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Ödsmåi Kville sn, Bohuslän

Hällristning
Fiskare från
bronsåldern

Rock carving
Bronze age
fishermen



**MEDDELANDE från
HAVSFISKELABORATORIET • LYSEKIL**

nr
86

Hydrografiska avdelningen, Göteborg.

Data of Primary Production Measured by the
C-14 Method at two Lightships in the Baltic.

by

Göran Michanek

(Fisheries Department, FAO, Rome)

May 1970

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From the autumn of 1961 up to the final withdrawal in November 1968 the crew of the lightship Finngrundet (N 61° 04' E 18° 41') made in situ C-14 measurements according to Steemann Nielsen (1958) approximately twice a month. By the end of 1963 the same program started also at the lightship Hävringe (N 58° 33' E 17° 31') but ceased here already in November 1967.

The measurements were made in situ during one half solar day usually from sunrise to noon. The ampoules were delivered by the Central Agency of C-14 determination in Denmark and the beta-radiation of the filters was counted at the same place. The total carbon dioxide was computed from the values of salinity according to Buch (1945):

S‰	ΣCO_2 mmol/l	
	Finngrundet	Hävringe
5	1.13	1.21
6	1.32	1.36
7		1.51

Some measurements of dark fixation have been done and are included in the list. They have not been subtracted from the values of the ordinary measurements, which were computed by the formula

$$\frac{\text{Counts/min and sample} \times \Sigma \text{CO}_2 \text{ mmol/l} \times 2 \times 12 \times 10^3}{\text{Counts/min and ampoule}}$$

Counts/min and ampoule refers always to the old BaCO₃ method. As for batch no C 131 values were given both of this method (1.012×10^6 C/min) and the new biological method (0.698×10^6) the ratio between them (= 1.45) was used to convert other values of the biological method as well.

References

- Buch, K., 1945: "Kolsyrejämvikten i Baltiska Havet". Fennia. 68:5.
Steemann Nielsen, E., 1958: "Experimental methods for measuring organic production in sea". Rapports et Procès-Verbaux des Reunions Vol. 144.

Finngrundet

Year	Month	Day		Year	Month	Day	
1961	11	01		1962	06	05	
Depth	Temp.	Sal.	mgC/m ³ and day	Depth	Temp.	Sal.	mgC/m ³ and day
m	°C	‰		m	°C	‰	
0	9.6	5.46	11.97	0	4.4	5.74	3.51
5	9.6	5.46	5.41	5	4.4	5.75	7.59
10	9.6	5.46	1.56	10	4.4	5.76	4.12
15	9.6	5.46	0.89	15	4.2	5.77	1.66
1961	11	16		1962	06	16	
0	7.1	5.72	6.32	0	6.8	5.82	5.56
5	7.1	5.70	3.67	5	6.5	5.83	9.72
10	7.1	5.69	1.13	10	6.4	5.83	6.21
15	7.1	5.69	1.13	15	5.2	5.83	1.31
1961	12	01		1962	07	06	
0	4.2	5.82	1.98	0	10.8	5.83	7.87
5	4.4	5.82	0.66	5	10.7	5.82	7.06
10	4.2	5.83	0.33	10	6.4	5.80	3.34
15	4.2	5.82	0.33	15	3.8	5.79	0.98
1961	12	16		1962	07	16	
0	3.1	5.84	0.99	0	10.2	5.90	1.41
5	3.1	5.82	0.60	5	10.2	5.91	5.53
10	3.1	5.82	0.28	10	10.1	5.90	5.00
				15	4.0	5.77	2.69
1962	01	18		1962	08	01	
0	1.8	5.82	1.21	0	14.1	5.83	8.35
5	1.7	5.82	0.38	5	14.0	5.81	8.15
10	1.7	5.82	0.17	10	13.8	5.84	5.02
				15	13.4	5.81	3.20
1962	02	03		1962	08	16	
0	0.8	5.66	1.29	0	12.0	5.81	8.24
5	1.0	5.69	0.70	5	11.0	5.76	5.67
10	1.0	5.68	0.32	10	10.8	5.77	6.05
15	1.0	5.67	0.22	15	10.4	5.78	2.58
1962	02	19		1962	09	06	
0	0.5	5.85	1.33	0	13.0	5.48	24.50
5	0.6	5.85	0.33	5	12.9	5.47	10.20
10	0.6	5.85	0.00	10	11.4	5.48	3.23
15	0.6	5.85	0.22	15	11.2	5.48	0.92
1962	03	01		1962	09	16	
0	0.1	5.83	2.47	0	9.6	5.58	9.20
5	0.1	5.84	1.76	5	9.6	5.55	13.27
10	0.1	5.84	0.44	10	9.6	5.62	5.25
15	0.2	5.83	0.11	15	9.6	5.64	1.88
1962	01	04					
0	2.1	5.80	1.21				
5	2.2	5.82	0.99				
10	2.0	5.80	0.38				
15	2.0	5.81	0.16				

Finngrundet

Year 1962	Month 10	Day 06		Year 1963	Month 06	Day 01	
Depth m	Temp. °C	Sal. ‰	mgC/m ³ and day	Depth m	Temp. °C	Sal. ‰	mgC/m ³ and day
0	9.7	5.49	20.91	0	7.0	5.64	16.10
5	9.6	5.47	11.54	5	6.9	5.64	14.55
10	9.6	5.59	3.53	10	5.4	5.74	3.70
15	9.1	5.74	0.55	15	4.1	5.79	1.07
1962	10	16		20	3.6	5.85	1.04
0	7.6	5.77	12.20	1963	06	16	
5	7.6	5.77	6.69	0	6.6	5.84	2.90
10	7.6	5.84	2.44	5	6.5	5.83	12.60
15	7.6	5.84	0.85	10	5.9	5.83	7.25
1962	11	01		15	4.8	5.83	2.44
0	6.7	5.65	8.03	20	4.0	5.83	0.71
5	6.5	5.67	2.85	1963	07	01	
10	6.5	5.67	0.83	0	10.6	5.75	10.00
1962	12	05		5	10.2	5.78	12.60
0	4.6	5.79	2.20	10	7.6	5.80	8.00
5	4.6	5.78	0.61	15	5.4	5.82	3.00
10	4.7	5.77	0.40	20	3.6	5.82	1.09
15	4.7	5.78	0.37	1963	07	16	
1962	12	19		0	13.1	5.73	11.60
0	2.7	5.73	1.34	5	13.1	5.73	12.50
5	3.0	5.76	0.54	10	13.0	5.74	13.50
10	2.9	5.71	0.09	15	6.0	5.84	6.70
15	3.0	5.70	0.12	20	3.7	5.87	0.87
1963	01	01		1963	08	01	
0	1.8	5.67	1.42	0	14.2	5.78	2.46
5	1.8	5.75	0.57	5	13.1	5.72	8.40
10	1.8	5.72	0.17	10	12.8	5.72	8.40
15	1.8	5.75	0.20	15	11.0	5.69	6.60
1963	05	21		20	6.7	5.69	1.52
0	4.2	5.62	15.85	1963	08	21	
5	4.2	5.62	26.60	0	15.8	5.76	11.05
10	3.8	5.76	12.00	5	15.8	5.76	12.70
15	3.4	5.79	4.90	10	15.4	5.76	13.60
1963	05	31	noon-sunset	15	10.0	5.79	5.95
0	6.4	5.64	14.30	20	4.4	5.79	1.98
5	5.0	5.64	22.10	1963	09	01	
10	3.8	5.74	5.01	0	15.4	5.58	12.07
15	3.6	5.79	0.85	5	15.2	5.58	4.40
				10	15.2	5.59	1.70
				15	9.8	5.76	0.70
				20	4.0	5.84	0.28

Finngrundet

Year	Month	Day	noon-sunset	Year	Month	Day	
1963	09	16	noon-sunset	1963	12	15	
Depth	Temp.	Sal.	mgC/m ³ and day	Depth	Temp.	Sal.	mgC/m ³ and day
m	°C	‰		m	°C	‰	
0	12.9	5.63	13.60	0	3.0	5.83	1.72
5	12.8	5.62	17.50	2.5			1.07
10	12.8	5.64	9.60	5	3.0	5.83	0.56
15	12.0	5.66	2.90	10	3.0	5.83	0.31
20	4.3	5.79	0.32	15	3.0	5.83	0.21
1963	10	01		1964	01	05	
0	10.4	5.68	19.67	0	1.8	5.80	1.39
2.5			14.50	2.5			0.94
5	10.4	5.66	14.00	5	1.8	5.76	0.67
10	10.4	5.66	4.63	10	1.8	5.77	0.33
15	10.4	5.68	2.06	15	1.8	5.77	0.45
1963	10	16	noon-sunset	1964	01	15	noon-sunset
0	5.8	5.69	10.73	0	1.4	5.83	1.19
2.5			7.69	2.5			0.95
5	5.8	5.69	2.41	5	1.4	5.82	0.53
10	5.8	5.69	0.96	10	1.4	5.81	0.24
15	5.8	5.69	0.48	15	1.4	5.82	0.12
1963	11	02		1964	02	01	
0	5.2	5.71	2.04	0	0.7	5.75	1.23
2.5			0.92	2.5			0.81
5	5.2	5.69	0.45	5	0.8	5.76	0.42
10	5.2	5.69	0.32	10	0.8	5.74	0.12
15	5.2	5.69	0.27	15	0.8	5.75	0.09
1963	11	16		1964	02	16	
0	4.4	5.75	1.82	0	0.0	5.82	1.19
2.5			0.78	2.5			0.58
5	4.4	5.71	0.31	5	0.0	5.82	0.43
10	4.4	5.74	0.21	10	0.1	5.82	0.23
15	4.4	5.73	0.14	15	0.0	5.82	0.15
1963	12	01		1964	05	01	
0	3.0	5.76	1.29	0	1.8	5.77	16.88
2.5			0.68	2.5			20.87
5	3.0	5.76	0.52	5	1.8	5.79	14.10
10	3.0	5.76	0.35	10	1.6	5.78	4.26
15	3.0	5.76	0.19	15	1.4	5.78	1.91

Finngrundet

Year	Month	Day		Year	Month	Day	
1964	05	16		1964	09	02	
Depth	Temp.	Sal.	mgC/m ³ and day	Depth	Temp.	Sal.	mgC/m ³ and day
m	°C	‰		m	°C	‰	
0	2.6	5.79	8.43	0	10.6	5.66	10.81
2.5			21.98	5	10.7	5.66	15.39
5	2.5	5.80	9.89	10	10.7	5.67	8.04
10	2.6	5.79	5.78	15	6.5	5.73	3.74
15	2.7	5.79	1.65	20	3.4	5.81	2.07
1964	06	05		1964	10	09	noon-sunset
0	4.4	5.80	10.75	0	7.5	5.66	9.65
2.5			17.41	5	7.5	5.66	3.78
5	4.0		15.05	10	7.5	5.66	1.42
10	4.0	5.80	5.86	15	7.5	5.66	1.07
15	3.3	5.79	2.50	20	7.5	5.66	0.63
1964	06	16		1964	10	16	
0	7.3	5.75	4.88	0	7.6	5.59	12.74
2.5			7.58	5	7.6	5.60	2.95
5	7.2	5.77	3.24	10	7.6	5.60	2.57
10	7.2		3.49	15	7.5	5.60	0.94
15	7.2	5.77	2.49	20	7.5	5.60	0.63
1964	07	01		1964	10	31	
0	12.0	5.45	11.77	0	6.5	5.61	12.78
2.5			18.80	5	6.5	5.62	8.54
5	10.8	5.48	-	10	6.5	5.62	3.47
10	10.8	5.50	12.51	15	6.5	5.62	2.92
15	7.6	5.62	2.60	20	6.4	5.62	2.37
1964	08	06		1964	12	02	
0	13.8	5.52	19.41	0	3.6	5.72	2.33
2.5			23.45	5	3.9	5.72	0.94
5	13.8	5.52	15.04	10	3.9	5.71	0.33
10	13.7	5.53	3.53	15	3.9	5.71	0.24
20				20	4.0	5.71	0.24
1964	08	16	noon-sunset	1965	09	24	
0	13.7	5.59	17.40	0	12.4	5.44	1.51
5	13.7	5.59	15.68	2.5			1.43
10	13.7	5.59	4.20	5	12.1	5.48	0.22
15	6.2	5.71	0.62	10	12.1	5.51	0.60
20	4.5	5.75	0.32	15	12.1	5.51	0.58
1964	08	17					
0	13.6	5.59	20.72				
5	13.6	5.59	19.95				
10	13.2	5.59	8.97				
15	8.0	5.71	1.29				
20	4.8	5.75	0.40				

Finngrundet

Year 1965	Month 10	Day 01		Year 1966	Month 06	Day 05	
Depth m	Temp. °C	Sal. ‰	mgC/m ³ and day	Depth m	Temp. °C	Sal. ‰	mgC/m ³ and day
0	11.8	5.54	20.60	0	4.2	5.22	29.83
2.5			26.26	2.5			44.82
5	11.8	5.55	23.05	5	4.2	5.22	27.70
10	11.8	5.58	13.24	10	2.2	5.47	12.08
15	11.8	5.59	3.80	15	1.5	5.53	6.71
1965	10	16		1966	06	16	
0	7.5	5.73	12.51	0	11.4	5.12	5.04
2.5			17.64	2.5			20.62
5	7.5	5.70	12.28	5	7.5	5.39	28.49
10	7.5	5.71	12.61	10	3.4	5.51	5.79
15	7.5	5.71	5.21	15	2.6	5.53	1.92
1965	11	17		1966	07	01	
0	4.7	5.79	4.66	0	12.6	5.39	4.56
2.5			4.74	2.5			11.59
5	4.8	5.79	2.68	5	12.6	5.39	9.25
10	4.8	5.80	1.59	10	11.2	5.54	2.69
15	4.8	5.79	1.60	15	3.0	5.62	0.67
1965	11	17	Dark fixation	1966	07	09	
0	4.7	5.79	0.20	0	14.6	5.11	9.63
2.5			0.36	2.5			14.43
5	4.8	5.79	0.13	5	14.6	5.21	14.10
10	4.8	5.80	0.22	10	11.4	5.27	14.36
15	4.8	5.79	0.39	15	3.6	5.40	2.80
1965	12	01		1966	08	16	
0	3.6	5.66	1.29	0	11.3	5.36	10.32
2.5			0.67	2.5			20.44
5	3.6	5.67	0.21	5	11.2	5.36	19.28
10	3.6	5.66	0.15	10	11.1		6.63
15	3.6	5.66	0.16	15	4.7	5.56	1.63
1965	12	15		1966	09	01	
0	2.3	5.85	1.13	0	12.7	5.28	13.69
2.5			0.40	2.5			16.16
5	2.3	5.86	0.20	5	12.7	5.28	11.67
10	2.3	5.83	0.15	10	12.7	5.28	3.83
15	2.3	5.83	0.08	15	12.6	5.29	2.70
1966	01	05		1966	09	02	Dark fixation
0	0.5	5.82	1.19	0	12.6	5.28	2.21
2.5			1.03	2.5			2.06
5	0.5	5.82	0.67	5	12.5	5.28	2.36
10	0.5	5.82	0.44	10	12.3	5.28	3.68
15	0.5	5.82	0.40	15	10.0	5.29	1.98

Finngrundet

Year	Month	Day		Year	Month	Day	Dark fixation
1966	09	16		1966	12	17	
Depth	Temp.	Sal.	mgC/m ³ and day	Depth	Temp.	Sal.	mgC/m ³ and day
m	°C	‰		m	°C	‰	
0	8.7	5.40	8.58	0	2.5	5.65	0.07
2.5			15.12	2.5			0.08
5	8.2	5.42	9.58	5	2.5	5.65	0.10
10	7.7	5.42	5.15	10	2.5	5.65	0.09
15	7.0	5.44	2.02	15	2.5	5.65	0.09
1966	10	19		1967	01	01	
0	6.6	5.46	13.40	0	1.3	5.81	0.23
2.5			7.12	2.5			0.19
5	6.6	5.46	4.77	5	1.3	5.81	0.17
10	6.6	5.47	1.44	10	1.3	5.81	0.20
15	6.6	5.46	0.67	15	1.3	5.81	0.20
1966	11	01		1967	05	20	
0	5.7	5.47	3.64	0	2.7	5.67	23.42
2.5			1.78	2.5			30.45
5	5.7	5.49	1.13	5	2.7	5.67	29.73
10	5.7	5.48	0.55	10	2.7	5.67	11.16
15	5.7	5.49	0.44	15	2.7	5.68	7.34
1966	11	12	Dark fixation	1967	06	01	
0	5.3	5.47	0.26	0	4.9	5.66	7.51
2.5			0.40	2.5			17.25
5	5.3	5.47	0.97	5	4.8	5.65	17.30
10	5.4	5.47	1.03	10	4.7	5.66	4.26
15	5.4	5.47	1.12	15	3.4	5.66	3.82
1966	11	13	noon-sunset	1967	06	03	Dark fixation
0	5.3	5.47	1.82	0	4.9	5.66	0.67
2.5			1.03	2.5			0.85
5	5.3	5.47	0.43	5	4.8	5.65	2.01
10	5.4	5.47	0.16	10	4.7	5.66	1.06
15	5.4	5.47	0.19	15	3.4	5.66	2.19
1966	12	01		1967	06	16	noon-sunset
0	3.6	5.50	1.37	0	6.8	5.66	1.04
2.5			0.67	2.5			3.79
5	3.9	5.49	0.40	5	5.9	5.66	11.59
10	3.8	5.49	0.23	10	4.8	5.63	8.15
15	3.6	5.49	0.14	15	5.1	5.64	0.64
1966	12	16		1967	07	03	
0	2.5	5.65	0.41	0	10.4	5.59	1.00
2.5			0.33	2.5			4.89
5	2.5	5.65	0.27	5	10.4	5.59	5.60
10	2.5	5.65	0.18	10	10.0	5.59	5.27
15	2.5	5.65	0.14	15	8.3	5.66	1.70

Finngrundet

Year	Month	Day		Year	Month	Day	noon-sunset
1967	07	21		1967	10	16	
Depth	Temp.	Sal.	mgC/m ³ and day	Depth	Temp.	Sal.	mgC/m ³ and day
m	°C	‰		m.	°C	‰	
0	15.4	5.30	0.02 ?	0	9.0	5.59	6.08
2.5			6.69	2.5			11.56
5	15.4	5.30	7.65	5	9.0	5.59	6.97
10	13.4	5.31	3.35	10	9.0	5.59	1.60
15	13.4	5.58	4.36	15	9.0	5.59	0.60
1967	08	01		1967	11	01	
0	16.8	5.08	12.02	0	7.0	5.55	5.78
2.5			8.95	2.5			3.80
5	16.8	5.06	13.63	5	7.2	5.57	1.70
10	16.4	5.09	7.54	10	7.1	5.56	0.61
15	9.9	5.48	4.92	15	7.1	5.57	0.55
1967	08	16		1967	11	02	Dark fixation
0	14.3	5.26	10.30	0	7.6	5.55	0.21
2.5			10.93	2.5			0.23
5	14.3	5.26	8.02	5	7.2	5.57	0.43
10	14.3	5.27	3.12	10	7.1	5.56	0.47
15	14.0	5.27	2.20	15	7.1	5.57	0.63
1967	08	17	Dark fixation	1967	11	16	
0	14.3	5.26	0.84	0	5.9	5.60	3.93
2.5			0.93	2.5			3.16
5	14.3	5.26	1.30	5	6.0	5.60	1.77
10	14.3	5.27	1.45	10	6.0	5.61	0.93
15	14.0	5.27	1.12	15	6.0	5.60	0.62
1967	09	01		1967	12	01	
0	13.9	5.34	13.91	0	4.8	5.58	2.97
2.5			14.81	2.5			1.61
5	13.9	5.34	7.27	5	4.7	5.58	0.91
10	13.9	5.34	2.85	10	4.7	5.59	0.52
15	13.9	5.34	1.80	15	4.6	5.58	0.52
1967	09	20		1967	12	13	
0	14.0	5.37	8.63	0	3.0	5.68	1.24
2.5			1.90	2.5			0.91
5	14.0	5.37	4.14	5	3.0	5.67	0.60
10	14.0	5.37	1.93	10	3.0	5.67	0.37
15	14.0	5.37	1.20	15	3.0	5.67	0.41
1967	10	01	noon-sunset	1968	01	04	
0	12.5	5.46	12.32	0	0.5	5.59	1.04
2.5			20.86	2.5			0.63
5	12.4	5.46	12.89	5	0.6	5.60	0.43
10	12.4	5.46	4.06	10	0.7	5.59	0.28
15	12.3	5.47	1.21	15	0.7	5.59	0.24

Finngrundet

Year 1968	Month 05	Day 01		Year 1968	Month 08	Day 02	Dark fixation
Depth m	Temp. °C	Sal. ‰	mgC/m ³ and day	Depth m	Temp. °C	Sal. ‰	mgC/m ³ and day
0	2.2	5.59	30.97	0	16.2	5.59	1.52
2.5			45.09	2.5			1.53
5	2.2	5.59	32.32	5	16.2	5.59	1.48
10	2.2	5.59	5.53	10	15.9	5.59	1.54
15	2.2	5.60	4.04	15	12.8	5.59	1.00
1968	05	02	Dark fixation	1968	08	13	
0	2.2	5.59	2.18	0	16.8	5.59	18.60
2.5			2.72	2.5			23.55
5	2.2	5.59	1.52	5	16.8	5.56	20.44
10	2.2	5.59	2.63	10	16.6	5.56	12.07
15	2.2	5.60	3.74	15	16.3	5.54	3.09
1968	05	24		1968	08	27	
0	3.2	5.59	17.36	0	15.9	5.56	19.59
2.5			50.56	2.5			22.30
5	3.2	5.60	29.81	5	15.9	5.56	20.54
10	3.2	5.59	11.25	10	12.8	5.56	11.24
15	3.2	5.61	5.53	15	8.4	5.56	2.55
1968	06	01		1968	09	15	
0	5.5	5.58	4.24	0	13.2	5.56	17.40
2.5			13.61	2.5			15.69
5	5.4	5.58	28.36	5	13.0	5.55	16.52
10	4.7	5.60	9.86	10	12.2	5.56	7.32
15	3.6	5.59	5.58	15	5.8	5.56	1.15
1968	06	16		1968	09	16	Dark fixation
0	9.3	5.53	7.07	0	13.2	5.56	1.16
2.5			16.09	2.5			1.39
5	9.1	5.54	14.93	5	13.1	5.55	1.54
10	8.8	5.53	10.31	10	13.1	5.56	2.12
15	5.1	5.54	3.04	15	13.1	5.56	2.09
1968	07	01		1968	10	01	
0	10.6	5.54	10.01	0	9.6	5.55	13.48
2.5			22.65	2.5			8.77
5	10.6	5.54	21.55	5	9.5	5.53	3.99
10	10.4	5.54	13.53	10	9.5	5.54	1.57
15	8.5	5.54	3.84	15	9.5	5.54	1.10
1968	08	01		1968	11	01	
0	16.2	5.59	13.71	0	4.4	5.67	5.23
2.5			16.53	2.5			3.42
5	16.2	5.59	12.67	5	4.4	5.67	1.72
10	15.9	5.59	7.22	10	4.4	5.67	0.59
15	12.8	5.59	8.42	15	4.4	5.67	0.43

Finngrundet

Year	Month	Day	Dark fixation	Year	Month	Day	
1968	11	02					
Depth	Temp.	Sal.	mgC/m ³ and day	Depth	Temp.	Sal.	mgC/m ³ and day
m	°C	‰		m	°C	‰	
0	4.4	5.67	0.22				
2.5			0.18				
5	4.4	5.67	0.20				
10	4.4	5.67	0.17				
15	4.4	5.67	0.24				

Hävringe

Year	Month	Day		Year	Month	Day	
1963	11	01		1964	01	16	
Depth	Temp.	Sal.	mgC/m ³ and day	Depth	Temp.	Sal.	mgC/m ³ and day
m	°C	‰		m	°C	‰	
0	5.6	6.93	-	0	1.6	7.08	1.34
2.5	5.5	6.95	2.34	2.5	1.6	7.08	2.29
5	5.5	6.97	1.45	5	1.6	7.07	1.64
10	5.3	6.99	0.82	10	1.6	7.06	1.60
15	5.2	7.00	0.46	15	1.7	7.05	1.21
1963	11	16		1964	02	03	
0	5.4	6.99	2.00	0	1.1	7.23	0.92
2.5	5.4	6.95	1.99	2.5	1.1	7.22	0.58
5	5.4	6.95	0.21	5	1.1	7.22	0.78
10	5.3	6.97	-	10	1.1	7.27	1.42
15	5.3	6.99	0.85	15	1.3	7.24	0.21
1963	12	01		1964	03	17	
0	5.3	6.69	1.40	0	0.1	6.78	8.55
2.5	5.3	6.74	1.10	2.5	0.1	6.78	11.79
5	5.3	6.78	0.85	5	0.1	6.78	7.42
10	5.3	6.77	0.24	10	0.2	6.82	2.60
15	5.3	6.77	0.12	15	0.2	6.88	1.48
1963	12	16		1964	04	01	
0	3.8	6.90	0.55	0	0.0	6.59	54.08
2.5	3.8	6.87	0.55	2.5	0.0	6.60	64.71
5	3.8	6.85	0.57	5	0.0	6.62	38.61
10	3.8	6.85	0.93	10	0.0	6.63	5.80
15	3.8	6.82	0.47	15	0.1	6.72	6.00
1964	01	02		1964	04	16	
0	2.3	6.95	0.32	0	1.6	6.64	2.49
2.5	2.3	6.95	0.30	2.5	1.6	6.64	31.07
5	2.3	6.95	0.33	5	1.7	6.63	23.85
10	2.3	6.97	0.36	10	1.2	6.95	14.92
15	2.3	6.98	0.49	15	1.1	7.17	6.85

Hävringe

Year	Month	Day		Year	Month	Day	
1964	05	03		1964	09	03	
Depth	Temp.	Sal.	mgC/m ³ and day	Depth	Temp.	Sal.	mgC/m ³ and day
m	°C	‰		m	°C	‰	
0	3.4	6.78	1.21	0	11.9	6.79	23.77
2.5	3.4		0.06	2.5	11.3		30.19
5	2.6	6.78	1.71	5	10.8	6.79	15.39
10	2.4	6.79	1.36	10	10.5	6.77	16.39
15	2.2	7.15	0.92	15	10.4	6.77	5.64
1964	05	20		1964	09	20	
0	6.1	6.65	10.83	0	10.2	6.79	22.41
2.5	6.0		6.79	2.5	10.2		24.23
5	5.8	6.62	6.80	10	10.2	6.80	7.40
10	5.1	6.65	3.63	15	10.1	6.80	1.88
15	4.7	6.94	2.36				
1964	06	04		1964	10	04	
0	9.2	6.12	17.14	0	7.8	6.80	10.38
2.5	9.3		11.08	2.5	7.8		13.34
5	9.4	6.12	5.43	5	7.8	6.80	10.61
10	9.2	6.13	2.35	10	7.8	6.87	4.00
15	8.6	6.25	1.43	15	7.7	6.90	1.84
1964	06	16		1964	10	15	
0	11.2	6.13	7.92	0	8.2	6.60	8.48
2.5	11.1		13.65	2.5	8.3		5.93
5	11.1	6.13	8.41	5	8.3	6.59	2.72
10	11.2	6.13	5.51	10	8.3	6.58	1.07
15	8.4	6.50	2.85	15	8.1	6.59	0.50
1964	07	02		1964	11	03	
0	13.3	6.42	26.42	0	7.0	6.59	17.27
2.5	13.3		29.91	2.5	7.0		9.68
5	13.1	6.42	33.58	5	7.0	6.59	11.29
10	13.0	6.42	12.14	10	7.0	6.60	3.42
15	10.6	6.57	6.49	15	7.0	6.69	1.03
1964	07	15		1964	11	16	
0	13.6	6.82	24.20	0	5.7	7.00	7.70
2.5	13.4		22.49	2.5	5.7		5.00
5	8.8	6.80	10.91	5	5.7	7.01	4.22
10	4.0	6.80	14.68	10	5.6	7.02	1.24
				15	5.6	7.00	0.19

Hävringe

Year 1965	Month 10	Day 01		Year 1965	Month 11	Day 19	Dark fixation
Depth	Temp.	Sal.	mgC/m ³ and day	Depth	Temp.	Sal.	mgC/m ³ and day
m	°C	‰		m	°C	‰	
0	11.9	6.41	16.57	0	5.8	6.65	0.10
2	11.9		27.59	2	5.8		0.10
5	11.8	6.41	10.41	5	5.9	6.65	0.07
10	11.7	6.41	4.70	10	5.9	6.65	0.16
15	11.5	6.45	2.36	15	5.9	6.65	0.05
1965	10	18		1965	11	29	
0	10.2	6.47	6.37	0	3.6	6.66	3.85
2	10.2		5.00	2	4.2		2.33
5	10.2	6.47	2.47	5	4.2	6.63	1.12
10	10.2	6.47	1.70	10	4.3	6.63	0.16
15	10.2	6.47	1.06	15	4.2	6.63	0.05
1965	11	01		1965	11	29	Dark fixation
0	8.7	6.78	15.31	0	3.6	6.66	0.10
2	8.7		17.41	2	4.2		0.01
5	8.7	6.79	13.80	5	4.2	6.63	0.07
10	8.7	6.78	5.13	10	4.3	6.63	0.06
15	8.7	6.78	1.78	15	4.2	6.63	0.21
1965	11	01	Dark fixation	1965	12	05	
0	8.7	6.78	0.13	0	3.9	6.58	2.64
2	8.7		1.45	2	3.9		1.44
5	8.7	6.79	0.57	5	4.0	6.58	0.57
10	8.7	6.78	0.21	10	4.0	6.58	0.14
15	8.7	6.78	0.23	15	3.9	6.58	0.09
1965	11	08		1965	12	16	
0	6.7	6.98	8.27	0	2.8	6.65	2.19
2	6.7		12.29	2	2.8		1.18
5	6.7	6.98	6.76	5	2.8	6.65	0.73
10	6.7	6.98	2.53	10	2.8	6.64	0.19
15	6.7	7.23	0.99	15	2.8	6.65	0.09
1965	11	08	Dark fixation	1966	05	03	
0	6.7	6.98	0.26	0	2.3	6.35	20.68
2	6.7		0.33	2	2.1		35.78
5	6.7	6.98	1.22	5	2.1	6.35	25.91
10	6.7	6.98	0.24	10	2.1	6.48	6.56
15	6.7	7.23	0.11	15	2.1	6.76	3.65
1965	11	19		1966	05	03	Dark fixation
0	5.8	6.65		0	2.3	6.35	0.77
2	5.8		1.72	2	2.1		0.99
5	5.9	6.65	0.96	5	2.1	6.35	1.00
10	5.9	6.65	0.42	10	2.1	6.48	0.86
15	5.9	6.65	0.23	15	2.1	6.76	0.58

Hävringe

Year 1966	Month 05	Day 17		Year 1966	Month 11	Day 15	
Depth m	Temp. °C	Sal. ‰	mgC/m ³ and day	Depth m	Temp. °C	Sal. ‰	mgC/m ³ and day
0	3.4	6.29	22.63	0	5.9	6.99	0.07
2	3.4		23.46	2	6.1		0.28
5	2.6	6.31	14.06	5	6.2	7.01	0.17
10	2.4	6.35	4.44	10	6.2	6.99	0.15
15	2.4	6.40	0.85	15	6.2	7.00	0.10
1966	06	25		1967	02	02	
0	17.0	6.30	7.83	0	-0.2	6.73	0.77
2	17.0		11.70	2	-0.3		0.60
5	9.3	6.26	29.52	5	-0.2	6.70	0.20
10	6.8	6.28	10.37	10	-0.2	6.74	0.06
15	5.5	6.41	5.58	15	-0.1	6.72	0.01
1966	07	08		1967	02	02	Dark fixation
0	17.2	5.97	13.82	0	-0.2	6.73	0.14
2	17.0		25.62	2	-0.3		0.08
5	16.9	6.05	22.46	5	-0.2	6.70	0.02
10	15.9	6.32	16.46	10	-0.2	6.74	0.02
15	7.6	6.41	5.99	15	-0.1	6.72	0.02
1966	07	26		1967	03	14	
0	19.2	6.30		0	1.0	7.06	6.10
2	19.2		5.95	2	1.0		8.05
5	19.2	6.26	5.66	5	1.0	7.08	4.55
10	10.0	6.28	4.23	10	1.0	7.14	2.17
15	5.4	6.41	1.61	15	1.0	7.17	0.41
1966	08	10		1967	03	14	Dark fixation
0	12.2	6.56	1.66 ?	0	1.0	7.06	2.92
2	12.1		20.57	2	1.0		0.66
5	12.1	6.56	20.50	5	1.0	7.08	3.04
10	4.8	6.89	6.40	10	1.0	7.14	0.21
15	4.2	6.78	1.13	15	1.0	7.17	0.06
1966	08	10	Dark fixation	1967	04	24	
0	12.2	6.56	16.52 ?	0	2.9	6.94	18.98
2	12.1			2	2.9		33.96
5	12.1	6.56	1.19	5	2.9	6.95	18.49
10	4.8	6.89	0.57	10	2.9	6.94	16.55
15	4.2	6.78	0.07	15	2.9	7.00	6.05
1966	10	11					
0	8.9	6.51	12.44				
2	8.9		5.66				
5	8.9	6.49	3.18				
10	8.8	6.49	0.58				
15	8.2	6.50	0.29				

Hävringe

Year 1967	Month 05	Day 03		Year 1967	Month 09	Day 27	
Depth m	Temp. °C	Sal. ‰	µgC/m ³ and day	Depth m	Temp. °C	Sal. ‰	µgC/m ³ and day
0	3.6	6.94	7.69	0	13.9	6.55	15.80
2	3.6		8.24	2	13.9		14.92
5	3.6	6.95	5.44	5	13.9	6.55	9.00
10	3.5	6.95	0.19	10	13.9	6.52	2.49
15	3.5	6.98	0.43	15	13.9	6.53	0.53
1967	05	03	Dark fixation	1967	10	05	
0	3.6	6.94	5.62	0	12.9	6.74	12.06
2	3.6		0.43	2	12.9		6.60
5	3.6	6.95	0.26	5	12.9	6.80	4.72
10	3.5	6.95	1.39	10	12.9	6.87	1.25
15	3.5	6.98	0.12	15	12.9	6.90	0.74
1967	05	22		1967	11	29	
0	5.2	6.84	14.62	0	6.1	7.13	0.86
2	5.2		17.60	2	6.1		0.62
5	5.1	6.84	18.97	5	6.1	7.15	0.37
10	5.1	6.82	9.08	10	6.0	7.17	0.17
15	5.0	6.83	2.37	15	6.0	7.17	0.09
1967	05	22	Dark fixation	1967	11	29	Dark fixation
0	5.2	6.84	0.26	0	6.1	7.13	0.11
2	5.2		0.35	2	6.1		0.06
5	5.1	6.84	0.50	5	6.1	7.15	0.08
10	5.1	6.82	0.19	10	6.0	7.17	0.09
15	5.0	6.83	0.20	15	6.0	7.17	0.05
1967	06	08					
0	8.4	6.55	13.03				
2	8.4		25.70				
5	7.9	6.57	20.12				
10	7.8	6.56	7.62				
15	7.6	6.58	2.25				
1967	09	09					
0	14.9	6.60	21.28				
2	14.9		12.33				
5	14.9	6.59	5.34				
10	14.8	6.59	1.76				
15	14.7	6.64	0.86				
1967	09	09	Dark fixation				
0	14.9	6.60	1.21				
2	14.9		0.65				
5	14.9	6.59	0.32				
10	14.8	6.59	0.29				
15	14.7	6.64	0.19				

