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DATA RECORD

ENUMERATION AND IDENTIFICATION OF ZOOPLANKTON POPULATIONS IN QUATSINO SOUND, BRITISH COLUMBIA, AND CONTIGUOUS INLETS

DR 77-4

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Data
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ABSTRACT

The Environmental Protection Service conducted a series of studies to determine the impact of discharges from the Port Alice pulp mill in Neroutsos Inlet, B.C. and from the Island Copper Mine in Rupert Inlet, B.C., on the marine communities and water quality of these inlet systems.

Zooplankton density and diversity was studied during 1971 and 1972. A special study of zooplankton populations was completed at Buchholz Rock, Neroutsos Inlet in July, 1973. This report presents the zooplankton identifications and enumerations obtained as a result of these surveys.

RÉSUMÉ

Le Service de la protection de l'environnement a fait une série d'études pour déterminer l'effet sur le zooplancton marin et sur la qualité de l'eau des effluents des usines de pâte de Port Alice sur l'inlet Neroutsos, C.-B., et de ceux de l'Island Copper Mine sur l'inlet Rupert, C.-B.

La densité et la diversité du zooplancton ont fait l'objet d'une étude en 1971 et 1972. Par ailleurs, on a complété, en juillet 1973, l'examen des populations de zooplancton à Buchholz Rock dans l'inlet Neroutsos. Le présent rapport établit la liste des espèces zooplanctoniques que ces deux études ont identifiées.

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SUMMARY OF RESULTS

The dominant species in all samples was the copepod Pseudocalanus minutus, and consequently it was used as a basis for comparison between stations. Total numbers/m^3 of P. minutus in three tows in June, 1971 in Neroutsos Inlet can be seen in Table 41. A decrease of approximately 50% of numbers/m^3 at 0-15 meters occurs from stations P-17 and 18 to stations P-19 and 20. The figures from the 1972 survey (Table 42) indicated even great decreases of zooplankton at stations P-19 and 20. The total numbers of P. minutus for each depth sampled at P-17 in June, 1971 are presented in Table 5. A considerable reduction, approximately 2-1/2 times, occurred between the 0-15m tow and the 15-30m tow. A further decrease of 50% was seen between the 15-30m depth and the 30-45m depth. Below this depth, total numbers/m^3 do not change appreciably. The total numbers/m^3 of P. minutus in Rupert Inlet (Tables 43 and 44) are generally lower at both depths than those recorded in Neroutsos Inlet. However, the total number of genera per station is higher in Rupert and Holberg inlets than in either Neroutsos Inlet or Quatsino Sound (See Tables 45 and 46).

1 INTRODUCTION

In 1971 the Environmental Protection Service initiated a study in Rupert, Holberg, and Neroutsos inlets and Quatsino Sound. The study was part of an ongoing environmental monitoring program designed to assess the environmental impact of two industrial operations located in the inlet system; the Port Alice Pulp Mill, owned by Rayonier Canada Ltd., and the Island Copper Mine, owned by Utah Mines Ltd.

The Port Alice Pulp Mill, located near the head of Neroutsos Inlet, began operations in 1917 as a calcium base sulphite mill. In the early 1970's the pulping process was changed to ammonia base. The present production is 453.5 metric tons per day of predominantly dissolving grade pulp. Untreated spent sulphite liquor was discharged directly into Neroutsos Inlet via the digester sewer until 1975. In that year, in compliance with a Provincial Pollution Control Branch operating permit, the company began barging a portion of the spent sulphite liquor to a dump site several miles west of the entrance to Quatsino Sound. In 1977, the installation of a spent liquor recovery system was completed, thereby eliminating the need to barge wastes to Quatsino Sound.

The Island Copper Mine, located on the north shore of Rupert Inlet opened in 1971 with a design capacity of 29 900 metric tons of ore per day. Tailing effluent is discharged via a submerged outfall directly into Rupert Inlet after being diluted 1 part sea water to one part liquid effluent. A recently amended permit will allow Utah Mines Ltd. an average daily annual discharge of effluent of 82 000 m^3. The mine's capacity will be increased to 35 400 metric tons of ore per day as a result of the increased discharged.

This report presents the results of work conducted in the Quatsino Sound area in 1971, 1972 and 1973 in which zooplankton populations were identified and enumerated. The objective of the study was to determine the distribution of zooplankton in the inlet system in relation to the Port Alice Pulp Mill and the Island Copper Mine.

2 DESCRIPTION OF STUDY AREA

Quatsino Sound, located in the northwestern portion of Vancouver Island, leads into three major inlets. Rupert and Holberg Inlets are located to the north and Neroutsos Inlet to the south (Figure 1). Rupert and Holberg Inlets are connected to Quatsino Sound by a narrow and often turbulent channel known as Quatsino Narrows.

Rupert Inlet is the smallest of the three inlets, being 10.2 km long with a mean width of 1.8 km. The mean centre channel depth is 110 meters with a maximum depth of 165 meters near the mouth of the inlet in the vicinity of Quatsino Narrows (Pickard 1963).

Holberg Inlet is 34.2 km long and has a mean width of 1.3 km. The mean centre channel depth is 80 meters with a maximum depth of 170 meters near Quatsino Narrows (Pickard 1963).

Drinkwater (1973) estimated the total freshwater input into Rupert and Holberg Inlets to be $10 \times 10^6 m^3$ per day rising to an input of $40 \times 10^6 m^3$ under maximum conditions. He also estimated that half of this volume comes from the Marble River, the major river system in the area.

Neroutsos Inlet, forming the southeast arm of Quatsino Sound, is 20.8 km long with a mean width of 1.3 km and a mean depth of 88 meters (Waldichuk, 1958). Cayeghle Creek, located at the southern end of the inlet, is the major source of freshwater input into Neroutsos Inlet.

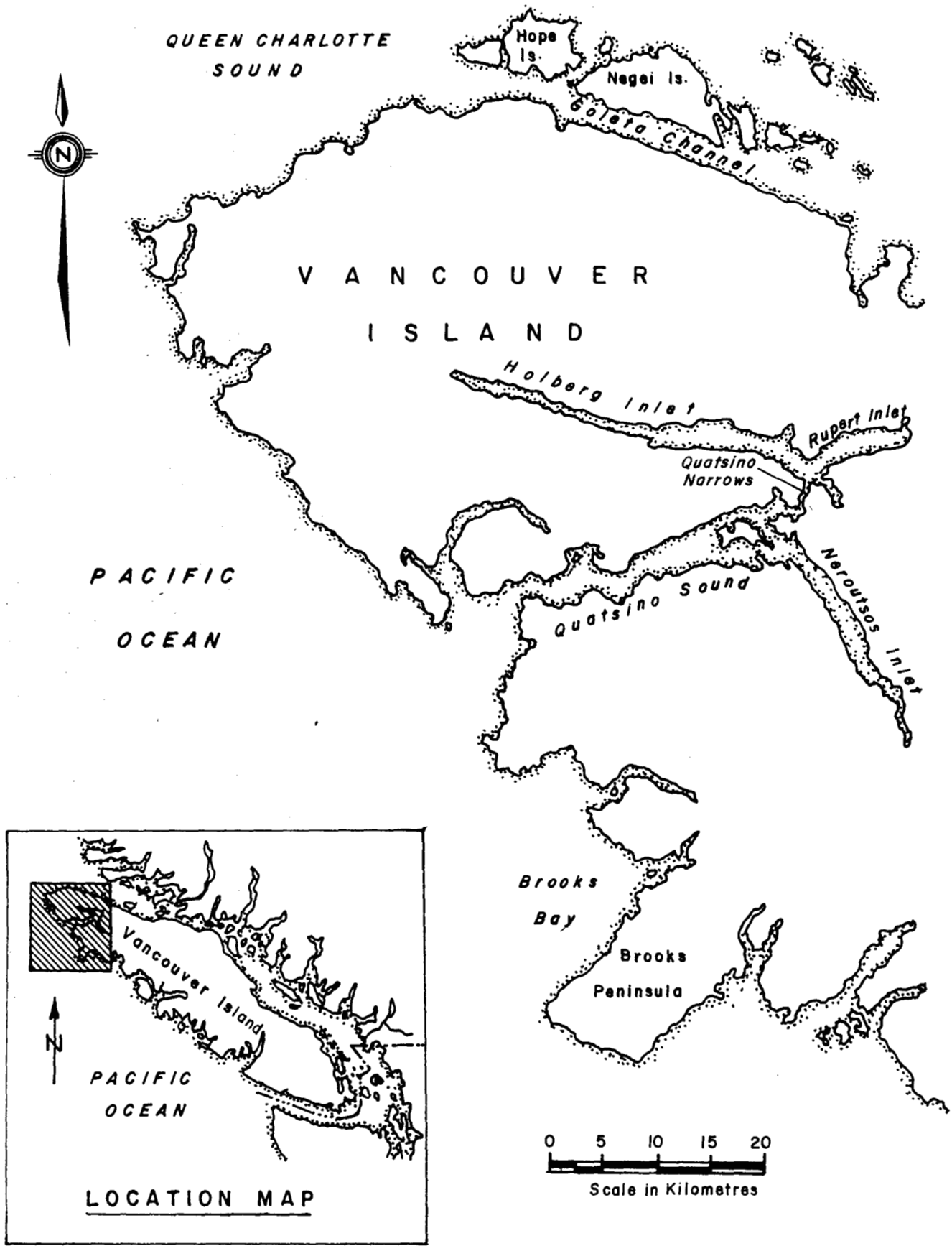

FIGURE 1 NORTHERN VANCOUVER ISLAND

3 MATERIALS AND METHODS

3.1 Station Locations

The study area included the monitoring of 14 permanent sampling stations established during the baseline studies of 1971-1972. The locations of the sampling sites are shown in Figure 2. The location of the 1973 Buchholz Rock study is also shown on Figure 2.

3.2 Zooplankton Samples

Zooplankton samples were collected with modified Miller Plankton Samplers equipped with 351 micron Miller nets. Sampling periods were scheduled to coincide with ebbing tides. Oblique tows were made from 0-15m, 15-30m, 30-45m, 45-60m, 60-75m and 75-90m. In addition, a vertical haul was made from 0-90m at each station. The nets were towed for 10 minutes at a speed of 1 meter per second and were lowered 3/4 of a meter every 30 seconds. On reaching the specified depth, the sampler was returned to the surface and the organisms placed in 4 oz. jars and preserved with 4-6% formalin.

On 24-25 July 1973, a special 24 hour zooplankton study was conducted from the C.F.A.V. Laymore at Buchholz Rock in Neroutsos Inlet. At three hour intervals, vertical hauls were made from 0-50m, 0-100m and 0-150m. The samples were placed in 4 oz. jars and preserved with 4-6% formalin.

Zooplankton samples were sub-sampled with a Folsom Plankton Splitter until a manageable counting density was achieved. It was determined a minimum of 200 individuals of the predominant species were necessary for quantitative analysis.

The sub-sample was placed into a Bogorov tray fitted with a millimeter grid for enumeration and identification with a dissecting

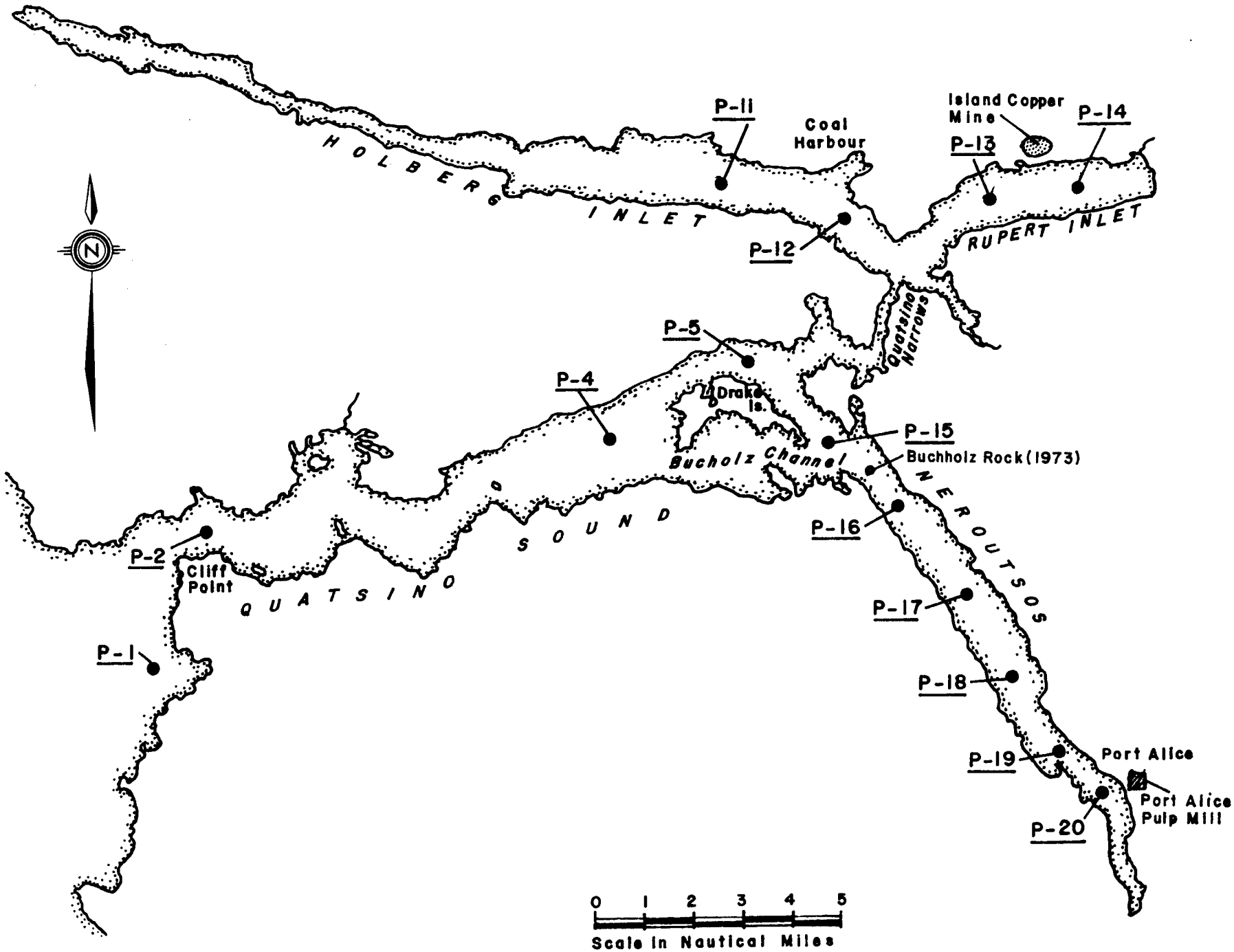

FIGURE 2 ZOOPLANKTON SAMPLING STATIONS, 1971 - 1973

microscope. For difficult identifications, the organisms were removed from the sub-sample and examined individually under a compound microscope. Identification to species was made when possible. The results of the analysis are presented as total numbers of organisms per cubic meter of water. Statistical corrections for organisms collected during descent or ascent of the sampler outside the sample depths have not been considered.

4 RESULTS

4.1 Neroutsos Inlet Zooplankton Samples
17-24 June, 1972
Tables 1 - 9

ABBREVIATIONS:

COEL.	-	COELENTERATA
CTEN.	-	CTENOPHORA
CHAE.	-	CHAETOGNATHA
OSTR.	-	OSTRACODA
COPE.	-	COPEPODA
AMPH.	-	AMPHIPODA
MYSI	-	MYSIDACEA
EUPH.	-	EUPHAUSIACEA
DECA.	-	DECAPODA
LARV.	-	LARVACEA

TABLE 1 QUATSINO SOUND ZOOPLANKTON SAMPLES
STATION P-4 19 June, 1971

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera						2	
CHAE. Sagitta elegans							1
COPE. Pseudocalanus minutus	163	1200	960	769	1161	1072	890
Calanus sp.	95	1161	502	1310	910	506	186
Acartia longiremis	90	576	50	393	928	583	432
Centropages abdominalis		34	19	5	5	10	
Eucalanus bungii bungii					2		
Oithona spinirostris				15	14	5	
O. helgolandicas							5
EUPH. Euphausia pacifica		45					
Thysanoessa spinifera					3		
T. raschii	1	46	39	10			2
LARV. Oikopleura dioica				4			
O. vanhoffeni		1	5	6	15		
Larval forms present:							
Brachyuran zoea		10			3		

TABLE 2 QUATSINO SOUND ZOOPLANKTON SAMPLES
STATION P-5 19 June, 1971

Data Expressed as Numbers/m^3

		Vert.	Oblique Tows (meters)					
		0-90	0-15	15-30	30-45	45-60	60-75	75-90
CHAE.	Sagitta elegans							2
	Sagitta sp. (nr. setosa)						1	
COPE.	Pseudocalanus minutus	168	1973	1560	410	517	285	282
	Calanus sp.	69	250	565	145	205	168	98
	Acartia longiremis	101	256	69	15	64	96	144
	Aetidius armatus	2				2		
	Calanus plumchrus				2			
	Metridia pacifica	2				2		
	Centropages abdominalis	2	16					
	Oithona spinirostris	2	10				5	26
	O. helgolandicas					5	2	2
EUPH.	Euphausia pacifica		26	12	2			
	Thysanoessa spinifera				3			
LARV.	Oikopleura dioica	8	16	53	5	64	29	21

TABLE 3 NEROUTSOS INLET ZOOPLANKTON SAMPLES
STATION P-15, 17 - 18 June, 1971

Data Expressed as Numbers/m

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera	1					2	
CHAE. Sagitta elegans	2		2		1		2
COPE. Pseudocalanus minutus	276	2768	832	545	856	312	354
Calanus sp.	144	600	614	280	66	106	113
Acartia longiremis	65	112	88	18	48	69	93
Metridia pacifica						2	
Aetidius armatus	1						5
Chiridius pacificus	2						10
Centropages abdominalis	1	2		2		2	2
Euchaeta japonica	1		2		2		2
Candacia columbia					2		
Oithona spinirostris	5	5		10		5	
AMPH. Cyphocaris sp.			2	5	2	8	5
Parathemisto sp.				2			
LARV. Oikopleura dioica	10	144	72	34	32	18	18
Larval forms present:							
Crustacea nauplii		63			5	2	5
Polychaete larvae						2	

TABLE 4 NEROUTSOS INLET ZOOPLANKTON SAMPLES
STATION P-16, 18 June, 1971

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
CHAE. Sagitta elegans				1	1	1	
COPE. Pseudocalanus minutus	108	811	381	133	150	145	144
Calanus sp.	6	74	32	14	18	25	45
Acartia longiremis	41	218	13	18	12	36	45
Metridia pacifica				1	4	5	6
Aetidius armatus						2	
Euchaeta japonica							1
Aetidius pacificus							1
Chiridius sp.						1	1
Eucalanus bungii bungii						1	
AMPH. Cyphocaris sp.				1			2
LARV. Oikopleura dioica	9	74	16	32	14	13	12
Larval forms present:							
Crustacea larvae		5	2			1	8
Euphausid juveniles		16	5	1		2	

TABLE 5 NEROUTSOS INLET ZOOPLANKTON SAMPLES
STATION P-17, 18 - 24 June, 1971

Data Expressed as Numbers/m

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera				1			
CHAE. Sagitta elegans				1	1		1
COPE. Pseudocalanus minutus		4288	1456	622	425	237	266
Calanus sp.		672	704	160	125	80	10
Acartia longiremis		1216	74	72	98	77	48
Metridia pacifica					5	8	2
Chiridius sp.					34	56	
Aetidius armatus						20	10
A. pacificus							2
Euchaeta japonica							5
Eucalanus bungii bungii		5					
Oithona spinirostris		5		32	5	8	8
AMPH. Cyphocaris sp.				2	8		5
Parathemisto sp.							5
DECA. Pasiphaea pacifica				2	2		
LARV. Oikopleura dioica		32	117	48	34	24	5
Larval forms present:							
Crustacea larvae		32	5	10	8	5	5
Euprimno juveniles		5					2
Euphausid juveniles		32	16	2	5	5	5

TABLE 6 NEROUTSOS INLET ZOOPLANKTON SAMPLES
STATION P-18 23 June, 1971

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
CHAE. Sagitta elegans					1		
COPE. Pseudocalanus minutus	533	4751	816	557	601	597	976
Calanus sp.	29	160	448	37	106	90	160
Acartia longiremis	9	160	18	21	21	64	9
Metridia pacifica				2		5	8
Aetidius armatus					2		2
Chiridius pacificus						5	16
Euchaeta japonica							2
Oithona spinirostris			5	8	5		41
AMPH. Cyphocaris sp.					8		8
Parathemisto sp.							2
LARV. Oikopleura dioica	16	128	37	42	69	74	112
Larval forms present:							
Crustacea larvae		21	32	5		2	
Euphausid juveniles	2	21	16	2	10	5	2

TABLE 7 NEROUTSOS INLET ZOOPLANKTON SAMPLES
STATION P-19 19 June, 1971

Data Expressed as Numbers/m

	Vert.	Oblique Tows (meters)				
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COPE. Pseudocalanus minutus		2400					
Calanus sp.		48					
Acartia longiremis		336					
Cyclopoida (unknown)		5					
LARV. Oikopleura dioica		48					
Fish eggs		32					

Samples contained large quantities of pulp - following species present.

COPE. Pseudocalanus minutus
Calanus sp.
Oithona helgolandicas
EUPH. Euphausia pacifica
MYSI. (unknown)
DECA. Pasiphaea pacifica
LARV. Oikopleura dioica
AMPH. Parathemisto sp.

Fish eggs

TABLE 8 NEROUTSOS INLET ZOOPLANKTON SAMPLES
STATION P-20 19 June, 1971

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
	0-45						
COPE. Pseudocalanus minutus	153	2176	1888	869			
Calanus sp.	43	128	16	8			
Acartia longiremis	43	624	176	48			
Metridia sp.	1						
Oithona spinirostris	1	16	16				
CHAE. Sagitta elegans	1						
EUPH. Thysanoessa spinifera				2			
AMPH. Cyphocaris sp.	1			2			
DECA. Pasiphaea pacifica			1	2			
LARV. Oikopleura dioica	60	336	128	112			
Larval forms present:							
Euphausid juveniles	1	5	5	5			
Crustacea larvae		5	5	8			
Fish eggs	15	224	352	96			
Polychaete larvae	1			2			

TABLE 9 NEROUTSOS INLET ZOOPLANKTON SAMPLES
MIST ROCK DEEP WATER TOWS
23 June, 1971

Data Expressed as Numbers/m^3

		0-90V	0-170V	90-130H	130-170H
COPE.	Pseudocalanus minutus	890	245	396	416
	Calanus sp.	112	76	68	101
	Acartia longiremis	23	22	13	25
	Aetidius armatus		4	13	10
	A. pacificus		6		
	Chiridius pacificus	28		6	
	Metridia lucens				2
	M. pacificus			4	
	Gaidius sp.		1		2
	Centropages abdominalis		1		
	Paraeuchaeta japonica		1		3
	Euchaeta japonica				2
	Tortanus discaudatus		1		
	Oithona spinirostris	5	6	1	1
	O. helgolandica				1
AMPH.	Cyphocaris sp.	1	5	1	1
LARV.	Oikopleura dioica	3	20	29	
	O. vanhoffeni		8		
Larval forms present:					
	Crustacea nauplii				34
	Euphausid juveniles	2		4	

4.2 Rupert Inlet Zooplankton Samples

20 June, 1971
14 - 16 July, 1971
August, 1971
September, 1971

Tables 10 - 17

TABLE 10 RUPERT INLET ZOOPLANKTON SAMPLES
STATION P-13 20 June, 1971

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera		18	12		2		5
CHAE. Sagitta elegans						2	
COPE. Pseudocalanus minutus	621	728	2000	2970	901	696	837
Calanus sp.	61	19	104	240	17	53	54
Acartia longiremis	29	50	16	32	26	21	40
Metridia pacifica	5				2	5	
Oithona spinirostris	8			8	5	8	13
O. helgolandica					10		
AMPH. Cyphocaris sp.							2
Parathemisto sp.		2	2			2	5
MYSI.							
LARV. Oikopleura dioica	49	60	149	152	130	40	112
O. vanhoffeni	8						
Larval forms present:							
Brachyuran zoea	5	13	2		8		2
Polychaete larvae						2	
Crustacea nauplii	14	8	9	16	8	5	14

TABLE 11 QUATSINO SOUND ZOOPLANKTON SAMPLES
STATION P-4 16 July, 1971

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera	3	2		5	1		
CHAE. Sagitta elegans				2			1
COPE. Pseudocalanus minutus	210	909	536	274	142	573	274
Calanus sp.	77	210	120	686	49	313	85
Acartia longiremis	153	629	74	189	53	352	508
Metridia pacifica						5	5
Oithona spinirostris	5		2	5		21	8
AMPH. Parathemisto sp.						2	5
EUPH. Euphausia pacifica					1		
LARV. Oikopleura dioica	5	2	26	18	2	37	2
Larval forms present:							
Brachyuran larvae	5	21	13	2			2
Crustacea nauplii	2				2		
Euphausid juveniles		8	5		2		

TABLE 12 HOLBERG INLET ZOOPLANKTON SAMPLES
STATION P-11 16 July, 1971

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera	8	170	21	18	8	5	13
Proboscidactyla sp.		5	5		2		
Sarsia sp.		26	8		5	2	
CHAE. Sagitta sp.					2	3	1
COPE. Pseudocalanus minutus	424	576	700	704	1109	616	810
Calanus sp.	18	39	109	53	96	56	130
Acartia longiremis	10	90	144	40	53	24	64
Metridia pacifica	2						
Oithona spinirostris	5			5	8	2	13
EUPH. Euphausia pacifica						8	
Thysanoessa spinifera					2		
AMPH. Cyphocaris sp.							1
Parathemisto sp.			9		2	5	
LARV. Oikopleura dioica	26	204	22	53	50	42	32
O. vanhoffeni	24	89	103	18			
Larval forms present:							
Brachyura zoea			13		2		
Euphausid calyptopis		80	269	168	112	42	18
Crustacea nauplii	18		5	2		5	13
Actinula		10	4	2	2	2	

TABLE 13 HOLBERG INLET ZOOPLANKTON SAMPLES
STATION P-12 14 July, 1971

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera	24	344	66	29	152	64	29
Sarsia sp.	2						
Proboscidactyla sp.						2	
Phialidium sp.	2						
COPE. Pseudocalanus minutus	233	310	610	420	722	562	445
Calanus sp.	5	34	16	45	226	82	96
Acartia longiremis	90	82	114	77	200	93	61
Metridia pacifica							2
Oithona spinirostris			5	16	5	10	2
EUPH. Thysanoessa raschii							2
AMPH. Parathemisto sp.	2	2	10	2	2	10	5
Cyphocaris sp.	2						5
LARV. Oikopleura dioica	80	106	53	114	117	53	53
Larval forms present:							
Brachyuran zoea	5	5		2	8	2	
Polychaete larvae				2			
Crustacea nauplii		10	5	5	8		2
Actinula	5	16	2	8	10	2	5
Euphausid calyptopis	2						

TABLE 14 RUPERT INLET ZOOPLANKTON SAMPLES
STATION P-13 15 July, 1971

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera	6	9	26	10	8	13	2
CHAE. Sagitta elegans	1						
COPE. Pseudocalanus minutus	309	848	786	936	261	456	309
Calanus sp.	30	80	120	122	184	114	34
Acartia longiremis	54	568	162	120	184	141	74
Metridia pacifica	5						
Aetidius aramatus	1						
Centropages abdominalis	1						
Epilabidocera amphirites						2	
Oithona spinirostris	5		5		5	5	5
O. helgolandica			2				
AMPH. Cyphocaris sp.							
Parathemisto sp.	1	22	10	2		5	8
LARV. Oikopleura dioica	2		2				
Larval forms present:							
Euphausid calyptopis			18	2	8	2	5
Actinula	1	8	2	5		2	
Brachyuran zoea	2	56	13	2	16	5	
Crustacea nauplii	1	22	5		8		5
Decapod megalops		2			1	2	

TABLE 15 RUPERT INLET ZOOPLANKTON SAMPLES
STATION P-14 15 July, 1971

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera	28	360	40	13	16	20	12
COPE. Pseudocalanus minutus	226	424	353	282	550	550	432
Calanus sp.	92	88	82	93	80	125	40
Acartia longiremis	90	200	136	97	112	73	80
Metridia pacifica	1	1				2	4
Eucalanus bungii bungii	1					1	1
Epilabidocera amphirites		1					
Aetidius armatus							1
Oithona spinirostris				2	8	2	
AMPH. Parathemisto sp.		16	17	4	8	2	4
EUPH. Euphausia pacifica				2			
Thysanoessa spinifera				1			
LARV. Oikopleura dioica	48	96	60	76	64	37	92
Larval forms present:							
Crustacea larvae	5	46	13	28	16	15	
Fish Larvae		4					
Actinula	5	36	4	1	8	5	4
Euphausid juveniles	2	8	13	10			

TABLE 16 RUPERT INLET ZOOPLANKTON SAMPLES
STATION P-13 August, 1971

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)				
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Obelia sp.			1				
Proboscidactyla sp.		1	5	1	1		
OSTR. Philomedes sp.			1				
COPE. Pseudocalanus minutus	189	7	36	100	240	560	
Calanus sp.	32	2	52	28	144	107	
Acartia longiremis	36	11	84	144	188	120	
Metridia pacificus	2		1				
Aetidius armatus	2					2	
Epilabidocera amphrites	2					2	
Centropages abdominalis	5	1	8	48	64		
Oithona spinirostris						24	
AMPH. Cyphocaris sp.						8	
Parathemisto sp.	10		6	2	32	56	
EUPH. Euphausia pacifica	2			6		5	
Thysanoessa spinifera				4		2	
DECA. Pasiphaea pacifica		1	6	44	33	24	
LARV. Oikopleura dioica		24	4				
Larval forms present:							
Polychaete larvae		2					
Crustacea nauplii	21	98	25	32	36	56	

TABLE 17 RUPERT INLET ZOOPLANKTON SAMPLES
STATION P-13 September, 1971

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Proboscidactyla sp.			1		1		
CHAE. Sagitta elegans			1				
COPE. Pseudocalanus minutus	24	20	198	91	75	186	152
Calanus sp.	5	2	8	6	5	13	5
Acartia longiremis	2	7	28	6	5	18	5
Aetidius armatus				1	2	8	8
Metridia pacifica	1				2		
Centropages abdominalis			10		1	2	
Oithona spinirostris	6		2	10	38	66	61
AMPH. Cyphocaris sp.							5
Parathemisto sp.	1		2	1	12	5	4
Scina sp.							2
EUPH. Euphausia pacifica			2				
MYSI. Neomysis sp.					3	1	1
LARV. Oikopleura dioica	4	1	1		9	2	
Larval forms present:							
Fish larvae						2	
Mysidacea juvenile			1				

4.3 Neroutsos Inlet Zooplankton Samples

14 - 16 June, 1972

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TABLE 18 QUATSINO SOUND ZOOPLANKTON SAMPLES
STATION P-4 15 June, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera	7		1	11	5	4	3
Proboscidactyla sp.					1		
CHAE. Sagitta elegans	1			1			
COPE. Pseudocalanus minutus	305	1474	925	341	204	370	293
Calanus sp.	68	432	240	245	128	87	100
Acartia longiremis	16	133	21	24	18	56	97
Oithona spinirostris		3	13	3	4		
AMPH. Parathemisto sp.			1				
LARV. Oikopleura dioica	41	149	280	78	36	49	28
Larval Forms present:							
Polychaete larvae	1						1
Gastropod larvae			1		1	1	
Cirripedia larvae		2			1		1
Euphausid furcilia				1	2	1	
Crustacea nauplii	14	8	9	5	8	12	12
Crustacea zoea		5		2	1		1
Crustacea megalopa	4	17	14	2	4	3	5

TABLE 19 NEROUTSOS INLET ZOOPLANKTON SAMPLES
STATION P-15 June, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera	3						
CTEN. Pleurobrachia sp.						8	
CHAE. Sagitta elegans	3				16	3	
COPE. Pseudocalanus minutus	470	560	1081	1357	1600	1359	1805
Calanus sp.	61	32	160	400	192	160	128
Acartia longiremis	14	32	16	112	160	16	16
Metridia pacifica	5				32		8
Euchaeta japonica				5			
Oithona spinirostris				33	96	32	
O. helgolandica						12	
nr. Bradyidius saanichi							4
DECA. Pasiphaea pacifica						2	
AMPH. Cyphocaris challengeri					12		5
Parathemisto sp.					2		11
NEMATODA					2		
LARV. Oikopleura dioica	83	64	64	96	128	128	64
Larval and juvenile forms:							
Crustacea nauplii	61	384	112	48	488	64	192
Decapod larvae	61	16	144	16	224	96	160
Polychaete larvae				5		2	
Cirripedia larvae	5	176	16		32	16	16

TABLE 20 NEROUTSOS INLET ZOOPLANKTON SAMPLES
STATION P-16 June, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Sarsia sp.	2				2		
Hybocodon prolifera					2		2
Proboscidactyla sp.	2						
CHAE. Sagitta elegans				4	2		
COPE. Pseudocalanus minutus	616	3583	2240	797	608	520	1168
Calanus sp.	32	576	80	170	320	48	80
Acartia longiremis	32	126			32	5	16
Aetidius pacifica							11
Oithona spinirostris				11	29	24	32
nr. Bradyidius saanichi	5					21	48
AMPH. Cyphocaris challengeri	2					2	32
Euprimno sp.					2		5
LARV. Oikopleura sp.	70	192	96	160	160	21	48
Larval and juveniles forms:							
Cirripedia cypris stage					5		8
Polychaete larvae			5		2		
Crustacea nauplii	32	192	16	32	32	16	144
Decapoda zoea & megalopa	160	128	80	11	64	80	16

TABLE 21 NEROUTSOS INLET ZOOPLANKTON SAMPLES
STATION P-17 14 June, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera				2	2		
Proboscidactyla sp.	1						
CTEN. Pleurobrachia sp.			2				
CHAE. Sagitta elegans	1	1	2		1	2	
COPE. Pseudocalanus minutus	144	4352	552	792	528	352	696
Calanus sp.	36	1088	88	104	64	54	80
Acartia longiremis	12	64		16	8	5	24
Oithona spinirostris	12	64	8	16	8	8	16
Euchaeta japonica					2		
Chiridius sp.							2
Metridia pacifica	4			8	2	5	5
Aetidius armatus	4						
AMPH. Cyphocaris challengeri	1			5	5	5	5
Euprimno sp.	1				2		
Parathemisto sp.				2			
Phronima sp.						13	2
MYSI. Neomysis sp.			1				
LARV. Oikopleura dioica	24	26	104	128	80	16	56
Larval and juvenile forms:							
Gastropod larvae		5					
Fish eggs	4	16		24	42	32	16
Cirripedia cypris	8	32					
Crustacea nauplii		320	8	16	40		8
Decapod zoea & megalopa	32	144		40	16	5	2

TABLE 22 NEROUTSOS INLET ZOOPLANKTON SAMPLES
STATION P-18 16 June, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Sarsia tubulosa			3				
Proboscidactyla sp.					1		
CHAE. Sagitta elegans				3	3		
COPE. Pseudocalanus minutus	151	1320	667	920	355	305	246
Calanus sp.	21	160	140	146	70	40	23
Acartia longiremis	1	40	13				1
Oithona spinirostris	3	40	46		5	20	15
Aetidius pacificus	1						
Metridia pacifica						20	31
AMPH. Cyphocaris challengeri	1						
Phronima sp.			3	3	3		
LARV. Oikopleura dioica	18	473	113	80		1	12
Larval and juvenile forms:							
Parathemisto sp. juven.						1	
Crustacea nauplii	8	146	46	10	15	5	10
Crustacea megalopa	6		20				
Cirripedia cypris		3		3	1	3	
Euphausid juveniles		5		3			
Polychaete larvae				3	1	1	1
Fish larvae			3				
Fish eggs	3	3	21	36	20	5	5

TABLE 23 NEROUTSOS INLET ZOOPLANKTON SAMPLES
STATION P-19 June, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-30	0-15	15-30	30-45	45-60	60-75	75-90
COPE. Pseudocalanus minutus	73	300	*				
Calanus sp.	15	113	*				
Acartia longiremis	8						
Oithona spinirostris		6	*				
LARV. Oikopleura dioica	5	30	*				
Larval and juvenile forms:							
Fish eggs	8	20	*				
Crustacea nauplii	18	73	*				
Cirripedia cypris	1		*				
Crustacea zoea			*				
Euphausid juveniles		73	*				
Polychaete larvae		6					
Parathemisto sp.		3	*				

* presence only. Due to pulp fibres accurate counting procedure impossible.

TABLE 24 NEROUTSOS INLET ZOOPLANKTON SAMPLES
STATION P-20 16 June, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-45	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera	1						
Sarsia sp.		1					
COPE. Pseudocalanus minutus	126	375	393	253			
Calanus sp.	13	50	60	63			
Acartia longiremis	3	25	6				
Oithona spinirostris			13	20			
Calanus plumchrus			3				
Oncaea sp.			6				
AMPH. Parathemisto sp.			1				
LARV. Oikopleura dioica	8	20	73	63			
DECA. Pasiphaea juveniles	13	25	20	16			
Larval and juvenile forms:							
Fish larvae	1	1	1				
Fish eggs	5	15	33	56			
Cirrepedia cypris stage		1	3	6			
Euphausid juveniles		16	13	6			
Crustacea nauplii		15					
Polychaete larvae	1		6	10			

* all samples contain large amounts of pulp fibres.

4.4 Rupert Inlet Zooplankton Samples

12 - 14 June, 1972
16 July, 1972
14 - 15 August, 1972

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TABLE 25 HOLBERG INLET ZOOPLANKTON SAMPLES
STATION P-11 12 June, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera			1				
CHAE. Sagitta elegans	1			1	5	1	1
COPE. Pseudocalanus minutus	197		701	373	788	373	876
Calanus sp.	14		72	24	16	8	44
Acartia longiremis	2						
Oithona spinirostris	6		10	20	12	3	12
Metridia sp.						3	
EUPH. Euphausia pacifica	1				1		
AMPH. Parathemisto sp.	1						
LARV. Oikopleura dioica	16	NOT SCORED	85	148	106	13	44
Larval forms present:							
Euphausid juveniles			74	132	80	13	72
Decapod juveniles				3			
Crustacea nauplii	71		123	44	44	68	16
Crustacea zoea			8	12	2	4	16
Crustacea megalopa	1						
Gastropod larvae			1				
Polychaete larvae	1						
Fish larvae (eggs)			3	3	5	1	
Cirripedia - cypris stage	1		4	3	6		

TABLE 26 HOLBERG INLET ZOOPLANKTON SAMPLES
STATION P-12 12 June, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera			4		3	3	
CTEN. Pleurobrachia sp.						1	2
COPE. Pseudocalanus minutus	286	285	608	720	654	472	492
Calanus sp.		53	66	106	96	60	24
Acartia longiremis		1	21	69	3	20	8
Oithona spinirostris			3	21	8		4
Metridia pacifica						3	3
Aetidius armatus						1	
Centropages abdominalis					3		
LARV. Oikopleura dioica	24	232	53	96	64	52	64
Larval and juvenile forms:							
Crustacea nauplii	84	1192	216	197	192	112	136
Crustacea zoea	6	16	16	5	40	8	4
Crustacea megalopa	14	157	97	96	64	60	24
Cirripedia cypris stage	6	5	3	5	10	10	5
Decapod juveniles			10	8	13	8	8
Polychaete larvae			3	3	3	1	

TABLE 27 RUPERT INLET ZOOPLANKTON SAMPLES
STATION P-13 14 June, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera	1	1	1	1		1	
CTEN. Pleurobrachia sp.	1		2				
COPE. Pseudocalanus minutus	236	148	66	192		1408	504
Calanus sp.	36	28	34	24		105	24
Acartia longiremis	18	18	4	20		14	8
Oithona spinirostris	12	2	4			2	
Metridia pacifica	4						6
nr. Bradyidius saanichi	2						
Aetidius pacifica					NOT SCORED	2	
Euchaeta japonica							5
Centropages abdominalis		2					
AMPH. Cyphocaris challengeri						1	3
EUPH. Euphausia pacifica	1					2	2
LARV. Oikopleura dioica	4	6	6	6			8
Larval and juvenile forms:							
Gastropod larvae			2				
Cirripedia cypris	2	2	4			4	3
Crustacea nauplii	4	368	100	32		13	24
Crustacea zoea	2	456	100	36		29	24
Crustacea megalopa	6	148	166	130		31	

TABLE 28 RUPERT INLET ZOOPLANKTON SAMPLES
STATION P-14 14 June, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-75	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera		6					
Sarsia sp.		1					
CHAE. Sagitta elegans					16	3	
COPE. Pseudocalanus minutus	524	123	848	2720	5696	3264	
Calanus sp.	44	17	120	192	254	254	
Acartia longiremis	4	20	24	32			
Calanus plumchrus	4					3	
Oithona spinirostris	4	1		3	32		
Metridia lucens						3	NOT SCORED
EUPH. Euphausia pacifica	2						
AMPH. Cyphocaris challengeri	1				2	5	
Parathemisto sp.				3	2		
MYSI. Neomysis sp.						1	
DECA. Pasiphaea pacifica					2	5	
LARV. Oikopleura dioica	4	23	24	64	32	3	
Larval and juvenile forms:							
Crustacea nauplii		54	24	64	64	31	
Decapod larvae	3	17	8	96	32	5	
Polychaete larvae				3		3	

TABLE 29 QUATSINO SOUND ZOOPLANKTON SAMPLES
STATION P-1 16 July 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-75	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Phialidium sp.		2	4	1			
Proboscidactyla sp.		1	2				
COPE. Pseudocalanus minutus	230	10	1	104	312	240	130
Calanus sp.	23	23			8	7	7
Acartia longiremis	97	37	32	170	399	443	83
Centropages abdominalis		10					
Oithona spinirostris				2	2		
Acartia clausii	6						
Larval and juvenile forms:							
Porcellanidae zoea		1					1
Crustacea nauplii	10	25	9	8	30	10	
Crustacea zoea & megalopa	26	25	12	20	48	6	23
Gastropod larvae	6			8	4	10	

TABLE 30 QUATSINO SOUND ZOOPLANKTON SAMPLES
STATION P-2 16 July 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Phialidium sp.	1	2	2	4	1		
Proboscidactyla sp.			2	2			
CTEN. Pleurobrachia sp.			1	2			
CHAE. Sagitta elegans							1
COPE. Pseudocalanus minutus	53	23	10	48	131	183	720
Calanus sp.	13	3	1	12	36	66	48
Acartia longiremis	13	13	1	8	8	37	16
Metridia pacifica	3			2			
Centropages abdominalis		3		2	1		
Oithona spinirostris					1	3	16
O. helgolandica				2	2		
Paracalanus parvus			2				
EUPH. Euphausia pacifica					1	5	3
Thysanoessa spinifera							
LARV. Oikopleura dioica				1			
Larval and juvenile forms:							
Crustacea nauplii	3	16	4	10	6		
Crustacea zoea & megalopa	3	26	23	16		3	3
Porcellanidae zoea				1	1	2	
Gastropod larvae					3		
Actinula larvae	3		1				

TABLE 31 HOLBERG INLET ZOOPLANKTON SAMPLES
STATION P-12 July, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Proboscidactyla sp.			1	1			
Sarsia sp.						1	
CHAE. Sagitta elegans			1				
COPE. Pseudocalanus minutus	280	50	150	680	280	1110	765
Calanus sp.	18		20	73	30	37	55
Acartia longiremis	13	3	26	13	3	30	20
Oithona spinirostris	3	1	6	6	3	15	5
Metridia pacifica	1			3	1	3	3
EUPH. Euphausia pacifica juv.	3		6	3	3	6	3
AMPH. Cyphocaris challengeri					1	1	
MYSI. Holmesiella anomala							1
LARV. Oikopleura sp.	13	173	16	46	15	28	31
Larval and juvenile forms:							
Fish eggs			1		1		
Crustacea nauplii	101	260	170	140	46	168	105
Cirripedia cypris stage	3	5		6		1	3

* All samples excluding the 0-90 vertical tow contained large numbers of eggs. Phytoplankton also abundant.

TABLE 32 RUPERT INLET ZOOPLANKTON SAMPLES
STATION P-13 July 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Hybocodon prolifera				1	1	2	4
CHAE. Sagitta elegans							1
COPE. Pseudocalanus minutus	262	187	258	360	288	274	643
Calanus sp.	45	8	14	24	32	42	123
Acartia longiremis	1	60	24	14	10	10	31
Oithona spinirostris			58	4	4		10
Metridia pacifica	1			1	1	1	4
Aetidius pacifica							3
Centropages abdominalis			1				
nr. Bradyidius saanichi					1		
EUPH. Euphausia pacifica	5	1	1	3	3	3	5
AMPH. Cyphocaris challengeri					2	1	1
MYSI. Holmesiella anomala				1		1	
LARV. Oikopleura dioica	7	75	18	12	30	34	76
Larval and juvenile forms:							
Crustacea nauplii	37	330	132	36	53	46	210
Crustacea zoea & megalopa	1	45	16	20	14	10	36
Cirripedia cypris stage	3	3		1			3
Decapod jeveniles	1	1		3	3	5	5

TABLE 33 RUPERT INLET ZOOPLANKTON SAMPLES
STATION P-13 15 August, 1972

Data Expressed as Numbers/m

		Vert.	Oblique Tows (meters)					
		0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL.	Proboscidactyla sp.		2	1		1		
CHAE.	Sagitta elegans					1	1	
COPE.	Pseudocalanus minutus	62	1	9	54	520	1296	943
	Oithona spinirostris			1		11	6	33
	Calanus sp.				1	3	3	106
	Acartia longiremis	2		4	3			
	Aetidius pacificus							6
	Metridia pacifica						10	3
	Epilabidocera amphitrites						2	3
	Euchaeta japonica							1
	Centropages abdominalis							1
EUPH.	Euphausia pacifica	1			2	7	2	1
AMPH.	Parathemisto sp.		2	1	1		3	2
	Cyphocaris challengeri						2	4
	Euprimno sp.						1	
MYSI.						1	1	1
DECA.	Crangonidae					1		
LARV.	Oikopleura dioica	1						10
Larval and juvenile forms:								
	Crustacea nauplii		24	4	1	3		
	Crustacea zoea & megalopa		3	3	4			

TABLE 34 RUPERT INLET ZOOPLANKTON SAMPLES
STATION P-14 14 August, 1972

Data Expressed as Numbers/m^3

	Vert.	Oblique Tows (meters)					
	0-90	0-15	15-30	30-45	45-60	60-75	75-90
COEL. Proboscidactyla sp.		3					2
CHAE. Sagitta elegans				1			
COPE. Pseudocalanus minutus	89	7	4	242	196	527	613
Calanus sp.	2			4	5	3	2
Acartia longiremis			10	2		3	2
Aetidius pacifica	1			4		3	3
Metridia gracilis							3
Oithona spinirostris	1			4	5	6	15
EUPH. Euphausia pacifica	5			30	82	3	6
AMPH. Cyphocaris challengeri					4	1	2
Parathemisto sp.		1	1			1	2
Larval and juvenile forms:							
Crustacea zoea & megalopa		13	4	3	2		2

4.5 Buchholz Rock Zooplankton Samples

24 - 25 July, 1973

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TABLE 35 SAMPLING PERIODS - BUCHHOLZ ROCK, NEROUTSOS INLET
24 - 25 July, 1973

Sample	Time
BR-A	1245 hours 24 July, 1973
BR-B	1500 hours 24 July, 1973
BR-C	1730 hours 24 July, 1973
BR-D	2030 hours 24 July, 1973
BR-E	2300 hours 24 July, 1973
BR-F	0155 hours 25 July, 1973
BR-G	0348 hours 25 July, 1973
BR-H	0650 hours 25 July, 1973
BR-I	0950 hours 25 July, 1973
BR-J	1230 hours 25 July, 1973

TABLE 36 BUCHHOLZ ROCK ZOOPLANKTON SAMPLES
24 - 25 July, 1973

Data Expressed as Total Numbers/Tow

	BR- A			BR-B		
	0-50m	0-100m	0-150m	0-50m	0-100m	0-150m
Coelenterata						
Hybocodon prolifera	1	1			1	1
Proboscidactyla sp.		1	1	1	1	
Chaetognatha						
Sagitta elegans	1	11	26		7	28
Copepoda						
Acartia longiremis	36	175	136	57	86	102
Aetidius sp.			1			9
Calanus sp.	19	40	28	11	38	45
Chiridius pacificus		1	2			2
Eucalanus bungii bungii			1			1
Euchaeta japonica						1
Metridia pacifica	3	5	2		2	1
Oithona spinirostris			21	1	6	2
Pseudocalanus minutus	492	445	560	221	508	1340
Tortanus discaudatus	1					
Amphipoda						
Cyphocaris challengeri	1	4	39	1	11	15
Euprimno sp.						1
Parathemisto sp.						62
Phronima sp.						juv.
Euphausiacea						
Euphausia pacifica			1	1		1
Larvacea						
Oikopleura dioica						
Fish larvae				1	1	

TABLE 37 BUCHHOLZ ROCK ZOOPLANKTON SAMPLES
24 - 25 July, 1973

Data Expressed as Total Numbers/Tow

	BR- C			BR-D		
	0-50m	0-100m	0-150m	0-50m	0-100m	0-150m
Coelenterata						
Hybocodon prolifera	1					
Proboscidactyla sp.		1				
Chaetognatha						
Sagitta elegans	3	19	20		11	29
Copepoda						
Acartia longiremis	50	108	90	18	33	128
Calanus sp.	9	8	24	4	33	48
Chiridius pacificus		2	11		9	24
Epilabidocera amphitrites	1					
Eucalanus bungii bungii			1		1	
Metridia pacifica	2	12	9	4	6	30
Pseudocalanus minutus	247	436	339	222	495	1008
Harpacticoida					1	
Amphipoda						
Cyphocaris challengeri	2	13	16	1	11	27
Euprimno sp.	2	1	2		1	
Parathemisto sp.			13		2	2
Euphausiacea						
Euphausia pacifica	11	6	3			9
Larvacea						
Oikopleura dioica	1	3	2	2		3
Polychaete larvae						1
Fish larvae			1			1

TABLE 38 BUCHHOLZ ROCK ZOOPLANKTON SAMPLES
24 - 25 July, 1973

Data Expressed as Total Numbers/Tow

	BR-E			BR-F		
	0-50m	0-100m	0-150m	0-50m	0-100m	0-150m
Coelenterata						
Hybocodon prolifera					1	
Proboscidactyla sp.		1				
Sarsia sp.				1		
Ctenophora						1
Chaetognatha						
Sagitta elegans	2	17	1	5	34	39
Copepoda						
Acartia longiremis	42	64	39	57	120	21
Calanus sp.	5	16	9	12	30	21
Chiridius pacificus	1	1	6			3
Metridia pacifica	2	2	6	1	12	9
Oithona spinirostris		4				3
Pseudocalanus minutus	432	740	357	522	1134	558
Harpacticoida						1
Amphipoda						
Cyphocaris challengeri	4	9	18	3	12	15
Euprimno sp.					1	1
Parathemisto sp.	1			1	2	2
Euphausiacea						
Euphausia pacifica	1		3	2	2	2
Larvacea						
Oikopleura dioica	2	2	3	9	12	3
Polychaete larvae		1				

TABLE 39 BUCHHOLZ ROCK ZOOPLANKTON SAMPLES
24 - 25 July, 1973

Data Expressed as Total Numbers/Tow

	BR- G			BR-H		
	0-50m	0-100m	0-150m	0-50m	0-100m	0-150m
Coelenterata						
Hybocodon prolifera					1	
Proboscidactyla sp.				1		
Chaetognatha						
Sagitta elegans	6	7	26	2	7	
Copepoda						
Acartia longiremis	51	44	198	111	33	
Calanus sp.	24	12	24	18	27	
Candacia sp.			1			
Chiridius pacificus	3		18			
Euchaeta japonica		1				
Metridia pacifica	3	4		6	9	
Oithona spinirostris		4	6			
Pseudocalanus minutus	603	512	858	555	722	
Amphipoda						
Cyphocaris challengeri	8	2	11		6	
Parathemisto sp.		1	2		1	
Euphausiacea						
Euphausia pacifica	1	1	2		2	
Thyanoessa spinifera			1			
Larvacea						
Oikopleura dioica	9	4		12	6	
Fish larvae	1	2		1	1	

SAMPLE NOT SCORED

TABLE 40 BUCHHOLZ ROCK ZOOPLANKTON SAMPLES
24 - 25 July, 1973

Data Expressed as Total Numbers/Tow

	BR- I			BR-J		
	0-50m	0-100m	0-150m	0-50m	0-100m	0-150m
Coelenterata						
Proboscidactyla sp.				1		
Chaetognatha						
Sagitta elegans	5	12	9	1	9	4
Copepoda						
Acartia longiremis	42	48	57	20	48	36
Calanus sp.	16	6	21	18	39	21
Chiridius pacificus			9		18	
Euchaeta japonica					10	
Oithona spinirostris		6	1		2	3
Pseudocalanus minutus	495	390	588	522	438	330
Amphipoda						
Cyphocaris challengeri		11	14	1	20	5
Euprimno sp.			1			
Parathemisto sp.		1	1			1
Euphausiacea						
Euphausia pacifica		2	3			2
Larvacea						
Oikopleura dioica		4	1	3	2	2
Polychaete larvae				1		
Fish larvae					1	

4.6 Additional Tables

TABLE 41 DISTRIBUTION OF PSEUDOCALANUS MINUTUS IN NEROUTSOS INLET, 17 - 24 June, 1971

Data Expressed as Numbers/m^3

Station	Depth of Tow 0-15m	15-30m	0-90m (V)
P-15	2768	832	276
P-16	811	381	108
P-17	4288	1456	890
P-18	4751	816	533
P-19	2400	N.S.	N.S.
P-20	2176	1888	153 (0-45m)

* N.S. - not scored

TABLE 42 DISTRIBUTION OF PSEUDOCALANUS MINUTUS IN NEROUTSOS INLET, 14 - 16 June, 1972

Data Expressed as Numbers/m^3

Station	Depth of Tow 0-15m	15-30m	0-90m (V)
P-15	560	1081	470
P-16	3583	2240	616
P-17	4352	552	144
P-18	1320	667	151
P-19	300	*	73 (0-30m)
P-20	375	393	126 (0-45m)

* Not sampled

TABLE 43 DISTRIBUTION OF PSEUDOCALANUS MINUTUS IN RUPERT AND HOLBERG INLETS AND QUATSINO SOUND
July, 1971

Data Expressed as Numbers/m^3

Station	Depth of Tow 0-15m	15-30m	0-90m (V)
P-4	909	536	210
P-11	576	700	424
P-12	310	610	233
P-13	848	786	309
P-14	424	353	226

TABLE 44 DISTRIBUTION OF PSEUDOCALANUS MINUTUS IN RUPERT AND HOLBERG INLETS
June, 1972

Data Expressed as Numbers/m^3

Station	Depth of Tow 0-15m	15-30m	0-90m (V)
P-11	*	701	197
P-12	285	608	186
P-13	148	66	236
P-14	123	848	524

* Not sampled

TABLE 45 TOTAL NUMBER OF GENERA /STATION, NEROUTSOS INLET AND QUATSINO SOUND
June, 1971

Station	Depth 0-15m	Depth 15-30m
P-4	7	6
P-5	7	5
P-15	6	7
P-16	4	4
P-17	6	4
P-18	4	5
P-19	6	N.S.
P-20	5	6

TABLE 46 TOTAL NUMBER OF GENERA /STATION, RUPERT AND HOLBERG INLETS AND QUATSINO SOUND
July, 1971

Station	Depth 0-15m	Depth 15-30m
P-4	5	5
P-11	8	9
P-12	6	7
P-13	5	8
P-14	6	6

4.7 Zooplankton Systematics

SYSTEMATICS

The systematic positions of the species described are as follows:

Phylum COELENTERATA

Order Hydroida

Sub-Order Anthomedusae

Sarsia sp.

Hybocodon prolifera

Sub-Order Leptomedusae

Phialidium sp.

Obelia sp.

Sub-Order Limnomedusae

Proboscidactyla sp.

Sub-Order Trachymedusae

Aglantha digitale

Order Siphonophora

Sub-Order Calycophora

Dimophyes artica

Muggiaea atlantica

Phylum CTENOPHORA

Order Lobata

Pleurobrachia pileus

Phylum CHAETOGNATHA

Sagitta elegans

S. decipiens

S. setosa

Phylum ANNELIDA

Class Polychaeta

Family Tomopteridae

Tomopteris renata

T. septentrionalis

Phylum ARTHROPODA

Class Crustacea

Order Cladocera

Evadne nordmanni

Podon polyphemoides

Order Ostracoda

Philomedes sp.

Conchoecia sp.

Order Copepoda

Sub-Order Calanoida

Family Calanidae

Calanus sp.

Family Pseudocalanidae

Pseudocalanus minutus

Microcalanus pusillus

Family Aetideidae

Chiridius pacificus

Aetideus armatus

A. pacificus

Gaidius sp.

Family Metridiidae

Metridia pacificus

M. lucens

Family Eucalanidae

Eucalanus bungii bungii

Family Pontellidae

Epilabidocera amphitrites

Family Centropagidae

Centropages abdominalis

Family Acartidae

Acartia longiremis

A. clausi

Family Tortanidae

Tortanus discaudatus

Family Candaciidae

Candacia columbiae

Family Euchaetidae

Euchaeta japonica

Paraeuchaeta japonica

Sub-Order Cyclopoida

Family Oithonidae

Oithona spinirostris

O. helgolandica

Order Pericarida

Sub-Order Mysidacea

Neomysis sp.

Neomysis rayii

Holmesiella anomala

Sub-Order Amphipoda

Family Hyperiidae

Cyphocaris challengeri

Euprimno sp.

Parathemisto sp.

Scina sp.

Order Eucarida

Sub-Order Euphausiacea

Family Euphausiidae

Euphausia pacifica

Thysanoessa longipes

T. raschii

T. spinifera

Order Decapoda

Sub-Order Natantia

Family Pasiphaeidae

Pasiphaea pacifica

Phylum CHORDATA

Sub-Phylum Urochorda

Order Larvacea

Family Appendiculariidae

Oikopleura dioica

O. vanhoffeni

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