

Fourth Report of the Regular Limnological Survey  
of Lake Biwa (1970)

I. Abiotic Environments<sup>1)2)</sup>

By

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This is the fourth report\* on the abiotic environments of Lake Biwa during 1970. As usual, the series of reports were edited by the Director of the Station, Syuiti Mori, and the present part, on the abiotic environments, was arranged especially by Shoji Horie. The field measurements of some environmental factors were performed chiefly by M. Nakanishi, T. Narita, Y. Nakajima, A. Kawabata and T. Ueda, and the titration of dissolved oxygen was done by T. Ueda. Other members of the Station have assisted this survey in many ways.

- \* HORIE, S., First report of the regular limnological survey of Lake Biwa (Oct. 1965-1966). V. Abiotic environment. Mem. Fac. Sci., Kyoto Univ., Ser. Biol. 1, 95-119, 1967  
HORIE, S., Second report of the regular limnological survey of Lake Biwa (1967). IV. Abiotic environment. *ibid.*, 2, 125-136, 1968  
MORI, S., Third report of the regular limnological survey of Lake Biwa (1968 and 1969). I. Abiotic environments. *ibid.*, 4, 1-28, 1970

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1) Contribution from the Otsu Hydrobiological Station, Kyoto University, No. 213.  
2) JIBP-PF Publication No. 120.

		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Station	Ie-1	0	8.1	7.0	7.29	88
Date	Jan. 20, 1970	1	8.0	7.0	7.36	89
Weather	Clear	2	7.9	7.0	7.33	88
Air temperature	7.0°C	5	7.7	7.0	7.34	88
Wind direction	S	10	7.7	7.0	7.35	88
speed	0.5-1.0m/sec.	15	7.7	7.0	7.32	87
Cloud form	SK	20	7.7	7.0	7.30	87
amount	1	30	7.7	7.0	7.32	87
Transparency	7.5m	40	7.7	7.0	7.49	89
Wave	Smooth	50	7.7	7.0	7.32	87
Mud temperature	7.4°C	60	7.7	6.8	7.33	88
		72.5(B)	7.7	6.8	7.34	88
Station	Ie-1	0	7.2	7.3	7.99	94
Date	Feb. 16, 1970	1	7.2	7.3	7.99	94
Weather	Clear	2	6.9	7.3	7.98	93
Air temperature	10.0°C	5	6.7	7.3	8.00	93
Wind direction	E	10	6.6	7.3	7.99	93
speed	1.0m/sec	15	6.6	7.4	7.97	93
Cloud form	—	20	6.6	7.4	7.96	92
amount	—	30	6.6	7.4	7.93	92
Transparency	—	40	6.6	7.5	7.94	92
Wave	Smooth	50	6.6	7.5	7.93	92
Mud temperature	—	60	6.6	7.3	7.95	92
		74(B)	6.7	7.3	7.94	93
Station	Ie-1	0	6.5	7.4	8.21	95
Date	Mar. 18, 1970	1	6.5	7.4	8.32	96
Weather	Cloudy	2	6.4	7.4	8.31	96
Air temperature	12.0°C	5	6.3	7.4	8.35	96
Wind direction	S	10	6.3	7.4	8.39	97
speed	7.0m/sec.	15	6.3	7.4	8.32	96
Cloud form	SK	20	6.3	7.4	8.21	95
amount	10	30	6.3	7.4	8.19	94
Transparency	5.5m	40	6.3	7.4	8.22	95
Wave	Gentle	50	6.2	7.4	8.39	97
Mud temperature	6.2°C	60	6.2	7.4	8.28	95
		70(B)	6.2	7.4	8.16	94
Station	Ie-1	0	7.3	7.5	8.39	99
Date	Apr. 13, 1970	1	7.3	7.5	8.44	100
Weather	Cloudy	2	7.3	7.5	8.42	100

		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Air temperature	8.0°C	5	7.3	7.5	8.38	99
Wind direction	N	10	7.3	7.5	8.43	100
speed	6.5m/sec.	15	7.3	7.5	8.38	99
Cloud form	SK	20	7.3	7.5	8.34	99
amount	10	30	7.1	7.5	8.41	99
Transparency	5.0m	40	7.2	7.5	8.39	99
Wave	Moderate	50	7.1	7.5	8.20	96
Mud temperature	7.5°C	60	7.1	7.5	8.07	95
		68(B)	7.0	7.5	8.18	96
Station	Ie-1	0	13.8	—	7.89	108
Date	May 13, 1970	1	13.3	—	7.95	108
Weather	Partly cloudy	2	13.0	—	7.95	107
Air temperature	25.0°C	5	12.7	—	7.94	106
Wind direction	NE	10	12.3	—	8.04	107
speed	<1.0m/sec.	15	12.2	—	8.09	107
Cloud form	SK	20	9.9	—	7.97	100
amount	8	30	8.8	—	7.90	97
Transparency	5.0m	40	7.5	—	7.83	93
Wave	Smooth	50	7.0	—	7.78	91
Mud temperature	7.1°C	60	6.5	—	7.45	86
		68(B)	6.5	—	7.36	85
Station	Ie-1	0	20.0	8.1	6.84	107
Date	June 17, 1970	1	19.4	8.1	6.93	107
Weather	Cloudy	2	19.3	8.0	6.98	107
Air temperature	21.8°C	5	19.1	8.0	6.93	106
Wind direction	NW	10	18.6	7.7	6.82	103
speed	1.2m/sec.	15	13.3	7.5	7.11	96
Cloud form	S	20	9.0	7.3	7.39	91
amount	10	30	7.7	7.2	7.49	89
Transparency	4.5m	40	7.1	7.1	7.45	88
Wave	Smooth	50	6.6	7.1	7.27	84
Mud temperature	6.8°C	60	6.4	7.0	6.64	77
		68(B)	6.4	7.0	6.53	75
Station	Ie-1	0	23.5	8.4	6.07	101
Date	July 16, 1970	1	23.2	8.4	6.13	101
Weather	Cloudy	2	23.1	8.2	6.32	104
Air temperature	24.8°C	5	22.3	8.2	6.16	100
Wind direction	E	10	20.0	7.3	5.53	86

		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wind speed	—	15	16.5	7.1	5.56	81
Cloud form	SC	20	12.4	7.0	6.31	84
amount	10	30	8.7	7.0	6.65	81
Transparency	3.3m	40	7.8	7.0	6.83	82
Wave	Smooth	50	7.2	7.0	6.80	80
Mud temperature	7.6°C	60	6.8	6.8	6.02	70
		68(B)	6.7	6.8	5.14	60
Station	Ie-1	0	28.3	8.4	5.44	99
Date	Aug. 13, 1970	1	28.3	8.4	5.43	99
Weather	Clear	2	27.7	8.4	5.59	100
Air temperature	32.0°C	5	27.4	8.4	5.52	99
Wind direction	NE	10	21.7	8.4	6.77	109
speed	0	15	15.2	7.2	5.75	81
Cloud form	KC	20	12.3	7.0	5.99	80
amount	5	30	8.7	7.1	6.33	77
Transparency	4.5m	40	7.4	7.0	6.62	79
Wave	Smooth	50	6.8	7.0	6.15	72
Mud temperature	7.5°C	60	6.5	6.8	4.35	50
		69(B)	6.5	6.8	3.31	38
Station	Ie-1	0	27.4	7.8	5.41	97
Date	Sept. 16, 1970	1	26.6	7.7	5.59	98
Weather	Cloudy	2	26.4	7.7	5.65	99
Air temperature	25.6°C	5	26.3	7.7	5.49	96
Wind direction	—	10	25.5	7.6	4.97	86
speed	—	15	14.7	7.2	5.03	70
Cloud form	SK	20	12.0	7.2	5.35	71
amount	9	30	8.4	7.2	6.30	77
Transparency	6.0m	40	7.5	7.2	6.39	76
Wave	Smooth	50	7.1	7.0	6.38	75
Mud temperature	7.6°C	60	6.6	6.8	4.68	54
		72(B)	6.5	6.8	2.77	32
Station	Ie-1	0	21.7	7.8	5.77	93
Date	Oct. 15, 1970	1	21.7	7.8	5.75	92
Weather	Cloudy	2	21.7	7.8	5.70	92
Air temperature	20.0°C	5	21.5	7.8	5.77	92
Wind direction	E	10	21.3	7.7	5.60	89
speed	—	15	20.9	7.6	5.61	89
Cloud form	CS	20	15.6	7.0	4.15	59

		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
amount	9	30	9.4	7.6(7.0)	5.54	69
Transparency	6, 7m	40	7.7	7.6(7.0)	5.72	68
Wave	Rippled	50	6.8	7.0	5.22	61
Mud temperature	7.0°C	60	6.7	6.9	4.88	57
		71.5(B)	6.7	6.8	3.71	43
Station	Ie-1	0	16.2	7.5	6.37	92
Date	Nov. 13, 1970	1	15.8	7.5	6.08	87
Weather	Clear	2	15.7	7.5	6.26	89
Air temperature	17.4°C	5	15.6	7.4	6.27	89
Wind direction	—	10	15.6	7.4	6.20	88
speed	—	15	15.6	7.4	6.31	90
Cloud form	KC	20	15.6	7.4	6.11	87
amount	6	30	8.8	6.8	5.39	66
Transparency	7.5m	40	7.6	7.0	5.83	69
Wave	Smooth	50	6.9	7.0	5.36	63
Mud temperature	—	60	6.6	6.7	3.32	39
		70	6.5	6.8	3.07	36
		75(B)	6.5	—	—	—
Station	Ie-1	0	10.5	7.4	7.29	93
Date	Dec. 16, 1970	1	10.5	7.4	7.27	93
Weather	Clear	2	10.4	7.4	7.24	92
Air temperature	8.9°C	5	10.3	7.3	7.34	93
Wind direction	E	10	10.3	7.3	7.24	91
speed	1.6m/sec.	15	10.3	7.3	7.15	90
Cloud form	CK	20	10.3	7.3	7.13	90
amount	2	30	10.3	7.2	7.20	91
Transparency	7.8m	40	9.4	7.3	7.14	89
Wave	Rippled	50	7.7	7.0	5.38	64
Mud temperature	7.1°C	60	6.9	6.9	4.74	56
		70	6.7	6.8	4.50	52
		72(B)	6.7	6.8	4.52	53
Station	Nb-2	0	3.5	7.4	8.70	93
Date	Jan. 14, 1970	1.3(B)	3.5	7.4	8.75	94
Weather	Cloudy					
Air temperature	3.7°C					
Wind direction	N					
speed	3.5m/sec.					
Cloud form	N					
amount	9					
Transparency	1.1m					

		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	3.8	7.5	8.59	93
Date	Jan. 14, 1970	1	3.7	7.5	8.59	93
Weather	Cloudy	2	3.7	7.5	8.60	93
Air temperature	5.0°C	3.5(B)	3.7	7.5	8.59	93
Wind direction	NNE					
speed	1.0m/sec.					
Cloud form	N					
amount	8					
Transparency	1.4m					
Wave	Smooth					
Mud temperature	4.6°C					
Station	Na-3	0	3.9	7.5	8.45	92
Date	Jan. 14, 1970	1.1(B)	3.9	7.5	8.44	92
Weather	Cloudy					
Air temperature	6.8°C					
Wind direction	W					
speed	1.0m/sec					
Cloud form	N					
amount	8					
Transparency	1.0m					
Wave	Smooth					
Mud temperature	5.0°C					
Station	Nb-2	0	5.3	7.1	8.54	96
Date	Feb. 17, 1970	1	5.3	7.1	8.60	97
Weather	Clear	1.7(B)	5.3	7.1	8.66	97
Air temperature	7.0°C					
Wind direction	WSW					
speed	6-8m/sec.					
Cloud form	—					
amount	0					
Transparency	1.7m					
Wave	Gentle					
Mud temperature	—					
Station	Nb-5	0	5.3	7.1	8.56	96
Date	Feb. 17, 1970	1	5.3	7.1	8.61	97
Weather	Clear	2	5.3	7.1	8.44	95
Air temperature	7.0°C	4.2(B)	5.1	7.0	8.45	95
Wind direction	WSW					

		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wind speed	7-9m/sec.					
Cloud form	—					
amount	0					
Transparency	1.5m					
Wave	Moderate					
Mud temperature	5.5°C					
Station	Na-3	0	6.2	7.1	8.32	96
Date	Feb. 17, 1970	1	6.2	7.0	8.32	96
Weather	Clear	1.9(B)	6.2	7.0	8.34	96
Air temperature	7.0°C					
Wind direction	WSW					
speed	5.5m/sec.					
Cloud form	—					
amount	0					
Transparency	1.4m					
Wave	Rippled					
Mud temperature	6.1°C					
Station	Nb-2	0	7.4	7.3	7.66	91
Date	Mar. 16, 1970	1	7.3	7.4	7.81	92
Weather	Cloudy	2(B)	7.3	7.4	7.74	92
Air temperature	12.0°C					
Wind direction	NW					
speed	7.8m/sec.					
Cloud form	SK					
amount	6					
Transparency	1.4m					
Wave	Moderate					
Mud temperature	—					
Station	Nb-5	0	6.7	7.4	8.53	99
Date	Mar. 16, 1970	1	6.7	7.4	8.38	98
Weather	Cloudy	2	6.7	7.4	8.38	98
Air temperature	12.0°C	4.1(B)	6.6	7.4	8.42	98
Wind direction	NNW					
speed	6.9m/sec.					
Cloud form	SK					
amount	8-9					
Transparency	1.8m					
Wave	Gentle					
Mud temperature	—					

		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Station	Na-3	0	7.6	7.3	7.95	95
Date	Mar. 16, 1970	1	7.6	7.4	8.04	96
Weather	Cloudy	2.3(B)	7.5	7.4	7.82	93
Air temperature	12.0°C					
Wind direction	NW					
speed	<1.0m/sec.					
Cloud form	SK					
amount	9					
Transparency	1.1m					
Wave	Smooth					
Mud temperature	7.5°C					
Station	Nb-2	0	11.3	7.7	8.13	106
Date	Apr. 15, 1970	1	11.1	7.7	8.21	106
Weather	Clear	1.8(B)	10.3	7.7	8.23	104
Air temperature	12.0°C					
Wind direction	N					
speed	1.5m/sec.					
Cloud form	S					
amount	1					
Transparency	1.2m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	10.9	7.7	8.20	106
Date	Apr. 15, 1970	1	10.8	7.7	8.19	105
Weather	Clear	2	10.0	7.7	8.35	105
Air temperature	13.0°C	4.5(B)	10.0	7.7	8.36	105
Wind direction	NE					
speed	3.0m/sec.					
Cloud form	S					
amount	1					
Transparency	3.0m					
Wave	Gentle					
Mud Temperature	10.1°C					
Station	Na-3	0	13.3	7.9	8.13	110
Date	Apr. 15, 1970	1	13.3	7.9	8.15	111
Weather	Clear	2.3(B)	13.2	8.0	8.72	118
Air temperature	18.5°C					
Wind direction	S					
speed	4.7m/sec					



		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Cloud form	—					
amount	—					
Transparency	2.0m					
Wave	Gentle					
Mud temperature	11.9°C					
Station	Nb-2	0	17.7	7.8	7.42	110
Date	May 14, 1970	1	17.7	7.8	7.48	111
Weather	Clear	2.0(B)	16.7	7.7	7.46	109
Air temperature	22.0°C					
Wind direction	NNE					
speed	3.7m/sec.					
Cloud form	SK					
amount	6					
Transparency	1.1m					
Wave	Rippled					
Mud temperature	—					
Station	Nb-5	0	16.5	7.8	7.25	105
Date	May 14, 1970	1	16.5	7.8	7.57	110
Weather	Clear	2	16.5	7.8	7.40	107
Air temperature	22.0°C	4.4(B)	14.8	7.7	7.81	109
Wind direction	NNE					
speed	4.0m/sec.					
Cloud form	SK					
amount	6					
Transparency	2.5m					
Wave	Rippled					
Mud temperature	14.6°C					
Station	Na-3	0	18.5	7.8	7.57	115
Date	May 14, 1970	1	18.4	7.8	7.53	114
Weather	Clear	2.2(B)	16.7	8.2	8.18	119
Air temperature	22.0°C					
Wind direction	NNE					
speed	4.5m/sec.					
Cloud form	SK					
amount	6					
Transparency	1.9m					
Wave	Rippled					
Mud temperature	16.3°C					
Station	Nb-2	0	22.1	7.6	6.07	98

		Dehpt(m)	Temp(°C)	pH	O <sub>2</sub> (cc/L)	O <sub>2</sub> (%)
Date	June 15, 1970	1	21.8	7.6	6.14	99
Weather	Rain	2(B)	21.1	7.6	6.12	97
Air temperature	21.5°C					
Wind direction	NE					
speed	1.5m/sec.					
Cloud form	N					
amount	10					
Transparency	1.2m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	22.0	8.4	6.67	108
Date	June 15, 1970	1	22.0	8.4	6.64	107
Weather	Rain	2	21.8	8.4	6.66	107
Air temperature	22.0°C	4.2(B)	21.5	8.0	6.35	102
Wind direction	SW					
speed	8.0m/sec.					
Cloud form	N					
amount	10					
Transparency	2.2m					
Wave	Moderate					
Mud temperature	21.2°C					
Station	Na-3	0	22.6	7.4	5.49	90
Date	June 15, 1970	1	22.6	7.4	5.62	92
Weather	Rain	2.1(B)	22.6	7.2	5.17	84
Air temperature	22.0°C					
Wind direction	W					
speed	—					
Cloud form	N					
amount	10					
Transparency	1.4m					
Wave	Rippled					
Mud temperature	—					
Station	Nb-2	0	25.4	8.4	6.52	112
Date	July 17, 1970	1	25.3	8.4	6.44	110
Weather	Cloudy	2(B)	24.1	7.6	5.13	86
Air temperature	27.0°C					
Wind direction	NE					
speed	1.2m/sec.					
Cloud form	N					

		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Cloud amount	10					
Transparency	1.0m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	24.9	8.4	6.91	118
Date	July 17, 1970	1	24.9	8.4	6.90	118
Weather	Rain	2	24.8	8.4	6.94	118
Air temperature	25.5°C	(B)	21.9	7.3	4.68	76
Wind direction	NE					
speed	3.0m/sec.					
Cloud form	N					
amount	10					
Transparency	1.5m					
Wave	Rippled					
Mud temperature	21.5°C					
Station	Na-3	0	25.0	8.4	6.29	107
Date	July 17, 1970	1	24.9	8.4	6.46	110
Weather	Rain	2.1(B)	24.9	8.4	6.46	110
Air temperature	25.5°C					
Wind direction	N					
speed	1.4m/sec.					
Cloud form	N					
amount	10					
Transparency	1.6m					
Wave	Smooth					
Mud temperature	24.5°C					
Station	Nb-2	0	28.7	7.8	6.10	112
Date	Aug. 12, 1970	1	28.3	7.8	5.05	92
Weather	Clear	2(B)	28.5	7.7	5.22	95
Air temperature	28.0°C					
Wind direction	NE					
speed	2.3m/sec.					
Cloud form	—					
amount	0					
Transparency	—					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	29.0	7.8	5.02	92
Date	Aug. 12, 1970	1	28.9	7.8	5.21	96

		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Weather	Clear	2	28.4	7.8	4.64	84
Air temperature	29°C	4.2(B)	27.9	7.5	4.98	90
Wind direction	NE					
speed	2.0m/sec					
Cloud form	KN					
amount	2					
Wave	Smooth					
Mud temperature	28°C					
Station	Na-3	0	29.6	7.8	5.06	94
Date	Aug. 12, 1970	1	29.5	7.8	5.17	96
Weather	Clear	2.2(B)	29.2	7.6	4.87	90
Air temperature	—					
Wind direction	NE					
speed	1.0m/sec.					
Cloud form	KN					
amount	4					
Wave	Smooth					
Mud temperature	29.4°C					
Station	Nb-2	0	26.7	7.6	5.92	104
Date	Sept. 17, 1970	1	26.7	7.6	5.95	105
Weather	Cloudy	1.8(B)	26.7	7.6	4.90	86
Air temperature	28.5°C					
Wind direction	SE					
speed	5.0m/sec.					
Cloud form	N					
amount	10					
Transparency	0.8m					
Wave	Gentle					
Mud temperature	—					
Station	Nb-5	0	26.7	7.6	5.51	97
Date	Sept. 17, 1970	1	26.6	7.6	5.57	98
Weather	Clear	2	26.3	7.5	5.66	99
Air temperature	28.0°C	4(B)	26.1	7.5	5.57	97
Wind direction	NNW					
speed	1.0m/sec.					
Cloud form	SK					
amount	6					
Transparency	1.6m					
Wave	Smooth					
Mud temperature	27.0°C					

		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Station	Na-3	0	27.0	7.8	5.86	104
Date	Sept. 17, 1970	1	26.8	7.6	5.76	102
Weather	Clear	1.8(B)	26.4	7.5	5.25	92
Air temperature	28.0°C					
Wind direction	—					
speed	—					
Cloud form	SK					
amount	5					
Transparency	1.0m					
Wave	—					
Mud temperature	27.0°C					
Station	Nb-2	0	20.6	7.6	5.82	92
Date	Oct. 16, 1970	1	20.6	7.6	5.57	88
Weather	Cloudy	2.1(B)	20.6	7.6	5.61	88
Air temperature	19°C					
Wind direction	SSE					
speed	1.0m/sec.					
Cloud form	SC					
amount	10					
Transparency	0.4m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	20.8	7.7	5.92	94
Date	Oct. 16, 1970	1	20.8	7.7	5.80	92
Weather	Cloudy	2	20.8	7.7	5.96	94
Air temperature	20.0°C	4.2(B)	20.8	7.6	5.60	89
Wind direction	—					
speed	—					
Cloud form	SC					
amount	10					
Transparency	1.3m					
Mud temperature	21.0°C					
Station	Na-3	0	21.0	7.7	6.13	97
Date	Oct. 16, 1970	1	21.0	7.7	6.09	97
Weather	Cloudy	2.2(B)	21.0	7.6	5.91	94
Air temperature	20.0°C					
Wind direction	E					
speed	0.4m/sec.					
Cloud form	SC					
amount	10					
Transparency	1.2m					

		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Mud temperature	21.5°C					
Station	Nb-2	0	12.7	7.7	7.26	97
Date	Nov. 14, 1970	1	12.5	7.7	7.25	97
Weather	Cloudy	1.8(B)	12.5	7.7	7.36	98
Air temperature	14.8°C					
Wind direction	—					
speed	—					
Cloud form	KC					
amount	9					
Transparency	0.95m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	13.6	7.7	6.89	94
Date	Nov. 14, 1970	1	13.5	7.7	7.03	96
Weather	Cloudy	2	13.2	7.7	6.96	94
Air temperature	17.2°C	4.8(B)	13.3	7.6	6.68	91
Wind direction	SSW					
speed	0.7m/sec.					
Cloud form	SC					
amount	10					
Transparency	1.8m					
Wave	Smooth					
Mud temperature	13.7°C					
Station	Na-3	0	14.0	7.6	6.93	95
Date	Nov. 14, 1970	1	13.9	7.7	6.84	94
Weather	Rain	2.1(B)	13.6	7.4	6.47	88
Air temperature	16.4°C					
Wind direction	—					
speed	—					
Cloud form	SC					
amount	10					
Transparency	1.05m					
Wave	Smooth					
Mud temperature	14.3°C					
Station	Nb-2	0	6.3	7.6	8.46	98
Date	Dec. 15, 1970	1	6.3	7.6	8.46	98
Weather	Clear	1.8(B)	6.3	7.6	8.33	96
Air temperature	6.2°C					
Wind direction	WSW					
speed	5.6m/sec.					

		Depth(m)	Temp(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Cloud form	SK					
amount	5					
Transparency	1.7m					
Mud temperature	—					
Station	Nb-5	0	7.7	7.6	8.19	98
Date	Dec. 15, 1970	1	7.7	7.6	8.20	98
Weather	Clear	2	7.7	7.6	8.16	97
Air temperature	7.5°C	3	7.7	—	—	—
Wind direction	WSW	4	7.7	7.6	—	—
speed	5.7m/sec.	4.3(B)	8.1	—	8.15	98
Cloud form	SK					
amount	3					
Transparency	2.2m					
Wave	Gentle					
Mud temperature	8.4°C					
Station	Na-3	0	7.5	7.7	8.13	97
Date	Dec. 15, 1970	1	7.5	7.6	8.25	98
Weather	Cloudy	2.2(B)	7.6	7.6	8.13	97
Air temperature	—					
Wind direction	WSW					
speed	2.3m/sec.					
Cloud form	SK					
amount	2					
Transparency	2.1m					
Wave	Rippled					
Mud temperature	8.7°C					