1.30	0.94	1.82	0.29	0.20	0.30
2008/10/31	1.39	0.82	1.95	0.30	0.30	0.30
<i>Monthly</i>	1.74	0.53	3.78	0.36	0.20	0.90

Table 5-11 Chlorophyll *a* fluorescence and turbidity data at 1.8 m depth in Oyako Ike, November 2008.

Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/11/1	1.34	0.77	1.88	0.30	0.30	0.30
2008/11/2	1.35	0.82	1.88	0.30	0.30	0.40
2008/11/3	1.38	0.60	2.92	0.37	0.30	0.60
2008/11/4	-	-	-	-	-	-
2008/11/5	0.91	0.57	1.61	0.30	0.30	0.30
2008/11/6	1.26	0.79	1.84	0.31	0.20	0.50
2008/11/7	-	-	-	-	-	-
2008/11/8	1.00	0.58	1.67	0.30	0.30	0.30
2008/11/9	1.07	0.53	1.65	0.33	0.30	0.40
2008/11/10	1.70	1.20	2.71	0.58	0.30	0.90
2008/11/11	-	-	-	-	-	-
2008/11/12	1.39	1.11	1.74	0.30	0.30	0.30
2008/11/13	1.20	0.70	1.82	0.35	0.30	0.40
2008/11/14	-	-	-	-	-	-
2008/11/15	0.94	0.51	1.67	0.33	0.30	0.40
2008/11/16	-	-	-	-	-	-
2008/11/17	0.77	0.53	1.58	0.31	0.30	0.40
2008/11/18	0.88	0.51	1.53	0.33	0.30	0.40
2008/11/19	1.06	0.72	1.50	0.38	0.30	0.40
2008/11/20	1.65	0.98	3.37	0.56	0.40	0.80
2008/11/21	1.17	0.72	1.45	0.31	0.30	0.40
2008/11/22	1.03	0.61	1.53	0.36	0.30	0.40
2008/11/23	-	-	-	-	-	-
2008/11/24	0.95	0.59	3.18	0.41	0.30	0.60
2008/11/25	-	-	-	-	-	-
2008/11/26	0.85	0.54	1.35	0.30	0.30	0.40
2008/11/27	1.19	0.63	2.93	0.45	0.30	0.90
2008/11/28	-	-	-	-	-	-
2008/11/29	1.27	0.98	1.51	0.30	0.30	0.30
2008/11/30	1.25	0.83	1.57	0.30	0.30	0.40
<i>Monthly</i>	1.16	0.51	3.37	0.35	0.20	0.90

Table 5-12 Chlorophyll *a* fluorescence and turbidity data at 1.8 m depth in Oyako Ike, December 2008.

Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/12/1	1.18	0.76	1.49	0.38	0.30	0.40
2008/12/2	0.88	0.50	1.63	0.35	0.30	0.50
2008/12/3	-	-	-	-	-	-
2008/12/4	0.90	0.61	1.48	0.34	0.30	0.40
2008/12/5	0.95	0.57	1.57	0.32	0.30	0.40
2008/12/6	0.87	0.52	1.45	0.34	0.30	0.40
2008/12/7	0.86	0.50	1.52	0.33	0.30	0.40
2008/12/8	0.86	0.52	1.39	0.32	0.30	0.40
2008/12/9	0.94	0.57	1.54	0.32	0.30	0.40
2008/12/10	0.86	0.51	1.45	0.37	0.30	0.40
2008/12/11	0.79	0.48	1.30	0.36	0.30	0.40
2008/12/12	0.82	0.53	1.26	0.39	0.30	0.40
2008/12/13	0.79	0.48	1.25	0.40	0.30	0.40
2008/12/14	0.77	0.50	1.22	0.40	0.40	0.40
2008/12/15	0.84	0.56	1.20	0.40	0.40	0.40
2008/12/16	0.80	0.51	1.20	0.40	0.30	0.50
2008/12/17	0.75	0.47	1.23	0.42	0.40	0.50
2008/12/18	0.67	0.42	1.16	0.41	0.40	0.50
2008/12/19	0.62	0.39	0.99	0.43	0.40	0.50
2008/12/20	0.62	0.39	1.05	0.44	0.40	0.50
2008/12/21	0.66	0.43	1.04	0.48	0.40	0.60
2008/12/22	0.67	0.43	1.06	0.50	0.40	0.60
2008/12/23	0.59	0.38	1.01	0.51	0.40	0.60
2008/12/24	0.57	0.39	0.87	0.55	0.50	0.70
2008/12/25	0.59	0.38	0.87	0.61	0.50	0.70
2008/12/26	0.57	0.39	0.92	0.67	0.60	0.80
2008/12/27	0.53	0.36	0.81	0.80	0.70	0.90
2008/12/28	0.52	0.35	0.76	0.89	0.80	0.90
2008/12/29	0.51	0.37	0.72	-	-	-
2008/12/30	0.50	0.34	0.94	-	-	-
2008/12/31	0.47	0.35	0.65	-	-	-
<i>Monthly</i>	0.73	0.34	1.63	0.45	0.30	0.90

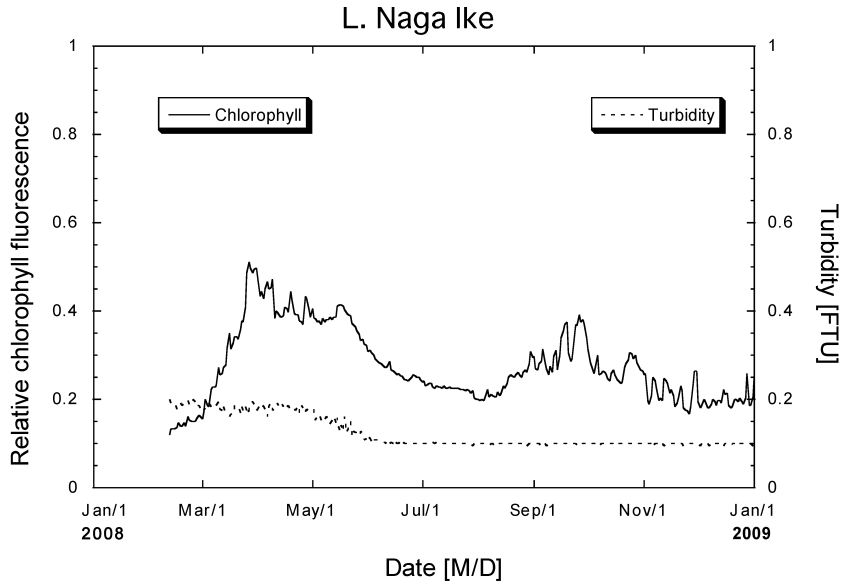


Fig. 8. Seasonal changes of chlorophyll fluorescence and turbidity at 2.3 m depth in Naga Ike (2008–2009). Daily average data.

Table 6-1 Chlorophyll *a* fluorescence and turbidity data at 2.3 m depth in Naga Ike, February 2008.

Depth	Chlorophyll (relative)			Turbidity (FTU)		
	daily average	minimum	maximum	daily average	minimum	maximum
2008/2/12	0.12	0.10	0.17	0.20	0.20	0.20
2008/2/13	0.13	0.09	0.18	0.19	0.10	0.20
2008/2/14	0.13	0.10	0.17	0.19	0.10	0.20
2008/2/15	0.13	0.10	0.17	0.19	0.10	0.20
2008/2/16	0.14	0.10	0.18	0.18	0.10	0.20
2008/2/17	0.15	0.11	0.18	0.19	0.10	0.20
2008/2/18	0.14	0.08	0.19	0.19	0.10	0.20
2008/2/19	0.14	0.10	0.19	0.19	0.10	0.20
2008/2/20	0.15	0.10	0.19	0.19	0.10	0.20
2008/2/21	0.14	0.10	0.20	0.20	0.10	0.20
2008/2/22	0.16	0.12	0.19	0.20	0.20	0.20
2008/2/23	0.15	0.11	0.20	0.19	0.10	0.20
2008/2/24	0.15	0.10	0.20	0.20	0.10	0.20
2008/2/25	0.15	0.11	0.20	0.20	0.20	0.20
2008/2/26	0.15	0.10	0.20	0.20	0.10	0.20
2008/2/27	0.16	0.12	0.20	0.18	0.10	0.20
2008/2/28	0.16	0.11	0.22	0.19	0.10	0.20
2008/2/29	0.16	0.11	0.22	0.18	0.10	0.20
<i>Monthly</i>	0.15	0.08	0.22	0.19	0.10	0.20

Table 6-2 Chlorophyll *a* fluorescence and turbidity data at 2.3 m depth in Naga Ike, March 2008.

Depth Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/3/1	0.16	0.09	0.22	0.18	0.10	0.20
2008/3/2	0.17	0.12	0.24	0.18	0.10	0.20
2008/3/3	0.20	0.14	0.24	0.18	0.10	0.20
2008/3/4	0.19	0.12	0.25	0.19	0.10	0.20
2008/3/5	0.18	0.12	0.27	0.19	0.10	0.20
2008/3/6	0.22	0.15	0.27	0.18	0.10	0.20
2008/3/7	0.23	0.15	0.30	0.19	0.10	0.20
2008/3/8	0.23	0.15	0.28	0.19	0.10	0.20
2008/3/9	0.23	0.15	0.28	0.19	0.10	0.20
2008/3/10	0.27	0.21	0.32	0.20	0.10	0.20
2008/3/11	0.26	0.15	0.35	0.18	0.10	0.20
2008/3/12	0.26	0.18	0.32	0.18	0.10	0.20
2008/3/13	0.27	0.17	0.33	0.19	0.10	0.20
2008/3/14	0.28	0.18	0.36	0.17	0.10	0.20
2008/3/15	0.32	0.25	0.40	0.17	0.10	0.20
2008/3/16	0.35	0.30	0.43	0.16	0.10	0.20
2008/3/17	0.31	0.17	0.43	0.17	0.10	0.20
2008/3/18	0.33	0.22	0.42	0.17	0.10	0.20
2008/3/19	0.34	0.22	0.42	0.19	0.10	0.20
2008/3/20	0.34	0.20	0.47	0.18	0.10	0.20
2008/3/21	0.34	0.17	0.45	0.18	0.10	0.20
2008/3/22	0.36	0.17	0.51	0.17	0.10	0.20
2008/3/23	0.38	0.19	0.50	0.18	0.10	0.20
2008/3/24	0.38	0.17	0.52	0.18	0.10	0.20
2008/3/25	0.41	0.25	0.51	0.19	0.10	0.20
2008/3/26	0.49	0.44	0.53	0.17	0.10	0.20
2008/3/27	0.51	0.47	0.55	0.18	0.10	0.20
2008/3/28	0.50	0.42	0.58	0.19	0.10	0.20
2008/3/29	0.49	0.45	0.55	0.20	0.10	0.20
2008/3/30	0.50	0.44	0.53	0.18	0.10	0.20
2008/3/31	0.50	0.44	0.55	0.18	0.10	0.20
<i>Monthly</i>	0.32	0.09	0.58	0.18	0.10	0.20

Table 6-3 Chlorophyll *a* fluorescence and turbidity data at 2.3 m depth in Naga Ike, April 2008.

Depth Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/4/1	0.47	0.40	0.54	0.18	0.10	0.20
2008/4/2	0.44	0.24	0.53	0.19	0.10	0.20
2008/4/3	0.45	0.30	0.51	0.19	0.10	0.20
2008/4/4	0.43	0.28	0.50	0.18	0.10	0.20
2008/4/5	0.45	0.30	0.54	0.18	0.10	0.20
2008/4/6	0.47	0.40	0.51	0.16	0.10	0.20
2008/4/7	0.45	0.35	0.53	0.18	0.10	0.20
2008/4/8	0.45	0.35	0.50	0.19	0.10	0.20
2008/4/9	0.47	0.43	0.53	0.18	0.10	0.20
2008/4/10	0.39	0.26	0.48	0.18	0.10	0.20
2008/4/11	0.40	0.27	0.49	0.19	0.10	0.20
2008/4/12	0.40	0.27	0.47	0.19	0.10	0.20
2008/4/13	0.39	0.22	0.47	0.18	0.10	0.20
2008/4/14	0.39	0.22	0.48	0.19	0.10	0.20
2008/4/15	0.39	0.24	0.48	0.18	0.10	0.20
2008/4/16	0.41	0.28	0.46	0.19	0.10	0.20
2008/4/17	0.41	0.27	0.47	0.18	0.10	0.20
2008/4/18	0.40	0.28	0.46	0.19	0.10	0.20
2008/4/19	0.44	0.40	0.48	0.18	0.10	0.20
2008/4/20	0.43	0.32	0.47	0.18	0.10	0.20
2008/4/21	0.40	0.25	0.47	0.18	0.10	0.20
2008/4/22	0.39	0.26	0.46	0.18	0.10	0.20
2008/4/23	0.39	0.25	0.45	0.19	0.10	0.20
2008/4/24	0.38	0.22	0.48	0.17	0.10	0.20
2008/4/25	0.37	0.22	0.45	0.19	0.10	0.20
2008/4/26	0.37	0.24	0.43	0.18	0.10	0.20
2008/4/27	0.43	0.35	0.48	0.17	0.10	0.20
2008/4/28	0.43	0.33	0.49	0.18	0.10	0.20
2008/4/29	0.40	0.26	0.48	0.18	0.10	0.20
2008/4/30	0.39	0.20	0.48	0.18	0.10	0.20
<i>Monthly</i>	0.42	0.20	0.54	0.18	0.10	0.20

Table 6-4 Chlorophyll *a* fluorescence and turbidity data at 2.3 m depth in Naga Ike, May 2008.

Depth Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/5/1	0.41	0.28	0.48	0.18	0.10	0.20
2008/5/2	0.38	0.23	0.46	0.18	0.10	0.20
2008/5/3	0.38	0.25	0.45	0.15	0.10	0.20
2008/5/4	0.37	0.24	0.43	0.16	0.10	0.20
2008/5/5	0.38	0.25	0.43	0.17	0.10	0.20
2008/5/6	0.37	0.22	0.43	0.15	0.10	0.20
2008/5/7	0.38	0.23	0.47	0.16	0.10	0.20
2008/5/8	0.38	0.24	0.45	0.15	0.10	0.20
2008/5/9	0.38	0.24	0.47	0.16	0.10	0.20
2008/5/10	0.38	0.24	0.43	0.15	0.10	0.20
2008/5/11	0.39	0.25	0.46	0.15	0.10	0.20
2008/5/12	0.38	0.25	0.46	0.15	0.10	0.20
2008/5/13	0.39	0.24	0.45	0.16	0.10	0.20
2008/5/14	0.39	0.25	0.56	0.15	0.10	0.20
2008/5/15	0.41	0.37	0.46	0.16	0.10	0.20
2008/5/16	0.42	0.38	0.45	0.13	0.10	0.20
2008/5/17	0.41	0.38	0.44	0.14	0.10	0.20
2008/5/18	0.41	0.37	0.46	0.13	0.10	0.20
2008/5/19	0.40	0.38	0.47	0.16	0.10	0.20
2008/5/20	0.39	0.37	0.42	0.13	0.10	0.20
2008/5/21	0.39	0.37	0.43	0.13	0.10	0.20
2008/5/22	0.39	0.35	0.46	0.15	0.10	0.20
2008/5/23	0.37	0.35	0.41	0.12	0.10	0.20
2008/5/24	0.37	0.35	0.40	0.13	0.10	0.20
2008/5/25	0.36	0.34	0.40	0.13	0.10	0.20
2008/5/26	0.36	0.33	0.39	0.13	0.10	0.20
2008/5/27	0.35	0.33	0.37	0.12	0.10	0.20
2008/5/28	0.33	0.32	0.37	0.13	0.10	0.20
2008/5/29	0.34	0.32	0.38	0.12	0.10	0.20
2008/5/30	0.33	0.30	0.36	0.11	0.10	0.20
2008/5/31	0.32	0.30	0.35	0.11	0.10	0.20
<i>Monthly</i>	0.38	0.22	0.56	0.14	0.10	0.20

Table 6-5 Chlorophyll *a* fluorescence and turbidity data at 2.3 m depth in Naga Ike, June 2008.

Depth Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/6/1	0.31	0.28	0.33	0.12	0.10	0.20
2008/6/2	0.31	0.28	0.35	0.11	0.10	0.20
2008/6/3	0.31	0.28	0.33	0.10	0.10	0.10
2008/6/4	0.30	0.28	0.35	0.11	0.10	0.20
2008/6/5	0.29	0.27	0.32	0.11	0.10	0.20
2008/6/6	0.29	0.26	0.30	0.11	0.10	0.20
2008/6/7	0.29	0.27	0.32	0.11	0.10	0.20
2008/6/8	0.28	0.25	0.31	0.10	0.10	0.20
2008/6/9	0.28	0.25	0.30	0.10	0.10	0.10
2008/6/10	0.27	0.25	0.30	0.10	0.10	0.20
2008/6/11	0.27	0.25	0.30	0.10	0.10	0.10
2008/6/12	0.27	0.25	0.30	0.11	0.10	0.20
2008/6/13	0.29	0.26	0.32	0.10	0.10	0.10
2008/6/14	0.27	0.25	0.29	0.10	0.10	0.20
2008/6/15	0.27	0.25	0.30	0.10	0.10	0.10
2008/6/16	0.26	0.25	0.28	0.11	0.10	0.20
2008/6/17	0.26	0.24	0.27	0.10	0.10	0.10
2008/6/18	0.26	0.24	0.27	0.10	0.10	0.10
2008/6/19	0.25	0.23	0.28	0.10	0.10	0.20
2008/6/20	0.25	0.23	0.27	0.11	0.10	0.20
2008/6/21	0.25	0.23	0.27	0.10	0.10	0.10
2008/6/22	0.24	0.23	0.26	0.10	0.10	0.10
2008/6/23	0.24	0.22	0.26	0.10	0.10	0.10
2008/6/24	0.25	0.22	0.27	0.10	0.10	0.10
2008/6/25	0.25	0.23	0.27	0.10	0.10	0.10
2008/6/26	0.25	0.24	0.27	0.10	0.10	0.10
2008/6/27	0.25	0.24	0.27	0.10	0.10	0.10
2008/6/28	0.25	0.22	0.27	0.10	0.10	0.10
2008/6/29	0.25	0.24	0.26	0.10	0.10	0.10
2008/6/30	0.25	0.23	0.27	0.10	0.10	0.10
<i>Monthly</i>	0.27	0.22	0.35	0.10	0.10	0.20

Table 6-6 Chlorophyll *a* fluorescence and turbidity data at 2.3 m depth in Naga Ike, July 2008.

Depth Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/7/1	0.24	0.22	0.26	0.10	0.10	0.10
2008/7/2	0.24	0.22	0.27	0.10	0.10	0.10
2008/7/3	0.23	0.22	0.25	0.10	0.10	0.10
2008/7/4	0.23	0.22	0.25	0.10	0.10	0.10
2008/7/5	0.24	0.22	0.25	0.10	0.10	0.10
2008/7/6	0.24	0.20	0.25	0.10	0.10	0.20
2008/7/7	0.23	0.20	0.25	0.10	0.10	0.20
2008/7/8	0.23	0.20	0.24	0.10	0.10	0.10
2008/7/9	0.23	0.20	0.25	0.10	0.10	0.20
2008/7/10	0.23	0.22	0.25	0.10	0.10	0.10
2008/7/11	0.23	0.20	0.25	0.10	0.10	0.10
2008/7/12	0.22	0.20	0.24	0.10	0.10	0.10
2008/7/13	0.23	0.20	0.25	0.10	0.10	0.10
2008/7/14	0.23	0.20	0.25	0.10	0.10	0.10
2008/7/15	0.22	0.20	0.24	0.10	0.10	0.10
2008/7/16	0.23	0.22	0.25	0.10	0.10	0.10
2008/7/17	0.23	0.21	0.24	0.10	0.10	0.10
2008/7/18	0.23	0.22	0.25	0.10	0.10	0.10
2008/7/19	0.22	0.20	0.26	0.10	0.10	0.10
2008/7/20	0.23	0.22	0.24	0.10	0.10	0.10
2008/7/21	0.23	0.20	0.25	0.10	0.10	0.10
2008/7/22	0.22	0.20	0.24	0.10	0.10	0.10
2008/7/23	0.22	0.20	0.24	0.10	0.10	0.10
2008/7/24	0.22	0.20	0.24	0.10	0.10	0.10
2008/7/25	0.22	0.20	0.24	0.10	0.10	0.10
2008/7/26	0.22	0.20	0.24	0.10	0.10	0.10
2008/7/27	0.22	0.20	0.24	0.10	0.10	0.10
2008/7/28	0.22	0.20	0.23	0.10	0.10	0.10
2008/7/29	0.22	0.20	0.24	0.10	0	0.10
2008/7/30	0.20	0.19	0.22	0.10	0.10	0.10
2008/7/31	0.20	0.18	0.22	0.10	0.10	0.10
<i>Monthly</i>	0.23	0.18	0.27	0.10	0.00	0.20

Table 6-7 Chlorophyll *a* fluorescence and turbidity data at 2.3 m depth in Naga Ike, August 2008.

Depth Date	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/8/1	0.20	0.17	0.22	0.10	0.10	0.10
2008/8/2	0.20	0.17	0.22	0.10	0.10	0.10
2008/8/3	0.20	0.19	0.22	0.10	0.10	0.10
2008/8/4	0.20	0.18	0.22	0.10	0.10	0.10
2008/8/5	0.21	0.18	0.22	0.10	0.10	0.10
2008/8/6	0.22	0.19	0.33	0.10	0	0.10
2008/8/7	0.21	0.17	0.24	0.10	0	0.10
2008/8/8	0.21	0.19	0.24	0.10	0.10	0.10
2008/8/9	0.21	0.17	0.24	0.10	0.10	0.10
2008/8/10	0.20	0.18	0.22	0.10	0	0.10
2008/8/11	0.21	0.17	0.22	0.10	0.10	0.10
2008/8/12	0.22	0.18	0.25	0.10	0.10	0.10
2008/8/13	0.21	0.17	0.22	0.10	0.10	0.10
2008/8/14	0.21	0.19	0.24	0.10	0.10	0.10
2008/8/15	0.23	0.20	0.27	0.10	0.10	0.10
2008/8/16	0.23	0.20	0.25	0.10	0.10	0.10
2008/8/17	0.24	0.22	0.27	0.10	0.10	0.10
2008/8/18	0.25	0.23	0.28	0.10	0.10	0.10
2008/8/19	0.26	0.23	0.28	0.10	0.10	0.10
2008/8/20	0.25	0.23	0.27	0.10	0.10	0.10
2008/8/21	0.25	0.23	0.28	0.10	0.10	0.10
2008/8/22	0.26	0.22	0.30	0.10	0.10	0.10
2008/8/23	0.26	0.24	0.30	0.10	0.10	0.10
2008/8/24	0.26	0.19	0.30	0.10	0.10	0.10
2008/8/25	0.25	0.17	0.28	0.10	0.10	0.10
2008/8/26	0.26	0.22	0.29	0.10	0.10	0.10
2008/8/27	0.27	0.23	0.28	0.10	0.10	0.10
2008/8/28	0.26	0.20	0.30	0.10	0	0.10
2008/8/29	0.28	0.25	0.30	0.10	0.10	0.10
2008/8/30	0.31	0.27	0.41	0.10	0.10	0.10
2008/8/31	0.30	0.27	0.32	0.10	0.10	0.10
<i>Monthly</i>	0.24	0.17	0.41	0.10	0.00	0.10

Table 6-8 Chlorophyll *a* fluorescence and turbidity data at 2.3 m depth in Naga Ike, September 2008.

Depth	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/9/1	0.30	0.26	0.37	0.10	0.10	0.10
2008/9/2	0.27	0.17	0.33	0.10	0.10	0.10
2008/9/3	0.27	0.17	0.33	0.10	0.10	0.10
2008/9/4	0.28	0.20	0.33	0.10	0.10	0.10
2008/9/5	0.29	0.22	0.34	0.10	0	0.10
2008/9/6	0.31	0.22	0.37	0.10	0.10	0.10
2008/9/7	0.28	0.19	0.33	0.10	0.10	0.10
2008/9/8	0.27	0.17	0.35	0.10	0	0.10
2008/9/9	0.26	0.15	0.34	0.10	0.10	0.10
2008/9/10	0.27	0.18	0.35	0.10	0.10	0.10
2008/9/11	0.26	0.15	0.35	0.10	0.10	0.10
2008/9/12	0.30	0.25	0.35	0.10	0.10	0.10
2008/9/13	0.31	0.25	0.35	0.10	0.10	0.10
2008/9/14	0.27	0.17	0.33	0.10	0.10	0.10
2008/9/15	0.30	0.23	0.35	0.10	0.10	0.10
2008/9/16	0.34	0.30	0.43	0.10	0.10	0.10
2008/9/17	0.36	0.32	0.37	0.10	0.10	0.10
2008/9/18	0.37	0.34	0.43	0.10	0.10	0.10
2008/9/19	0.38	0.33	0.41	0.10	0.10	0.10
2008/9/20	0.31	0.18	0.43	0.10	0.10	0.10
2008/9/21	0.29	0.16	0.41	0.10	0.10	0.10
2008/9/22	0.29	0.17	0.38	0.10	0.10	0.10
2008/9/23	0.32	0.18	0.41	0.10	0.10	0.10
2008/9/24	0.37	0.32	0.40	0.10	0.10	0.10
2008/9/25	0.37	0.32	0.40	0.10	0	0.10
2008/9/26	0.39	0.35	0.42	0.10	0.10	0.10
2008/9/27	0.37	0.24	0.43	0.10	0.10	0.10
2008/9/28	0.38	0.32	0.41	0.10	0.10	0.10
2008/9/29	0.37	0.22	0.45	0.10	0.10	0.10
2008/9/30	0.34	0.20	0.43	0.10	0.10	0.10
<i>Monthly</i>	0.32	0.15	0.45	0.10	0.00	0.10

Table 6-9 Chlorophyll *a* fluorescence and turbidity data at 2.3 m depth in Naga Ike, October 2008.

Depth	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/10/1	0.31	0.17	0.45	0.10	0.10	0.10
2008/10/2	0.28	0.15	0.38	0.10	0.10	0.10
2008/10/3	0.28	0.17	0.40	0.10	0.10	0.10
2008/10/4	0.26	0.15	0.38	0.10	0.10	0.10
2008/10/5	0.27	0.15	0.43	0.10	0.10	0.10
2008/10/6	0.30	0.20	0.38	0.10	0.10	0.10
2008/10/7	0.26	0.13	0.38	0.10	0	0.10
2008/10/8	0.26	0.14	0.38	0.10	0.10	0.10
2008/10/9	0.26	0.15	0.40	0.10	0.10	0.10
2008/10/10	0.26	0.15	0.40	0.10	0.10	0.10
2008/10/11	0.26	0.14	0.38	0.10	0.10	0.10
2008/10/12	0.25	0.12	0.40	0.10	0.10	0.10
2008/10/13	0.24	0.12	0.37	0.10	0.10	0.10
2008/10/14	0.26	0.14	0.41	0.10	0.10	0.10
2008/10/15	0.27	0.14	0.43	0.10	0.10	0.10
2008/10/16	0.25	0.13	0.42	0.10	0.10	0.10
2008/10/17	0.25	0.12	0.40	0.10	0	0.10
2008/10/18	0.24	0.14	0.39	0.10	0.10	0.10
2008/10/19	0.24	0.12	0.40	0.10	0.10	0.10
2008/10/20	0.24	0.13	0.38	0.10	0.10	0.10
2008/10/21	0.27	0.16	0.40	0.10	0.10	0.10
2008/10/22	0.28	0.18	0.39	0.10	0.10	0.10
2008/10/23	0.29	0.18	0.39	0.10	0.10	0.10
2008/10/24	0.31	0.20	0.39	0.10	0.10	0.10
2008/10/25	0.30	0.20	0.38	0.10	0.10	0.10
2008/10/26	0.29	0.19	0.37	0.10	0.10	0.10
2008/10/27	0.30	0.19	0.38	0.10	0.10	0.20
2008/10/28	0.28	0.18	0.37	0.10	0.10	0.10
2008/10/29	0.27	0.19	0.36	0.10	0.10	0.10
2008/10/30	0.27	0.19	0.35	0.10	0.10	0.10
2008/10/31	0.26	0.17	0.36	0.10	0.10	0.10
<i>Monthly</i>	0.27	0.12	0.45	0.10	0.00	0.20

Table 6-10 Chlorophyll *a* fluorescence and turbidity data at 2.3 m depth in Naga Ike, November 2008.

Depth	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/11/1	0.26	0.17	0.35	0.10	0.10	0.10
2008/11/2	0.26	0.17	0.35	0.10	0.10	0.10
2008/11/3	0.20	0.12	0.34	0.10	0.10	0.10
2008/11/4	0.19	0.12	0.33	0.10	0.10	0.10
2008/11/5	0.21	0.12	0.32	0.10	0.10	0.10
2008/11/6	0.25	0.17	0.33	0.09	0	0.10
2008/11/7	0.24	0.15	0.34	0.10	0.10	0.10
2008/11/8	0.22	0.12	0.33	0.10	0.10	0.10
2008/11/9	0.20	0.12	0.35	0.10	0.10	0.10
2008/11/10	0.20	0.12	0.33	0.10	0	0.10
2008/11/11	0.20	0.12	0.32	0.10	0.10	0.10
2008/11/12	0.25	0.15	0.35	0.10	0.00	0.10
2008/11/13	0.24	0.16	0.33	0.10	0.10	0.10
2008/11/14	0.24	0.17	0.32	0.10	0.10	0.10
2008/11/15	0.21	0.14	0.30	0.10	0.10	0.10
2008/11/16	0.22	0.14	0.30	0.10	0.10	0.10
2008/11/17	0.21	0.13	0.35	0.10	0.10	0.10
2008/11/18	0.18	0.11	0.30	0.10	0.10	0.10
2008/11/19	0.19	0.12	0.29	0.10	0.10	0.10
2008/11/20	0.20	0.13	0.33	0.10	0.10	0.10
2008/11/21	0.23	0.15	0.32	0.10	0.10	0.10
2008/11/22	0.22	0.14	0.33	0.10	0.10	0.10
2008/11/23	0.18	0.11	0.30	0.10	0	0.10
2008/11/24	0.17	0.12	0.29	0.10	0.10	0.10
2008/11/25	0.17	0.10	0.28	0.10	0.10	0.10
2008/11/26	0.17	0.10	0.27	0.10	0.10	0.10
2008/11/27	0.18	0.12	0.28	0.10	0.10	0.10
2008/11/28	0.23	0.14	0.30	0.10	0.10	0.10
2008/11/29	0.26	0.19	0.32	0.10	0.10	0.10
2008/11/30	0.26	0.17	0.33	0.10	0.10	0.10
<i>Monthly</i>	0.22	0.10	0.35	0.10	0.00	0.10

Table 6-11 Chlorophyll *a* fluorescence and turbidity data at 2.3 m depth in Naga Ike, December 2008.

Depth	Chlorophyll (relative)			Turbidity (FTU)		
	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>	<i>daily average</i>	<i>minimum</i>	<i>maximum</i>
2008/12/1	0.20	0.13	0.35	0.10	0.10	0.10
2008/12/2	0.18	0.10	0.30	0.10	0	0.10
2008/12/3	0.19	0.12	0.28	0.10	0.10	0.10
2008/12/4	0.20	0.13	0.32	0.10	0.10	0.10
2008/12/5	0.19	0.12	0.32	0.10	0.10	0.10
2008/12/6	0.18	0.10	0.30	0.10	0.10	0.10
2008/12/7	0.18	0.12	0.28	0.10	0	0.10
2008/12/8	0.19	0.12	0.28	0.10	0.10	0.10
2008/12/9	0.20	0.14	0.31	0.10	0.00	0.10
2008/12/10	0.19	0.12	0.30	0.10	0.10	0.10
2008/12/11	0.19	0.12	0.28	0.10	0.10	0.10
2008/12/12	0.20	0.14	0.31	0.10	0.10	0.10
2008/12/13	0.20	0.12	0.29	0.10	0.10	0.10
2008/12/14	0.19	0.13	0.30	0.10	0	0.10
2008/12/15	0.22	0.15	0.64	0.10	0	0.10
2008/12/16	0.21	0.13	0.49	0.10	0.10	0.10
2008/12/17	0.21	0.17	0.30	0.10	0.10	0.10
2008/12/18	0.19	0.10	0.30	0.10	0.10	0.10
2008/12/19	0.18	0.11	0.32	0.10	0	0.10
2008/12/20	0.18	0.12	0.28	0.10	0.10	0.10
2008/12/21	0.20	0.14	0.28	0.10	0.10	0.10
2008/12/22	0.20	0.13	0.28	0.10	0	0.10
2008/12/23	0.19	0.12	0.28	0.10	0.10	0.10
2008/12/24	0.20	0.13	0.42	0.10	0.10	0.10
2008/12/25	0.19	0.13	0.28	0.10	0.10	0.10
2008/12/26	0.19	0.12	0.28	0.10	0.10	0.10
2008/12/27	0.20	0.13	0.33	0.10	0.10	0.10
2008/12/28	0.26	0.12	0.54	0.10	0.10	0.10
2008/12/29	0.19	0.13	0.28	0.10	0.10	0.10
2008/12/30	0.19	0.12	0.27	0.10	0.10	0.10
2008/12/31	0.21	0.14	0.37	0.10	0	0.10
<i>Monthly</i>	0.20	0.10	0.64	0.10	0.00	0.10