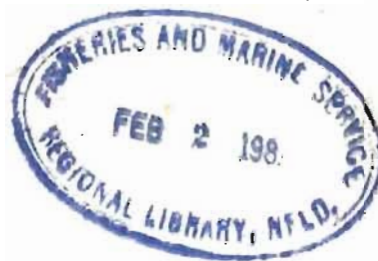


Data Report on Effects of Dissolved Oxygen Deficiency in Bottom Waters of Howe Sound: Trawl Data January 1978 to March 1979 and Oceanographic Data August 1977 to March 1979

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Numbers 1-25 in this series were issued as Fisheries and Marine Service Data Records. Numbers 26-160 were issued as Department of Fisheries and the Environment, Fisheries and Marine Service Data Reports. The current series name was changed with report number 161.

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Rapport statistique canadien des sciences halieutiques et aquatiques

Ces rapports servent de base à la compilation des données de classement et d'archives pour lesquelles il y a peu ou point d'analyse. Cette compilation aura d'ordinaire été préparée pour appuyer d'autres publications ou rapports. Les sujets des Rapports statistiques reflètent la vaste gamme des intérêts et politiques du Ministère des Pêches et des Océans, notamment gestion des pêches, techniques et développement, sciences océaniques et environnements aquatiques, au Canada.

Les numéros 1 à 25 de cette série ont été publiés à titre de Records statistiques, Service des pêches et de la mer. Les numéros 26-160 ont été publiés à titre de Rapports statistiques du Service des pêches et de la mer, Ministère des Pêches et de l'Environnement. Le nom de la série a été modifié à partir du numéro 161.

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Canadian Data Report of Fisheries
and Aquatic Sciences No. 217

August 1980



DATA REPORT ON EFFECTS OF DISSOLVED OXYGEN
DEFICIENCY IN BOTTOM WATERS OF HOWE SOUND:
TRAWL DATA JANUARY 1978 TO MARCH 1979 AND
OCEANOGRAPHIC DATA AUGUST 1977 TO MARCH 1979

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ABSTRACT

Levings, C. D., and N. G. McDaniel. 1980. Data report on effects of dissolved oxygen deficiency in bottom waters of Howe Sound: trawl data January 1978 to March 1979 and oceanographic data August 1977 to March 1979. Can. Data Rep. Fish. Aquat. Sci. 217: 87 p.

Trawl data documenting changes in communities of fish and epibenthic communities following dissolved oxygen depletion (D.O.) and replenishment in Howe Sound, B.C. are presented. Accompanying oceanographic data are provided, including plots of D.O. along the axis of the Sound for each sample date. These show patterns of incursions over the sill and subsequent D.O. utilization in Howe Sound basin.

Key words: demersal fish, macrobenthos, bottom trawls, Howe Sound, oxygen depletion, salinity.

RÉSUMÉ

Levings, D. D., and N. G. McDaniel. 1980. Data report on effects of dissolved oxygen deficiency in bottom water of Howe Sound: trawl data January 1978 to March 1979 and oceanographic data August 1977 to March 1979. Can. Data Rep. Fish. Aquat. Sci. 217: 87 p.

Les A. présentent des données de chalutage qui renseignent sur les modifications des communautés de poissons et d'épibiontes de la baie Howe suite à une diminution et à un rétablissement de la teneur en oxygène dissous. Les données océanographiques correspondantes sont fournies ainsi que les teneurs en oxygène dissous le long de l'axe de la baie pour chaque date d'échantillonnage. Elles font voir comment les eaux oxygénées franchissent le seuil à l'entrée et comment l'oxygène est consommé dans la baie.

Mots clés: poissons démersaux, macrobenthos, chaluts de fond, baie Howe, désoxygénation, salinité.

INTRODUCTION

In August 1977 we documented a drastic change in benthic communities and emigration of demersal fish in the inner basin of Howe Sound. These events were related to an unusually prolonged period of low dissolved oxygen (D.O.) in bottom waters. Trawl data for the period August 1976 to December 1977 were reported in an earlier publication (McDaniel et al. 1978), and the present report presents information to the termination of sampling in March 1979 (Table 1, p.3-39). In addition, data on oceanographic measurements documenting temporal changes in salinity and D.O. during and after the period of D.O. deficiency are presented.

TRAWL METHODS

The CSS VECTOR (39 m, 640 hp) was used for this work, and sampling was conducted using a small otter trawl (6 m throat) with 3.2 cm (1.25") mesh body web and a 1.3 cm (0.5") mesh cod-end liner. The trawl was normally fished with a 3:1 scope and for 10 min duration (vessel speed approximately 2 knots, 0.5 to 1.0 km of bottom covered), once the full scope was paid out. The catch was rough-sorted on deck while washing through a 5 mm mesh screen. Station locations for trawling and hydrography are shown in Fig. 1.

Individual taxa were then weighed using either an Ohaus 2 kg trip balance or a Mettler PL 3000 Electro-balance, or in the case of heavier specimens, an Accu-weigh Model BD-50-M pan balance.

Identifications were made using available faunal keys especially Kozloff (1974) and Hart (1973). Some specimens were preserved for more detailed laboratory study and for confirmation of our identification by specialists.

OCEANOGRAPHIC SAMPLING

Water samples were obtained with Nansen bottles during cruises for trawling from VECTOR or at very similar periods from R/V ACTIVE LASS (15 m). Surface temperature was obtained with a bucket thermometer. Salinity was measured in the laboratory using an Autosal Model 8400 inductive salinometer. D.O. samples were "pickled" in the field following the procedure of Strickland and Parsons (1972). They were kept refrigerated until titrated ashore at the West Vancouver Laboratory, usually within 48 h of sampling. Methods used by this laboratory are described elsewhere (Anon 1976).

RESULTS

Some of the biological interpretations from the study have been reported in the literature (Levings 1980) and the present data base and the previous data report (McDaniel et al. 1978) provides the original information for the published papers. Up to December 1977, 66 taxa of invertebrates and 41 species of invertebrates were recorded. Readers are referred to the previous data report (McDaniel et al. 1978) for the faunal list, but should be aware that subsequent sampling extended the list by a few species.

Incursions of water over the sill and subsequent changes in D.O. were investigated by plotting D.O. values along the axis of Howe Sound on consecutive sample dates (Fig. 2 to 14). These plots show the minor incursion of autumn 1977 and the major exchange in winter 1978-1979. As shown, most of the oxygen deficient water was below 180 m.

Several similar plots for salinity were prepared and show the same patterns established by the D.O. plots. As Bell (1973) explained, salinity can be used to track incursions into Howe Sound basin with almost the same reliability as density.

Oceanographic data for the sampling period August 1977 to March 1979 are given in Table 2 (p.41-60).

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Table 1. Tables of trawl catch data from Howe Sound,
January 1978 to March 1979. For abbreviations and codes see
previous data report (McDaniel et al. 1978).

SPECIES	H4A129			H4A130			H4/131		
	FREQ	WET	WT	FREQ	WET	WT	FREQ	WET	WT
COLUS	2		10	1		4	192		456
NEPTUNEA	0		0	0		0	3		77
GASTROPTERON	0		0	99		9999	0		0
PASIPHAEA	33		17	17		7	0		0
FANDALOPSIS	19		75	50		191	0		0
SPIRON SICA	367		383	608		615	2784		2616
CRANGON COMM	7		15	4		5	0		0
MUNIDA	0		0	0		0	84		156
MOLPADIA	0 ^a		0 ^b	1		5	2		46
CIONA	99 ^a		9999 ^b	99		9999	0		0
BAJA	0		0	1		33	0		0
HYDROLAGUS	3		1580	4		1080	2		491
FORICHTHYS	3		123	3		171	0		0
MEBLUCCIUS	1		70	1		101	0		0
THERAGRA	8		134	4		85	1		23
LYCO PARV	0		0	0		0	1		1
LYCODES	0		0	1		43	37		604
LYCODOPSIS	83		1905	140		4095	22		504
LUMPENELLA	0		0	0		0	2		28
S MALIGER	0		0	1		995	0		0
S ELCNGATUS	1		113	0		0	0		0
EATHYAGONUS	1		9999	0		0	0		0
HIFEOGLOSSOI	0		0	1		148	0		0
LYOPSETTA	3		181	10		241	1		32
MICRCSTOMUS	2		205	2		292	1		217
PAROPHRYS	3		581	8		1500	5		950

SPECIES	H4/132			H3/133			H3/134		
	FREQ	WET	WT	FREQ	WET	WT	FREQ	WET	WT
COLUS	225		750	0		0	0		0
NEPTUNEA	5		131	0		0	0		0
PASIPHAEA	0		0	39		27	12		13
FANDALOPSIS	0		0	1		15	0		0
SPIRON SICA	2310		3240	437		409	398		419
MUNIDA	60		195	30		31	2		2
BRISASTER	15		10	0		0	0		0
MOLPADIA	15		60	0		0	0		0
SQUALUS	0		0	1		3500	0		0
HYDECLAGUS	2		945	0		0	0		0
LEUROGLOSSUS	0		0	6		10	0		0
LYCODES	27		596	6		105	6		71
LYCODOPSIS	50		1205	0		0	1		31
LUMPENELLA	4		46	2		22	1		8
LYCONNECTES	1		18	0		0	0		0
LYCFSETTA	2		88	1		41	2		20
MICROSTOMUS	2		496	0		0	0		0
FAECPHRYS	6		1025	0		0	0		0

^a 99=few (0-5).
 999=some (5-100).
 9999=abundant (>100).

^bNo wet weight taken.

HAUL NO.	H4A/129	H4A/130	H4/131	H4/132	H3/133
DATE	10/1/78	10/1/78	11/1/78	11/1/78	11/1/78
TIME START	1549	1637	0729	0841	1007
DEPTH(m)	130	130	200	200	250
DURATION (min)	10	10	10	10	10
GEAR	OT(K)	OT(K)	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3	1.3	1.3
START:					
LAT:	49°40.30'N	49°40.70'N	49°40.20'N	49°40.13'N	49°37.04'N
LONG:	123°11.00'N	123°11.00'N	123°12.70'N	123°12.61'W	123°13.50'W
FINISH:					
LAT:	49°40.00'N	49°40.20'N	49°40.10'N	49°40.05'N	49°37.36'N
LONG:	123°11.50'W	123°11.70'W	123°13.00'W	123°13.70'W	123°13.58'W

REMARKS

HAUL NO.	H3/134
DATE	11/1/78
TIME	1117
DEPTH (m)	250
DURATION (min)	10
GEAR	OT(K)
MESH SIZE (cm)	1.3
START:	
LAT:	49°36.95'N
LONG:	123°13.75'W
FINISH:	
LAT:	49°37.25'N
LONG:	123°13.69'W

REMARKS

SPECIES	H3/135		H2/136		H2/137	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
PASIPHAEA	7	5	7	6	1	9999
SPIRON SICA	236	207	282	313	30	49
MUNIDA	8	4	3	1	0	0
AFRISTURUS	0	0	1	400	0	0
THERAGRA	0	0	1	29	0	0
LYCODES	2	12	3	88	0	0
NECTOLIPARUS	0	0	1	1	0	0
LYOPSETTA	0	0	3	190	0	0
LEPIDOPSETTA	1	2300	0	0	0	0

SPECIES	H1/138		H4A139		H4A140	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
IOEHCN	99	9999	0	0	0	0
ACTINIARIA S	8	5000	0	0	0	0
NUCOLA	92	19	0	0	0	0
CCLUS	11	25	1	3	3	7
NEPTUNEA	4	110	5	244	0	0
NATICA	6	16	0	0	0	0
MACOMA	43	11	0	0	0	0
YCLDIA THRAC	240	475	0	0	0	0
DENTALIUM	99	9999	0	0	0	0
STERNAESIS	28	14	0	0	0	0
PASIPHAEA	0	0	60	61	17	13
PANDALUS FOR	0	0	10	49	0	0
PANDALUS PLA	0	0	1	20	0	0
PANDALOPSIS	1	8	3	15	25	98
SPIRON SICA	15	22	50	67	507	851
CEANGCN COMM	0	0	9	16	7	10
MUNIDA	5	9	10	8	0	0
CANCER	0	0	0	0	1	1008
BRISASTER	320	2440	0	0	0	0
CTENCDI SCUS	56	916	0	0	0	0
PSEUDARCHAST	1	10	0	0	0	0
CHIRIDOTA	9999	9999	0	0	0	0
MOLPADIA	12	284	0	0	0	0
CIGNA	0	0	99	99999	99	9999
HYDROLAGUS	0	0	7	1275	3	1145
LEURCGLOSSUS	0	0	2	9999	2	9999
PORICHTHYS	0	0	2	72	2	97
MEBLUCCIUS	0	0	2	100	0	0
THERAGRA	0	0	9	285	7	292
LYCO PARV	0	0	3	6	5	12
LYCODES	0	0	0	0	3	115
LYCODOPSIS	0	0	116	1530	76	1959
S MALIGER	0	0	1	948	0	0
EATHYAGCNUS	0	0	1	13	1	1
NECTOLIPARUS	0	0	0	0	1	1
HIPPUGLOSSOI	0	0	1	104	1	129
LYOPSETTA	0	0	4	109	0	0
FAROPHRYS	0	0	1	159	2	366
LEPIDOPSETTA	0	0	0	0	1	104

HAUL NO.	H3/135	H2/136	H2/137	H1/138	H4A/139
DATE	11/I/78	11/I/78	11/I/78	11/I/78	6/II/78
TIME START	1245	1425	1600	1815	1640
DEPTH(m)	250	280	280	225	153
DURATION (min)	10	10	10	10	10
GEAR	OT(K)	OT(K)	OT(K)	OY(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3	1.3	1.3
START:					
LAT:	49°37.15'N	49°35.14'N	49°35.10'N	49°29.90'N	49°40.32'N
LONG:	123°13.60'W	123°14.83'W	123°14.90'W	123°16.70'W	123°11.00'W
FINISH:					
LAT:	49°37.28'N	49°35.40'N	49°35.30'N	49°30.00'N	49°40.00'N
LONG:	123°13.50'W	123°14.71'W	123°14.80'W	123°16.80'W	123°11.50'W

REMARKS

HAUL NO.	H4A/140
DATE	6/II/78
TIME START	1810
DEPTH(m)	153
DURATION (min)	10
GEAR	OT(K)
MESH SIZE (cm)	1.3
START:	
LAT:	49°40.20'N
LONG:	123°11.32'W
FINISH:	
LAT:	49°40.10'N
LONG:	123°12.05'W

REMARKS

SPECIES	H4/141		H4/142		H3/143	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
COLUS	21	68	15	39	0	0
NEPTUNEA	1	32	3	81	0	0
FASIPHAEA	0	0	9	9	14	12
SPIRON SICA	520	456	950	1200	205	231
MUNIDA	20	58	51	133	5	6
CIONA	99	9999	99	9999	0	0
RAJA	0	0	0	0	1	132
HYDROLAGUS	2	888	7	3195	0	0
LEUFCGLOSSUS	0	0	0	0	4	9999
MERLUCCIUS	1	58	0	0	0	0
THERAGRA	0	0	2	22	0	0
LYCO PARV	4	12	4	9	0	0
LYCODES	10	167	74	1490	0	0
LYCODOPSIS	64	1586	100	2890	0	0
LUMPENELLA	1	8	13	128	0	0
ICELINUS BUR	0	0	1	10	0	0
LYCESETTA	2	114	1	31	0	0
PAROPHRYS	3	509	5	995	0	0

SPECIES	H3/144		H3/145		H3/146	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
FASIPHAEA	9	7	5	3	21	16
PANDALUS BOR	0	0	0	0	1	9999
SPIRON SICA	369	485	390	309	400	480
MUNIDA	6	4	6	5	4	1
APRISTURUS	0	0	1	19	1	9
LEUFCGLOSSUS	2	9999	0	0	1	9999
LYCODES	3	43	2	54	3	74
LYCODOPSIS	1	22	0	0	0	0
LYOPSETTA	0	0	1	40	1	30

SPECIES	H2/147		H2/148		H2/149	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
AFHBOCALLIST	99	9999	0	0	0	0
PASIPHAEA	9	6	2	1	6	6
PANDALUS BOR	2	4	5	4	1	9999
SPIRON SICA	184	221	391	454	80	93
MUNIDA	4	9999	14	9	3	1
LAMEETEA	1	48	0	0	0	0
HYDROLAGUS	1	997	1	535	1	570
LEUFCGLOSSUS	2	9999	0	0	1	9999
THERAGRA	1	17	0	0	0	0
LYCODES	1	36	0	0	2	75
LYOPSETTA	1	25	0	0	0	0
MICROSTOMUS	0	0	1	243	0	0

HAUL NO.	H4/141	H4/142	H3/143	H3/144	H3/145
DATE	6/II/78	7/II/78	7/II/78	7/II/78	7/II/78
TIME START	1910	0722	0827	0980	1125
DEPTH(m)	185	180	280	280	280
DURATION (min)	10	10	10	10	10
GEAR	OT(K)	OT(K)	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3	1.3	1.3
START:					
LAT:	49°40.13'N	49°40.17'N	49°36.79'N	49°37.10'N	49°37.40'N
LONG:	123°12.60'W	123°14.45'W	123°13.58'W	123°13.69'W	123°13.71'W
FINISH:					
LAT:	49°39.94'N	49°40.02'N	49°37.01'N	49°37.29'N	49°37.62'N
LONG:	123°13.30'W	123°13.06'W	123°13.47'W	123°13.66'W	123°13.78'W
REMARKS					
HAUL NO.	H3/146	H2/147	H2/148	H2/149	
DATE	7/II/78	7/II/78	7/II/78	7/II/78	
TIME START	1235	1403	1530	1650	
DEPTH(m)	280	290	290	290	
DURATION (min)	10	10	10	10	
GEAR	OT(K)	OT(K)	OT(K)	OT(K)	
MESH SIZE (cm)	1.3	1.3	1.3	1.3	
START:					
LAT:	49°36.88'N	49°24.98'N	49°35.03'N	49°24.97'N	
LONG:	123°13.98'W	123°15.00'W	123°14.85'W	123°15.03'W	
FINISH:					
LAT:	49°37.13'N	49°35.28'W	49°35.38'N	49°25.32'N	
LONG:	123°13.93'W	123°14.78'W	123°14.70'W	123°14.75'W	
REMARKS					

SPECIES	H1/150		H4A151			H4A152		
	FREQ	WET WT	FREQ	WET	WT	FREQ	WET	WT
ICEHCN	99	9999	0	0		0	0	
ACTINIARIA S	7	5000	0	0		0	0	
PACHYCERIAMT	99	9999	0	0		0	0	
NUCULA	40	11	0	0		0	0	
COLUS	17	45	0	0		0	0	
NEPTUNEA	1	10	0	0		0	0	
NATICA	2	9999	0	0		0	0	
MACOMA	6	2	0	0		0	0	
YOLDIA THRAC	173	370	0	0		0	0	
DENTALIUM	99	9999	0	0		0	0	
STEBNAPSIS	71	25	0	0		0	0	
ERADA	3	9999	0	0		0	0	
FASIPHAEA	8	3	8	8		3	1	
FANDALUS BOR	22	30	23	128		27	143	
PANDALOPSIS	6	30	7	75		3	28	
SPIECN SICA	65	79	10	12		70	92	
CRANGON COMM	0	0	1	2		22	32	
MUNIEA	5	4	0	0		1	1	
CANCER	0	0	0	0		1	960	
BRISASTER	312	2400	0	0		0	0	
CTENODI SCUS	45	330	0	0		0	0	
FSEUCARCHAST	1	3	0	0		0	0	
MOLPADIA	11	220	0	0		0	0	
HYDROLAGUS	0	0	0	0		1	43	
FORICHTHYS	0	0	1	30		3	132	
MERLUCCIUS	0	0	1	54		1	44	
THERAGRA	0	0	2	45		2	33	
LYCODES	1	30	0	0		0	0	
LYCODOPSIS	0	0	12	480		128	3595	
EATHYAGCNUS	1	12	0	0		4	4	
HIPPOGLOSSOI	0	0	1	55		2	150	
LYOFSETTA	0	0	1	25		6	45	
PAROPHRYS	0	0	13	1450		6	840	

HAUL NO.	H1/150	H4A/151	H4A/152
DATE	7/II/78	11/IV/78	11/IV/78
TIME	1845	1625	1747
DEPTH(m)	241	125	125
DURATION (min)	10	10	10
GEAR	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3
START:			
LAT:	49°29.90'N	49°40.30'N	49°40.39'N
LONG:	123°17.00'W	123°10.90'W	123°10.80'W
FINISH:			
LAT:	49°30.37'N	49°40.20'N	49°40.30'N
LONG:	123°16.93'W	123°11.00'W	123°11.09'W
REMARKS			

SPECIES	H4A/153		H4/154			H4/155		
	FREQ	WET WT	FREQ	WET	WT	FREQ	WET	WT
CCLUS	10	34	10	22		1		1
NEPTUNEA	1	17	3	8		1		4
PASIPHAEA	18	16	2	1		0		0
PANDALUS BOR	10	56	0	0		0		0
PANDALOPSIS	7	38	0	0		0		0
SEIFON SICA	190	169	1360	940		240		233
CRANGON COMM	0	0	0	0		1		1
MUNIDA	1	4	136	316		15		15
CANCER	2	1039	0	0		0		0
MOLPADIA	0	0	1	1		0		0
RAJA	1	116	0	0		0		0
HYDROLAGUS	1	70	2	930		2		640
LYCO MAND	0	0	2	5		0		0
LYCODES	2	35	6	87		1		5
LYCODOPSIS	34	1675	22	720		9		227
ASTHERESTHES	1	1115	0	0		0		0
LYOPSETTA	5	128	1	23		0		0
MICROCSTOMUS	0	0	2	250		0		0
PAROPHRYS	2	354	0	0		1		113

SPECIES	H4/156		H3/157			H3/158		
	FREQ	WET WT	FREQ	WET	WT	FREQ	WET	WT
CCLUS	2	7	0	0		0		0
PASIPHAEA	19	11	3	3		2		1
SPIRON SICA	1125	161	1544	1132		74		58
MUNIDA	250	522	520	120		96		38
HYDROLAGUS	3	1902	7	2753		1		290
LEUCGLOSSUS	0	0	2	1		0		0
LYCODES	1	20	14	386		2		34
LYCODOPSIS	14	418	0	0		0		0
LUMPENELLA	2	30	0	0		0		0
GLYPTOCEPHAL	1	215	0	0		0		0
LYOPSETTA	0	0	5	250		4		123
MICROCSTOMUS	1	108	0	0		0		0

SPECIES	H3/159		H2/160			H2/161		
	FREQ	WET WT	FREQ	WET	WT	FREQ	WET	WT
PASIPHAEA	0	0	12	8		0		0
SPIRON SICA	3224	1794	760	748		595		408
MUNIDA	1612	442	160	36		104		26
APRISTURUS	0	0	1	47		0		0
HYDROLAGUS	8	3157	3	1522		4		1930
LEUCGLOSSUS	1	1	0	0		0		0
LYCODES	6	108	3	98		6		135
LUMPENELLA	1	7	0	0		0		0
ASTHERESTHES	0	0	0	0		1		356
LYOPSETTA	0	0	2	110		5		208

HAUL NO.	H4A/153	H4/154	H4/155	H4/156	H3/157
DATE	11/IV/78	11/IV/78	11/IV/78	12/IV/78	12/IV/78
TIME	1830	1930	2035	0921	1050
DEPTH(m)	125	188	188	188	265
DURATION (min)	10	10	10	10	10
GEAR	OT(K)	OT(K)	OT(K)	OT(K)	OT(K)
MESH SIZE	1.3	1.3	1.3	1.3	1.3
START:					
LAT:	49°40.35'N	49°39.80'N	49°40.00'N	49°39.52'N	49°37.24'N
LONG:	123°11.10'W	123°13.10'W	123°12.70'W	123°13.11'W	123°13.75'W
FINISH:					
LAT:	49°40.15'N	49°39.70'N	49°39.80'N	49°39.79'N	49°36.80'N
LONG:	123°11.60'W	123°13.40'W	123°13.22'W	123°13.80'W	123°13.91'W

REMARKS

HAUL NO.	H3/158	H3/159	H2/160	H2/161
DATE	12/IV/78	12/IV/78	12/IV/78	12/IV/78
TIME START	1230	1325	1440	1547
DEPTH(m)	265	265	285	285
DURATION (min)	10	10	10	10
GEAR	OT(K)	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3	1.3
START:				
LAT:	49°37.74'N	49°37.15'N	49°35.03'N	49°34.80'N
LONG:	123°13.85'W	123°13.70'N	123°14.85'W	123°14.90'W
FINISH:				
LAT:	49°37.45'N	49°37.44'N	49°34.75'N	49°35.00'N
LONG:	123°13.90'W	123°13.66'W	123°15.02'W	123°14.80'W

REMARKS

SPECIES	H2/162			H1/163			H4A164		
	FREQ	WET	WT	FREQ	WET	WT	FREQ	WET	WT
APHROCALLIST	0		0	99	9999		0		0
METRIDIUM	0		0	0	0		24	5299	
ACTINIARIA S	0		0	5	5000		0		0
PACHYCERANT	0		0	1	20		0		0
NUCULA	0		0	50	18		0		0
COLUS	0		0	11	13		13	41	
NEPTUNEA	0		0	2	15		0		0
NATICA	0		0	6	12		0		0
YOLDIA THRAC	0		0	70	138		0		0
ACILA	0		0	1	9999		0		0
LCLIGO	0		0	0	0		1	12	
STERNAPSIS	0		0	108	40		0		0
FASIPHAEA	1	9999		39	22		5	4	
PANDALUS BOR	0		0	11	20		0		0
PANDALOPSIS	0		0	1	16		9	59	
SPIRON SICA	794		658	4	3		550	567	
MUNIDA	25		6	12	9		0		0
CHIONOECETES	0		0	1	7		0		0
CANCER	0		0	0	0		1	98	
BRISASTER	0		0	182	1255		0		0
CTENCDI SCUS	0		0	36	502		0		0
CHIRIDOTA	0		0	9999	9999		0		0
MCLPACIA	0		0	7	79		8	243	
CIONA	0		0	0	0		99	9999	
HYDROLAGUS	4	2044		1	610		2	499	
THERAGRA	3		4	0	0		1	9	
LYCO PARV	0		0	0	0		15	53	
LYCODES	9	286		0	0		25	633	
LYCODOPSIS	0		0	2	5		64	2299	
LUMPENELLA	0		0	0	0		2	8	
DASYCOTTUS	0		0	1	119		0		0
ICELINUS BUR	0		0	1	13		2	63	
EATHYAGONUS	0		0	0	0		2	4	
HIPPOGLOSSOI	0		0	0	0		5	1136	
LYOPSETTA	1	129		0	0		0		0
MICROSTOMUS	0		0	0	0		6	731	
FAECOPHRYS	1		31	0	0		5	1163	

HAUL NO.	H2/162	H1/163	H4A/164
DATE	12/IV/78	13/IV/78	26/VI/78
TIME START	1730	1600	1601
DEPTH(m)	285	230	155
DURATION (min)	10	10	10
GEAR	OT(K)	OT(K)	OT(K)
MESH SIZE (Cm)	1.3	1.3	1.3
START:			
LAT:	49°35.00'N	49°29.83'N	49°40.02'N
LONG:	123°15.00'N	123°16.80'N	123°11.05'N
FINISH:			
LAT:	49°34.70'N	49°30.00'N	49°39.92'N
LONG:	123°15.15'W	123°16.81'W	123°11.68'W
REMARKS			

SPECIES	H4A165		H4A166		H4/167	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
METRIDIUM	1	364	0	0	0	0
CCLOS	24	75	8	28	2	5
NEPTUNEA	3	104	2	102	0	0
PASIPHAEA	20	18	60	45	2	1
FANDALUS BOR	6	33	1	3	0	0
FANDALOPSIS	45	302	36	228	0	0
SPIRON SICA	400	423	54	62	2000	2000
CRANGON COMM	58	88	21	22	0	0
MUNIDA	0	0	0	0	590	1077
CHIONOECETES	1	345	0	0	0	0
CANCER	3	2028	0	0	0	0
ERISASTER	0	0	0	0	16	33
MCLPADIA	2	110	1	32	0	0
CIONA	99	9999	99	9999	99	9999
HYDECLAGUS	5	689	4	331	0	0
LEUROGLOSSUS	0	0	4	2	40	42
MERLUCCIUS	0	0	3	185	1	100
LYCO PARV	10	37	2	5	2	8
LYCODES	26	619	4	112	2	19
LYCODOPSIS	302	9265	108	5390	0	0
LUMPENELLA	1	10	0	0	0	0
ANOPLOMA	1	535	1	452	0	0
DASYCCTUS	1	28	0	0	0	0
ICELINUS BUR	1	6	0	0	0	0
EATHYAGONUS	0	0	7	62	0	0
GLYPTOCEPHAL	0	0	1	166	0	0
IYOPSETTA	6	128	2	33	2	91
MICROSTOMUS	5	874	2	241	0	0
FAFOPHRYS	9	1906	3	530	0	0

SPECIES	H4/168		H4/169		H3/170	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
COLUS	126	70	0	0	0	0
MACOMA	140	56	8	8	0	0
PASIPHAEA	7	7	0	0	0	0
SPIRON SICA	3150	3318	400	288	825	858
MUNIDA	2590	3633	272	224	3410	2211
ERISASTER	126	693	8	24	0	0
MCLPADIA	7	7	0	0	0	0
CIONA	99	9999	99	9999	0	0
LEUROGLOSSUS	0	0	1	1	0	0
ICELINUS BUR	1	12	0	0	0	0
IYOPSETTA	6	235	0	0	0	0

SPECIES	H3/171		H3/172		H2/173	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
MACOMA	11	11	12	6	0	0
SPIRON SICA	33	11	78	56	0	0
MUNIDA	1694	858	3390	2034	132	52
LEUROGLOSSUS	0	0	1	1	0	0

HAUL NO.	H4A/165	H4A/166	H4/167	H4/168	H4/169
DATE	26/VI/78	26/VI/78	26/VI/78	27/VI/78	27/VI/78
TIME	1705	1820	2030	0705	0922
DEPTH(m)	155	155	220	220	220
DURATION (min)	10	10	10	10	10
GEAR	OT(K)	OT(K)	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3	1.3	1.3
START:					
LAT:	49°40.11'N	49°40.19'N	49°40.15'N	49°39.92'N	49°40.10'N
LONG:	123°11.06'W	123°11.70'W	123°13.25'W	123°13.10'W	123°13.45'W
FINISH:					
LAT:	49°39.90'N	49°39.98'N	49°39.99'N	49°39.72'N	49°39.95'N
LONG:	123°11.80'W	123°11.70'W	123°13.89'W	123°13.75'W	123°14.05'W
REMARKS					
HAUL NO.	H3/170	H3/171	H3/172	H3/173	
DATE	27/VI/78	27/VI/78	27/VI/78	27/VI/78	
TIME	1115	1310	1420	1545	
DEPTH(m)	245	245	245	290	
DURATION (min)	10	10	10	10	
GEAR	OT(K)	OT(K)	OT(K)	OT(K)	
MESH SIZE (cm)	1.3	1.3	1.3	1.3	
START:					
LAT:	49°37.19'N	49°37.70'N	49°37.20'N	49°35.50'N	
LONG:	123°13.65'W	123°13.70'W	123°13.65'W	123°14.59'W	
FINISH:					
LAT:	49°37.44'N	49°37.45'N	49°37.45'N	49°35.19'N	
LONG:	123°13.75'W	123°13.70'W	123°13.65'W	123°14.62'W	
REMARKS					

SPECIES	H2/174 ⁻¹⁸		H2/175		H1/176	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
ACTINIARIA S	0	0	0	0	69	35000
NUCULA	0	0	0	0	10	3
CCLUS	0	0	0	0	25	40
NATICA	0	0	0	0	3	3
MACOMA	0	0	0	0	28	8
YOLDIA THRAC	0	0	0	0	58	50
AENRODITA	0	0	0	0	5	15
STERNAPSIS	0	0	0	0	60	25
FASIPHAEA	9	9	0	0	0	0
PANDALUS BOR	0	0	0	0	388	1175
PANDALOPSIS	0	0	0	0	10	50
SPIRON SICA	207	279	108	99	313	335
MUNICA	306	126	144	72	325	278
BRISASTER	0	0	0	0	75	635
CTENCDI SCUS	0	0	0	0	33	680
PSEUDARCHAST	0	0	0	0	3	35
CHIRIDOTA	0	0	0	0	9999	9999
LYCO PARV	0	0	0	0	26	68
LYCODES	0	0	0	0	18	234
LUMPENELLA	0	0	0	0	1	4
ANOELCMA	0	0	0	0	1	359
DASYCOTTUS	0	0	0	0	2	57
ICELINUS EUR	0	0	0	0	2	21
BATHYAGONUS	0	0	0	0	8	22
HIPPYGLOSSOI	0	0	0	0	1	66
LYOPSETTA	0	0	0	0	3	20

HAUL NO.	H2/174	H2/175	H1/176
DATE	27/VI/78	27/VI/78	27/VI/78
TIME START	1650	1935	2030
DEPTH(m)	290	290	235
DURATION (min)	10	10	10
GEAR	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3
START:			
LAT:	49°35.15'N	49°35.07'N	49°30.00'N
LONG:	123°14.69'W	123°14.84'W	123°16.60'N
FINISH:			
LAT:	49°35.45'N	49°35.40'N	49°29.61'N
LONG:	123°14.60'W	123°14.71'W	123°16.70'W
REMARKS			

SPECIES	H1/177		H1/178			H4A179		
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
ACTINIARIA S	26	13000	15	7500	0	0		
NUCULA	9	3	5	1	0	0		
COLUS	3	12	0	0	10	44		
MACCMA	0	0	3	2	0	0		
YOLDIA THRAC	3	3	7	1	0	0		
STERNOPSIS	18	3	15	4	3	1		
PASIPHAEA	9	6	12	10	12	8		
PANDALUS FOR	100	387	230	795	17	157		
PANDALOPSIS	6	36	2	20	0	0		
SEIFON SICA	105	102	90	100	137	167		
CRANGON COMM	0	0	0	0	28	40		
SEIFON HOLME	0	0	0	0	59	71		
MUNIDA	45	27	42	47	0	0		
CANCEE	0	0	0	0	3	930		
ERISASTER	3	12	1	4	0	0		
CTENODI SCUS	15	351	7	135	0	0		
CHIRIDOTA	9999	9999	9999	9999	0	0		
MOLPADIA	0	0	0	0	1	32		
CIONA	0	0	0	0	99	9999		
SQUALUS	0	0	0	0	3	7622		
APRISTURUS	0	0	0	0	1	4		
LEURCGLOSSUS	10	10	12	14	0	0		
THEBAGRA	0	0	0	0	1	54		
LYCO PARV	34	78	34	77	1	5		
LYCODES	19	50	7	9	3	129		
LYCODOPSIS	0	0	0	0	292	9719		
S MALIGER	0	0	0	0	1	1142		
DASYCOTTUS	2	1	0	0	1	41		
ICELINUS BUR	0	0	0	0	2	5		
RADULINUS	0	0	0	0	6	37		
EATHYAGONUS	3	10	0	0	0	0		
GLYPTOCEPHAL	0	0	0	0	1	117		
LYOPSETTA	1	1	1	67	13	271		
MICROSTOMUS	0	0	0	0	1	135		
PAROPHRYS	0	0	0	0	7	1661		

HAUL NO.	H1/177	H1/178	H4A/179
DATE	28/VI/78	28/VI/78	8/VIII/78
TIME START	0730	0947	1510
DEPTH(m)	235	235	102-128
DURATION (min)	10	10	10
GEAR	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3
START:			
LAT:	49°29.61'N	49°29.85'N	49°40.23'N
LONG:	123°16.70'W	123°16.62'W	123°10.75'W
FINISH:			
LAT:	49°29.60'N	49°29.48'W	49°40.07'N
LONG:	123°16.73'W	123°16.71'W	123°11.05'W
REMARKS			

SPECIES	H4A180		H4A181		H4/182	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
CCLUS	187	822	165	503	50	137
NEPTUNEA	0	0	4	91	0	0
MACOMA	2	1	5	3	0	0
YOLDIA SCISS	0	0	3	8	0	0
STERNAPSIS	2	1	0	0	0	0
BRADA	0	0	0	0	3	3
NEOAMPHITRIT	0	0	0	0	3	3
ECCINELA	1	1	0	0	0	0
PASIPHAEA	67	46	14	4	0	0
SPIRON SICA	385	548	203	276	733	547
SPIRON HOLME	165	235	87	118	0	0
MUNIEA	1	1	4	6	2107	1833
CANCER	1	308	0	0	0	0
ERISASTER	0	0	0	0	313	690
MOLPADIA	3	97	7	139	0	0
CIGNA	99	9999	99	9999	99	9999
SQUALUS	0	0	1	1	0	0
APRISTURUS	0	0	1	78	0	0
HYDROLAGUS	4	1422	5	2023	0	0
LEUROGLOSSUS	0	0	5	3	0	0
LYCO PARV	0	0	4	13	0	0
LYCODES	5	137	19	526	0	0
LYCODOPSIS	211	7153	142	5274	0	0
LUMFENELLA	1	3	5	89	0	0
SEBASTES DIP	0	0	0	0	1	118
ICELINUS BUR	0	0	1	25	0	0
RADULINUS	7	18	1	5	0	0
EATHYAGONUS	0	0	0	0	1	7
NECTOLIPARUS	0	0	4	3	0	0
LYOPSETTA	2	53	2	60	0	0
MICROSTOMUS	0	0	1	113	0	0
FAEOPHYS	5	1190	4	611	0	0

SPECIES	H4/183		H4/184		H3/185	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
COLUS	11	22	122	317	0	0
NEPTUNEA	0	0	7	112	0	0
MACOMA	0	0	0	0	145	29
YOLDIA SCISS	0	0	3	3	0	0
ACILA	0	0	3	1	0	0
PECTINARIA	0	0	99	9999	0	0
BRADA	11	10	0	0	0	0
NEOAMPHITRIT	0	0	20	43	0	0
SPIRON SICA	3520	2442	865	832	977	607
MUNIDA	3729	2057	845	779	10523	6157
BEISASTER	187	583	614	3023	0	0
MOLPADIA	0	0	46	1119	0	0
CIGNA	99	9999	99	9999	0	0
LEUROGLOSSUS	2	9999	0	0	1	1
MERLUCCIUS	1	100	0	0	0	0

HAUL NO.	H4A/180	H4A/181	H4/182	H4/183	H4/184
DATE	8/VIII/78	8/VIII/78	8/VIII/78	8/VIII/78	9/VIII/78
TIME START	1557	1652	1740	1915	0710
DEPTH(m)	105-146	105-125	190	190-223	195
DURATION (min)	10	10	10	10	10
GEAR	OT(K)	OT(K)	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3	1.3	1.3
START:					
LAT:	49°40.20'N	49°40.30'N	49°40.00'N	49°39.90'N	49°40.15'N
LONG:	123°11.20'W	123°11.20'W	123°13.63'W	123°13.90'W	123°13.40'W
FINISH:					
LAT:	49°40.00'N	49°40.20'N	49°39.95'N	49°39.75'N	49°40.00'N
LONG:	123°11.60'W	123°11.50'W	123°13.60'W	123°14.40'W	123°13.52'W
REMARKS					
HAUL NO.	H3/185				
DATE	9/VIII/78				
TIME START	0830				
DEPTH(m)	220-256				
DURATION (min)	10				
GEAR	OT(K)				
MESH SIZE (cm)	1.3				
START:					
LAT:	49°37.84'N				
LONG:	123°13.70'W				
FINISH:					
LAT:	49°				
LONG:	123°				
REMARKS	H3/185 Finish - no data				

24 -

SPECIES	H3/186			H3/187			H2/188		
	FREQ	WET	WT	FREQ	WET	WT	FREQ	WET	WT
MACCMA	45		6	33		5	0		0
POLYCHAETA S	0		0	0		0	1		1
BOCINELA	0		0	0		0	1		1
EASIPHAFA	0		0	0		0	1		9999
SPIRON SICA	0		0	24		10	0		0
MUNICA	6		4	6816		3031	4		3

SPECIES	H2/189			H2/190			H1/191		
	FREQ	WET	WT	FREQ	WET	WT	FREQ	WET	WT
IOPHON	0		0	0		0	99		9999
ACTINIARIA S	0		0	0		0	12		4155
NEPTUNEA	0		0	0		0	1		40
NATICA	0		0	0		0	2		9999
MACCMA	0		0	0		0	1		9999
YOLDIA THRAC	0		0	0		0	19		25
AENRODITA	0		0	0		0	1		4
STERNAPSIS	0		0	0		0	15		2
EGLYCHAETA S	3		1	2		1	0		0
BOCINELA	0		0	0		0	2		6
EASIPHAFA	3		2	0		0	4		1
PANDALUS BOR	0		0	0		0	130		715
PANDALOPSIS	0		0	0		0	36		404
SPIRON SICA	0		0	0		0	73		140
SPIRON HOLME	0		0	0		0	13		24
EVALUS MACRO	0		0	0		0	40		77
MUNICA	9		6	0		0	54		56
CANCER	0		0	0		0	1		556
BRISASTER	0		0	0		0	42		247
CTENODI SCUS	0		0	0		0	11		66
PSEUDARCHAST	0		0	0		0	2		6
CHIRIDOTA	0		0	0		0	9999		9999
MOLPADIA	0		0	0		0	13		199
LEUROGLOSSUS	0		0	0		0	3		9999
LYCODES	0		0	0		0	7		71
DASYCOTTUS	0		0	0		0	1		6
PATHYAGONUS	0		0	0		0	4		5
GLYPTOCEPHAL	0		0	0		0	1		304
LYOPSETTA	0		0	0		0	1		46
MICROSTOMUS	0		0	0		0	3		842

HAUL NO.	H3/186	H3/187	H2/188	H2/189	H2/190
DATE	9/VIII/78	9/VIII/78	9/VIII/78	9/VIII/78	9/VIII/78
TIME START	1021	1138	1256	1425	1600
DEPTH(m)	270-278	256	285-288	285	285
DURATION (min)	10	10	17	10	10
GEAR	OT(K)	OT(K)	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3	1.3	1.3
START:					
LAT:	49°36.80'N	49°37.26'N	49°35.82'N	49°35.12'N	49°35.24'N
LONG:	123°13.70'W	123°13.62'W	123°14.42'W	123°14.75'W	123°14.80'W
FINISH:					
LAT:	49°37.14'N	49°37.62'N	49°35.59'N	49°35.37'N	49°35.10'N
LONG:	123°13.60'W	123°13.60'W	123°14.50'W	123°14.62'W	123°14.80'W

REMARKS

HAUL NO.	H1/191
DATE	9/VIII/78
TIME START	1700
DEPTH(m)	240
DURATION (min)	10
GEAR	OT(K)
MESH SIZE (cm)	1.3
START:	
LAT:	49°30.70'N
LONG:	123°16.60'W
FINISH:	
LAT:	49°30.28'N
LONG:	123°16.61'W

REMARKS

SPECIES	H1/192 - 26 -		H4A193			H4A194		
	FREQ	WET WT	FREQ	WET	WT	FREQ	WET	WT
ICPRGN	99	9999	0		0	0		0
ACTINIARIA S	35	14248	0		0	0		0
NUCULA	9	3	0		0	0		0
COLUS	5	11	0		0	127		536
NEPTUNEA	0	0	1		36	2		47
NATICA	1	9999	0		0	0		0
MACOMA	7	3	0		0	2		9999
YOLDIA THFAC	29	51	0		0	0		0
AENRODITA	1	4	0		0	0		0
STEBNAPSIS	14	3	0		0	4		1
BOCINELA	1	1	0		0	0		0
FASIFHAEA	6	4	15		14	2		1
PANDALUS BOR	323	1157	0		0	0		0
PANDALUS PLA	2	90	0		0	0		0
PANDALOPSIS	22	251	25		44	1		4
SPIRGN SICA	165	155	106		81	1100		1082
CRANGON COMM	0	0	48		93	25		44
SPIRGN HOLME	29	27	121		92	1250		1230
EVALUS MACRO	91	85	15		11	150		148
MUNICA	158	241	0		0	0		0
CHIONOECETES	1	15	0		0	0		0
CANCER	0	0	0		0	1		452
BRISASTER	50	250	0		0	0		0
CTENCDI SCUS	30	344	0		0	0		0
PSEUDARCHAST	1	14	0		0	0		0
CHIEIDOTA	9999	9999	0		0	0		0
MOLPADIA	1	89	0		0	4		198
SQUALUS	0	0	0		0	1		5000
HYDROLAGUS	0	0	3		2249	0		0
LEURCGLOSSUS	1	9999	0		0	0		0
MERLUCCIUS	0	0	1		1	1		110
LYCO PARV	5	12	2		2	2		6
LYCODES	12	24	0		0	0		0
LYCODOPSIS	0	0	72		1834	79		2296
LUMPENELLA	0	0	0		0	6		44
SEBASTES DIP	1	183	0		0	0		0
ANOPLOMA	1	774	0		0	0		0
DASYCOTTUS	2	43	1		39	0		0
BATHYAGONUS	5	14	2		3	5		21
LYOFSETTA	1	24	1		17	3		87
MICROSTOMUS	1	182	0		0	2		283

HAUL NO.	H1/192	H4A/193	H4A/194
DATE	9/VIII/78	10/X/78	10/X/78
TIME START	1825	1630	1722
DEPTH(m)	246	145	145
DURATION (min)	10	10	10
GEAR	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3
START:			
LAT:	49°29.85'N	49°40.25'N	49°40.20'N
LONG:	123°16.70'W	123°10.70'W	123°11.40'W
FINISH:			
LAT:	49°30.20'N	49°40.15'N	49°40.18'N
LONG:	123°16.70'W	123°11.10'W	123°11.10'W
REMARKS			

SPECIES	H4A195			H3/196			H3/197		
	FREQ	WET	WT	FREQ	WET	WT	FREQ	WET	WT
METRIDIDIUM	1		173	0		0	0		0
COLUS	68		309	0		0	0		0
NEPTUNEA	5		162	0		0	0		0
MACCMA	1		9999	74		8	200		25
PASIPHAEA	1		9999	1		9999	3		2
SPIRCN SICA	880		884	0		0	0		0
CRANGON COMM	6		16	0		0	0		0
SPIRCN HOLME	1000		1005	0		0	0		0
EVALUS MACRO	120		120	0		0	0		0
MUNIEA	0		0	0		0	29		11
MOLPADIA	6		119	0		0	0		0
SQUALUS	2		1700	0		0	0		0
LEUROGLOSSUS	0		0	4		10	1		2
LYCODOPSIS	27		830	0		0	0		0
LUMPENELLA	1		25	0		0	0		0
EATHYAGCNUS	2		5	0		0	0		0
LYOPSETTA	1		18	0		0	0		0

SPECIES	H3/198			H4/199			H4/200		
	FREQ	WET	WT	FREQ	WET	WT	FREQ	WET	WT
METRIDIUM	0		0	1		2	0		0
ACTINIARIA S	0		0	0		0	1		1
COLUS	0		0	0		0	1		3
MACCMA	50		8	80		32	128		56
PECTINARIA	0		0	0		0	17		9
BRADA	0		0	2		1	7		6
NEOAMPHITRIT	0		0	8		8	100		40
FOLYCHAETA S	2		9999	2		1	20		5
MUNIEA	2		1	0		0	3		2
ARHYNCHITE	0		0	0		0	11		84
LEUROGLOSSUS	2		3	0		0	0		0

SPECIES	H2/201			H2/202			H2/203		
	FREQ	WET	WT	FREQ	WET	WT	FREQ	WET	WT
PASIPHAEA	2		1	1		9999	1		9999
LEUROGLOSSUS	3		5	0		0	0		0

HAUL NO.	H4A/195	H3/196	H3/197	H3/198	H4/199
DATE	10/X/78	11/X/78	11/X/78	11/X/78	11/X/78
TIME START	1830	0745	0847	0950	1210
DEPTH(m)	195	260	260	260	220
DURATION (min)	10	10	10	10	10
GEAR	OT(K)	OT(K)	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3	1.3	1.3
START:					
LAT:	49°40.25'N	49°36.97'N	49°37.15'N	49°37.12'N	49°40.00'N
LONG:	123°10.95'W	123°13.55'W	123°13.53'W	123°13.58'W	123°13.90'W
FINISH:					
LAT:	49°40.15'N	49°36.10'N	49°13.47'N	49°37.50'N	49°39.80'N
LONG:	123°11.20'W	123°13.55'W	123°13.47'W	123°13.60'W	123°14.50

REMARKS

HAUL NO.	H4/200	H2/201	H2/202	H2/203
DATE	11/X/78	11/X/78	11/X/78	11/X/78
TIME START	1340	1515	1620	1745
DEPTH(m)	220	292	290	290
DURATION (min)	10	10	10	10
GEAR	OT(K)	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3	1.3
START:				
LAT:	49°40.08'N	49°35.45'N	49°35.47'N	49°35.39'N
LONG:	123°13.60'W	123°14.60'W	123°14.57'W	123°14.58'W
FINISH:				
LAT:	49°39.93'N	49°35.05'N	49°35.20'N	49°35.08'N
LONG:	123°14.10'W	123°14.75'W	123°14.60'W	123°14.73'W

REMARKS

SPECIES	H1/204 - 30 -		H1/205		H4A206	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
ICEHCN	99	9999	99	9999	0	0
ACTINIARIA S	2	3000	25	17500	0	0
ACTINIARIA S	0	0	0	0	1	9999
NUCULA	61	11	70	10	0	0
COLUS	4	11	10	20	23	47
NEPTUNEA	0	0	0	0	2	19
NATICA	0	0	115	10	0	0
EACCMA	3	1	1	9999	35	10
YOLDIA SCISS	0	0	0	0	2	9999
YCLDIA THEAC	115	222	135	310	0	0
CARDIOMYA	6	1	0	0	0	0
DENTALIUM	10	9999	35	9995	0	0
STERNAPSIS	55	21	40	20	0	0
PECTINARIA	0	0	0	0	31	23
TRAVISIA	1	3	15	15	0	0
BRADA	0	0	0	0	99	9999
POLYCHAETA S	3	9999	25	9999	0	0
EANIALUS BOB	0	0	15	60	0	0
SPIRON SICA	4	5	10	10	640	1066
CRANGON COMM	1	9999	0	0	0	0
SPIRON HOLME	4	5	10	10	0	0
MUNICA	14	15	40	55	470	470
ERISASTER	38	114	110	870	6	26
CTENODI SCUS	19	171	50	775	0	0
CHIBIDOTA	9999	9999	9999	9999	0	0
MCLPADIA	1	2	5	190	43	1419
CIONA	0	0	0	0	1	9999
LYCCONNECTES	0	0	1	15	0	0
LYOPSETTA	0	0	1	15	0	0

HAUL NO.	H1/204	H1/205	H4A/206
DATE	12/X/78	12/X/78	18/XII/78
TIME START	0710	0923	1250
DEPTH(m)	225	225	146
DURATION (min)	10	10	10
GEAR	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3
START:			
LAT:	49°29.38'N	49°29.69'N	49°39.85'N
LONG:	123°16.70'W	123°16.69'W	123°12.00'W
FINISH:			
LAT:	49°29.60'N	49°30.00'N	49°39.95'N
LONG:	123°16.60'W	123°16.70'W	123°11.67'W
REMARKS			

SPECIES	H4A207			H4A208			H4/209		
	FREQ	WET	WT	FREQ	WET	WT	FREQ	WET	WT
ACTINIARIA S	0		0	0		0	2		9999
CCLUS	12		51	0		0	0		0
NEPTUNEA	0		0	2		80	0		0
EACCMA	0		0	0		0	178		74
ERADA	0		0	0		0	1		9999
NEOAMPHITRIT	0		0	0		0	4		10
PASIPHAEA	0		0	0		0	19		15
PANDALUS BOB	0		0	4		6	0		0
PANDALOPSIS	0		0	17		90	0		0
SPIRON SICA	250		355	70		67	9		4
CRANGON COMM	0		0	16		29	0		0
MUNIDA	12		24	0		0	1900		2110
CANCER	0		0	1		142	0		0
MOLPADIA	21		1020	0		0	0		0
SQUALUS	0		0	1		1873	0		0
HYDROLAGUS	6		2000	0		0	0		0
MERLUCCIUS	0		0	1		93	0		0
LYCODES	23		550	0		0	0		0
LYCODOPSIS	98		2801	65		1045	0		0
LUMFENELLA	1		15	0		0	0		0
EATHYAGONUS	0		0	4		10	0		0
GLYPTOCEPHAL	0		0	1		274	0		0
HIPPOGLOSSOI	0		0	1		49	0		0
LYCPSETTA	1		25	3		65	0		0
MICROSTOMUS	5		1324	2		313	0		0
EABOPHRYS	5		956	0		0	0		0

SPECIES	H4/210			H3/211			H3/212		
	FREQ	WET	WT	FREQ	WET	WT	FREQ	WET	WT
COLUS	4		16	0		0	0		0
HACOMA	204		92	0		0	6		1
ERADA	8		16	0		0	0		0
NEOAMPHITRIT	32		40	0		0	0		0
PASIPHAEA	12		12	1		9999	1		9999
SPIRON SICA	280		200	0		0	0		0
MUNIDA	10800		9340	0		0	2		2
LEUROGLOSSUS	1		1	0		0	0		0

HAUL NO.	H4A/207	H4A/208	H4/209	H4/210	H3/211
DATE	18/XII/78	18/XII/78	18/XII/78	18/XII/78	18/XII/78
TIME START	1520	1615	1830	1925	2000
DEPTH(m)	146	145	208	208	285
DURATION (min)	10	10	10	10	10
GEAR	OT(K)	OT(K)	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3	1.3	1.3
START:					
LAT:	49°39.95'N	49°40.10'N	49°40.10'N	49°40.15'N	49°37.15'N
LONG:	123°11.68'W	123°11.15'W	123°13.55'W	123°13.40'W	123°13.68'W
FINISH:					
LAT:	49°39.82'N	49°40.00'N	49°39.90'N	49°40.00'N	49°37.32'N
LONG:	123°12.05'W	123°11.50'W	123°14.00'W	123°13.90'W	123°13.58'W

REMARKS

HAUL NO.	H3/212
DATE	19/XII/78
TIME START	0745
DEPTH(m)	285
DURATION (min)	10
GEAR	OT(K)
MESH SIZE (cm)	1.3
START:	
LAT:	49°33.1'N
LONG:	123°16.6'W
FINISH:	
LAT:	49°
LONG:	123°

REMARKS no data for finish lat. long.

SPECIES	H2/213 - 34 -			H2/214			H1/215		
	FREQ	WET	WT	FREQ	WET	WT	FREQ	WET	WT
ACTINIARIA S	0		0	0		0	3		1810
NUCULA	0		0	0		0	151		30
COLUS	0		0	0		0	20		58
MACCMA	0		0	0		0	5		2
YOLDIA THRAC	0		0	0		0	158		351
CARDIOMYA	0		0	0		0	1		9999
DENTALIUM	0		0	0		0	3		9999
STERNAPSIS	0		0	0		0	56		25
BRADA	0		0	0		0	1		9999
SPIBGN SICA	5		4	2		4	44		40
CRANGON COMM	0		0	0		0	1		2
SPIFCN HOLME	0		0	0		0	2		2
EVALUS MACRO	0		0	0		0	1		1
MUNIDA	101		86	16		18	31		44
CHIONOECETES	0		0	0		0	1		39
BRISASTER	0		0	0		0	175		1608
CTENODI SCUS	0		0	0		0	51		928
CHIRIDOTA	0		0	0		0	999		9999
MOLPADIA	0		0	0		0	18		512
EATHYAGONUS	0		0	0		0	1		3
LYOPSETTA	0		0	0		0	1		109

HAUL NO.	H2/213	H2/214	H1/215
DATE	19/XII/78	19/XII/78	19/XII/78
TIME START	1020	1100	1230
DEPTH(m)	290	290	215
DURATION (min)	10	10	10
GEAR	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3
START:			
LAT:	49°34.81'N	49°34.98'N	49°29.81'N
LONG:	123°14.83'W	123°14.89'W	123°16.60'W
FINISH:			
LAT:	49°35.00'N	49°35.15'N	49°29.90'N
LONG:	123°14.80'W	123°14.83'W	123°16.55'W
REMARKS			

SPECIES	H1/216		H2/217			H2/218		
	FREQ	WET WT	FREQ	WET	WT	FREQ	WET	WT
ICEHCN	99	9999	0	0		0	0	
METRIDIUM	0	0	1	16		0	0	
ACTINIARIA S	26	13431	0	0		0	0	
NUCULA	35	5	0	0		0	0	
COLUS	9	23	0	0		0	0	
NEPTUNEA	1	22	0	0		0	0	
EPITONIUM	2	4	0	0		0	0	
NATICA	2	2	0	0		0	0	
MACOMA	17	5	0	0		0	0	
YOLDIA THEAC	183	330	0	0		0	0	
CARDIOMYA	5	3	0	0		0	0	
DENTALIUM	22	1	0	0		0	0	
OCTOPUS	1	100	0	0		0	0	
AFNECDITA	2	5	0	0		0	0	
STERNAPSIS	74	37	0	0		0	0	
EASIPHAEA	0	0	26	18		0	0	
PANDALUS BOR	4	70	20	24		0	0	
PANDALOPSIS	2	20	3	27		0	0	
SPIRON SICA	60	75	181	181		46	16	
CRANGON COMM	2	4	0	0		0	0	
SPIRON HOLME	3	4	4	4		1	2	
EVALUS MACRO	2	2	0	0		0	0	
MUNIDA	53	89	22	27		3	2	
PAGURUS	1	24	0	0		0	0	
CHIONOECETES	1	24	0	0		0	0	
BRISASTER	116	715	0	0		0	0	
CTENODI SCUS	25	360	0	0		0	0	
CHIRIDOTA	999	9999	0	0		0	0	
MOLPADIA	45	896	0	0		0	0	
HYDRCLAGUS	0	0	8	4268		0	0	
LEUROGLOSSUS	0	0	1	3		0	0	
LYCODES	5	63	2	26		0	0	
DASYCOTTUS	1	3	0	0		0	0	
EATHYAGGNUS	1	2	0	0		0	0	

SPECIES	H2/219		H3/220			H3/221		
	FREQ	WET WT	FREQ	WET	WT	FREQ	WET	WT
POLYCHAETA S	0	0	1	2		0	0	
EASIPHAEA	21	14	3	3		6	4	
PANDALUS BOR	25	26	67	103		71	90	
PANDALOPSIS	1	11	0	0		0	0	
SEIECN SICA	185	185	345	345		156	154	
CRANGON COMM	0	0	0	0		1	9999	
SPIRON HOLME	4	4	0	0		0	0	
EVALUS MACRO	0	0	5	5		4	4	
MUNIDA	14	13	83	122		32	43	
APRISTURUS	1	318	0	0		0	0	
HYDROLAGUS	6	3704	3	675		1	518	
LEUROGLOSSUS	1	1	0	0		0	0	
LYCODES	1	21	17	607		8	204	
LUMPENELLA	0	0	2	36		0	0	
LYCSETTA	1	31	0	0		0	0	

HAUL NO.	H1/216	H2/217	H2/218	H2/219	H3/220
DATE	19/XII/78	27/III/79	27/III/79	27/III/79	27/III/79
TIME START	1350	1121	1230	1330	1420
DEPTH(m)	215	285	285	285	280
DURATION (min)	10	10	10	10	10
GEAR	OT(K)	OT(K)	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3	1.3	1.3
START:					
LAT:	49°29.48'N	49°35.33'N	49°35.55'N	49°35.35'N	49°37.22'N
LONG:	123°16.68'W	123°14.58'W	123°14.61'W	123°14.63'W	123°14.00'W
FINISH:					
LAT:	49°29.61'N	49°35.62'N	49°35.80'N	49°35.73'N	49°37.59'N
LONG:	123°16.63'W	123°14.49'W	123°14.46'W	123°14.48'W	123°14.11'W

REMARKS

HAUL NO.	H3/221
DATE	27/III/79
TIME START	1530
DEPTH(m)	280
DURATION (min)	10
GEAR	OT(K)
MESH SIZE (cm)	1.3
START:	
LAT:	49°37.05'N
LONG:	123°13.85'W
FINISH:	
LAT:	49°37.52'N
LONG:	123°13.90'W

REMARKS

SPECIES	H3-222		H4A223		H4A224	
	FREQ	WET WT	FREQ	WET WT	FREQ	WET WT
METRIDIUM	0	0	1	177	0	0
ROSSIA	0	0	1	5	0	0
PASIPHAEA	14	7	0	0	2	9999
PANDALUS BOB	55	62	50	101	11	19
PANDALOPSIS	0	0	4	27	0	0
SPIBCN SICA	270	270	72	72	24	24
CRANGON COMM	1	1	1	1	0	0
SPIRCN HOLME	0	0	1	1	0	0
EVALUS MACRO	4	4	0	0	0	0
MUNIDA	29	35	7	8	1	1
RAJA	0	0	1	4000	0	0
HYDECLAGUS	1	795	0	0	5	1523
PORICHTHYS	0	0	11	338	3	69
MERLUCCIUS	0	0	8	190	4	82
LYCO PARV	0	0	1	1	0	0
LYCODES	6	150	0	0	0	0
LYCODOPSIS	0	0	340	4338	95	1176
S ELCNGATUS	1	328	0	0	0	0
EATHYAGONUS	0	0	3	11	1	1
HIPPGLSSOI	0	0	1	634	0	0
LYOPSETTA	1	17	1	9	3	19
MICRCSTMUS	0	0	1	126	1	87
PAROPHRYS	0	0	5	612	3	216

SPECIES	H1/225		H1/226	
	FREQ	WET WT	FREQ	WET WT
ACTINIARIA S	0	0	25	11363
NUCULA	38	8	15	5
MACOMA	18	10	4	1
YCLDIA THRAC	38	72	9	10
STERNAPSIS	34	14	17	10
ECLYCHAETA S	1	9999	0	0
PASIPHAEA	0	0	27	20
PANDALUS BOB	1	9999	37	92
PANDALOPSIS	0	0	8	81
SPIRCN SICA	27	27	96	72
CRANGON COMM	0	0	1	1
SPIRCN HOLME	1	1	1	1
EVALUS MACRO	3	3	3	3
MUNIDA	32	60	29	51
CHIONOECETES	1	242	0	0
EBISASTER	40	147	2	5
CTENODI SCUS	18	308	13	146
ESEUDARCHAST	0	0	1	5
CHIRIDOTA	99	9999	999	9999
MOLEADIA	1	3	1	2
LYCO PARV	0	0	1	1
LYCODES	0	0	7	141
LYCODOPSIS	2	14	0	0
DASYCOTTUS	0	0	1	9
EATHYAGONUS	0	0	1	2
LYOPSETTA	0	0	2	174

HAUL NO.	H3/222	H4A/223	H4A/224	H1/225	H1/226
DATE	27/III/79	27/III/79	27/III/79	28/III/78	28/III/79
TIME START	1625	1742	1916	0627	0720
DEPTH(m)	280	109	106		
DURATION (min)	10	10	10	10	10
GEAR	OT(K)	OT(K)	OT(K)	OT(K)	OT(K)
MESH SIZE (cm)	1.3	1.3	1.3	1.3	1.3
START:					
LAT:	49°13.8'N	49°40.28'N	49°40.32'N	49°29.99'N	49°29.30'N
LONG:	123°37.23'W	123°11.11'N	123°10.80'N	123°16.67'W	123°16.50'W
FINISH:					
LAT:	49°13.97'N	49°40.08'N	49°40.12'N	49°30.22'N	49°28.92'N
LONG:	123°38.13'W	123°11.84'W	123°11.47'W	123°16.64'W	123°16.53'W
REMARKS					

Table 2. Oceanographic data from stations (Fig. 1) in
Howe Sound corresponding to trawl haul locations.

Station: X1
Latitude: 49°32.0'N
Longitude: 123°16.0'W
Time: 0940
Date: 11/VIII/77
Depth: 192
Secchi: nd

Surface Temperature: 16.5

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	9.00	9.8
5	23.99	9.7
10	26.82	7.6
25	-	6.0
50	26.69	5.6
100	30.17	5.4
125	30.40	5.4
150	29.62	5.6
175	29.98	5.3

Station: X2
Latitude: 49°34.95'N
Longitude: 123°16.25'W
Time: 1035
Date: 11/VIII/77
Depth: 135
Secchi: nd

Surface Temperature: 17.5

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	9.34	9.9
5	23.39	9.2
10	26.76	7.2
25	29.05	6.0
50	29.61	5.3
100	30.04	4.0
125	30.05	3.8

Station: X3
Latitude: 49°34.65'N
Longitude: 123°15.70'W
Time: 1110
Date: 11/VIII/77
Depth: 270
Secchi: 1.8 m

Surface Temperature: 17.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	9.16	9.9
5	24.07	9.3
10	26.59	7.4
25	29.05	5.8
50	29.66	5.2
100	30.07	3.7
125	30.09	3.8
150	30.13	2.9
175	-	1.1
200	30.13	0.8
225	30.15	0.4
250	30.15	0.2

Station: X4
Latitude: 49°34.45'N
Longitude: 123°15.25'W
Time: 1355
Date: 11/VIII/77
Depth: 288
Secchi: 1.5 m

Surface Temperature: 16.2

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	7.41	9.9
5	23.78	9.7
10	26.39	7.7
25	28.96	6.0
50	29.76	5.5
100	29.88	5.0
150	30.07	4.2
175	30.11	2.0
200	30.21	1.2
225	30.26	0.8
250	30.28	0.4

Station: X5
Latitude: 49°34.25'N
Longitude: 123°14.65'W
Time: 1140
Date: 11/VIII/77
Depth: 240
Secchi: 0.75 m

Surface Temperature: 14.8

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	8.67	10.1
5	23.26	9.7
10	26.74	7.3
25	28.98	5.8
50	29.74	5.3
100	30.12	3.7
125	30.08	2.8
150	30.09	2.8
175	30.14	1.7
200	30.13	1.1
225	30.20	0.5

Station: X6
Latitude: 49°34.05'N
Longitude: 123°14.10'W
Time: 1255
Date: 11/VIII/77
Depth: 85
Secchi: 0.75 m

Surface Temperature: 18.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	-	10.0
5	22.70	10.2
10	26.89	7.5
25	29.00	5.8
50	29.71	5.5
75	30.03	4.6

Station: X7
Latitude: 49°37.40'N
Longitude: 123°12.90'W
Time: 1640
Date: 11/VIII/77
Depth: 135
Secchi: 1.0 m

Surface Temperature: 16.5

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	5.33	9.8
5	23.61	9.7
10	25.79	8.3
25	28.96	5.8
50	29.64	5.3
100	-	3.4
125	30.04	3.4

Station: X8
Latitude: 49°37.4'N
Longitude: 123°13.67'W
Time: 1500
Date: 11/VIII/77
Depth: 260
Secchi: 0.75 m

Surface Temperature: 13.8

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	5.18	10.1
5	23.27	9.3
10	25.99	7.8
25	29.02	5.7
50	29.62	5.5
100	30.00	3.4
125	30.01	3.5
150	30.02	2.3
175	30.02	1.0
200	30.12	0.8
225	30.14	0.4
250	30.14	0.4

Station: X9
Latitude: 49°37.39'N
Longitude: 123°14.30'W
Time: 1630
Date: 11/VIII/77
Depth: 260
Secchi: 1.0 m

Surface Temperature: 17.3

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	4.96	10.1
5	25.21	8.9
10	25.87	7.9
25	29.07	5.2
50	29.60	5.5
100	29.99	3.4
125	30.01	3.2
150	30.02	2.6
175	30.04	0.6
200	30.05	0.3
225	30.05	0.2
250	30.05	0.1

Station: X13
Latitude: 49°40.15'N
Longitude: 123°11.65'W
Time: 0900
Date: 9/VIII/77
Depth: 153
Secchi: 0.5 m

Surface Temperature: nd

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	<3	10.87
5	25.03	8.56
10	-	6.48
25	28.89	6.23
50	29.58	5.87
100	30.03	2.93
125	30.06	2.46

Station: X10
Latitude: 49°38.97'N
Longitude: 123°13.65'W
Time: 1915
Date: 11/VIII/77
Depth: 110
Secchi: 1.0 m

Surface Temperature: 17.8

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	7.10	10.2
5	24.63	9.7
10	25.89	7.7
25	-	5.7
50	29.57	5.8
75	29.82	4.5
100	29.99	3.0

Station: X1
Latitude: 49°32.0'N
Longitude: 123°16.0'W
Time: 1000
Date: 31/VIII/77
Depth: nd
Secchi: nd

Surface Temperature: 16.2

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	13.26	9.2
5	24.52	8.0
10	27.71	6.2
25	29.43	5.7
50	29.83	5.1
100	30.40	5.1
125	30.40	5.0
150	30.47	5.1
175	30.47	5.2

Station: X11
Latitude: 49°39.36'N
Longitude: 123°14.3'W
Time: 1815
Date: 11/VIII/77
Depth: 222
Secchi: 1.25 m

Surface Temperature: 16.7

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	7.09	10.0
5	-	9.0
10	-	7.6
25	28.94	6.0
50	-	5.7
100	-	3.2
125	-	2.6
150	29.62	2.0
175	29.80	1.3
200	29.82	0.4

Station: X2
Latitude: 49°34.95'N
Longitude: 123°16.25'W
Time: 0740
Date: 31/VIII/77
Depth: nd
Secchi: 1.75 m

Surface Temperature: 14.1

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	9.89	9.3
5	23.98	7.8
10	27.43	6.3
25	29.45	5.5
50	29.77	5.2
100	30.00	3.1
125	30.01	3.5

Station: X12
Latitude: 49°39.85'N
Longitude: 123°14.74'W
Time: 1850
Date: 11/VIII/77
Depth: 174
Secchi: 1.25 m

Surface Temperature: 17.3

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	7.80	10.2
5	22.40	8.5
10	25.67	7.3
25	28.87	5.3
50	29.57	5.5
100	29.99	3.0
125	-	2.5
150	30.03	1.5

Station: X3
Latitude: 49°34.65'N
Longitude: 123°15.70'W
Time: 0825
Date: 31/VIII/77
Depth: nd
Secchi: 2.25 m

Surface Temperature: 14.2

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	11.06	9.3
5	24.60	8.0
10	27.87	6.1
25	29.34	5.7
50	29.75	5.0
100	30.00	3.8
125	30.03	3.5
150	29.99	3.1
175	30.03	2.0
200	30.05	1.8
225	30.05	0.7
250	30.05	0.2

Station: X12
 Latitude: 49°39.85'N
 Longitude: 123°14.74'W
 Time: 1355
 Date: 30/VIII/77
 Depth: nd
 Secchi: 0.75 m

Surface Temperature: 14.7

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	7.05	9.7
5	24.69	6.8
10	27.75	6.2
25	29.34	5.5
50	29.72	5.2
100	29.99	2.8
125	30.02	3.0
150	30.03	1.4

Station: X13
 Latitude: 49°40.15'N
 Longitude: 123°11.65'W
 Time: 1120
 Date: 30/VIII/77
 Depth: 153
 Secchi: 0.25 m

Surface Temperature: 10.0

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	4.98	10.4
5	23.54	7.8
10	26.64	7.1
25	29.34	5.7
50	29.72	5.1
100	29.99	3.0
125	30.01	2.0

Station: X1
 Latitude: 49°32.0'N
 Longitude: 123°16.0'W
 Time: 1430
 Date: 3/X/77
 Depth: nd
 Secchi: nd

Surface Temperature: 12.5

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	22.88	8.7
5	25.55	7.3
10	27.75	6.2
25	29.30	4.8
50	30.01	5.1
100	30.31	5.1
125	30.38	4.7
150	30.58	4.8
175	30.52	4.6

Station: X2
 Latitude: 49°34.95'N
 Longitude: 123°16.25'W
 Time: 1030
 Date: 3/X/77
 Depth: nd
 Secchi: 7.5 m

Surface Temperature: 12.9

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	22.73	8.7
5	25.35	7.1
10	28.17	5.4
25	29.42	5.0
50	29.96	4.8
100	30.17	3.9
125	30.05	3.5

Station: X3
 Latitude: 49°34.65'N
 Longitude: 123°15.70'W
 Time: 1050
 Date: 3/X/77
 Depth: nd
 Secchi: nd

Surface Temperature: 12.2

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	22.99	8.4
5	24.07	7.9
10	28.06	5.5
25	29.36	5.2
50	29.93	4.6
100	30.03	3.9
125	30.03	3.3
150	30.03	2.9
175	30.03	1.9
200	30.01	1.2
225	29.99	0.8
250	30.01	-

Station: X4
 Latitude: 49°34.45'N
 Longitude: 123°15.25'W
 Time: 1145
 Date: 3/X/77
 Depth: nd
 Secchi: 7 m

Surface Temperature: 11.4

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	23.17	7.7
5	23.61	7.7
10	27.44	5.6
25	28.36	4.9
50	29.87	4.7
100	30.10	4.0
125	30.08	3.5
150	30.07	3.0
175	30.04	2.1
200	30.01	1.0
225	29.97	0.8
250	30.07	-

Station: X5
 Latitude: 49°34.25'N
 Longitude: 123°14.65'W
 Time: 1340
 Date: 3/X/77
 Depth: 240
 Secchi: 5.5 m

Surface Temperature: 12.0

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	24.65	7.4
5	26.08	7.1
10	28.09	5.5
25	29.65	4.9
50	30.06	4.9
100	30.15	4.3
125	30.08	3.3
150	30.02	2.8
175	29.99	1.8
200	30.02	1.4
225	30.05	1.6

Station: X6
 Latitude: 49°34.05'N
 Longitude: 123°14.10'W
 Time: 1400
 Date: 3/X/77
 Depth: 85
 Secchi: 8.5 m

Surface Temperature: 12.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	24.54	7.7
5	26.10	7.6
10	28.25	5.4
25	29.62	4.8
50	30.07	4.9
75	30.08	4.8

Station: X4
Latitude: 49°34.45'N
Longitude: 123°15.25'W
Time: 1945
Date: 30/VIII/77
Depth: nd
Secchi: 2 m

Surface Temperature: 15.5

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	10.71	9.7
5	24.35	7.2
10	27.81	6.0
25	29.49	5.6
50	29.76	5.1
100	29.76	3.9
125	30.01	3.8
150	30.01	3.4
175	30.03	2.1
200	30.03	1.4
225	30.03	1.0
250	30.05	0.3

Station: X5
Latitude: 49°34.25'N
Longitude: 123°14.65'W
Time: 0850
Date: 31/VIII/77
Depth: nd
Secchi: 7 m

Surface Temperature: 15.7

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	13.44	9.6
5	25.82	7.0
10	28.03	6.1
25	29.41	5.5
50	29.87	5.0
100	30.05	4.1
125	30.00	3.6
150	30.03	2.7
175	30.06	1.5
200	30.07	0.7
225	30.08	0.4

Station: X6
Latitude: 49°34.05'N
Longitude: 123°14.10'W
Time: 0930
Date: 31/VIII/77
Depth: nd
Secchi: 7.5 m

Surface Temperature: 16.8

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	14.82	9.2
5	25.56	7.8
10	27.90	6.1
25	29.41	5.6
50	29.83	5.1
75	29.95	4.9

Station: X7
Latitude: 49°37.40'N
Longitude: 123°12.90'W
Time: 1540
Date: 30/VIII/77
Depth: nd
Secchi: 1 m

Surface Temperature: 13.9

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	7.26	9.8
5	17.61	8.6
10	27.88	6.0
25	29.31	5.4
50	29.38	4.9
100	29.68	5.1
125	29.89	5.1

Station: X8
Latitude: 49°37.4'N
Longitude: 123°13.67'W
Time: 1605
Date: 30/VIII/77
Depth: nd
Secchi: nd

Surface Temperature: 13.2

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	-	9.7
5	27.79	7.8
10	27.79	6.3
25	29.28	5.7
50	29.72	5.1
100	29.99	3.5
125	30.01	3.4
150	30.02	2.4
175	30.03	1.7
200	30.05	0.8
225	30.05	0.5
250	30.05	0.4

Station: X9
Latitude: 49°37.39'N
Longitude: 123°14.30'W
Time: 1515
Date: 30/VIII/77
Depth: nd
Secchi: nd

Surface Temperature: 12.7

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	9.51	6.7
5	23.83	4.0
10	28.07	5.9
25	29.30	5.5
50	29.68	5.2
100	30.00	3.4
125	30.00	2.8
150	30.02	2.5
175	30.04	1.1
200	30.05	0.7
225	30.05	0.5
250	30.05	0.4

Station: X10
Latitude: 49°38.97'N
Longitude: 123°13.65'W
Time: 1425
Date: 30/VIII/77
Depth: nd
Secchi: 0.5 m

Surface Temperature: 13.2

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	10.91	9.7
5	23.34	7.0
10	27.62	5.8
25	29.48	5.5
50	29.73	5.0
100	29.98	2.9

Station: X11
Latitude: 49°39.36'N
Longitude: 123°14.3'W
Time: 1300
Date: 30/VIII/77
Depth: nd
Secchi: 0.5 m

Surface Temperature: 13.1

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	5.42	10.2
5	25.88	7.3
10	27.96	6.1
25	29.25	5.7
50	29.68	5.5
100	30.00	3.3
125	30.02	2.3
175	30.03	<2
200	30.05	1.0

Station: X7
 Latitude: 49°37.40'N
 Longitude: 123°12.90'W
 Time: 1540
 Date: 5/X/77
 Depth: 135
 Secchi: 14.75 m

Surface Temperature: 11.5

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	28.32	5.7
5	28.69	5.5
10	29.09	4.7
25	29.51	4.7
50	29.81	5.2
100	30.02	3.4
125	30.03	2.9

Station: X8
 Latitude: 49°37.4'N
 Longitude: 123°13.67'W
 Time: 1510
 Date: 5/X/77
 Depth: 260
 Secchi: 15.0 m

Surface Temperature: 11.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	25.50	7.0
5	28.55	5.5
10	29.03	5.0
25	29.56	4.6
50	29.81	4.5
100	30.00	2.7
125	30.02	2.4
150	30.02	1.8
175	30.05	0.8
200	30.05	0.3
225	30.05	0.4
250	30.05	0.7

Station: X9
 Latitude: 49°37.39'N
 Longitude: 123°14.20'W
 Time: 1445
 Date: 5/X/77
 Depth: 260
 Secchi: 10.0 m

Surface Temperature: 11.2

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	23.38	7.2
5	28.12	5.5
10	28.93	5.1
25	29.79	4.4
50	30.02	3.3
100	30.02	-
125	30.05	2.3
150	30.05	0.5
175	30.05	0.6
200	30.05	0.3
225	29.93	1.8

Station: X10
 Latitude: 49°38.97'N
 Longitude: 123°13.65'W
 Time: 1400
 Date: 5/X/77
 Depth: 110
 Secchi: 14.0 m

Surface Temperature: 10.7

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	26.13	6.3
5	28.26	5.5
10	-	5.2
25	29.59	5.3
50	29.76	4.5
100	30.02	2.8

Station: X11
 Latitude: 49°39.36'N
 Longitude: 123°14.3'W
 Time: 1305
 Date: 5/X/77
 Depth: nd
 Secchi: 7.0 m

Surface Temperature: 10.3

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	21.80	7.9
5	28.28	5.9
10	29.03	5.4
25	29.51	4.8
50	29.83	4.6
100	29.99	3.2
125	30.02	3.0
150	30.03	1.0
175	30.04	0.9
200	30.05	0.5

Station: X12
 Latitude: 49°39.85'N
 Longitude: 123°14.74'W
 Time: 1325
 Date: 5/X/77
 Depth: nd
 Secchi: 5.0 m

Surface Temperature: 10.9

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	22.58	7.3
5	28.88	5.5
10	28.96	5.2
25	29.47	5.0
50	29.79	4.2
100	29.99	2.4
125	30.02	2.3
150	30.05	0.9

Station: X13
 Latitude: 49°40.15'N
 Longitude: 123°11.65'W
 Time: 1035
 Date: 5/X/77
 Depth: nd
 Secchi: 4.5 m

Surface Temperature: 9.5

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	23.86	7.2
5	27.76	5.8
10	29.07	5.5
25	29.60	5.4
50	29.84	4.7
100	30.00	2.7
125	30.02	2.3

Station: X1
 Latitude: 49°23.0'N
 Longitude: 123°16.0'W
 Time: 1415
 Date: 9/X1/77
 Depth: nd
 Secchi: 6.0 m

Surface Temperature: 8.8

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	24.22	7.9
5	24.28	7.9
10	25.68	7.1
25	29.66	4.5
50	30.06	4.5
100	30.40	4.9
125	30.44	4.8
150	30.46	5.1
175	30.50	4.9

Station: X2
 Latitude: 49°34.95'N
 Longitude: 123°16.25'W
 Time: 1005
 Date: 9/XI/77
 Depth: nd
 Secchi: 6.5 m

Surface Temperature: 8.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	21.96	8.8
5	25.83	6.7
10	29.07	4.7
25	29.97	4.0
50	30.10	3.5
100	30.19	4.7

Station: X3
 Latitude: 49°34.65'N
 Longitude: 123°15.70'W
 Time: 1030
 Date: 9/XI/77
 Depth: nd
 Secchi: 6.5 m

Surface Temperature: 8.5

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	23.21	8.4
5	-	8.0
10	28.22	5.4
25	29.90	4.3
50	30.08	3.4
100	30.17	3.4
125	30.19	3.0
150	30.17	3.0
175	30.18	2.8
200	30.20	2.8
225	30.18	2.8
250	30.21	3.1

Station: X4
 Latitude: 49°34.45'N
 Longitude: 123°15.25'W
 Time: 1110
 Date: 9/XI/77
 Depth: nd
 Secchi: 6.0 m

Surface Temperature: 8.7

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	23.66	7.7
5	24.41	7.2
10	28.12	6.0
25	29.90	4.6
50	30.01	3.6
100	30.21	4.0
125	30.22	4.0
150	30.24	3.8
175	30.24	3.5
200	30.19	3.0
225	30.16	2.9
250	30.19	2.9

Station: X5
 Latitude: 49°34.35'N
 Longitude: 123°14.65'W
 Time: 1310
 Date: 9/XI/77
 Depth: nd
 Secchi: 7.0 m

Surface Temperature: 8.9

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	24.04	7.8
5	24.55	4.0
10	27.28	6.2
25	29.72	4.5
50	30.23	4.1
100	30.02	4.3
125	30.02	4.2
150	30.23	4.4
175	30.23	4.0
200	30.23	3.6

Station: X6
 Latitude: 49°34.05'N
 Longitude: 123°14.65'W
 Time: 1345
 Date: 9/XI/77
 Depth: nd
 Secchi: 7.0 m

Surface Temperature: 9.2

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	24.35	7.7
5	25.25	7.3
10	27.64	6.2
25	29.68	4.7
50	30.08	4.0
75	30.18	3.9

Station: X7
 Latitude: 49°39.40'N
 Longitude: 123°12.90'W
 Time: 1520
 Date: 8/XI/77
 Depth: nd
 Secchi: 8.0 m

Surface Temperature: 7.8

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	23.29	8.7
5	25.53	7.2
10	28.03	5.5
25	29.84	4.1
50	30.06	3.2
100	30.17	3.3
125	30.22	3.7

Station: X8
 Latitude: 49°37.4'N
 Longitude: 123°13.67'W
 Time: 1540
 Date: 8/XI/77
 Depth: nd
 Secchi: 8.0 m

Surface Temperature: 6.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	21.91	8.4
5	25.22	7.3
10	27.29	5.9
25	29.76	4.1
50	30.05	3.4
100	30.12	3.0
125	30.08	2.0
150	30.07	1.2
175	30.10	1.8
200	30.10	1.8
225	30.23	3.3
250	30.24	4.0

Station: X9
 Latitude: 49°37.39'N
 Longitude: 123°14.30'W
 Time: 1440
 Date: 8/XI/77
 Depth: nd
 Secchi: 4.5 m

Surface Temperature: 6.1

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	12.39	9.8
5	24.98	7.0
10	26.72	6.2
25	29.87	4.0
50	30.02	2.9
100	30.04	1.2
125	30.04	0.2
150	30.03	0.3
175	30.03	0.4
200	30.04	1.6
225	30.10	2.4
250	30.18	-

Station: X10
Latitude: 49°38.97'N
Longitude: 123°13.65'W
Time: 1410
Date: 8/XI/77
Depth: nd
Secchi: 7.0 m

Surface Temperature: 7.3

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
0	19.00	8.7
5	-	6.6
10	25.88	6.1
25	29.88	3.9
50	30.04	3.4
100	30.07	2.2

Station: X11
Latitude: 49°39.36'N
Longitude: 123°14.3'W
Time: 1300
Date: 8/XI/77
Depth: nd
Secchi: nd

Surface Temperature: nd

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	10.84	10.4
5	25.32	7.1
10	27.60	5.6
25	29.91	4.2
50	30.05	3.4
100	30.05	2.7
125	30.06	1.5
150	30.05	0.9
175	30.08	2.1
200	30.05	0.8

Station: X12
Latitude: 49°39.85'N
Longitude: 123°14.74'W
Time: 1340
Date: 8/XI/77
Depth: nd
Secchi: 1.75 m

Surface Temperature: 5.3

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	9.34	10.1
5	24.75	6.9
10	28.07	5.3
25	29.99	4.0
50	30.05	3.3
100	30.02	1.5
125	30.03	0.8
150	30.04	0.5

Station: X13
Latitude: 49°40.15'N
Longitude: 123°11.65'W
Time: 1105
Date: 8/XI/77
Depth: nd
Secchi: nd

Surface Temperature: 5.4

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
0	8.74	10.7
5	24.26	7.9
10	27.34	6.0
25	29.94	3.9
50	30.03	3.1
100	30.04	1.9
125	30.04	1.8

Station: X8
Latitude: 49°37.4'N
Longitude: 123°14.67'W
Time: 1130
Date: 24/XI/77
Depth: 251
Secchi: nd

Surface Temperature: nd

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
150	-	1.22
175	-	2.01
200	-	2.08
225	-	3.09
250	-	2.58

Station: X14
Latitude: 49°35.90'N
Longitude: 123°14.20'W
Time: 1315
Date: 24/XI/77
Depth: 276
Secchi: nd

Surface Temperature: nd

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
175	-	2.01
200	-	2.72
225	-	2.72
250	-	3.02
275	-	2.91

Station: X4
Latitude: 49°34.45'N
Longitude: 123°15.25'W
Time: 1430
Date: 24/XI/77
Depth: 286
Secchi: nd

Surface Temperature: nd

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
185	-	3.15
210	-	3.22
235	-	3.10
260	-	3.10
285	-	2.79

Station: X1
Latitude: 49°32.0'N
Longitude: 123°16.0'W
Time: 1020
Date: 10/I/78
Depth: 192
Secchi: 8.0 m

Surface Temperature: 7.2

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
0	-	9.1
5	-	8.8
10	-	8.2
25	-	8.0
50	-	7.3
100	-	6.2
125	-	5.5
150	-	5.0
175	-	4.8

Station: X4
 Latitude: 49°34.45 'N
 Longitude: 123°5.25'W
 Time: 1120
 Date: 10/I/78
 Depth: 288
 Secchi: 7 m

Surface Temperature: 6.9

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	-	8.9
5	-	9.4
10	-	8.8
25	-	7.4
50	-	5.5
100	-	5.8

Station: X14
 Latitude: 49°35.90'N
 Longitude: 123°14.20'W
 Time: 1250
 Date: 10/I/78
 Depth: 276 m
 Secchi: 7.5 m

Surface Temperature: 7.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	-	8.7
5	-	8.9
10	-	8.2
25	-	7.1
50	-	6.6
100	-	3.7
125	-	2.6
150	-	2.3
175	-	2.1
200	-	2.2
225	-	2.4
250	-	2.3

Station: X8
 Latitude: 49°37.4'N
 Longitude: 123°13.67'W
 Time: 1330
 Date: 10/I/78
 Depth: 260
 Secchi: 7.5 m

Surface Temperature: 7.4

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	-	8.4
5	-	8.5
10	-	7.6
25	-	7.0
50	-	6.6
100	-	3.5
125	-	2.8
150	-	2.2
175	-	2.1
200	-	2.1
225	-	2.0
250	-	1.9

Station: X11
 Latitude: 49°39.36'N
 Longitude: 123°14'3W
 Time: 1355
 Date: 10/I/78
 Depth: 222
 Secchi: 7 m

Surface Temperature: 6.3

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	-	8.6
5	-	7.9
10	-	7.5
25	-	7.1
50	-	6.8
100	-	3.7
125	-	2.6
150	-	2.0
175	-	1.8
200	-	2.0

Station: X13
 Latitude: 49°40.15'N
 Longitude: 123°11.65'W
 Time: est. 1430
 Date: 10/I/78
 Depth: 153
 Secchi: 6.5 m

Surface Temperature: 4.7

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	-	9.6
5	-	7.6
10	-	7.3
25	-	7.4
50	-	6.9
100	-	6.0
125	-	2.8

Station: X1
 Latitude: 49°32'N
 Longitude: 123°16'W
 Time: 1045
 Date: 6/II/78
 Depth: 175
 Secchi: 9 m

Surface Temperature: 7.2

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	28.06	9.5
5	28.38	9.1
10	28.74	8.8
25	29.19	8.4
50	29.55	8.0
100	29.69	9.5
125	29.81	6.7
150	29.66	7.4
175	29.80	8.4

Station: X4
 Latitude: 49°34.45'N
 Longitude: 123°14.20'W
 Time: 1147
 Date: 6/II/78
 Depth: 250
 Secchi: 6 m

Surface Temperature: 7.2

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	28.09	9.6
5	28.31	9.4
10	28.69	8.6
25	29.17	8.0
50	29.61	7.7
100	30.02	5.9
125	30.11	3.0
150	30.18	2.4
175	30.15	2.6
200	30.14	2.6
225	30.18	2.7
250	30.21	2.5

Station: X14
 Latitude: 49°35.90'N
 Longitude: 123°14.20'W
 Time: 1304
 Date: 6/II/78
 Depth: 250
 Secchi: 7.0 m

Surface Temperature: 7.4

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	25.86	9.0
5	28.33	10.1
10	28.98	8.2
25	29.47	7.7
50	29.64	7.0
100	30.04	4.4
125	30.12	2.9
150	30.13	2.4
175	30.16	2.2
200	30.16	2.1
225	30.17	2.1
250	30.16	2.1

Station: X8
 Latitude: 49°37.4'N
 Longitude: 123°13.67'W
 Time: 1400
 Date: 6/II/78
 Depth: 250
 Secchi: 8 m

Surface Temperature: 7.4

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
0	28.13	9.4
5	28.84	8.5
10	29.02	9.1
25	29.47	7.9
50	29.57	8.0
100	30.12	4.0
125	30.10	2.3
150	30.18	2.4
175	30.15	2.3
200	30.18	2.0
225	30.16	2.1
250	30.17	1.8

Station: X2
 Latitude: 49°39.9'
 Longitude: 123° 16.3'
 Time: 1135
 Date: 2/III/78
 Depth: 100
 Secchi: 8.75 m

Surface Temperature: 6.8

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
0	25.66	9.4
5	26.07	9.3
10	27.30	8.9
25	29.31	7.1
50	29.65	6.9
100	29.96	4.4

Station: X11
 Latitude: 49°39.26'N
 Longitude: 123°14.30'W
 Time: 1444
 Date: 6/II/78
 Depth: 200
 Secchi: 2.5 m

Surface Temperature: 6.3

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	15.11	10.1
5	28.49	9.1
10	29.09	8.2
25	29.44	8.0
50	29.60	7.5
100	29.97	4.8
125	30.08	3.1
150	30.14	2.4
175	30.16	2.5
200	30.16	1.7

Station: X3
 Latitude: 49°34.6'
 Longitude: 123° 15.7'
 Time: 0945
 Date: 2/III/78
 Depth: 250
 Secchi: 6 m

Surface Temperature: 7.0

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	26.82	9.1
5	27.04	9.1
10	28.27	8.2
25	29.34	7.4
50	29.55	7.2
100	29.95	4.7
125	30.12	2.8
150	30.12	2.3
175	30.14	2.0
200	30.16	1.9
225	30.17	1.7
250	30.12	2.2

Station: X13
 Latitude: 49°40.15'N
 Longitude: 123°11.65'W
 Time: 1540
 Date: 6/II/78
 Depth: 125
 Secchi: 6 m

Surface Temperature: 7.2

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	26.16	9.2
5	28.53	8.4
10	29.01	8.6
25	29.28	8.5
50	29.51	7.7
100	29.89	5.6
125	30.12	3.1

Station: X4
 Latitude: 49°34.5'
 Longitude: 123°15.3'
 Time: 1036
 Date: 2/III/78
 Depth: 250
 Secchi: 5 m

Surface Temperature: 7.4

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	27.13	8.8
5	27.39	8.6
10	28.19	8.2
25	29.21	7.4
50	29.49	7.4
100	29.86	5.2
125	30.08	3.4
150	30.12	2.5
175	30.14	2.1
200	30.16	1.9
225	30.16	1.9
250	30.16	1.9

Station: X1
 Latitude: 49° 32.0'
 Longitude: 123°16.0'
 Time: 1315
 Date: 28/III/78
 Depth: 175
 Secchi: nd

Surface Temperature: 7.5

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
0	27.78	9.0
5	27.79	8.9
10	27.79	8.8
25	29.29	7.2
50	29.52	6.9
100	29.67	7.0
125	29.73	6.9
150	29.78	6.9
175	29.79	6.8

Station: X5
 Latitude: 49° 34.4'
 Longitude: 123°14.6'
 Time: 1100
 Date: 2/III/78
 Depth: 200
 Secchi: 12 m

Surface Temperature: 7.7

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
0	28.18	8.4
5	28.20	8.4
10	28.31	8.4
25	29.25	7.2
50	29.51	7.4
100	29.99	4.5
125	30.10	2.8
150	30.14	2.8
175	30.15	-
200	30.16	2.0

Station: X6
 Latitude: 49° 34.1' (est.)
 Longitude: 123° 14.6'
 Time: 1145
 Date: 2/III/78
 Depth: 75
 Secchi: 1.0 m

Surface Temperature: 7.7

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	28.49	8.4
5	28.45	8.3
10	28.75	7.8
25	29.20	7.7
50	29.50	7.7
75	29.78	6.1

Station: X7
 Latitude: 49° 39.4' (est.)
 Longitude: 123° 12.9'
 Time: 1100
 Date: 1/III/78
 Depth: 125
 Secchi: 14.0 m

Surface Temperature: 7.4

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	27.94	8.8
5	28.05	8.6
10	28.51	8.5
25	29.02	7.7
50	29.57	7.1
100	29.91	5.2
125	30.03	3.6

Station: X8
 Latitude: 49° 37.4' (est.)
 Longitude: 123° 13.7'
 Time: 1030
 Date: 1/III/78
 Depth: 250
 Secchi: 9.0 m

Surface Temperature: 7.0

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	26.42	9.2
5	27.84	9.8
10	28.45	8.1
25	29.04	7.5
50	29.62	6.8
100	29.90	5.2
125	30.07	3.1
150	30.12	2.5
175	30.14	2.0
200	30.14	1.9
225	30.16	1.9
250	30.16	1.9

Station: X9
 Latitude: 49° 37.4' (est.)
 Longitude: 123° 14.3'
 Time: 0955
 Date: 1/III/78
 Depth: 250
 Secchi: 5.0 m

Surface Temperature: nd

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	21.49	9.7
5	27.94	8.5
10	28.42	8.2
25	29.01	7.6
50	29.60	6.9
100	29.88	5.2
125	30.08	3.0
150	30.12	2.2
175	30.15	1.9
200	30.16	1.9
225	30.15	1.3
250	30.16	1.4

Station: X10
 Latitude: 49° 39.9' (est.)
 Longitude: 123° 13.16'
 Time: 0935
 Date: 1/III/78
 Depth: 100
 Secchi: 7.75 m

Surface Temperature: 6.8

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	26.78	9.0
5	27.68	8.8
10	28.19	8.4
25	29.17	7.5
50	29.63	6.7
100	29.99	3.7

Station: X11
 Latitude: 49° 39.4'
 Longitude: 123° 14.3'
 Time: 1651
 Date: 28/II/78
 Depth: 200
 Secchi: 5.0 m

Surface Temperature: 7.0

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	20.25	10.2
5	27.53	9.2
10	28.32	8.5
25	29.32	7.7
50	29.65	7.2
100	29.97	4.5
125	29.53	3.7
150	29.42	2.5
175	30.14	1.8
200	30.15	1.9

Station: X12
 Latitude: 49° 39.9'
 Longitude: 123° 14.7'
 Time: 0900
 Date: 1/III/78
 Depth: 150
 Secchi: 4.75 m

Surface Temperature: 5.9

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	20.05	6.5
5	27.93	4.6
10	28.57	8.3
25	28.98	8.0
50	29.61	7.0
100	30.08	3.3
125	30.13	2.3
150	30.16	2.3

Station: X13
 Latitude: 49° 40.2'
 Longitude: 123° 11.6'
 Time: 0810
 Date: 1/III/78
 Depth: 125
 Secchi: 7.0 m

Surface Temperature: 6.9

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	25.89	9.1
5	27.82	8.1
10	28.33	8.6
25	29.07	8.3
50	29.65	6.9
100	30.03	3.5

Station: X1
 Latitude: 49°32.0' (est.)
 Longitude: 123°16.0'
 Time: nd
 Date: 11/IV/78
 Depth: 175
 Secchi: 2.5 m

Surface Temperature: 10.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	20.34	12.3
5	25.62	10.7
10	27.96	7.6
25	29.41	6.6
50	29.66	6.4
100	29.89	6.6
125	29.86	7.2
150	29.91	7.0
175	29.97	6.5

Station: X4
 Latitude: 49°34.5' (est.)
 Longitude: 123°15.3'
 Time: nd
 Date: 11/IV/78
 Depth: 250
 Secchi: 3.0 m

Surface Temperature: 10.4

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	20.07	11.7
5	23.72	-
10	27.90	8.0
25	29.41	6.7
50	29.76	6.5
100	30.05	3.4
125	30.14	2.5
150	30.14	2.1
175	30.17	1.7
200	30.16	1.8
225	30.16	1.7
250	30.16	1.7

Station: X14
 Latitude: 49°36.0'
 Longitude: 123°14.3'
 Time: nd
 Date: 11/V/78
 Depth: 250
 Secchi: 3.0 m

Surface Temperature: 10.4

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	16.12	12.0
5	23.02	12.0
10	27.58	8.0
25	29.55	6.8
50	29.65	6.8
100	30.02	4.3
125	30.08	2.5
150	30.14	2.0
175	30.15	1.7
200	30.16	1.7
225	30.17	1.6
250	30.20	1.2

Station: X8
 Latitude: 49°37.4' (est.)
 Longitude: 123°13.7'
 Time: nd
 Date: 11/IV/78
 Depth: 250
 Secchi: 3.0 m

Surface Temperature: 10.4

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	17.70	12.4
5	22.51	13.5
10	28.58	7.5
25	29.28	7.3
50	29.64	6.8
100	29.89	4.9
125	30.09	2.9
150	30.13	2.3
175	30.16	2.0
200	30.16	1.3
225	30.16	1.7
250	30.16	1.4

Station: X11
 Latitude:
 Longitude:
 Time:
 Date: 11/IV/78
 Depth: 200
 Secchi: 2.5 m

Surface Temperature: 9.7

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	11.31	11.7
5	21.58	13.2
10	27.53	8.4
25	29.29	7.1
50	29.64	6.7
100	29.91	4.8
125	30.06	2.8
150	30.12	1.9
175	30.18	1.7
200	30.15	1.4

Station: X13
 Latitude:
 Longitude:
 Time:
 Date: 11/IV/78
 Depth: 125
 Secchi: 2.5 m

Surface Temperature: 8.7

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	8.44	11.7
5	20.12	13.7
10	27.45	8.5
25	29.38	7.2
50	29.65	6.7
100	29.98	4.0
125	30.10	2.5

Station: X1
 Latitude: 49°32.0' (est.)
 Longitude: 123°16.0'
 Time: 1317
 Date: 30/V/78
 Depth: 175
 Secchi: 3.25 m

Surface Temperature: 3.7

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	13.89	9.9
10	28.19	7.8
25	29.55	-
50	29.81	6.5
100	30.08	5.5
150	30.54	6.9
175	29.13	6.7

Station: X2
 Latitude: 49°39.9 (est.)
 Longitude: 123°16.3
 Time: 1012
 Date: 30/V/78
 Depth: 125
 Secchi: 2.75 m

Surface Temperature: 12.8

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	5.59	11.3
5	26.29	-
10	27.92	8.9
25	29.00	8.9
50	29.60	7.7
100	29.98	5.2

Station: X3
 Latitude: 49°34.6'
 Longitude: 123°15.7' (est.)
 Time: 1033
 Date: 30/V/78
 Depth: 250
 Secchi: 3.0 m

Surface Temperature: 12.3

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
0	4.20	11.0
5	23.92	-
10	26.88	9.7
25	28.96	8.6
50	29.45	8.4
100	29.95	5.8
125	30.10	3.2
150	30.14	3.1
175	30.15	3.0
200	30.19	3.2
225	30.17	3.6
250	30.17	2.5

Station: X4
 Latitude: 49°34.5'
 Longitude: 123°15.3' (est.)
 Time: 1125
 Date: 30/V/78
 Depth: 250
 Secchi: 3.5 m

Surface Temperature: 12.3

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	5.93	11.3
5	24.80	11.4
10	27.62	8.9
25	28.95	8.4
50	29.47	7.6
100	29.97	4.9
125	30.09	2.8
150	30.13	2.6
175	30.14	2.2
200	30.16	2.1
225	30.16	2.1
250	30.17	1.8

Station: X5
 Latitude: 49°34.4'
 Longitude: 123°14.6' (est.)
 Time: 1250
 Date: 30/V/78
 Depth: 225
 Secchi: 3.75 m

Surface Temperature: 13.1

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	6.69	10.7
5	24.17	-
10	27.69	8.6
25	29.05	7.5
50	29.43	6.9
100	29.97	4.2
125	30.08	3.2
150	30.11	2.2
175	30.14	2.1
200	30.14	2.1
225	30.16	2.0

Station: X6
 Latitude: 49°34.1' (est.)
 Longitude: 123°14.6' (est.)
 Time: 1320
 Date: 30/V/78
 Depth: 75
 Secchi: 3.0 m

Surface Temperature: 14.0

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
0	10.58	10.6
5	25.22	10.5
10	28.17	8.5
25	29.17	7.0
50	29.49	6.4
75	29.63	5.9

Station: X7
 Latitude: 49°39.4'
 Longitude: 123°12.9' (est.)
 Time: 1355
 Date: 30/V/78
 Depth: 125
 Secchi: 3.5 m

Surface Temperature: 13.5

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
0	6.78	8.5
5	24.26	10.1
10	27.56	7.9
25	29.10	7.0
50	29.48	6.3
100	29.85	4.7
125	30.05	2.4

Station: X8
 Latitude: 49°37.4'
 Longitude: 123°13.7' (est.)
 Time: 1415
 Date: 30/V/78
 Depth: 250
 Secchi: 5.5 m

Surface Temperature: nd

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	11.91	10.7
5	24.82	9.9
10	27.74	7.7
25	29.07	6.9
50	29.46	6.4
100	29.89	4.6
125	30.08	2.5
150	30.12	1.3
175	30.12	1.2
200	30.14	1.5
225	30.15	1.1
250	30.16	2.1

Station: X9
 Latitude: 49°37.4' (est.)
 Longitude: 123°14.3' (est.)
 Time: 1445
 Date: 30/V/78
 Depth: 250
 Secchi: 3.5 m

Surface Temperature: nd

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	9.86	10.7
5	-	-
10	27.81	7.7
25	29.05	6.9
50	29.45	6.3
100	29.90	3.9
125	30.06	2.6
150	30.06	2.1
175	30.14	1.2
200	30.14	1.5
225	30.15	1.0
250	30.16	1.1

Station: X10
 Latitude: 49°38.9' (est.)
 Longitude: 123°13.6' (est.)
 Time: 1520
 Date: 30/V/78
 Depth: 100
 Secchi: 3.0 m

Surface Temperature: 14.0

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
0	7.2	9.9
10	28.13	7.3
25	29.13	6.9
50	29.46	6.3

Station: X11
 Latitude: 49°39.4'
 Longitude: 123°14.3' (est.)
 Time: 1540
 Date: 30/V/78
 Depth: 200
 Secchi: 3.0 m

Surface Temperature: 13.7

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	7.10	10.5
10	27.94	7.5
25	29.05	6.9
50	29.42	6.5
100	29.97	3.4
125	30.09	2.1
150	30.06	1.4
175	30.08	1.2
200	30.16	1.2

Station: X12
 Latitude: 49°39.9'
 Longitude: 123°14.7' (est.)
 Time: 1620
 Date: 30/V/78
 Depth: 150
 Secchi: 2.75 m

Surface Temperature: 13.8

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	5.13	10.7
10	27.27	8.5
25	29.06	6.8
50	29.45	6.3
100	29.91	3.8
125	30.09	2.1
150	30.12	1.3

Station: X13
 Latitude: 49°40.2'
 Longitude: 123°11.6' (est.)
 Time: 1645
 Date: 30/V/78
 Depth: 125
 Secchi: 2.0 m

Surface Temperature: 13.0

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	5.85	10.6
10	-	7.3
25	28.01	6.9
50	29.47	6.3
100	30.09	3.5
125	30.08	1.8

Station: X1
 Latitude: 49°32'N
 Longitude: 123°16'W
 Time: 1015
 Date: 26/VI/78
 Depth: 175 m
 Secchi: 1.0 m

Surface Temperature: 12.4

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	6.47	11.
5	23.62	8.5
10	26.34	7.6
25	28.14	7.1
50	29.28	6.4
100	29.91	6.3
125	30.16	5.8
150	30.31	5.2
175	30.43	4.3

Station: X4
 Latitude: 49°34.45'N
 Longitude: 123°15.20'W
 Time: 1115
 Date: 26/VI/78
 Depth: 250 m
 Secchi: 1.0 m

Surface Temperature: 11.0

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	6.86	10.0
5	23.77	8.6
10	26.38	7.9
25	28.47	7.3
50	29.19	6.7
100	29.86	5.6
125	30.05	3.0
150	30.16	2.2
175	30.17	2.0
200	30.15	1.5
225	30.16	1.2
250	30.17	1.1

Station: X8
 Latitude: 49°37.4'N
 Longitude: 123°15.20'W
 Time: 1315
 Date: 26/VI/78
 Depth: 250
 Secchi: 1.0 m

Surface Temperature: 11.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	4.04	10.2
5	24.19	8.2
10	26.38	7.4
25	28.39	6.6
50	29.21	4.3
100	29.92	6.4
125	30.06	2.6
150	30.28	2.1
175	30.12	1.9
200	30.15	1.2
225	30.16	1.3
250	30.17	1.1

Station: X11
 Latitude: 49°39.36'N
 Longitude: 123°14.30'W
 Time: nd
 Date: 26/VI/78
 Depth: 200
 Secchi: 0.5 m

Surface Temperature: 10.8

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	3.85	9.2
5	22.39	8.3
10	26.47	7.3
25	28.39	6.6
50	29.24	6.1
100	29.92	3.6
125	30.09	2.2
150	30.12	1.3
175	30.14	0.97
200	30.14	1.5

Station: X13
Latitude: 49°40.15'N
Longitude: 123°11.65'W
Time: 1510
Date: 26/VI/78
Depth: 125
Secchi: 0.75 m

Surface Temperature: 11.0

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	3.70	10.2
5	22.22	8.6
10	25.85	7.9
25	28.18	6.7
50	29.20	6.2
100	29.95	3.1
125	30.16	1.1

Station: X14
Latitude: 49°35.90'N
Longitude: 123°14.20'W
Time: 1215
Date: 26/VI/78
Depth: 250
Secchi: 0.75 m

Surface Temperature: 11.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	3.59	9.4
5	23.53	8.6
10	26.53	7.3
25	28.52	6.8
50	29.20	6.2
100	29.86	4.8
125	30.02	2.7
150	30.10	2.0
175	30.16	1.7
200	30.16	1.3
225	30.16	1.2
250	30.14	1.1

Station: X1
Latitude: 49°32'N
Longitude: 123°16'W
Time: 1026
Date: 8/VIII/78
Depth: 108
Secchi: 1.7 m

Surface Temperature: 16.1

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	12.71	9.4
5	26.24	7.5
10	28.01	6.7
25	29.13	6.1
50	29.46	5.8
100	30.08	5.5
125	30.20	5.6
150	30.43	5.2
175	-	5.0

Station: X4
Latitude: 49°34.4'N
Longitude: 123°15.2'W
Time: 1121
Date: 8/VIII/78
Depth: 152
Secchi: 1.0 m

Surface Temperature: 15.7

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	12.44	9.2
5	26.19	7.3
10	28.07	6.4
25	29.04	6.1
50	29.39	5.8
100	29.91	3.9
125	30.10	2.1
150	-	1.5
175	30.24	1.3
200	30.18	1.1
225	30.17	1.0
250	30.61	0.7

Station: X8
Latitude: 49°47.4'N
Longitude: 123°13.67'W
Time: 1312
Date: 8/VIII/78
Depth: 140
Secchi: 1.5 m

Surface Temperature: 14.4

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	7.20	9.3
5	25.58	7.4
10	27.42	6.5
25	28.99	6.2
50	29.43	6.0
100	29.97	3.6
125	30.08	2.0
150	30.12	3.6
175	30.18	0.8
200	30.14	0.5
225	30.23	0.3
250	30.65	0.1

Station: X11
Latitude: 49°39.36'N
Longitude: 123°14.3'W
Time: 1353
Date: 8/VIII/78
Depth: 122
Secchi: 1.0 m

Surface Temperature: 15.1

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	6.26	9.6
5	25.71	6.9
10	-	6.4
25	29.90	6.0
50	29.36	5.8
100	29.97	3.5
125	30.06	1.5
150	30.12	0.7
175	-	0.7
200	30.16	0.6

Station: X13
Latitude: 49°40.1'N
Longitude: 123°11.6'W
Time: 1425
Date: 8/VIII/78
Depth: 78
Secchi: 0.75 m

Surface Temperature: 13.5

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	6.87	9.7
5	25.07	7.4
10	27.48	6.5
25	28.86	6.1
50	29.33	5.8
100	29.95	3.0
125	-	1.4

Station: X14
Latitude: 49°35.9'N
Longitude: 123°14.2'W
Time: 1224
Date: 8/VIII/78
Depth: 153
Secchi: 2.0 m

Surface Temperature: 14.8

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	10.21	9.5
5	26.48	7.2
10	28.01	6.4
25	29.02	6.1
50	29.36	5.8
100	29.92	3.7
125	30.08	2.2
150	30.15	1.5
175	30.16	1.3
200	30.17	1.2
225	-	-
250	30.17	0.4
275	30.19	0.3
285	30.39	0.2

Station: X3
Latitude: 49°34.65'N
Longitude: 123°15.70'W
Time: 0900
Date: 29/XI/78
Depth: 250
Secchi: 8.0 m

Surface Temperature: 7.4

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	26.81	8.0
10	27.14	7.8
50	29.89	5.2
100	30.02	4.4
125	30.06	3.8
150	30.10	2.2
175	30.10	1.3
200	30.12	0.7
225	30.14	0.6
250	30.15	0.5

Station: X4
Latitude: 49°34.4'N
Longitude: 123°15.20'W
Time: 1600
Date: 28/XI/78
Depth: 250
Secchi: 7.0 m

Surface Temperature: 7.2

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	25.90	7.2
10	27.57	7.7
50	29.94	4.9
100	29.93	3.9
125	30.06	2.1
150	30.10	1.1
175	30.09	1.2
200	30.12	0.7
222	30.14	0.5
250	30.16	0.4

Station: X5
Latitude: 49°34.25'N
Longitude: 123°14.65'W
Time: 1540
Date: 28/XI/78
Depth: 175
Secchi: 7.5 m

Surface Temperature: 7.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	26.22	8.6
5	-	-
10	27.94	7.4
25	-	-
50	29.91	4.8
100	30.02	4.3
125	30.12	3.7
150	30.12	2.0
175	30.12	0.9

Station: X6
Latitude: 49°34.05'N
Longitude: 123°14.10'W
Time: 1515
Date: 28/XI/78
Depth: 50
Secchi: 8.5 m

Surface Temperature: 7.6

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	26.99	8.2
5	27.65	-
10	27.66	7.5
25	-	5.7
50	29.95	4.9

Station: X7
Latitude: 49°37.40'N
Longitude: 123°12.90'W
Time: 1435
Date: 28/XI/78
Depth: 125
Secchi: 9.5 m

Surface Temperature: 7.3

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	25.88	8.5
5	27.02	8.0
10	27.83	7.4
25	29.21	6.1
50	29.89	5.1
100	29.98	3.3
125	30.07	2.4

Station: X8
Latitude: 49°37.4'N
Longitude: 123°13.67'W
Time: 1403
Date: 28/XI/78
Depth: 250
Secchi: 8.0 m

Surface Temperature: 7.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	26.23	8.1
5	26.72	7.8
10	27.96	7.1
25	29.26	6.2
50	29.87	5.1
100	30.05	3.8
125	30.05	2.1
150	30.08	0.8
175	30.12	0.9
200	30.14	0.4
225	30.16	0.4
250	30.05	0.2

Station: X9
Latitude: 49°37.39'N
Longitude: 123°14.20'W
Time: 1330
Date: 28/XI/78
Depth: 250
Secchi: 8.5 m

Surface Temperature: 6.9

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	24.54	8.8
5	27.45	7.4
10	28.28	6.8
25	29.32	6.1
50	29.91	4.7
100	30.04	3.7
125	30.03	2.2
150	29.99	1.1
175	30.11	0.9
200	30.12	0.5
225	30.16	0.4
250	30.14	0.2

Station: X10
Latitude: 49°38.97'N
Longitude: 123°13.65'W
Time: 1312
Date: 28/XI/78
Depth: 100
Secchi: 9.0 m

Surface Temperature: 7.7

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	26.59	8.1
5	27.48	7.7
10	28.13	7.0
25	29.39	6.0
50	29.91	4.7
100	30.05	3.6

Station: X1
Latitude: 49°32'N
Longitude: 123°16'W
Time: nd
Date: 10/X/78
Depth: nd
Secchi: nd

Surface Temperature: 13.3

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	19.72	9.0
5	22.42	9.0
10	26.41	6.1
25	28.83	5.1
50	29.43	5.0
100	29.98	4.8
125	30.17	4.8
150	30.42	4.6
175	30.56	4.4

Station: X13
Latitude: 49°40.1'N
Longitude: 123°11.6'W
Time: 1535
Date: 10/X/78
Depth: nd
Secchi: nd

Surface Temperature: 10.2

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	3.72	10.2
5	20.94	7.9
10	25.41	6.7
25	28.73	5.6
50	29.36	5.0
100	29.89	2.6
125	30.01	2.0

Station: X4
Latitude: 49°34.45'N
Longitude: 123°15.20'W
Time: nd
Date: 10/X/78
Depth: nd
Secchi: nd

Surface Temperature: 12.3

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	18.09	8.8
5	22.69	8.5
10	26.04	6.6
25	28.69	5.3
50	29.41	5.3
100	29.91	3.9
125	30.03	2.3
150	30.13	1.6
175	30.14	1.2
200	30.15	0.8
225	30.16	0.8
250	30.17	0.6

Station: X14
Latitude: 49°35.9'N
Longitude: 123°14.2'W
Time: 1310
Date: 10/X/78
Depth: nd
Secchi: nd

Surface Temperature: 11.5

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	13.36	8.6
5	23.87	7.7
10	26.19	6.1
25	28.30	5.4
50	29.30	5.1
100	29.85	4.1
125	30.10	2.2
150	30.11	1.4
175	30.13	1.1
200	30.16	0.9
225	30.16	0.7
250	30.17	0.4

Station: X8
Latitude: 49°37.4'N
Longitude: 123°13.67'W
Time: 1417
Date: 10/X/78
Depth: nd
Secchi: nd

Surface Temperature: 11.7

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	14.64	9.0
5	26.28	6.8
10	26.70	6.0
25	28.75	5.0
50	29.39	3.8
100	29.83	2.8
125	30.04	1.8
150	30.10	1.2
175	30.13	0.9
200	30.16	0.8
225	30.16	0.7
250	30.16	0.5

Station: X1
Latitude: 49°32'N
Longitude: 123°16'W
Time: 0950
Date: 28/XI/78
Depth: 125
Secchi: 8.0 m

Surface Temperature: 7.4

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	26.55	8.4
5	26.58	8.5
10	26.81	8.3
25	26.14	6.0
50	29.89	5.4
100	30.29	4.9
125	30.43	4.8
150	30.48	4.7
175	30.57	4.5

Station: X11
Latitude: 49°39.36'N
Longitude: 123°14.30'W
Time: 1500
Date: 10/X/78
Depth: nd
Secchi: nd

Surface Temperature: 11.3

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	13.18	9.2
5	22.61	7.6
10	26.44	6.1
25	28.69	-
50	29.35	5.3
100	29.63	4.7
125	29.88	3.9
150	30.02	1.5
175	30.10	1.0
200	30.14	0.8

Station: X2
Latitude: 49°34.95'N
Longitude: 123°16.25'W
Time: 0843
Date: 29/XI/78
Depth: 75
Secchi: 8.0 m

Surface Temperature: 6.7

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
0	25.77	-
10	26.70	-
50	29.93	-
75	30.03	-

Station: X11
Latitude: 49°39.36'N
Longitude: 123°14.3'W
Time: 1235
Date: 28/XI/78
Depth: 200
Secchi: 9.5 m

Surface Temperature: 6.8

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	24.64	8.3
5	27.47	7.5
10	28.28	6.8
25	29.53	4.4
50	29.93	4.5
100	30.02	3.4
125	30.05	3.0
150	30.09	1.0
175	30.12	0.4
200	30.12	0.3

Station: X1
Latitude: 49°32'N
Longitude: 123°16'W
Time: 0900
Date: 7/III/79
Depth: 175
Secchi: 7.0 m

Surface Temperature: 6.5

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	20.98	10.3
5	27.41	9.0
10	28.27	8.8
25	30.05	6.6
50	30.19	7.5
100	30.24	7.6
125	30.24	7.7
150	30.36	6.9
175	30.37	6.9

Station: X12
Latitude: 49°39.85'N
Longitude: 123°14.74'W
Time: 1210
Date: 28/XI/78
Depth: 150
Secchi: 5.0 m

Surface Temperature: 6.5

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	26.31	8.9
5	27.57	7.2
10	28.36	6.8
25	29.51	5.6
50	29.93	4.4
100	30.02	3.3
125	30.06	2.0
150	30.10	0.8

Station: X2
Latitude: 49°34.95'N
Longitude: 123°16.25'W
Time: 0745
Date: 7/III/79
Depth: 125
Secchi: 1.75 m

Surface Temperature: 5.5

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	23.71	10.9
5	27.34	8.8
10	28.61	8.1
25	30.16	6.0
50	30.33	5.7
100	30.35	6.0
125	30.35	5.7

Station: X13
Latitude: 49°40.1'N
Longitude: 123°11.6'W
Time: 1110
Date: 28/XI/78
Depth: 125
Secchi: 9.0 m

Surface Temperature: 5.7

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	23.95	8.6
5	27.66	7.2
10	28.17	6.9
25	29.32	5.8
50	29.89	4.4
100	30.03	3.1
125	30.06	2.0

Station: X3
Latitude: 49°34.65'N
Longitude: 123°15.70'W
Time: 1700
Date: 6/III/79
Depth: 225
Secchi: 1.5 m

Surface Temperature: 5.9

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	16.14	10.7
5	28.07	8.3
10	28.90	7.2
25	30.12	5.5
50	30.31	5.9
100	30.32	5.6
125	30.31	6.0
150	30.33	5.8
175	30.33	5.9
200	30.29	6.0
225	30.34	5.9

Station: X4
Latitude: 49°34.45'N
Longitude: 123°15.26'W
Time: 1030
Date: 18/XII/78
Depth: 275
Secchi: 6.0 m

Surface Temperature: 7.0

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	-	12.2
5	-	10.3
10	-	10.3
25	-	9.1
50	-	5.6
100	-	5.1
125	-	5.1
150	-	3.9
175	-	1.7
200	-	0.6
225	-	0.5
250	-	0.5
285	-	0.4
290	-	0.3

Station: X4
Latitude: 49°34.4'N
Longitude: 123°15.2'W
Time: 1630
Date: 6/III/79
Depth: 250
Secchi: 1.5 m

Surface Temperature: 6.5

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	-	10.8
5	27.72	8.7
10	28.55	8.0
25	30.20	5.7
50	30.06	5.7
100	30.23	5.7
125	30.33	6.0
150	30.16	5.9
175	30.31	6.0
200	30.32	6.0
225	30.16	5.9
250	30.31	6.0

Station: X5
Latitude: 49°34.25'N
Longitude: 123°14.65'W
Time: 1555
Date: 6/III/79
Depth: 200
Secchi: 7.0 m

Surface Temperature: 6.5

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	23.50	9.8
5	27.88	9.0
10	28.60	8.2
25	30.20	5.5
50	30.31	5.9
100	-	6.5
125	30.25	6.8
150	30.25	6.9
175	30.26	6.9
200	30.25	6.8

Station: X6
Latitude: 49°34.05'N
Longitude: 123°14.10'W
Time: 1535
Date: 6/III/79
Depth: 75
Secchi: 7.0 m

Surface Temperature: 6.8

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	24.32	9.6
5	27.96	8.8
10	28.56	8.1
25	30.19	5.8
50	30.27	6.1
75	30.24	6.8

Station: X7
Latitude: 49°37.40'N
Longitude: 123°12.90'W
Time: 1455
Date: 6/III/79
Depth: 125
Secchi: 5.0 m

Surface Temperature: 6.4

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	23.90	9.7
5	28.07	8.9
10	28.47	8.5
25	30.02	5.8
50	30.33	5.5
100	30.31	6.0
125	30.31	6.0

Station: X8
Latitude: 49°37.4'N
Longitude: 123°13.67'W
Time: 1420
Date: 6/III/79
Depth: 250
Secchi: 2.5 m

Surface Temperature: 6.8

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	15.90	10.47
5	28.08	8.3
10	28.91	7.6
25	30.12	5.4
50	30.19	5.5
100	30.32	5.9
125	30.33	6.2
150	30.31	6.1
175	30.33	5.9
200	30.35	6.0
225	30.33	6.0
250	30.33	6.0

Station: X9
Latitude: 49°37.39'N
Longitude: 123°14.20'W
Time: 1345
Date: 6/III/79
Depth: 250
Secchi: 1.25 m

Surface Temperature: 5.3

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	11.31	11.3
5	27.75	8.5
10	28.74	7.9
25	30.06	5.8
50	30.32	5.6
100	30.34	5.7
125	30.33	5.8
150	30.33	5.8
175	30.35	6.0
200	30.35	5.9
225	30.35	6.2
250	30.33	5.8

Station: X10
Latitude: 49°38.97'N
Longitude: 123°13.65'W
Time: 1315
Date: 6/III/79
Depth: 100
Secchi: 4.0 m

Surface Temperature: 6.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	17.45	10.0
5	-	8.3
10	28.69	8.0
25	30.20	5.4
50	30.29	5.5
100	30.33	5.8

Station: X11
Latitude: 49°39.36'N
Longitude: 123°14.3'W
Time: 1245
Date: 6/III/79
Depth: 200
Secchi: 1.25 m

Surface Temperature: 5.3

Depth (m)	Sal. (‰)	Oxygen (mg L ⁻¹)
0	17.30	10.3
5	28.05	8.5
10	27.77	8.1
25	30.21	5.4
50	30.31	5.5
100	30.32	5.8
125	30.33	5.8
150	30.33	5.9
175	30.34	5.8
200	30.34	5.8

Station: X12
Latitude: 49°39.85'N
Longitude: 123°14.74'W
Time: 1155
Date: 6/III/79
Depth: 150
Secchi: 1.0 m

Surface Temperature: 4.3

Depth (m)	Sal. (‰)	Oxygen ₁ (mg L ⁻¹)
0	8.19	11.8
5	28.26	8.4
10	28.79	7.9
25	30.20	5.3
50	30.31	5.5
100	30.33	5.5
125	30.33	5.8
150	30.33	5.6

Station: X13
Latitude: 49°40.1'N
Longitude: 123°11.6'W
Time: 1110
Date: 6/III/79
Depth: 125
Secchi: 0.75 m

Surface Temperature: 3.5

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
0	6.08	12.3
5	27.62	8.3
10	28.58	7.9
25	30.03	5.5
50	30.29	5.5
100	30.31	5.7
125	30.33	5.8

Station:
Latitude:
Longitude:
Time:
Date:
Depth:
Secchi:
Colour:

Surface Temperature:

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
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Station:
Latitude:
Longitude:
Time:
Date:
Depth:
Secchi:
Colour:

Surface Temperature:

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
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Station:
Latitude:
Longitude:
Time:
Date:
Depth:
Secchi:
Colour:

Surface Temperature:

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
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Station:
Latitude:
Longitude:
Time:
Date:
Depth:
Secchi:
Colour:
Surface Temperature:

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
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Station:
Latitude:
Longitude:
Time:
Date:
Depth:
Secchi:
Colour:
Surface Temperature:

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
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Station:
Latitude:
Longitude:
Time:
Date:
Depth:
Secchi:
Colour:
Surface Temperature:

Depth (m)	Sal. (°/oo)	Oxygen (mg L ⁻¹)
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Station:
Latitude:
Longitude:
Time:
Date:
Depth:
Secchi:
Colour:
Surface Temperature:

Depth (m)	Sal. (°/oo)	Oxygen ₁ (mg L ⁻¹)
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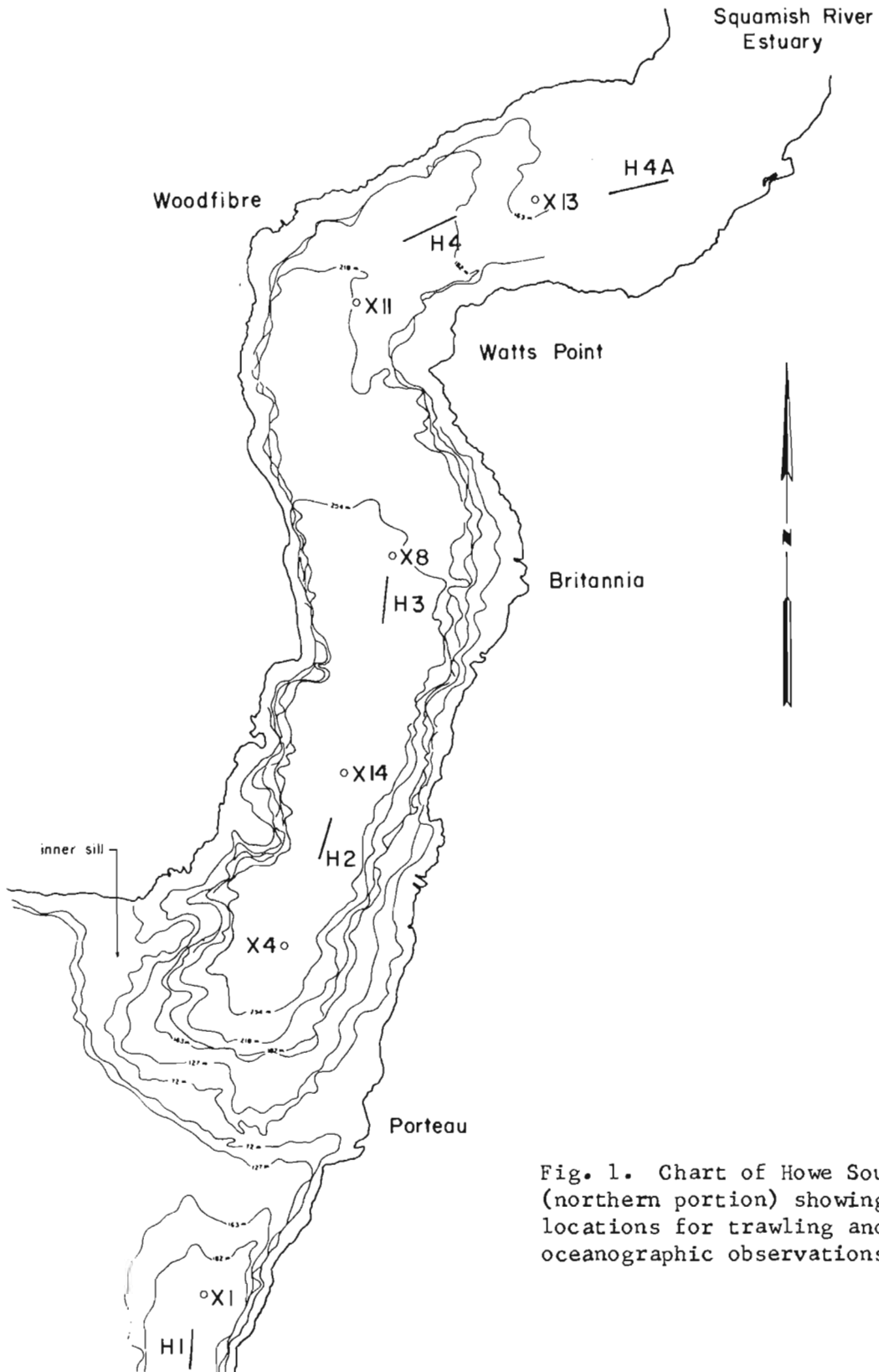


Fig. 1. Chart of Howe Sound (northern portion) showing station locations for trawling and oceanographic observations.



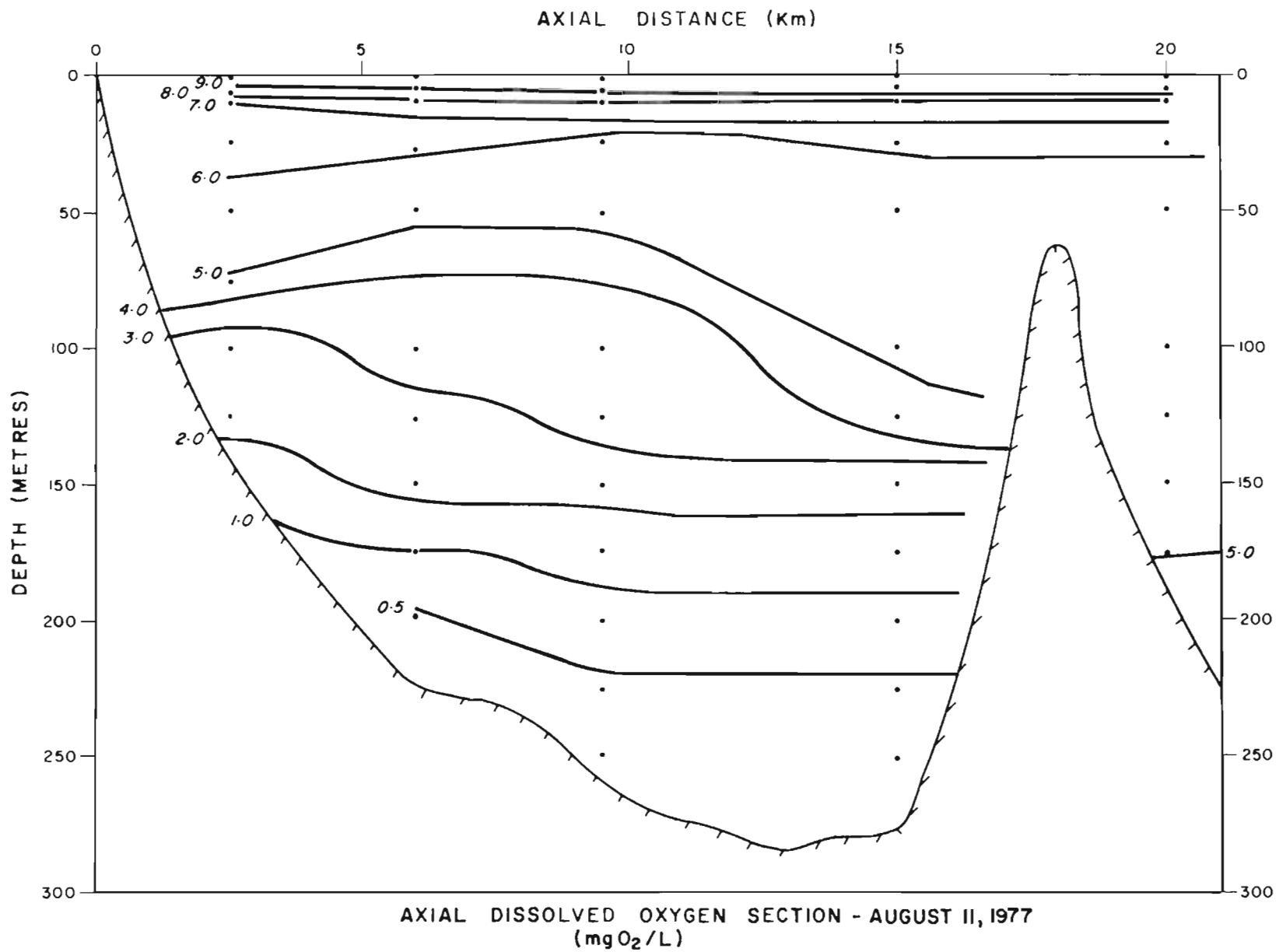


Fig. 2. Plot of D.O. values (mg L⁻¹) along the longitudinal axis of Howe Sound on August 11, 1977.

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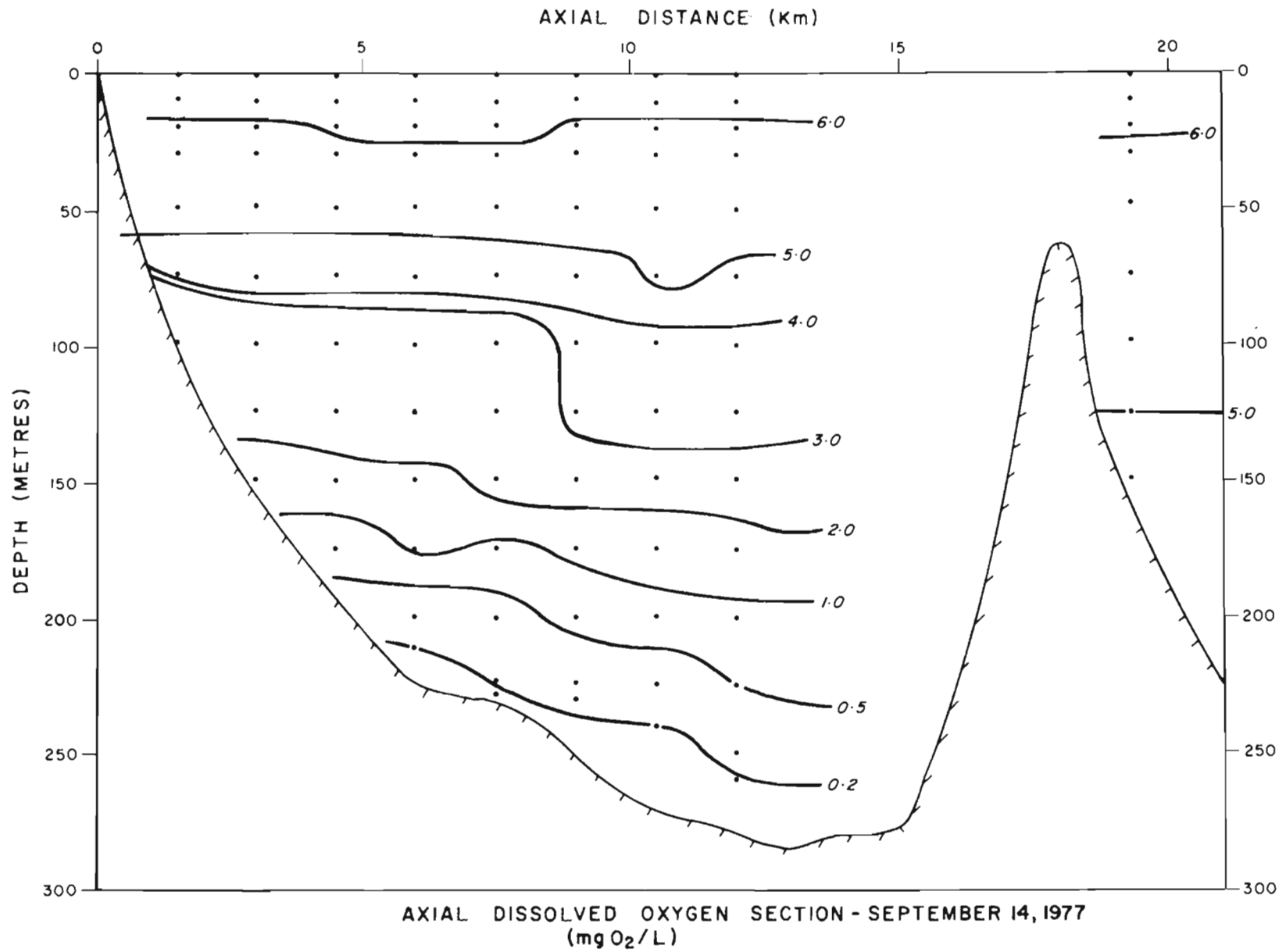


Fig. 3. Plot of D.O. values (mg L^{-1}) along the longitudinal axis of Howe Sound on September 14, 1977.



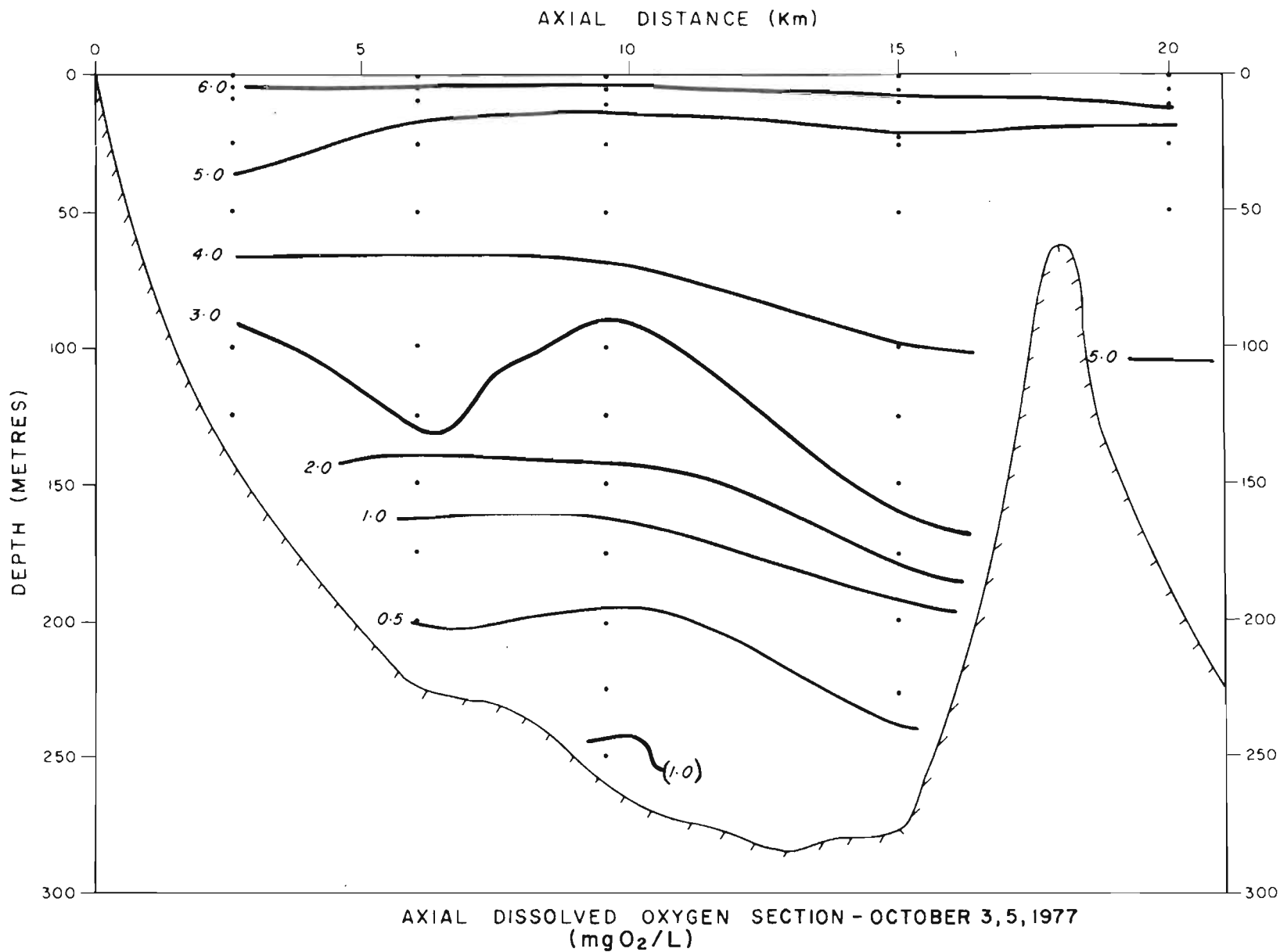


Fig. 4. Plot of D.O. values (mg L^{-1}) along the longitudinal axis of Howe Sound on October 3 and 5, 1977.



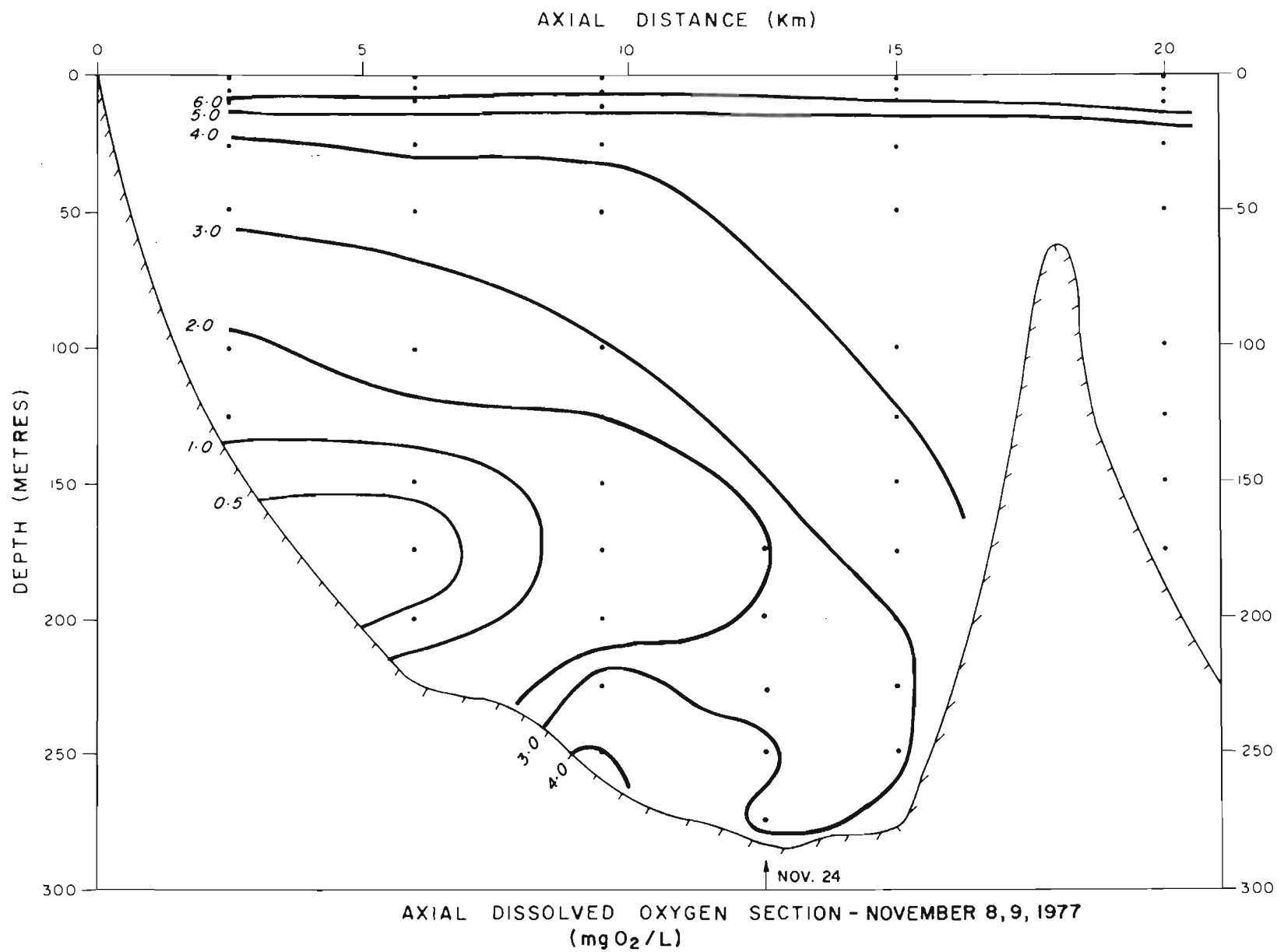
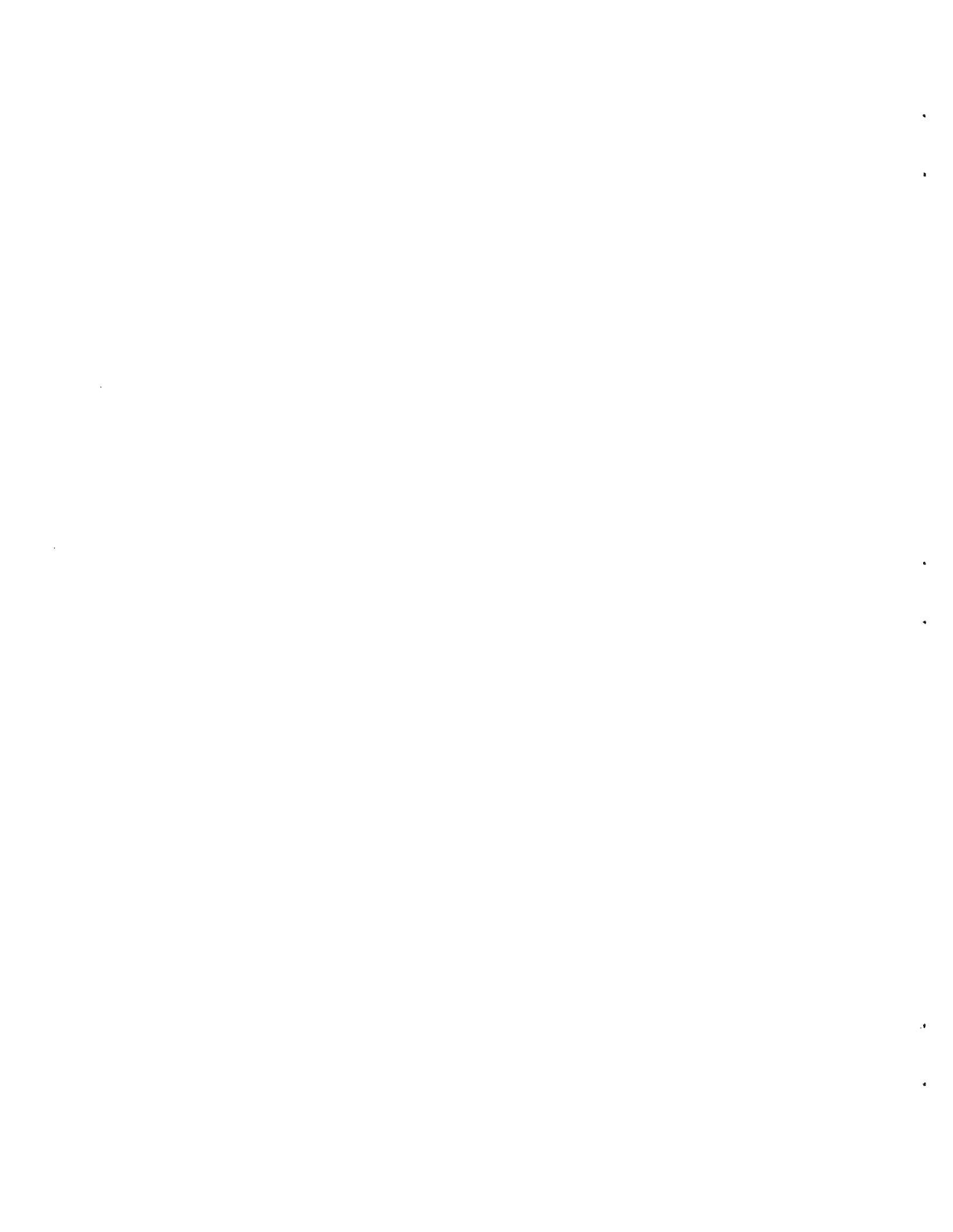


Fig. 5. Plot of D.O. values (mg L^{-1}) along the longitudinal axis of Howe Sound on November 8 and 9, 1977. 5 depths were also sampled on November 24 (see arrow).



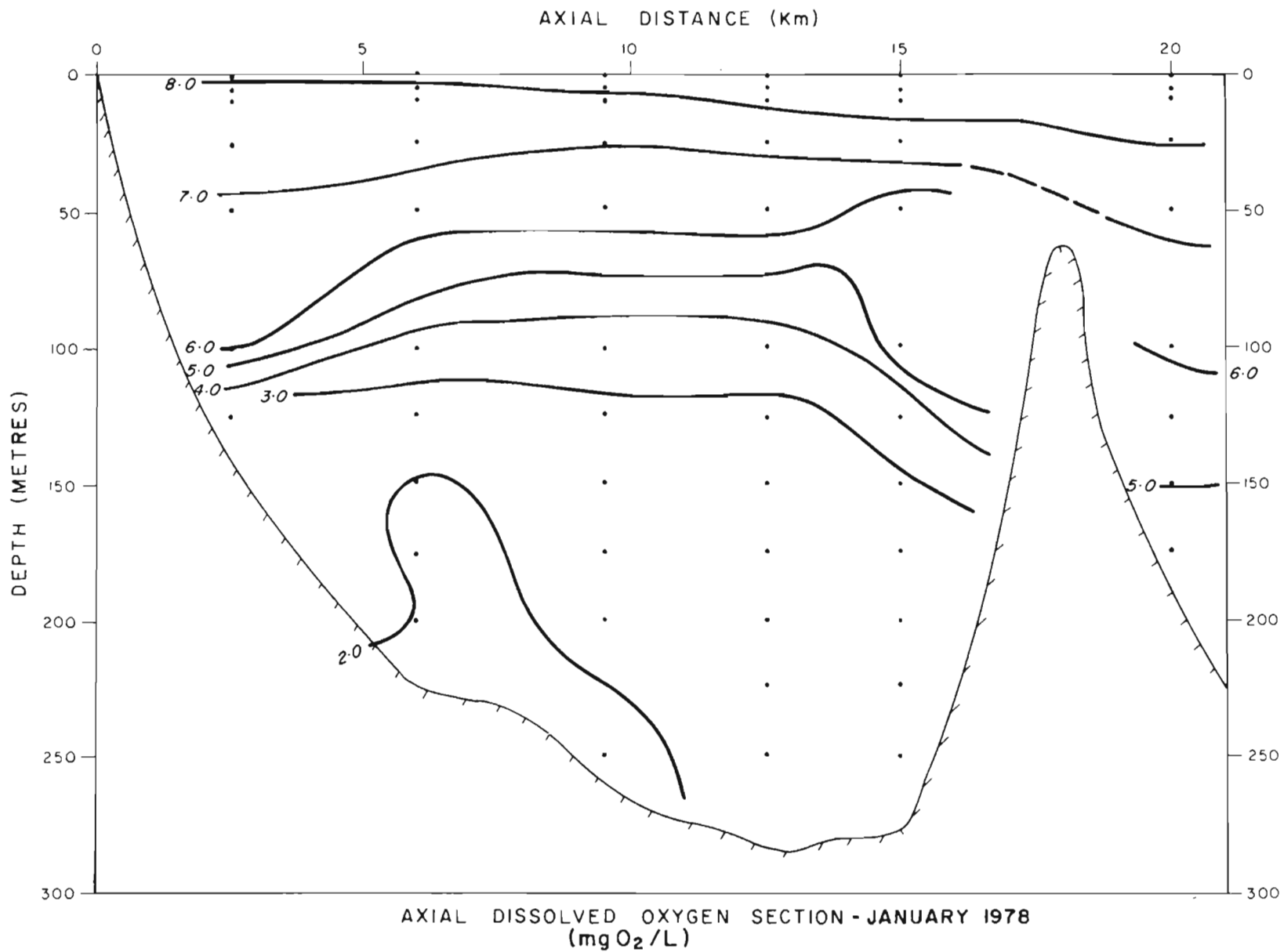


Fig. 6. Plot of D.O. values (mg L⁻¹) along the longitudinal axis of Howe Sound on January 10, 1978.



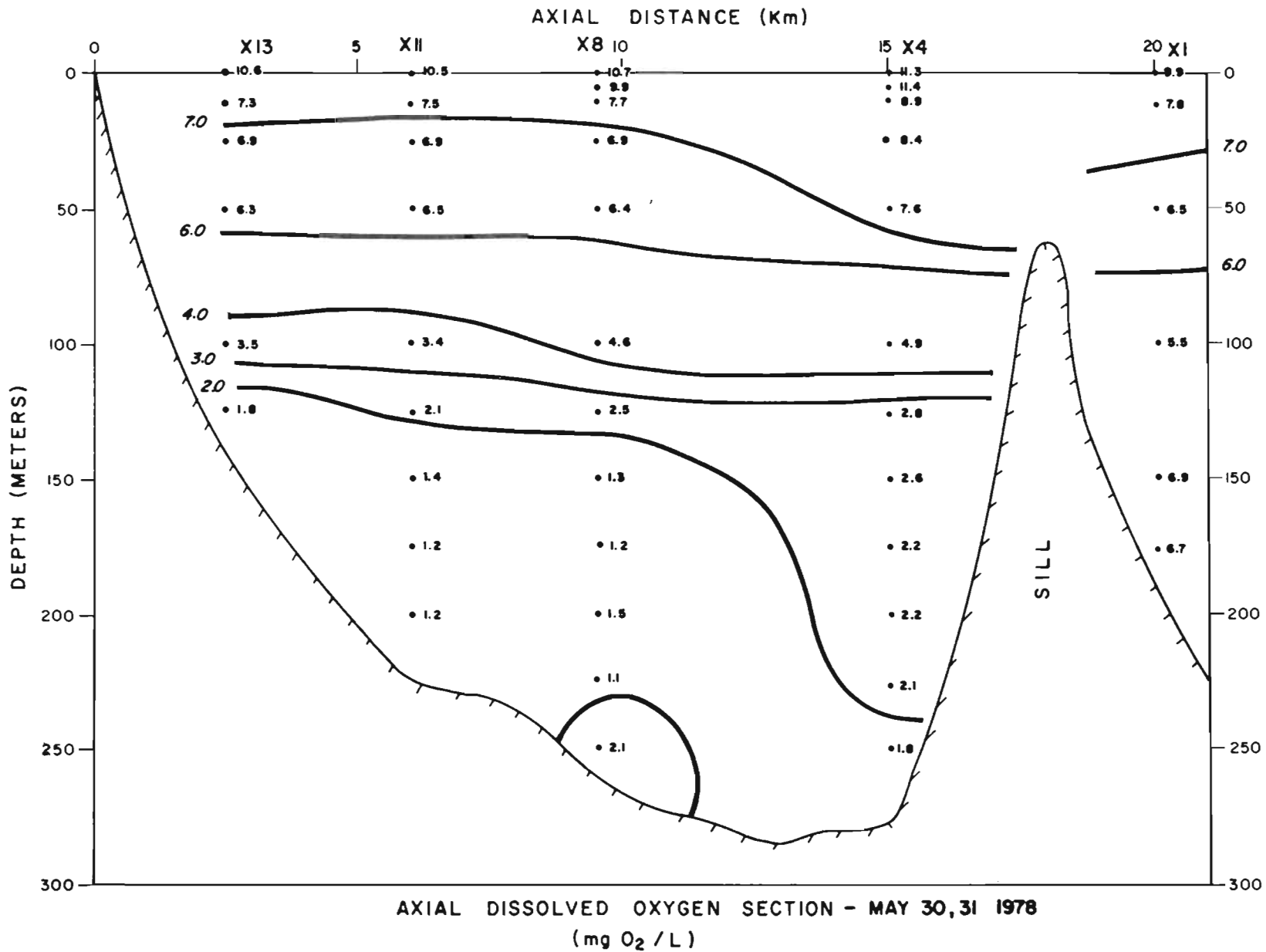


Fig. 9. Plot of D.O. values (mg L⁻¹) along the longitudinal axis of Howe Sound on May 30 and 31, 1978.

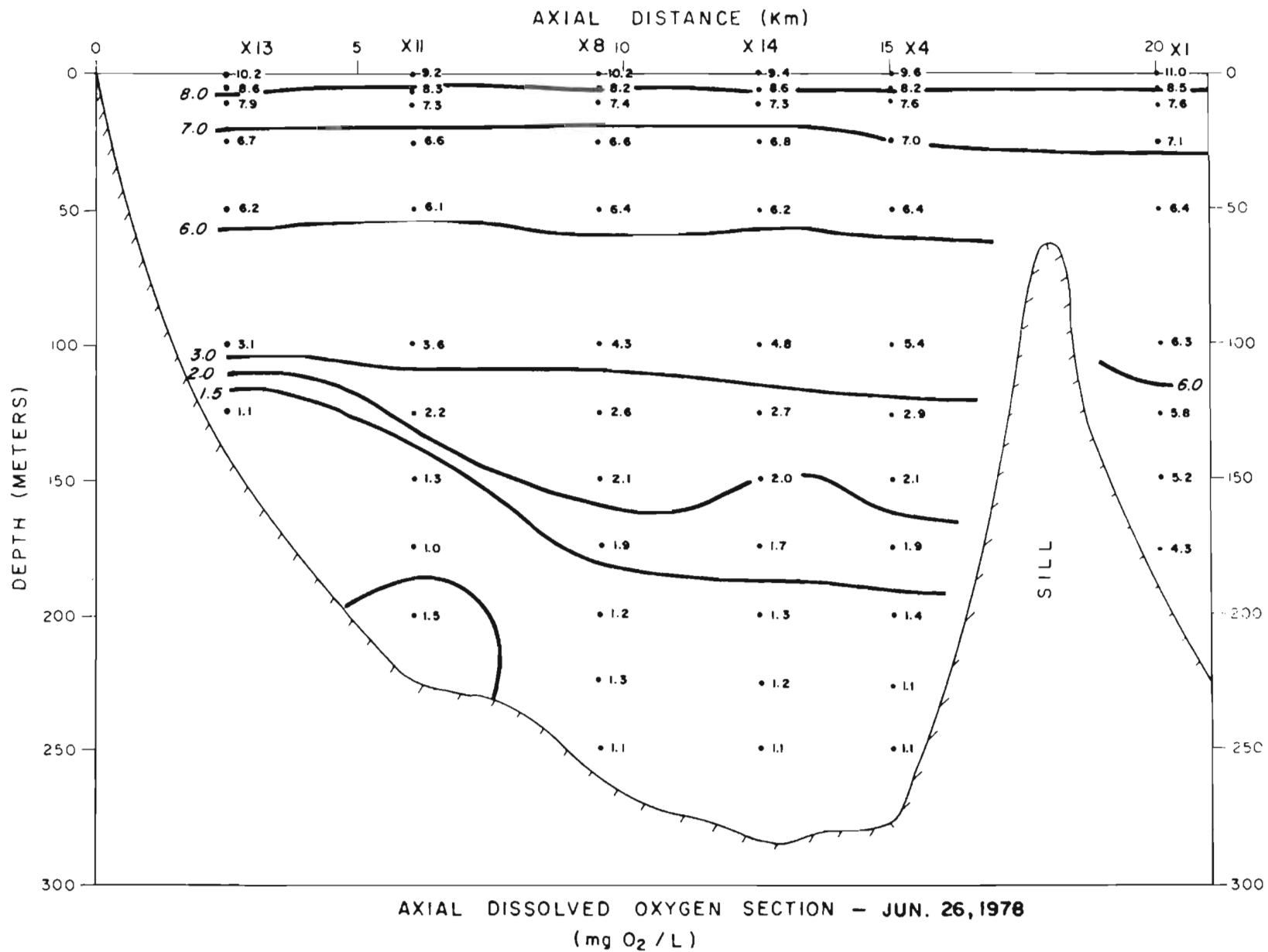
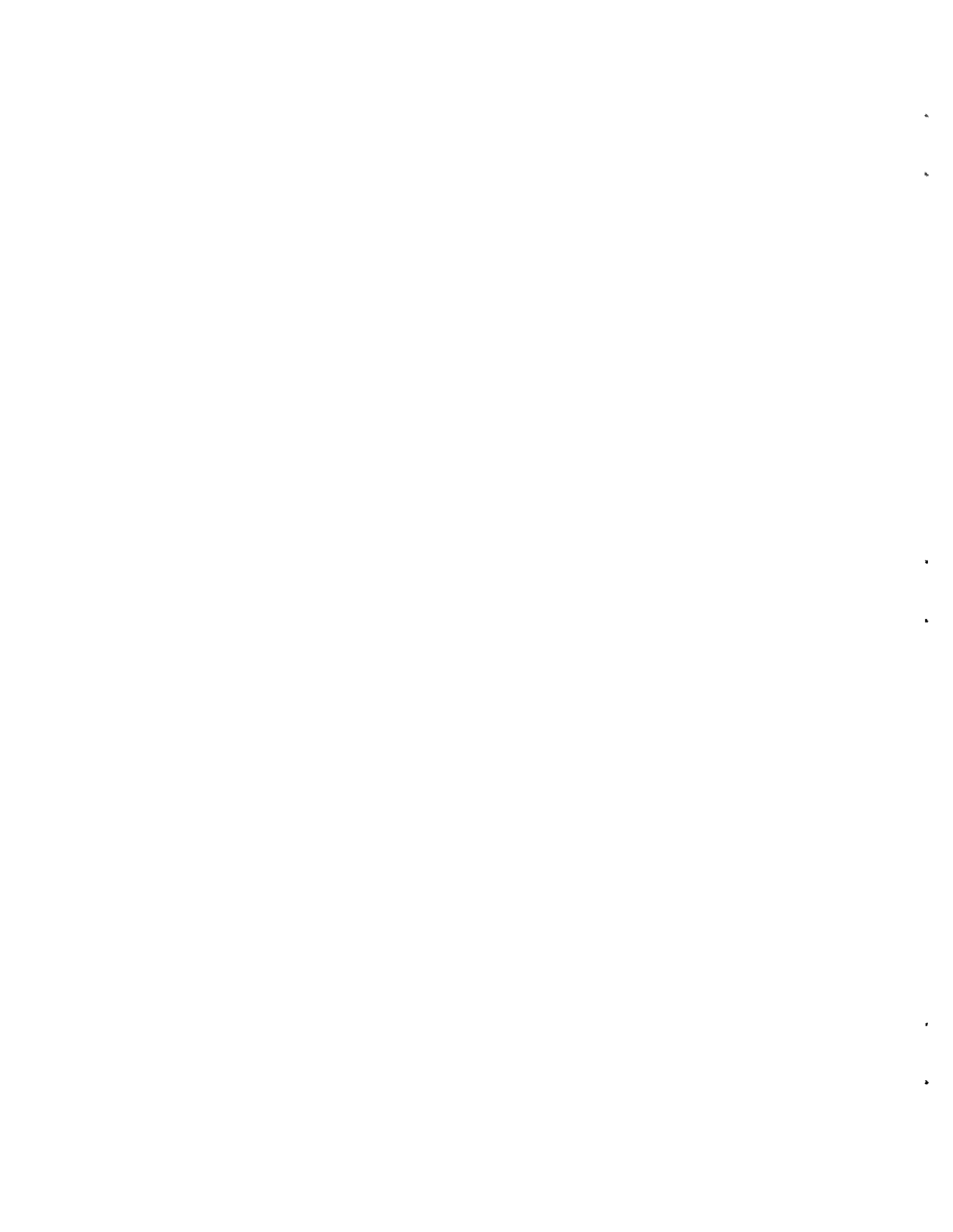


Fig. 10. Plot of D.O. values (mg L⁻¹) along the longitudinal axis of Howe Sound on June 26, 1978.



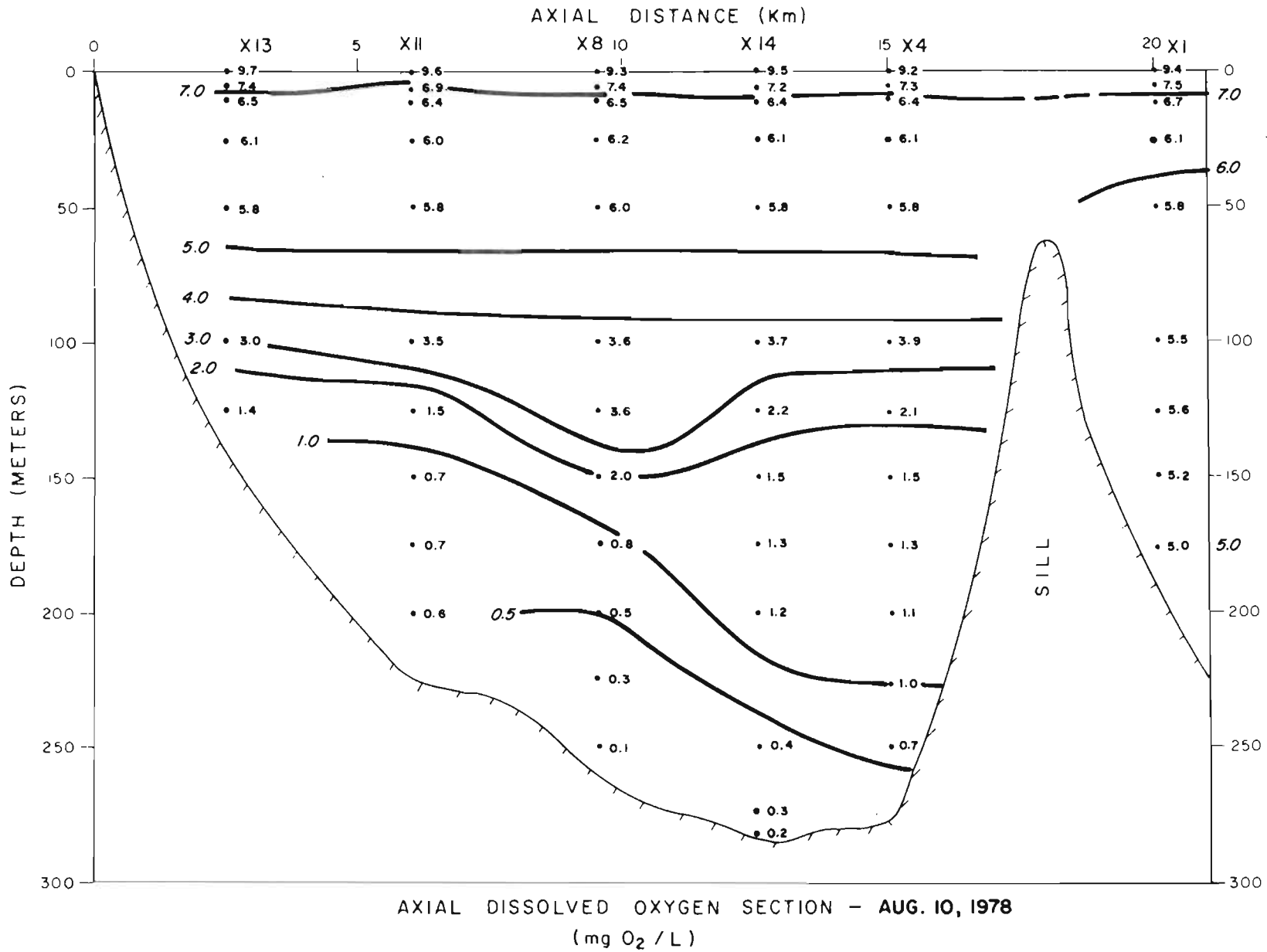


Fig. 11. Plot of D.O. values (mg L⁻¹) along the longitudinal axis of Howe Sound on August 10, 1978.



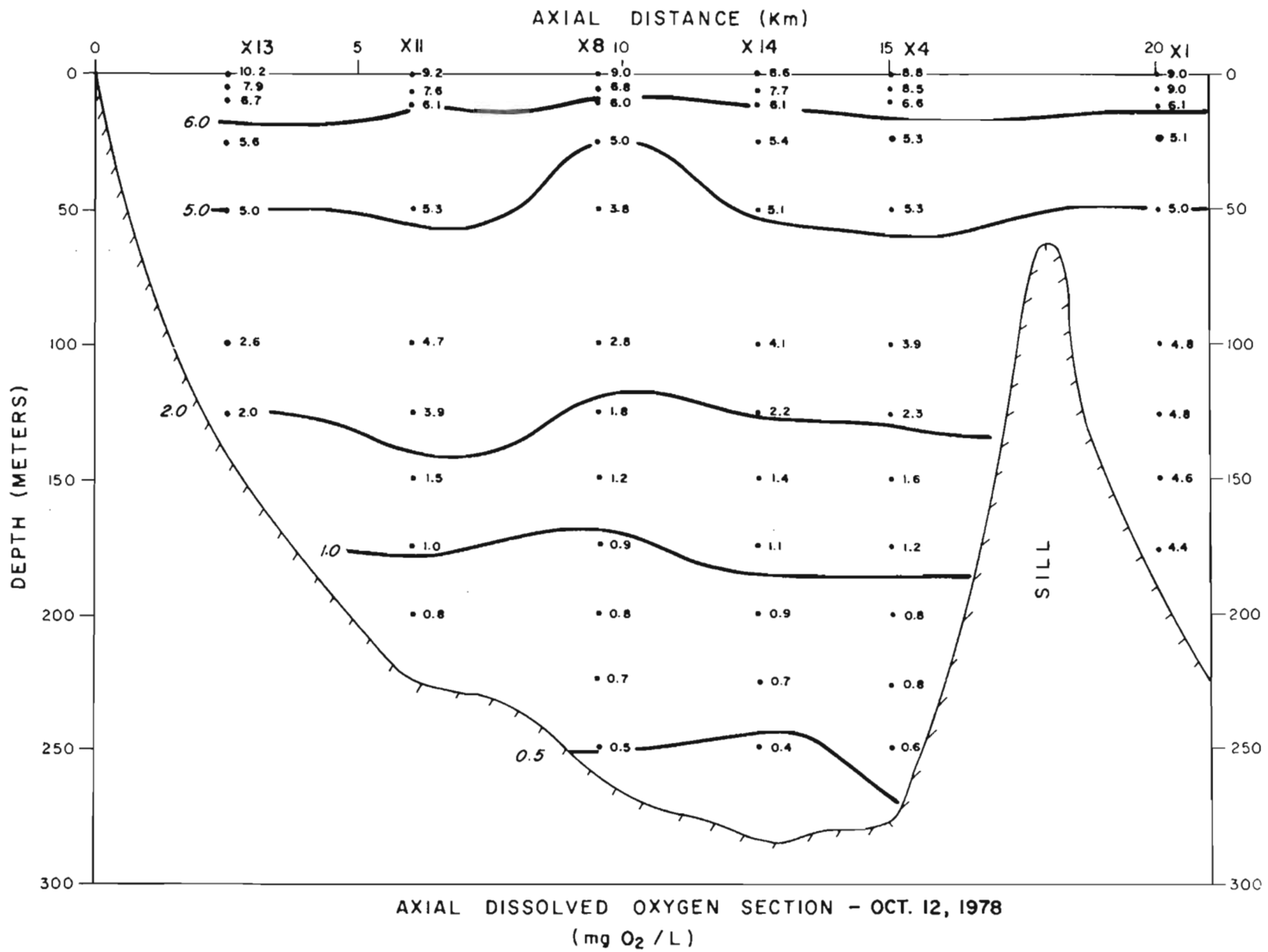


Fig. 12. Plot of D.O. values (mg L⁻¹) along the longitudinal axis of Howe Sound on October 12, 1978.



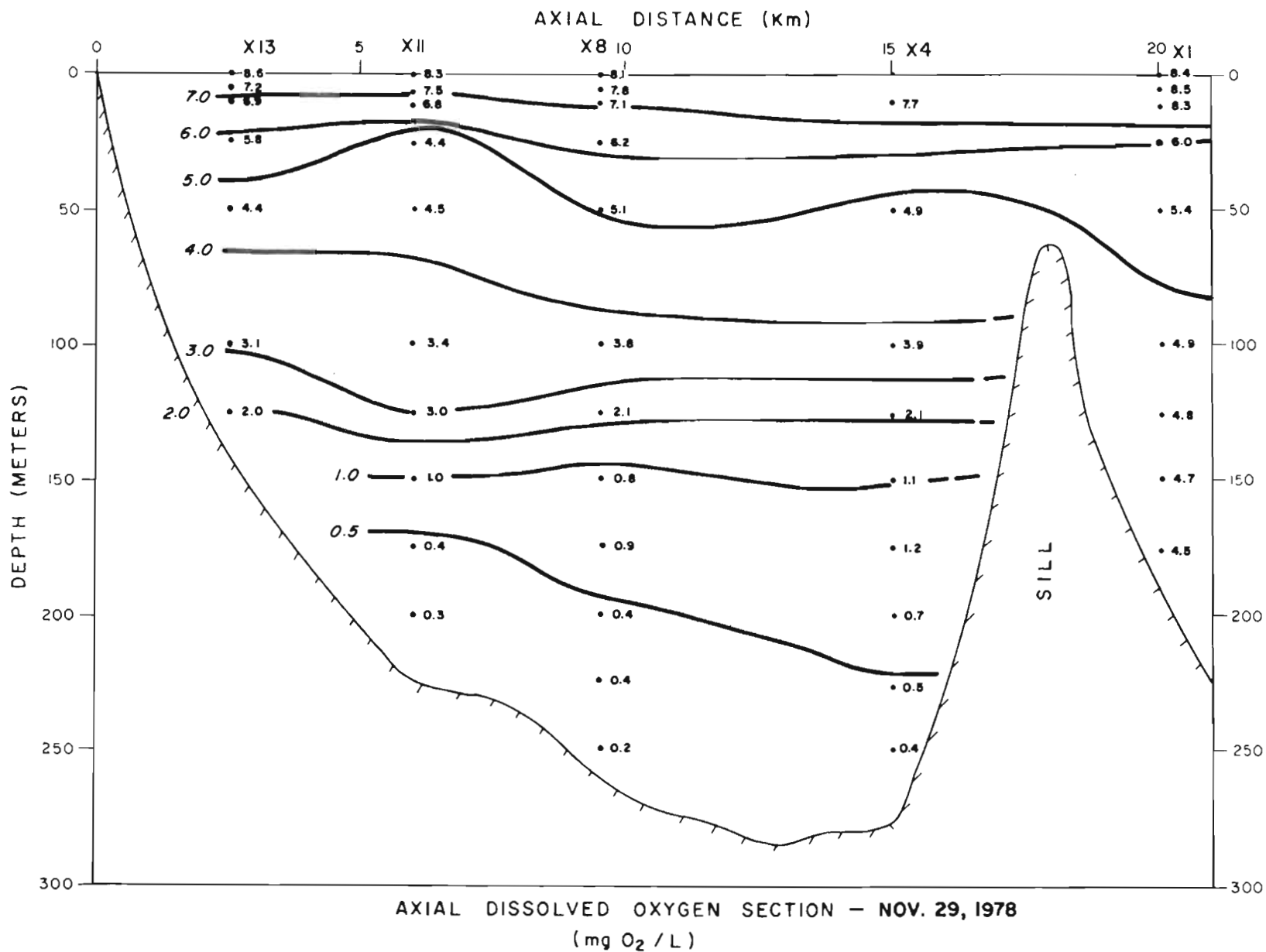
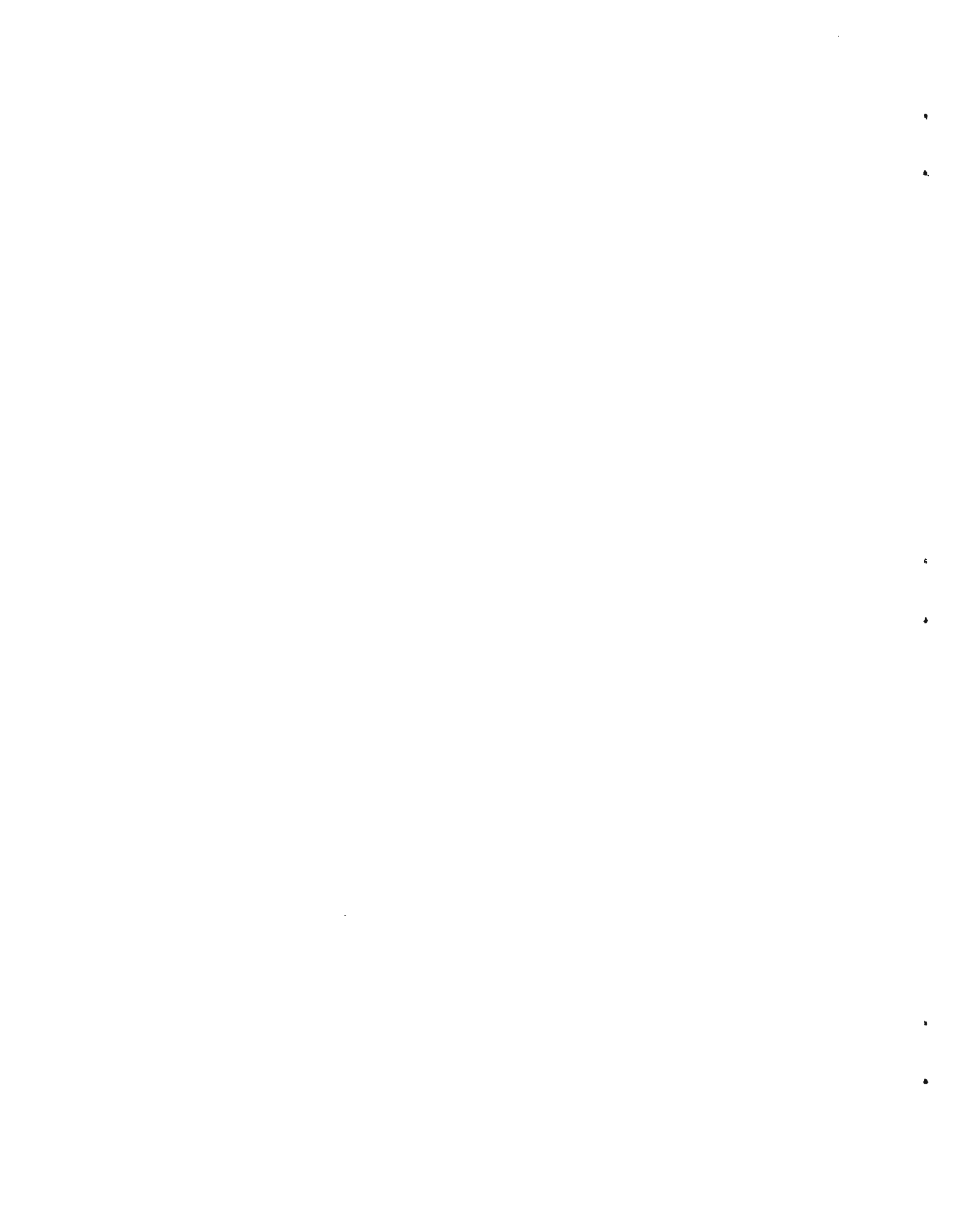


Fig. 13. Plot of D.O. values (mg L⁻¹) along the longitudinal axis of Howe Sound on November 29, 1978.



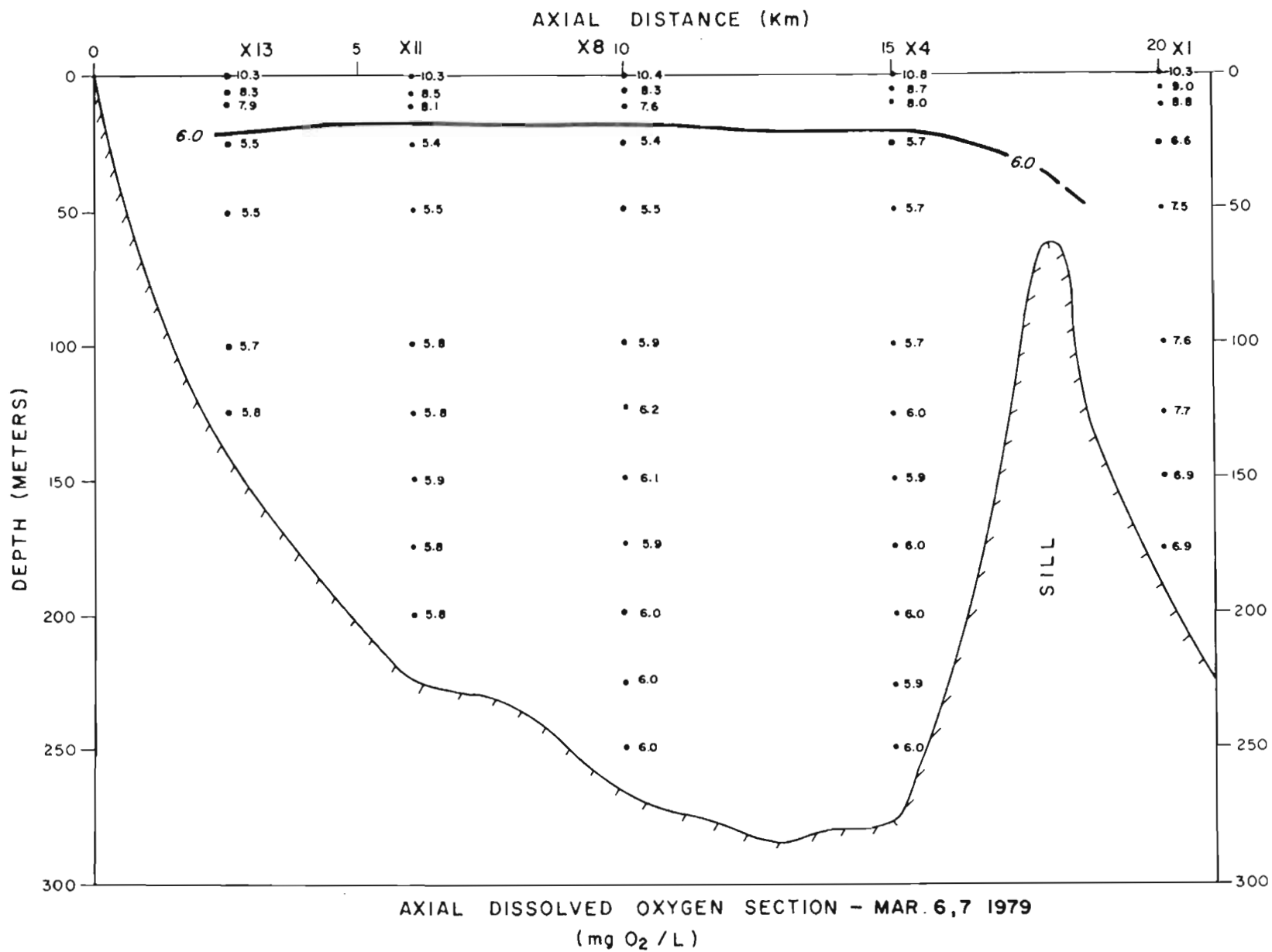


Fig. 14. Plot of D.O. values (mg L⁻¹) along the longitudinal axis of Howe Sound on March 6 and 7, 1979.

