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Midwater Tows and Catches Made on G.B. Reed Cruise GBR79-7 Off Southwest Coast of Vancouver Island October 29-November 16, 1979

L. W. Barner, F. H. C. Taylor, J. M. Thompson and W. T. Ryan

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Pacific Biological Station
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Canadian Data Report of Fisheries

and Aquatic Sciences No. 206

May 1980

MIDWATER TOWS AND CATCHES MADE ON G.B. REED CRUISE GBR79-7

OFF SOUTHWEST COAST OF VANCOUVER ISLAND

October 29-November 16, 1979

by

L. W. Barner, F. H. C. Taylor, J. M. Thompson and W. T. Ryan

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ABSTRACT

Barner, L. W., F. H. C. Taylor, J. M. Thompson, and W. T. Ryan. 1980.
Midwater trawl tows and catches made on G.B. REED Cruise, GBR79-7 off
southwest coast of Vancouver Island, October 29-November 16, 1979.
Can. Data Rep. Fish. Aquat. Sci. 206: 57 p.

This report gives the midwater catches, fishing positions and biological sampling data obtained during G.B. REED cruise GBR79-7, October 29-November 16, off southwest coast of Vancouver Island. Tows were made to determine the distribution and abundance of walleye pollock, (Theragra chalcogramma) and other fish stocks present.

Sex and length data were obtained for chinook salmon, dogfish, hake, herring, and four species of rockfish.

Key Words: Marine fish, catch composition, walleye pollock, distribution and abundance, southwest coast Vancouver Island.

RÉSUMÉ

Barner, L. W., F. H. C. Taylor, J. M. Thompson, and W. T. Ryan. 1980.
Midwater trawl tows and catches made on G.B. REED Cruise GBR79-7 off
southwest coast of Vancouver Island, October 29-November 16, 1979.
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Le rapport indique les prises semi-pélagiques, les positions de pêche et les données d'échantillonnage biologique recueillies au cours de l'expédition GBR79-7 du G.B. REED, du 29 octobre au 16 novembre, au large du sud-ouest de l'île Vancouver. Des traits de chalut ont permis de déterminer la distribution et l'abondance de la morue du Pacifique occidental (Theragra chalcogramma) et des autres stocks de poisson présents.

Des données sur le sexe et la longueur ont été recueillies en ce qui concerne le saumon quinnat, l'aiguillat, le merlu, le hareng et quatre espèces de scorpènes.

Mots clés: poisson de mer, composition des prises, morue de Pacifique occidental, distribution et abondance, côte sud-ouest de l'île Vancouver.

INTRODUCTION

In 1979 an acoustical survey was carried out off the southwest coast of Vancouver Island, by the C.G.S. G.B. REED to determine the distribution and abundance of walleye pollock and other fish stocks present. These stocks were primarily herring (Clupea harengus pallasi), hake (Merluccius productus), walleye pollock (Theragra chalcogramma) and eulachon (Thaleichthys pacificus).

MATERIALS AND METHODS

SURVEY METHODS

Echo sounding was carried out at 9 kn following the grid of transect lines (Fig. 1) covering the banks and gullies off the southwest coast of Vancouver Island. Loran "C" was used to determine the vessel's position along the tracklines.

During this survey, midwater trawl tows were made to identify the major species of fish in the main sound scattering layers (Fig. 2).

EQUIPMENT

Net and fishing gear

Only one type of net was used on this cruise, an Engel midwater trawl fished with 40-fm 5/8-in bridles, and 3 m² Süberkrüb otter boards. The forepart of the net was 434 16-in meshes in circumference; the net tapered to a codend of double 1 1/2-in web.

The depth of the net was determined by a headline transducer connected by a cable to an Elac netsounder operating at 30 kHz.

SAMPLING METHODS

The catch from each tow was brought aboard and sorted by species into galvanized tubs, with perforated bottoms to release water. Six tubs of each species were weighed on a beam balance and the remainder of the tubs counted. Also any incomplete or partially filled tubs were weighed. The average weight of the six tubs weighed per species was raised by the total number of tubs of each species to obtain a total estimated weight of each species.

The main sampling effort was devoted to pollock, hake, herring and dogfish. Pectoral fins were taken from 663 pollock, 1058 were measured and 211 were weighed individually. Stomachs were examined on 260 pollock and 140 dogfish.

Eight hundred and thirty-eight hake were measured and 574 otoliths were taken for age determinations, 1236 herring were measured and 477 dogfish were measured and sexed. Table 1 presents a complete summary of species sampled, type of sample taken, and numbers of specimens examined.

This report contains length and sex data for the following species:

Walleye pollock	Appendix Table 1
Pacific hake	Appendix Table 2
Pacific herring	Appendix Table 3
Dogfish	Appendix Table 4
Chinook salmon	Appendix Table 5
<u>Sebastes alutus</u>	Appendix Table 6
<u>S. flavidus</u>	Appendix Table 7
<u>S. proriger</u>	Appendix Table 8
<u>S. pinniger</u>	Appendix Table 9

Fork length was measured in rockfish to the nearest lower centimeter. For dogfish, the total length was measured to the nearest centimeter. In herring the length to the end of the silvery area of the caudal peduncle was measured to the nearest millimeter. Hake and pollock were measured to the nearest centimeter.

CATCH COMPOSITION

Twenty-six tows were made, all by midwater trawl. Table 2 contains a list of scientific and common names of species captured.

Pacific herring dominated the catches accounting for 11386.4 kg or 43.8% by weight of the total midwater catch (Table 3). They appeared in 19 of the 26 tows. Pacific hake ranked second, accounting for 5238.9 kg or 20.2% of catch and were present in 10 tows. Walleye pollock was third with 4853.3 kg or 18.7% and were present in 11 tows. Dogfish was fourth with 3519.2 kg or 13.5% and were in 15 tows. Eulachon only accounted for 405.0 kg or 1.6% although juvenile eulachon were seen escaping from the net on some tows.

Individual round weights were taken from 211 pollock. The total average weights for male and female pollock by cm are shown in Table 4.

The occurrence of food items in the stomachs of pollock and dogfish are shown in Tables 5 and 6. In pollock the dominant food item was euphausiids--82.0%, while dogfish had digested fish fragments as the most important item, occurring in 50.0% of the stomachs containing food.

Detailed tables (Tables 7 and 8) show the time, location and catches (kg) of midwater trawl tows made off west coast of Vancouver Island on cruise GBR79-7, October 29-November 16, 1979.

The results of the acoustic surveys will be discussed elsewhere.

Table 1. Summary of species sampled, type of sample, and number of specimens examined.

Species	Tow no.	Type of net	Length	Sex			Body weight	Maturity	Stomach	Age	Sampling remarks
				M	F	U					
Pollock	2	Midwater	319	162	157	-	149	200	151	200	Total sample checked for lamprey scars
Pollock	3	Midwater	200	116	84	-	46	200	37	200	20 fish fin sample sample
Pollock	5	Midwater	100	44	56	-	16	2	12	100	Random sub-sample
Pollock	8	Midwater	63	35	28	-	-	63	60	63	Total sample
Pollock	21	Midwater	100	40	60	-	-	100	-	100	Random sub-sample
Pollock	24	Midwater	27	13	14	-	-	-	-	-	Total sample
Pollock	26	Midwater	249	104	145	-	-	-	-	-	Total sample
Total	7		1058	514	544	-	211	565	260	663	
Hake	2	Midwater	300	67	232	1	-	300	-	300	Random sub-sample
Hake	3	Midwater	61	22	39	-	-	61	-	61	Total sample
Hake	5	Midwater	145	26	119	-	-	119	-	119	Total sample
Hake	9	Midwater	55	11	44	-	-	55	-	55	Total sample
Hake	21	Midwater	189	23	166	-	-	39	-	39	Random sub-sample
Hake	23	Midwater	30	8	22	-	-	-	-	-	Total sample
Hake	24	Midwater	19	3	16	-	-	-	-	-	Total sample
Hake	26	Midwater	39	7	32	-	-	-	-	-	Total sample
Total	8		838	167	670	1	-	574	-	574	
Herring	1	Midwater	106	58	48	-	-	-	-	-	Random sub-sample
Herring	6	Midwater	102	57	45	-	-	-	-	-	Random sub-sample
Herring	7	Midwater	98	64	35	-	-	-	-	-	Random sub-sample
Herring	9	Midwater	102	48	55	-	-	-	-	-	Random sub-sample

Table 1 (cont'd)

Species	Tow no.	Type of net	Length	Sex			Body weight	Maturity	Stomach	Age	Sampling remarks
				M	F	U					
Herring	10	Midwater	101	48	53	-	-	-	-	-	Random sub-sample
Herring	11	Midwater	104	34	70	-	-	-	-	-	Random sub-sample
Herring	12	Midwater	96	33	46	17	-	-	-	-	Random sub-sample
Herring	15	Midwater	100	40	60	-	-	-	-	-	Random sub-sample
Herring	16	Midwater	106	-	-	106	-	-	-	-	Random sub-sample
Herring	18	Midwater	106	43	40	23	-	-	-	-	Random sub-sample
Herring	19	Midwater	102	41	54	7	-	-	-	-	Random sub-sample
Herring	23	Midwater	111	8	8	95	-	-	-	-	Random sub-sample
Total	10		1236	474	514	248	-	-	-	-	
Dogfish	3	Midwater	17	7	10	-	-	-	-	-	Total sample
Dogfish	9	Midwater	5	3	2	-	-	2	5	-	Total sample
Dogfish	12	Midwater	25	16	9	-	-	-	-	-	Total sample
Dogfish	13	Midwater	208	109	99	-	-	-	-	-	6 tub sub-sample
Dogfish	14	Midwater	87	54	33	-	-	-	-	-	Total sample
Dogfish	19	Midwater	58	47	11	-	-	-	58	-	Total sample
Dogfish	20	Midwater	54	36	18	-	-	-	54	-	Total sample
Dogfish	26	Midwater	23	8	15	-	-	-	23	-	Total sample
Total	8		477	280	197	-	-	-	140	-	
Chinook salmon	2	Midwater	4	2	2	-	4	-	4	-	Total sample
Chinook	5	Midwater	1	-	1	-	1	-	1	-	Total sample
Coho	5	Midwater	1	1	-	-	1	-	1	-	Total sample
Chinook	10	Midwater	1	1	-	-	1	-	1	-	Total sample
Chinook	11	Midwater	1	-	1	-	1	-	1	-	Total sample
Chinook	23	Midwater	1	1	-	-	1	-	1	-	Total sample

Table 1 (cont'd)

Species	Tow no.	Type of net	Length	Sex			Body weight	Maturity	Stomach	Age	Sampling remarks
				M	F	U					
Coho	23	Midwater	1	1	-	-	1	-	1	-	Total sample
Chinook	24	Midwater	5	3	2	-	-	-	5	-	Total sample
Chinook	25	Midwater	2	1	1	-	-	-	2	-	Total sample
Chinook	26	Midwater	1	-	1	-	1	-	1	-	Total sample
Total	8		18	10	8	-	11	-	18	-	
<u>S. alutus</u>	3	Midwater	21	15	6	-	-	-	-	-	Total sample
<u>S. flavidus</u>	8	Midwater	19	9	10	-	-	-	-	-	Total sample
<u>S. flavidus</u>	23	Midwater	10	4	6	-	-	-	-	-	Total sample
<u>S. flavidus</u>	24	Midwater	8	5	3	-	-	-	-	-	Total sample
Total	3		37	18	19	-	-	-	-	-	
<u>S. proriger</u>	8	Midwater	180	98	82	-	-	-	-	-	Total sample
<u>S. proriger</u>	11	Midwater	23	10	13	-	-	-	-	-	Total sample
<u>S. proriger</u>	14	Midwater	25	4	21	-	-	-	-	-	Total sample
Total	3		228	112	116	-	-	-	-	-	
<u>S. pinniger</u>	14	Midwater	14	8	3	-	-	-	-	-	Total sample

Table 2. Scientific and common names¹ of species captured.

Common name	Scientific name
Pacific lamprey	<u>Lampetra tridentatus</u>
Spiny dogfish	<u>Squalus acanthias</u>
American shad	<u>Alosa sapidissima</u>
Pacific herring	<u>Clupea harengus pallasi</u>
Northern anchovy	<u>Engraulis mordax</u>
Coho salmon	<u>Oncorhynchus kisutch</u>
Chinook salmon	<u>Oncorhynchus tshawytscha</u>
Eulachon	<u>Thaleichthys pacificus</u>
Pacific hake	<u>Merluccius productus</u>
Pollock	<u>Theragra chalcogramma</u>
Jack mackerel	<u>Trachurus symmetricus</u>
Pacific ocean perch	<u>Sebastes alutus</u>
Silvergray rockfish	<u>S. brevispinis</u>
Widow rockfish	<u>S. entomelas</u>
Yellowtail rockfish (greenies)	<u>S. flavidus</u>
Bocaccio or longjaw rockfish	<u>S. paucispinis</u>
Canary rockfish	<u>S. pinniger</u>
Redstripe rockfish	<u>S. proriger</u>
Pygmy rockfish	<u>S. wilsoni</u>
Sablefish or blackcod	<u>Anoplopoma fimbria</u>
Lingcod	<u>Ophiodon elongatus</u>
Arrowtooth flounder or turbot	<u>Atheresthes stomias</u>
Rex sole	<u>Glyptocephalus zachirus</u>
Flathead sole	<u>Hippoglossoides elassodon</u>
English or lemon sole	<u>Parophrys vetulus</u>

¹After Hart (1973)

Table 3. Total catch by principal species, G.B. REED Cruise GBR 79-7,
October 29-November 16, 1979.

Species	Kilograms	% of total catch
Herring	11386.4	43.79
Hake	5238.9	20.15
Pollock	4853.3	18.67
Dogfish	3519.2	13.53
Eulachon	405.0	1.56
<u>Sebastes proriger</u>	306.0	1.18
<u>Sebastes flavidus</u>	97.5	0.38
<u>Sebastes alutus</u>	53.0	0.20
Chinook salmon	34.1	0.13
Jack mackerel	26.8	0.10
<u>Sebastes pinniger</u>	23.0	.09
<u>Sebastes paucispinis</u>	16.2	.06
Lingcod	11.4	.04
Sablefish	6.9	.02
Turbot	6.0	.02
<u>Sebastes entomelas</u>	5.2	.02
<u>Sebastes brevispinis</u>	3.0	.01
Flathead sole	3.0	.01
Coho salmon	1.0	
Anchovy	0.5	
English sole	Tr	
Rex sole	Tr	
Shad	Tr	
<u>Sebastes wilsoni</u>	Tr	
Lamprey	Tr	
Squid	Tr	
Shrimp pink	Tr	
Total	25996.4	100.00%

Table 4. The total average body weights in grams of pollock by cm and sex.

Fork length (cm)	Round weight (grams)		Average wt/cm	No. of fish/cm
		Male		
34	373		373.0	1
35	422, 461, 424		435.7	3
36	514, 446, 548, 404		478.0	4
37	460, 482, 509, 579, 547, 562, 486, 617		530.3	8
38	580, 516, 506, 506, 551, 541, 518, 500		527.3	8
39	558, 560, 612, 664, 604, 546		590.7	6
40	647, 653, 623, 613, 655, 652		640.5	6
41	640, 648, 601, 650, 701		648.0	5
42	851, 751, 750, 730, 733, 759, 737, 678, 701, 725, 823		748.9	11
43	758, 872, 812, 746, 845, 802		805.8	6
44	800, 902, 825, 861, 836, 854, 799, 897, 859		848.1	9
45	855, 952, 936, 934, 792, 849, 831, 860, 976, 1145		913.0	10
46	1110, 1002, 920, 942, 1046, 896, 1017		990.4	7
47	902, 939, 983, 1018, 985		965.4	5
48	988, 1138, 1090, 1034, 1052, 1101, 1069		1067.4	7
49	1198, 1049, 1110, 1145		1125.5	4
50			0	0
51	1262, 957		1109.5	2

Table 4 cont'd.

Fork length (cm)	Round weight (grams)		Average wt/cm	No. of fish/cm
		Female		
35	409,375,415		399.7	3
36	479		479.0	1
37	486,522,495,510,523,478,540		507.7	7
38	513,535,529,509,612,448,516,557,524,548,528		529.0	11
39	567,585,557,529,584		564.4	5
40	685,635,712,620		663.0	4
41	658,733,642,744		694.3	4
42	675,684,731,732,766		717.6	5
43	858,803,774		811.7	3
44	668,629,867,880,872		783.2	5
45	909,977		943.0	2
46	996,1007,802,1017		955.5	4
47	1049,934,965,1052,1059		1011.8	5
48	996,1003,1038,1101,974,1037		1024.8	6
49	1144,1087,1180,1010,1110,1125,1292,1094,978,1048,1136,1159		1113.6	12
50	1138,1012,974,918,1196,1281,1132,1242,1157,1188,1152,1155		1128.8	12
51	1103,1368,1240,1443,1140,957,1313,1093		1207.1	8
52	1224,1254,1240,1267,1202,1445		1272.0	6
53	1486,1349,1331,1319,1175		1332.0	5
54	1159		1159.0	1

Table 5. Occurrence of food items in the stomachs of pollock (Theragra chalcogramma), on Cruise GBR79-7, October 29-November 16, 1979, by 5 cm length groups.

Length interval group (cm)	Stomachs examined	Euphausiids	Herring	Eulachon	Digested material	Digested fish frag.	Shrimp	Eulachon	Sandlance	Other	Total food occurrences	Empty stomachs	Stomachs with food
25-29	51	48	1	2	0	4	1	2	-	-	58	0	51
30-34	9	9	-	-	-	1	-	1	-	-	12	0	9
35-39	52	41	-	-	1	1	3	1	-	-	47	6	46
40-44	58	46	-	-	3	1	2	-	1	-	53	7	51
45-49	60	31	-	-	21	1	4	-	1	-	58	9	51
50-54	30	16	-	-	6	1	2	-	-	1	26	5	25
Total	260	191	1	2	31	9	12	4	2	2	254	27	233
Percent*			82.0	0.4	0.9	13.3	3.9	5.2	1.7	0.9	0.9	10.4	89.6

*The percentage each food item formed of the number of stomachs containing food.

Table 6. Occurrence of food items in the stomachs of dogfish (*Squalus acanthias*), on Cruise GBR79-7, October 29-November 16, 1979, by 5 cm length groups.

Length interval group (cm)	Stomachs examined	Euphausiids	Herring	Eulachon	Digest material	Digested fish frag.	Other	Total food occurrence	Empty stomachs	Stomachs with food
50-54	1	-	-	-	1	-	-	1	-	1
55-59	2	-	-	-	-	1	-	1	1	1
60-64	13	3	-	-	4	2	-	9	5	8
65-69	11	1	-	-	1	2	-	4	7	4
70-74	22	-	1	-	8	3	-	12	10	12
75-79	47	1	2	-	8	12	1	24	24	23
80-84	31	-	2	-	2	8	-	12	19	12
85-89	8	-	1	-	-	3	-	4	4	4
90-94	4	-	-	-	-	-	-	-	4	-
95-99	-	-	-	-	-	-	-	-	-	-
100-104	1	-	1	1	-	-	-	2	-	1
Total	140	5	7	1	24	31	1	69	74	66
Percent*	-	7.6	10.6	1.5	36.4	50.0	1.5	-	52.9	47.1

*The percentage each food item formed of the number of stomachs containing foods.

Table 7. Species composition of G.B. REED, trawl catches, October 29–November 16, 1979.

Table 7 cont'd.

Midwater or bottom net	Midwater	Midwater	Midwater	Midwater
Tow number	5	6	7	8
Total catch	627.3	728.6	1298.4	103.2
Duration (min)	30	16	37	27
	Wt.	No.	Wt.	No.
Pacific lamprey	-	-	-	-
Spiny dogfish	5.4	1	-	-
American shad	Tr	1	-	-
Pacific herring	Tr	-	728.6	5288
Northern anchovy	-	-	-	-
Coho salmon	0.6	1	-	-
Chinook salmon	1.0	1	-	-
Eulachon	-	-	-	-
Pacific hake	189.4	145	-	-
Walleye pollock	417.9	519	-	-
Jack mackerel	6.8	3	-	-
Pacific ocean perch	-	-	-	-
Silvergray rockfish	-	-	-	-
Widow rockfish	-	-	-	-
Yellowtail rockfish (greenies)	6.2	5	-	-
Boccaccio or longjaw rockfish	-	-	-	-
Canary rockfish	-	-	-	-
Redstripe rockfish	-	-	-	-
Pygmy rockfish	-	-	-	-
Sablefish or blackcod	-	-	-	5.4
Lingcod	-	-	-	-
Arrowtooth flounder (turbot)	-	-	-	-
Rex sole	-	-	-	-
Flathead sole	-	-	-	-
English or lemon sole	-	-	-	-

Table 7 cont'd.

Table 7 cont'd.

Midwater or bottom net	Midwater	Midwater	Midwater	Midwater
Tow number	13	14	15	16
Total catch	3064.2	181.0	5363.0	35.8
Duration (min)	29	30	27	30
	Wt.	No.	Wt.	No.
Pacific lamprey	-	-	-	-
Spiny dogfish	3064.2	1404	120.8	87
American shad	-	-	-	-
Pacific herring	-	-	-	5363.0
Northern anchovy	-	-	-	38924
Coho salmon	-	-	-	32.8
Chinook salmon	-	-	-	-
Eulachon	-	-	Tr	-
Pacific hake	-	-	2.0	1
Walleye pollock	-	-	1.0	1
Jack mackerel	-	-	-	-
Pacific ocean perch	-	-	-	-
Silvergray rockfish	-	-	3.0	1
Widow rockfish	-	-	-	-
Yellowtail rockfish (greenies)	-	-	-	-
Boccaccio or longjaw rockfish	-	-	16.2	3
Canary rockfish	-	-	23.0	11
Redstripe rockfish	-	-	15.0	25
Pygmy rockfish	-	-	-	-
Sablefish or blackcod	-	-	-	-
Lingcod	-	-	-	-
Arrowtooth flounder (turbot)	-	-	-	-
Rex sole	-	-	-	-
Flathead sole	-	-	-	-
English or lemon sole	-	-	-	-

Table 7 cont'd.

Midwater or bottom net	Midwater	Midwater	Midwater	Midwater
Tow number	17	18	19	20
Total catch	2.0	244.8	162.8	112.6
Duration (min)	12	16	35	33
Pacific lamprey	-	-	-	-
Spiny dogfish	-	-	1.8	1
American shad	-	-	-	-
Pacific herring	-	-	30.6	-
Northern anchovy	-	-	-	-
Coho salmon	-	-	-	-
Chinook salmon	-	-	-	-
Eulachon	-	-	-	-
Pacific hake	2.0	1	-	-
Walleye pollock	-	-	-	-
Jack mackerel	-	-	-	-
Pacific ocean perch	-	-	-	-
Silvergray rockfish	-	-	-	-
Widow rockfish	-	-	5.2	11
Yellowtail rockfish (greenies)	-	-	2.4	3
Boccaccio or longjaw rockfish	-	-	-	-
Canary rockfish	-	-	-	-
Redstripe rockfish	-	-	204.8	320
Pygmy rockfish	-	-	Tr	2
Sablefish or blackcod	-	-	-	-
Lingcod	-	-	-	-
Arrowtooth flounder (turbot)	-	-	-	-
Rex sole	-	-	-	-
Flathead sole	-	-	-	-
English or lemon sole	-	-	-	-

Table 7 cont'd.

Midwater or bottom net	Midwater	Midwater	Midwater	Midwater
Tow number	21	22	23	24
Total catch	1343.6	211.6	73.8	128.6
Duration (min)	6	15	29	30
Pacific lamprey	-	-	-	-
Spiny dogfish	5.0	1	-	-
American shad	-	-	-	-
Pacific herring	-	-	Tr	-
Northern anchovy	-	-	Tr	-
Coho salmon	-	-	-	-
Chinook salmon	-	-	-	-
Eulachon	-	-	209.6	-
Pacific hake	420.9	299	-	-
Walleye pollock	897.8	-	2.0	3
Jack mackerel	-	-	-	-
Pacific ocean perch	-	-	-	-
Silvergray rockfish	-	-	-	-
Widow rockfish	-	-	-	-
Yellowtail rockfish (greenies)	8.5	5	-	-
Boccaccio or longjaw rockfish	-	-	-	-
Canary rockfish	-	-	-	-
Redstripe rockfish	-	-	-	-
Pygmy rockfish	-	-	-	-
Sablefish or blackcod	-	-	-	-
Lingcod	11.4	1	-	-
Arrowtooth flounder (turbot)	-	-	Tr	1
Rex sole	-	-	-	-
Flathead sole	-	-	-	-
English or lemon sole	-	-	-	-

Table 7 (cont'd)

Midwater or bottom net	Midwater		Midwater	
Tow number	25		26	
Total catch	81.7		243.8	
Duration (min)	31		29	
	Wt.	No.	Wt.	No.
Pacific lamprey	-	-	-	-
Spiny dogfish	1.0	1	32.0	23
American shad	-	-	-	-
Pacific herring	1.0	9	-	-
Northern anchovy	-	-	-	-
Coho salmon	-	-	-	-
Chinook salmon	5.4	2	1.8	1
Eulachon	50.5	-	5.0	-
Pacific hake	-	-	50.0	39
Walleye pollock	2.0	4	150.0	249
Jack mackerel	-	-	-	-
Pacific ocean perch	-	-	-	-
Silvergray rockfish	-	-	-	-
Widow rockfish	-	-	-	-
Yellowtail rockfish (greenies)	21.8	16	-	-
Boccaccio or longjaw rockfish	-	-	-	-
Canary rockfish	-	-	-	-
Redstripe rockfish	-	-	-	-
Pygmy rockfish	-	-	-	-
Sablefish or blackcod	-	-	-	-
Lingcod	-	-	-	-
Arrowtooth flounder (turbot)	-	-	4.0	4
Rex sole	-	-	Tr	1
Flathead sole	-	-	1.0	4
English or lemon sole	-	-	-	-

Tr=Trace, less than 0.5 kilograms.

Table 8.

VESSEL: G.B. REED DATE: 79 Nov 1 Yr Mo Day SET/HAUL NO: 1
LOCATION: Nitinat Canyon AREA: W.C.V.I.
START: Lat. 48°16.2' Long. 125°43.2'
END: Lat. 48°18.7' Long. 125°44.5'
GEAR: M.W.T. - 434 E START TIME (1025): P.S.T. DURATION: 31 min.
BOTTOM DEPTH m: Start: 161 End: 154 Est. Av. Depth: 157
NET DEPTH RANGE m: _____ Est. Av. Depth: 146
DIRECTION OF SET °true: 325 SPEED kn: 2.6 DISTANCE TRAVELED: 1.6 mi.
SET ON: bottom school WATER CONDITION: Lt. chop TIDE: high slack
WIND DIRECTION: 80, WIND SPEED: 15 kts RECORDER: W. Barner
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: _____
SOUNDER SUMMARY: 6-14 fm, fuzzy, type layer on 86 fm bottom. Gear towed
with footrope 2-4 fm off bottom.

VESSEL: G.B. REED DATE: 79 Nov 1 Yr Mo Day SET/HAUL NO: 2
LOCATION: Prairies AREA: W.G.V.I.
START: Lat. 48°29.2' Long. 125°17.5'
END: Lat. 48°29.0' Long. 125°14.8'
GEAR: M.W.T. - 434 E START TIME (1427): P.S.T. DURATION: 29 min.
BOTTOM DEPTH m: Start: 150 End: 146 Est. Av. Depth: 148
NET DEPTH RANGE m: _____ Est. Av. Depth: 136
DIRECTION OF SET °true: 80 SPEED kn: 3.5 DISTANCE TRAVELED: 1.8 mi.
SET ON: mid layer WATER CONDITION: Lt. chop TIDE: ebb
WIND DIRECTION: _____ WIND SPEED: _____ RECORDER: _____
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: No liner in net.
SOUNDER SUMMARY: Layer from 70-80 fm, bottom at 85 fm.

Table 8 (cont'd)

VESSEL: G.B. REED DATE: 79 Nov 3 Yr Mo Day SET/HAUL NO: 3
LOCATION: Prairies AREA: W.C.V.I.
START: Lat. 48° 27.3' Long. 125° 20.2'
END: Lat. 48° 28.5' Long. 125° 18.7'
GEAR: M.W.T. - 434 E START TIME (1923) : P.S.T. DURATION: 28 min.
BOTTOM DEPTH m: Start: 161 End: 161 Est. Av. Depth: 161
NET DEPTH RANGE m: 157 Est. Av. Depth: 157
DIRECTION OF SET °true: 56 SPEED kn: 3.4 DISTANCE TRAVELED: 1.6 mi.
SET ON: bottom layer WATER CONDITION: Lt. chop TIDE: flood
WIND DIRECTION: 80°T WIND SPEED: 20 RECORDER: W. Barner
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Net open 6.5 fm.
SOUNDER SUMMARY: Layer from 70-88 fm on bottom.

VESSEL: G.B. REED DATE: 79 Nov 3 Yr Mo Day SET/HAUL NO: 4
LOCATION: S.E. of Finger Bank AREA: W.C.V.I.
START: Lat. 48° 27.0' Long. 125° 21.7'
END: Lat. 48° 27.7' Long. 125° 19.3'
GEAR: M.W.T. - 434 E START TIME (2140): P.S.T. DURATION: 30 min.
BOTTOM DEPTH m: Start: 161 End: 161 Est. Av. Depth: 161
NET DEPTH RANGE m: 126 Est. Av. Depth: 126
DIRECTION OF SET °true: 80 SPEED kn: 3.2 DISTANCE TRAVELED: 1.6 mi.
SET ON: surf layer WATER CONDITION: H. chop TIDE: Ebb
WIND DIRECTION: _____ WIND SPEED: 20 RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Set on surface layer to 30 fm.
SOUNDER SUMMARY:

Table 8 (con'td)

VESSEL: G.B. REED DATE: 79 Nov 4 Yr Mo Day SET/HAUL NO: 5
LOCATION: S.E. of Finger Bank AREA: W.C.V.I.
START: Lat. 48° 29.3' Long. 125° 19.4'
END: Lat. 48° 28.9' Long. 125° 17.1'
GEAR: M.W.T. - 434 E START TIME (0837): P.S.T. DURATION: 30 min.
BOTTOM DEPTH m: Start: 150 End: 154 Est. Av. Depth: 152
NET DEPTH RANGE m: 137-126 Est. Av. Depth: 142
DIRECTION OF SET °true: 90 SPEED kn: 3.4 DISTANCE TRAVELED: 1.7 mi.
SET ON: off bottom layer WATER CONDITION: H. chop TIDE: flood
WIND DIRECTION: WIND SPEED: RECORDER: F. Taylor
TTM: TDM: BT: OTHER OCEANOGRAPHIC DATA:
REMARKS: Layer 15 fm off bottom.
SOUNDER SUMMARY: Net open 6 fm.

VESSEL: G.B. REED DATE: 79 Nov 4 Yr Mo Day SET/HAUL NO: 6
LOCATION: Finger Bank AREA: W.C.V.I.
START: Lat. 48° 29.0' Long. 125° 30.7'
END: Lat. 48° 28.7' Long. 125° 29.7'
GEAR: M.W.T. - 434 E START TIME (1053): P.S.T. DURATION: 16 min.
BOTTOM DEPTH m: Start: 90 End: 95 Est. Av. Depth: 93
NET DEPTH RANGE m: 80-90 Est. Av. Depth: 83
DIRECTION OF SET °true: 100 SPEED kn: 3.4 DISTANCE TRAVELED: .9 mi.
SET ON: bottom school WATER CONDITION: H. chop TIDE:
WIND DIRECTION: 110 WIND SPEED: 30 kts RECORDER: F. Taylor
TTM: TDM: BT: OTHER OCEANOGRAPHIC DATA:
REMARKS: Net open 6 fm.
SOUNDER SUMMARY:

Table 8 (cont'd)

VESSEL: G.B. REED DATE: 79 Nov 4 Yr Mo Day SET/HAUL NO: 7
LOCATION: Finger Bank AREA: W.C.V.I.
START: Lat. 48° 27.8' Long. 125° 37.9'
END: Lat. 48° 28.7' Long. 125° 35.2'
GEAR: M.W.T. - 434 E START TIME (1253): P.S.T. DURATION: 37 min.
BOTTOM DEPTH m: Start: 100 End: 100 Est. Av. Depth: 100
NET DEPTH RANGE m: 96-90 Est. Av. Depth: 93
DIRECTION OF SET °true: 35 SPEED kn: 3.2 DISTANCE TRAVELED: 2 mi.
SET ON: bottom school WATER CONDITION: chop TIDE: --
WIND DIRECTION: WIND SPEED: RECORDER: F. Taylor
TTM: TDM: BT: OTHER OCEANOGRAPHIC DATA:
REMARKS: Set on herring schools on bottom.
SOUNDER SUMMARY: Net open 6 fm.

VESSEL: G.B. REED DATE: 79 Nov 7 Yr Mo Day SET/HAUL NO: 8
LOCATION: Bottleneck AREA: W.C.V.I.
START: Lat. 48° 39.0 Long. 125° 35.0'
END: Lat. 48° 38.8' Long. 125° 37.0
GEAR: M.W.T. - 434 E START TIME (0839): P.S.T. DURATION: 27 min.
BOTTOM DEPTH m: Start: 81 End: 81 Est. Av. Depth: 150
NET DEPTH RANGE m: 120 Est. Av. Depth: 120
DIRECTION OF SET °true: 275 SPEED kn: 1-2.9 DISTANCE TRAVELED: 1.4 mi.
SET ON: bottom (edge) WATER CONDITION: Lt. chop TIDE: flood
WIND DIRECTION: 100 WIND SPEED: 5 kts RECORDER: W. Barner
TTM: TDM: BT: OTHER OCEANOGRAPHIC DATA:
REMARKS: Gear was short cabled.
SOUNDER SUMMARY:

Table 8 (cont'd)

VESSEL: G.B. REED DATE: 79 Nov 7 SET/HAUL NO: 9
LOCATION: S.W. Corner AREA: W.C.V.I.
START: Lat. 48° 41.5' Long. 125° 45.8'
END: Lat. 48° 40.1 Long. 125° 44.6'
GEAR: M.W.T. - 434 E START TIME (1035) : P.S.T. DURATION: 27 min.
BOTTOM DEPTH m: Start: 135 End: 117 Est. Av. Depth: 126
NET DEPTH RANGE m: 122-108 Est. Av. Depth: 114
DIRECTION OF SET °true: 158 SPEED kn: 4.5 DISTANCE TRAVELED: 1.9 mi.
SET ON: bottom layer WATER CONDITION: ripple TIDE: flood
WIND DIRECTION: 130 WIND SPEED: 10 kts RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Net open 6 fm.
SOUNDER SUMMARY:

VESSEL: G.B. REED DATE: 79 Nov 7 SET/HAUL NO: 10
LOCATION: Outer Edge AREA: W.C.V.I.
START: Lat. 48° 24.5' Long. 126° 03.4'
END: Lat. 48° 25.8' Long. 126° 02.2'
GEAR: M.W.T. - 434 E START TIME (1341): P.S.T. DURATION: 30 min.
BOTTOM DEPTH m: Start: 200 End: 183 Est. Av. Depth: 191
NET DEPTH RANGE m: -- Est. Av. Depth: --
DIRECTION OF SET °true: 030 SPEED kn: 3 DISTANCE TRAVELED: 1.6 mi.
SET ON: bottom schools WATER CONDITION: ripple TIDE: --
WIND DIRECTION: 125 WIND SPEED: 10 kts RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Net open 6 fm.
SOUNDER SUMMARY:

Table 8 (cont'd)

VESSEL: G.B. REED DATE: 79 Nov 7 Yr Mo Day SET/HAUL NO: 11
LOCATION: Outer Edge AREA: W.C.V.I.
START: Lat. 48°31.7' Long. 126°06.6'
END: Lat. 48°33.5' Long. 126°08.5'
GEAR: M.W.T. - 434 E START TIME (1537) : P.S.T. DURATION: 39 min.
BOTTOM DEPTH m: Start: 183 End: 183 Est. Av. Depth: 183
NET DEPTH RANGE m: 176-165 Est. Av. Depth: 170
DIRECTION OF SET °true: 320 SPEED kn: 3.5 DISTANCE TRAVELED: 2.3 mi.
SET ON: low bottom layer WATER CONDITION: ripple TIDE: --
WIND DIRECTION: 0 WIND SPEED: 5-10 kts RECORDER: F. Taylor
TTM: TDM: BT: OTHER OCEANOGRAPHIC DATA:
REMARKS: Warp 300 fm.

SONDER SUMMARY:

VESSEL: G.B. REED DATE: 79 Nov 9 Yr Mo Day SET/HAUL NO: 12
LOCATION: Nitinat Canyon AREA: W.C.V.I.
START: Lat. 48°15.8' Long. 125°44.8'
END: Lat. 48°16.8' Long. 125°47.1'
GEAR: M.W.T. - 434 E START TIME (1516): P.S.T. DURATION: 28 min.
BOTTOM DEPTH m: Start: 348 End: 179 Est. Av. Depth: 182
NET DEPTH RANGE m: 179 Est. Av. Depth: 179
DIRECTION OF SET °true: 300 SPEED kn: -- DISTANCE TRAVELED: --
SET ON: near bottom WATER CONDITION: glass TIDE: H. slack
WIND DIRECTION: nil WIND SPEED: nil RECORDER: W. Barner
TTM: TDM: BT: OTHER OCEANOGRAPHIC DATA:
REMARKS: Net towed with footrope 2 fm off bottom. Warp 300 fm.
SONDER SUMMARY: Schools diving below footrope of net.

Table 8 (cont'd)

VESSEL: G.B. REED DATE: 79 Nov 9 Yr Mo Day SET/HAUL NO: 13
LOCATION: 100 fm Edge AREA: W.C.V.I.
START: Lat. 48°16.7' Long. 125°47.1'
END: Lat. 48°15.7' Long. 125°44.5'
GEAR: M.W.T. - 434 E START TIME (1736): P.S.T. DURATION: 29 min.
BOTTOM DEPTH m: Start: 179 End: 490 Est. Av. Depth: 182
NET DEPTH RANGE m: 117 m off bottom Est. Av. Depth: _____
DIRECTION OF SET °true: 105 SPEED kn: -- DISTANCE TRAVELED: --
SET ON: mid water layer WATER CONDITION: ripple TIDE: ebb
WIND DIRECTION: 270 WIND SPEED: 5 kts RECORDER: W. Barner
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Gear towed with headrope 70 fm off bottom. Warp 175 fm.
SOUNDER SUMMARY: Fish layer at 30-40 fm.

VESSEL: G.B. REED DATE: 79 Nov 9 Yr Mo Day SET/HAUL NO: 14
LOCATION: 100 fm Edge AREA: W.C.V.I.
START: Lat. 48°17.7' Long. 125°50.3'
END: Lat. 48°17.0' Long. 125°47.8'
GEAR: M.W.T. - 434 E START TIME (2001): P.S.T. DURATION: 30 min.
BOTTOM DEPTH m: Start: 245 End: 179 Est. Av. Depth: 183
NET DEPTH RANGE m: _____ Est. Av. Depth: 179
DIRECTION OF SET °true: 120 SPEED kn: 3.4 DISTANCE TRAVELED: 1.7 mi.
SET ON: bottom layer WATER CONDITION: ripple TIDE: ebb
WIND DIRECTION: 220 WIND SPEED: 5 kts RECORDER: W. Barner
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Layer from 80 fm to bottom.
SOUNDER SUMMARY: Gear towed with footrope 2-4 fm off bottom.

Table 8 (cont'd)

VESSEL: G.B. REED DATE: 79 Nov 10 Yr Mo Day SET/HAUL NO: 15
LOCATION: Barkley Canyon AREA: W.C.V.I.
START: Lat. 48° 25.9' Long. 126° 05.0'
END: Lat. 48° 25.0' Long. 126° 03.1'
GEAR: M.W.T. - 434 E START TIME (1011): P.S.T. DURATION: 2.7 min.
BOTTOM DEPTH m: Start: 208 End: 187 Est. Av. Depth: 187
NET DEPTH RANGE m: 2-9 off bottom Est. Av. Depth: 183
DIRECTION OF SET °true: 120 SPEED kn: 3.5 DISTANCE TRAVELED: 1.7 mi.
SET ON: bottom school WATER CONDITION: ripple TIDE: ebb
WIND DIRECTION: 270 WIND SPEED: 5 kts RECORDER: W. Barner
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: _____
SOUNDER SUMMARY: Herring-like school 94-114 fm.

VESSEL: G.B. REED DATE: 79 Nov 10 Yr Mo Day SET/HAUL NO: 16
LOCATION: Nitinat Canyon AREA: W.C.V.I.
START: Lat. 48° 15.0' Long. 125° 41.8'
END: Lat. 48° 05.5' Long. 125° 37.0'
GEAR: M.W.T. - 434 E START TIME (1331): P.S.T. DURATION: 30 min.
BOTTOM DEPTH m: Start: 146 End: 168 Est. Av. Depth: 157
NET DEPTH RANGE m: 9 off bottom Est. Av. Depth: 148
DIRECTION OF SET °true: 205 SPEED kn: 4.0 DISTANCE TRAVELED: 1.8 mi.
SET ON: bottom school WATER CONDITION: ripple TIDE: _____
WIND DIRECTION: 270 WIND SPEED: 5-10 kts RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: _____

SOUNDER SUMMARY: A lot of juvenile fish seen escaping from net when gear was hauled.

Table 8 (cont'd)

VESSEL: G.B. REED DATE: 79 Nov 10 Yr Mo Day SET/HAUL NO: 17
LOCATION: Prairies AREA: W.C.V.I.
START: Lat. 48°04.4' Long. 125°36.2'
END: Lat. 48°05.1' Long. 125°36.3'
GEAR: M.W.T. - 434 E START TIME (1552): P.S.T. DURATION: 17 min.
BOTTOM DEPTH m: Start: 212 End: 172 Est. Av. Depth: 192
NET DEPTH RANGE m: _____ Est. Av. Depth: _____
DIRECTION OF SET °true: 333 SPEED kn: -- DISTANCE TRAVELED: --
SET ON: small bottom schools WATER CONDITION: ripple TIDE: _____
WIND DIRECTION: 315 WIND SPEED: 5 kts RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 275 fm.
SOUNDER SUMMARY: Net ripped, gear touched bottom.

VESSEL: G.B. REED DATE: 79 Nov 12 Yr Mo Day SET/HAUL NO: 18
LOCATION: Prairies AREA: W.C.V.I.
START: Lat. 48°18.1' Long. 125°39.0'
END: Lat. 48°18.9' Long. 125°39.5'
GEAR: M.W.T. - 434 E START TIME (0829): P.S.T. DURATION: 16 min.
BOTTOM DEPTH m: Start: 143 End: 143 Est. Av. Depth: 143
NET DEPTH RANGE m: 139 Est. Av. Depth: 139
DIRECTION OF SET °true: 330 SPEED kn: 3.6 DISTANCE TRAVELED: 0.8 mi.
SET ON: _____ WATER CONDITION: ripple TIDE: ebb
WIND DIRECTION: 90 WIND SPEED: 5 kts RECORDER: W. Barner
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: _____
SOUNDER SUMMARY: Net towed with footrope 2-3 fm off bottom.

Table 8 (cont'd)

VESSEL: G.B. REED DATE: 79 Nov 12 Yr Mo Day SET/HAUL NO: 19
LOCATION: Prairies AREA: W.C.V.I.
START: Lat. 48°18.1' Long. 125°35.1'
END: Lat. 48°19.5' Long. 125°32.9'
GEAR: M.W.T. - 434 E START TIME (1045) : P.S.T. DURATION: 35 min.
BOTTOM DEPTH m: Start: 134 End: 132 Est. Av. Depth: 133
NET DEPTH RANGE m: 128-126 Est. Av. Depth: 128-126
DIRECTION OF SET °true: 052 SPEED kn: 3.5 DISTANCE TRAVELED: 1.8 mi.
SET ON: bottom schools WATER CONDITION: ripple TIDE: ebb
WIND DIRECTION: 90 WIND SPEED: 10 kts RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Net open 6.5 fm. A lot of juvenile herring escaped while hauling net.
SOUNDER SUMMARY: _____

VESSEL: G.B. REED DATE: 79 Nov 12 Yr Mo Day SET/HAUL NO: 20
LOCATION: Prairies AREA: W.C.V.I.
START: Lat. 48°21.3' Long. 125°29.7'
END: Lat. 48°19.7' Long. 125°27.9'
GEAR: M.W.T. - 434 E START TIME (1307): P.S.T. DURATION: 33 min.
BOTTOM DEPTH m: Start: 132 End: 128 Est. Av. Depth: 130
NET DEPTH RANGE m: 126 Est. Av. Depth: 126
DIRECTION OF SET °true: 140 SPEED kn: 3.5 DISTANCE TRAVELED: 1.9 mi.
SET ON: mid layer WATER CONDITION: ripple TIDE: _____
WIND DIRECTION: 90 WIND SPEED: 2-5 kts RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Fish in mid layer avoided net.
SOUNDER SUMMARY: Fish caught while net was near bottom.

Table 8. (cont'd)

VESSEL: G.B. REED DATE: 79 Nov 12 Yr Mo Day SET/HAUL NO: 21
LOCATION: Just S.E. Finger Bank AREA: W.C.V.I.
START: Lat. 48° 28.1' Long. 125° 26.5'
END: Lat. 48° 27.8' Long. 125° 26.5'
GEAR: M.W.T. - 434 E START TIME (1517) : P.S.T. DURATION: 6 min.
BOTTOM DEPTH m: Start: 154 End: 154 Est. Av. Depth: 154
NET DEPTH RANGE m: 146 Est. Av. Depth: 146
DIRECTION OF SET °true: 153 SPEED kn: -- DISTANCE TRAVELED: --
SET ON: bottom layer WATER CONDITION: ripple TIDE: flood
WIND DIRECTION: 170°T WIND SPEED: 5 kts RECORDER: W. Barner
TTM: TDM: BT: OTHER OCEANOGRAPHIC DATA:
REMARKS: Layer from 70 fm to bottom.
SOUNDER SUMMARY:

VESSEL: G.B. REED DATE: 79 Nov 14 Yr Mo Day SET/HAUL NO: 22
LOCATION: Prairies AREA: W.C.V.I.
START: Lat. 48° 21.4' Long. 125° 11.0'
END: Lat. 48° 22.4' Long. 125° 11.3'
GEAR: M.W.T. - 434 E START TIME (0916): P.S.T. DURATION: 15 min.
BOTTOM DEPTH m: Start: 179 End: 179 Est. Av. Depth: 179
NET DEPTH RANGE m: 161 Est. Av. Depth: 161
DIRECTION OF SET °true: 350 SPEED kn: 2.4 DISTANCE TRAVELED: 1.1 mi.
SET ON: bottom layer WATER CONDITION: chop TIDE: ebb
WIND DIRECTION: 70 WIND SPEED: 15 kts RECORDER: W. Barner
TTM: TDM: BT: OTHER OCEANOGRAPHIC DATA:
REMARKS: Net towed with fottrope 10-15 fm off bottom.
SOUNDER SUMMARY: Large amounts of juvenile eulachons lost when gear was hauled.

Table 8 (cont'd)

VESSEL: G.B. REED DATE: 79 Nov 14 Yr Mo Day SET/HAUL NO: 23
LOCATION: Prairies AREA: W.G.V.I.
START: Lat. 48°19.8' Long. 125°13.3'
END: Lat. 48°21.4' Long. 125°14.0'
GEAR: M.W.T. - 434 E START TIME (1052) : P.S.T. DURATION: 29 min.
BOTTOM DEPTH m: Start: 187 End: 181 Est. Av. Depth: 183
NET DEPTH RANGE m: 148 Est. Av. Depth: 148
DIRECTION OF SET °true: 340 SPEED kn: 3.7 DISTANCE TRAVELED: 1.8 mi.
SET ON: bottom layer WATER CONDITION: lt chop TIDE: ebb
WIND DIRECTION: 70°T WIND SPEED: 20 kts RECORDER: W. Barner
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Net open 6 fm. Warp 300 fm.

SOUNDER SUMMARY:

VESSEL: G.B. REED DATE: 79 Nov 24 Yr Mo Day SET/HAUL NO: 24
LOCATION: W. of Swiftsure AREA: W.G.V.I.
START: Lat. 48°26.1' Long. 125°07.1'
END: Lat. 48°27.7' Long. 125°08.4'
GEAR: M.W.T. - 434 E START TIME (1255): P.S.T. DURATION: 30 min.
BOTTOM DEPTH m: Start: 110 End: 156 Est. Av. Depth: 133
NET DEPTH RANGE m: _____ Est. Av. Depth: _____
DIRECTION OF SET °true: 340 SPEED kn: 3.6 DISTANCE TRAVELED: 1.8 mi.
SET ON: _____ WATER CONDITION: H. chop TIDE: _____
WIND DIRECTION: 70 WIND SPEED: 40 kts RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 250 fm. Net open 6.5 fm.

SOUNDER SUMMARY:

Table 8 (cont'd)

VESSEL: G.B. REED DATE: 79 Nov 14 Yr Mo Day SET/HAUL NO: 25
LOCATION: off Swiftsure AREA: W.C.V.I.
START: Lat. 48°30.3' Long. 125°06.8'
END: Lat. 48°32.0' Long. 125°07.6'
GEAR: M.W.T. - 434 E START TIME (1456) P.S.T. DURATION: 31 min.
BOTTOM DEPTH m: Start: 141 End: 119 Est. Av. Depth: 128
NET DEPTH RANGE m: _____ Est. Av. Depth: 110
DIRECTION OF SET °true: 345 SPEED kn: 3.5 DISTANCE TRAVELED: 1.8 mi.
SET ON: bottom layer WATER CONDITION: H. chop TIDE: flood
WIND DIRECTION: 70°T WIND SPEED: 20 kts RECORDER: W. Barner
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Light layer 50 fm to bottom.
SOUNDER SUMMARY: Fish the heavier dots in top of layer.

VESSEL: G.B. REED DATE: 79 Nov 14 Yr Mo Day SET/HAUL NO: 26
LOCATION: S. of Finger Bank AREA: W.C.V.I.
START: Lat. 48°27.7' Long. 125°25.7'
END: Lat. 48°29.2' Long. 125°26.6'
GEAR: M.W.T. - 434 E START TIME (1836): P.S.T. DURATION: 29 min.
BOTTOM DEPTH m: Start: 154 End: 106 Est. Av. Depth: 154
NET DEPTH RANGE m: _____ Est. Av. Depth: 140
DIRECTION OF SET °true: 345 SPEED kn: 3.2 DISTANCE TRAVELED: 1.5 mi.
SET ON: bottom layer WATER CONDITION: chop TIDE: flood
WIND DIRECTION: 70°T WIND SPEED: 20 kts RECORDER: _____
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Net open 6.5 fm.
SOUNDER SUMMARY:

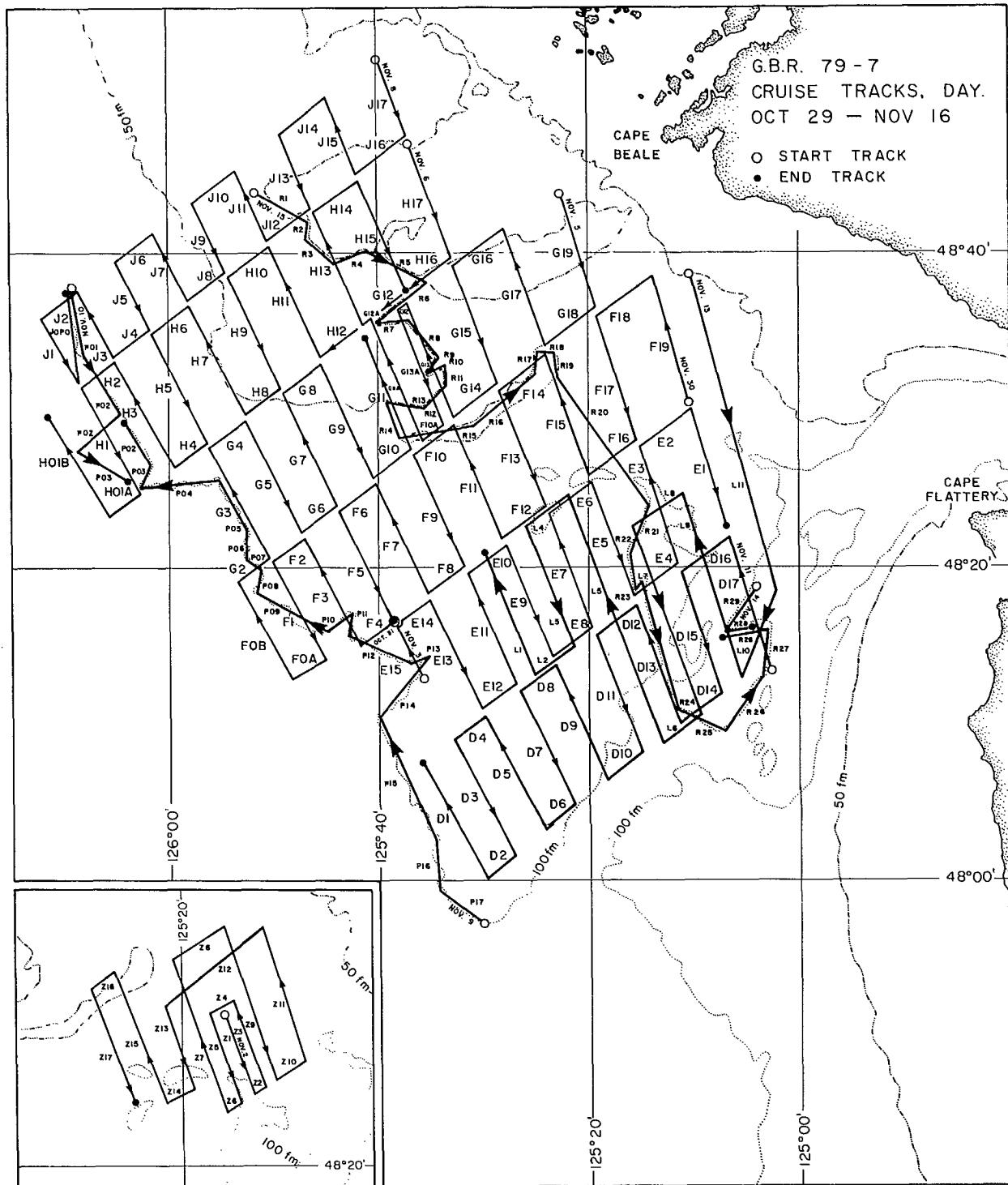


Fig. 1. Cruise tracks for cruise G.B.R. 79-7, southwest coast of Vancouver Island, October 29–November 16, 1979.



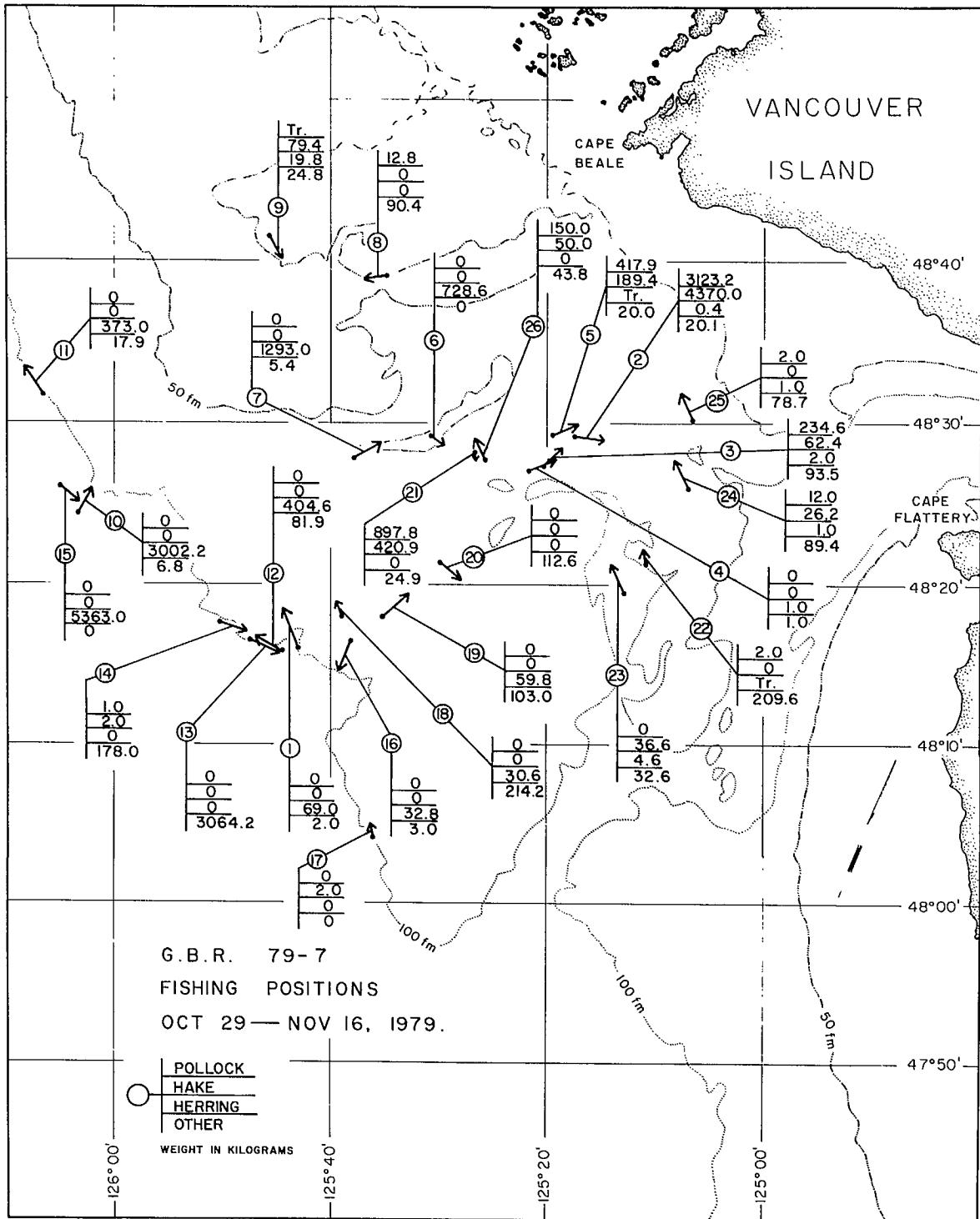


Fig. 2. Location of midwater trawl tows southwest coast of Vancouver Island, cruise G.B.R. 79-7, October 29-November 16, 1979, showing the major fish species caught in kilograms.



Appendix Table 1. Size composition of walleye pollock (Theragra chalcogramma), numbers sampled by haul and sex, for G.B. REED Cruise GBR79-7, October 29–November 16, 1979.

Fork Length (cm)	Haul no.											
	2			3			5			8		
	M	F	T	M	F	T	M	F	T	M	F	T
25	—	—	—	—	—	—	—	—	—	2	1	3
26	—	—	—	—	—	—	—	—	—	3	5	8
27	—	—	—	—	—	—	—	—	—	9	3	12
28	—	—	—	—	—	—	—	—	—	8	9	17
29	—	—	—	—	—	—	—	—	—	8	5	13
30	—	—	—	—	—	—	—	—	—	2	4	6
31	—	—	—	—	—	—	—	—	—	2	0	2
32	—	—	—	—	—	—	—	—	—	0	1	1
33	—	—	—	—	—	—	—	—	—	1	—	1
34	—	—	—	1	—	1	2	—	2	—	—	—
35	2	—	2	1	—	1	2	3	5	—	—	—
36	4	2	6	0	—	0	2	1	3	—	—	—
37	10	7	17	0	1	1	6	3	9	—	—	—
38	15	8	23	5	8	13	4	11	15	—	—	—
39	10	18	28	7	2	9	8	5	13	—	—	—
40	10	11	21	6	5	11	3	4	7	—	—	—
41	10	15	25	4	6	10	2	6	8	—	—	—
42	6	10	16	11	3	14	2	2	4	—	—	—
43	12	8	20	12	7	19	3	3	6	—	—	—
44	22	8	30	17	1	18	2	1	3	—	—	—
45	21	6	27	18	5	23	1	2	3	—	—	—
46	20	11	31	12	7	19	4	5	9	—	—	—
47	10	13	23	11	10	21	2	1	3	—	—	—
48	6	8	14	5	3	8	1	1	2	—	—	—
49	3	13	16	5	11	16	—	2	2	—	—	—
50	0	9	9	1	7	8	—	3	3	—	—	—
51	1	5	6	—	4	4	—	0	0	—	—	—
52	—	2	2	—	3	3	—	1	1	—	—	—
53	—	2	2	—	1	1	—	2	2	—	—	—
54	—	1	1	—	—	—	—	—	—	—	—	—
Total	162	157	319	116	84	200	44	56	100	35	28	63

Appendix Table 1 cont'd.

Fork Length (cm)	Haul no.									Male total	Female total	Total			
	21			24			26								
	M	F	T	M	F	T	M	F	T						
25	-	-	-	-	-	-	-	-	-	2	1	3			
26	-	-	-	-	-	-	1	1	2	4	6	10			
27	-	-	-	-	-	-	0	0	0	9	3	12			
28	-	-	-	-	-	-	0	1	1	8	10	18			
29	-	-	-	1	-	1	2	1	3	11	6	17			
30	-	-	-	0	-	0	1	4	5	3	8	11			
31	-	-	-	1	-	1	4	0	4	7	0	7			
32	-	-	-	0	-	0	1	0	1	1	1	2			
33	-	-	-	1	-	1	1	1	2	3	1	4			
34	-	-	-	0	2	2	2	0	2	5	2	7			
35	-	1	1	4	1	5	2	2	4	11	7	18			
36	1	1	2	1	0	1	8	2	10	16	6	22			
37	3	1	4	0	4	4	12	12	24	31	28	59			
38	4	5	9	1	3	4	12	12	24	41	47	88			
39	7	3	10	2	0	2	9	17	26	43	45	88			
40	4	4	8	0	0	0	15	26	41	38	50	88			
41	4	10	14	1	3	4	8	19	27	29	59	88			
42	4	6	10	1	0	1	5	15	20	29	36	65			
43	2	5	7	-	0	0	7	12	19	36	35	71			
44	3	3	6	-	0	0	1	4	5	45	17	62			
45	3	6	9	-	0	0	3	4	7	46	23	69			
46	0	4	4	-	0	0	6	2	8	42	29	71			
47	3	1	4	-	0	0	1	2	3	27	27	54			
48	1	4	5	-	0	0	3	2	5	16	18	34			
49	0	1	1	-	1	1	-	2	2	8	30	38			
50	1	2	3	-	-	-	-	2	2	2	23	25			
51	-	2	2	-	-	-	-	2	2	1	13	14			
52	-	0	0	-	-	-	-	-	-	0	6	6			
53	-	1	1	-	-	-	-	-	-	0	6	6			
54	-	-	-	-	-	-	-	-	-	0	1	1			
Total	40	60	100	13	14	27	104	145	249	514	544	1058			

Appendix Table 2. Size composition of hake (*Merluccius productus*), numbers sampled, by haul and sex, for G.B. REED cruise GBR79-7, October 29-November 16, 1979.

Fork length (cm)	Haul no.														
	2			3			5			9			21		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
45	-	-	-	-	-	-	-	-	-	2	-	2	-	-	-
46	-	-	-	-	-	-	-	-	-	0	-	0	-	-	-
47	-	-	-	-	-	-	-	-	-	0	-	0	-	-	-
48	1	1	2	1	-	1	-	-	-	0	-	0	1	-	1
49	1	1	2	0	-	0	1	1	2	0	2	2	0	1	1
50	5	5	10	1	-	1	1	3	4	1	0	1	2	2	4
51	7	13	20	1	3	4	2	2	4	1	0	1	2	5	7
52	8	19	27	3	3	6	1	5	6	0	2	2	2	5	7
53	9	24	33	5	3	8	5	6	11	2	1	3	4	18	22
54	4	34	38	3	6	9	2	11	13	1	3	4	1	10	11
55	11	27	38	3	4	7	0	7	7	1	5	6	2	11	13
56	5	28	33	3	5	8	7	16	23	1	5	6	2	17	19
57	3	16	19	1	4	5	2	7	9	1	7	8	2	26	28
58	5	11	16	1	2	3	3	16	19	0	4	4	0	13	13
59	4	17	21	-	4	4	0	10	10	1	5	6	1	14	15
60	2	13	15	-	3	3	1	8	9	-	3	3	0	9	9
61	1	7	8	-	1	1	0	9	9	-	3	3	2	9	11
62	0	4	4	-	0	0	0	8	8	-	2	2	0	4	4
63	1	4	5	-	0	0	0	4	4	-	0	0	1	5	6
64	-	5	5	-	0	0	0	5	5	-	0	0	-	2	2
65	-	1	1	-	0	0	0	1	1	-	0	0	-	6	6
66	-	1	1	-	0	0	0	-	-	-	1	1	-	2	2
67	-	0	0	-	1	1	0	-	-	-	0	0	-	2	2
68	-	1	1	-	-	-	1	-	1	-	0	0	-	3	3
69	-	-	-	-	-	-	-	-	-	-	1	1	-	0	0
70	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0
71	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Total	67	232	299	22	39	61	26	119	145	11	44	55	23	166	189

Appendix Table 2 (cont'd)

Fork length (cm)	Haul no.									Male total	Female total	Total			
	23			24			26								
	M	F	T	M	F	T	M	F	T						
45	-	-	-	-	-	-	-	-	-	2	-	2			
46	-	-	-	-	-	-	-	-	-	0	-	0			
47	-	-	-	-	-	-	-	-	-	1	-	1			
48	-	-	-	-	-	-	-	-	-	3	1	4			
49	-	-	-	-	-	-	-	-	-	2	5	7			
50	-	-	-	-	-	-	1	-	1	11	10	21			
51	-	4	4	1	-	1	0	3	3	14	30	44			
52	1	1	2	0	1	1	0	2	2	15	38	53			
53	1	2	3	0	1	1	0	1	1	26	56	82			
54	3	1	4	0	1	1	1	1	2	15	67	82			
55	0	1	1	0	2	2	1	1	2	18	58	76			
56	0	4	4	1	1	2	2	2	4	21	78	99			
57	0	2	2	1	0	1	0	4	4	10	66	76			
58	0	0	0	-	0	0	0	0	0	9	46	55			
59	1	4	5	-	3	3	0	3	3	7	60	67			
60	0	1	1	-	1	1	0	3	3	3	41	44			
61	1	0	1	-	0	0	0	5	5	4	34	38			
62	0	1	1	-	3	3	0	3	3	0	25	25			
63	0	0	0	-	1	1	1	1	2	3	15	18			
64	1	1	2	-	0	0	1	0	1	2	13	15			
65	-	-	-	-	0	0	-	2	2	0	10	10			
66	-	-	-	-	2	2	-	1	1	0	7	7			
67	-	-	-	-	-	-	-	-	-	0	3	3			
68	-	-	-	-	-	-	-	-	-	1	4	5			
69	-	-	-	-	-	-	-	-	-	-	1	1			
70	-	-	-	-	-	-	-	-	-	-	0	0			
71	-	-	-	-	-	-	-	-	-	-	1	1			
72	-	-	-	-	-	-	-	-	-	-	1	1			
Total	8	22	30	3	16	19	7	32	39	167	670	837			

Appendix Table 3. Size composition of herring (Clupea harengus pallasi), numbers sampled, by haul and sex, for G.B. REED cruise GBR79-7.

Length	Haul no.														
	1			6			7			9			10		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
70- 92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93- 95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
96- 98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102- 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5- 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111- 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4- 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7- 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120- 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3- 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6- 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-131	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
132- 4	-	-	-	-	-	-	-	-	-	0	0	-	-	-	-
5- 7	-	-	-	-	-	-	-	-	-	0	0	-	-	-	-
8-140	-	-	-	-	-	-	-	-	-	0	0	-	-	-	-
141- 3	-	-	-	-	-	-	-	-	-	1	0	1	3	2	5
4- 6	-	-	-	-	-	-	-	-	-	0	2	2	1	1	2
7- 9	-	1	1	-	-	-	-	-	-	1	0	1	3	1	4
150- 2	1	1	2	-	-	-	-	-	-	7	6	13	3	2	5
3- 5	1	2	3	-	-	-	-	-	-	3	12	15	5	7	12
6- 8	6	5	11	-	-	-	-	-	-	9	6	15	5	10	15
9-161	6	7	13	1	-	1	-	-	-	3	1	4	5	5	10
162- 4	11	4	15	1	-	1	-	-	-	11	9	20	17	14	31
5- 7	6	7	13	0	1	1	1	-	1	0	1	1	1	5	6
8-170	6	6	12	1	1	2	0	-	0	3	1	4	4	1	5
171- 3	2	2	4	0	0	0	-	0	0	3	3	3	1	1	2

Appendix Table 3 (cont'd)

Length	Haul no.														
	1			6			7			9			10		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
174-176	2	1	3	2	0	2	0	-	0	3	6	9	-	2	2
7- 9	2	2	4	3	0	3	1	1	2	1	2	3	-	1	1
180- 2	2	0	2	1	4	5	1	1	2	0	2	2	-	1	1
3- 5	3	1	4	2	2	4	2	0	2	3	2	5	-	-	-
6- 8	1	1	2	1	0	1	0	1	1	0	0	0	-	-	-
9-191	0	2	2	1	0	1	1	0	1	2	0	2	-	-	-
192- 4	2	0	2	4	0	4	8	0	8	0	1	1	-	-	-
5- 7	0	1	1	3	0	3	5	2	7	0	-	0	-	-	-
8-200	4	1	5	3	4	7	4	1	5	0	-	0	-	-	-
201- 3	2	1	3	7	5	12	8	5	13	0	-	0	-	-	-
4- 6	1	1	2	4	3	7	9	0	9	0	-	0	-	-	-
7- 9	-	1	1	6	2	8	3	7	10	0	-	0	-	-	-
210- 2	-	0	0	3	5	8	3	5	8	0	-	0	-	-	-
3- 5	-	0	0	6	5	11	1	4	5	0	-	0	-	-	-
6- 8	-	1	1	2	5	7	3	4	7	0	-	0	-	-	-
9-221	-	-	-	1	4	5	4	0	4	1	-	1	-	-	-
222- 4	-	-	-	3	0	3	2	2	4	-	-	-	-	-	-
5- 7	-	-	-	1	1	2	3	0	3	-	-	-	-	-	-
8-230	-	-	-	1	1	2	1	0	1	-	-	-	-	-	-
231- 3	-	-	-	-	0	0	2	2	4	-	-	-	-	-	-
4- 6	-	-	-	-	0	0	2	-	2	-	-	-	-	-	-
7- 9	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
240- 2	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
Total	58	48	106	57	45	102	64	35	99	48	55	103	48	53	101

Appendix Table 3 (cont'd.)

Length	Haul no.																
	11			12			15			16			18				
	M	F	T	M	F	U	T	M	F	T	M	F	U	M	F	U	T
70- 92	-	-	-	-	-	6	6	-	-	-	-	-	69	-	-	22	22
93- 95	-	-	-	-	1	5	6	-	-	-	-	-	17	-	-	1	1
96- 98	-	-	-	-	0	0	0	-	-	-	-	-	10	-	-	-	-
99-101	-	-	-	-	0	2	2	-	-	-	-	-	2	-	-	-	-
102- 4	-	-	-	-	0	2	2	-	-	-	-	-	4	-	-	-	-
5- 7	-	-	-	-	0	1	1	-	-	-	-	-	2	-	-	-	-
8-110	-	-	-	-	0	0	0	-	-	-	-	-	0	-	-	-	-
111- 3	-	-	-	-	1	0	1	-	-	-	-	-	1	-	-	-	-
4- 6	-	-	-	-	1	1	2	-	-	-	-	-	1	-	-	-	-
7- 9	-	-	-	-	0	0	0	-	-	-	-	-	-	-	-	-	-
120- 2	-	-	-	-	0	0	0	-	-	-	-	-	-	-	-	-	-
3- 5	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-
6- 8	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-
9-131	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-
132- 4	-	-	-	-	1	0	-	1	-	-	-	-	-	-	-	-	-
5- 7	-	2	2	1	1	-	2	-	-	-	-	-	-	-	-	-	-
8-140	4	1	5	0	1	-	1	2	-	2	-	-	-	-	1	-	1
141- 3	2	4	6	0	0	-	0	1	1	2	-	-	-	-	1	-	1
4- 6	5	2	7	0	0	-	0	0	3	3	-	-	-	-	2	-	2
7- 9	11	7	18	2	3	-	5	5	4	9	-	-	-	-	1	3	4
150- 2	2	20	22	1	3	-	4	6	3	9	-	-	-	-	6	2	8
3- 5	5	8	13	4	1	-	5	4	5	9	-	-	-	-	2	3	5
6- 8	2	16	18	1	8	-	9	9	11	20	-	-	-	-	7	8	15
9-161	3	6	9	7	2	-	9	5	7	12	-	-	-	-	6	5	11
162- 4	-	0	0	4	4	-	8	4	14	18	-	-	-	-	5	0	5
5- 7	-	0	0	1	3	-	4	2	8	10	-	-	-	-	7	6	13
8-170	-	1	1	1	5	-	6	0	1	1	-	-	-	-	1	0	1
171- 3	-	0	0	1	1	-	2	1	2	3	-	-	-	-	2	2	4

Appendix Table 3 (cont'd)

Length	Haul no.																
	11			12				15			16			18			
	M	F	T	M	F	U	T	M	F	T	M	F	U	M	F	U	T
174-176	-	0	0	0	1	-	1	1	1	2	-	-	-	1	0	-	1
7- 9	-	0	0	1	1	-	2	-	-	-	-	-	-	0	1	-	1
180-	2	-	1	1	0	1	-	1	-	-	-	-	-	0	0	-	0
3- 5	-	0	0	1	2	-	3	-	-	-	-	-	-	0	1	-	1
6- 8	-	0	0	1	2	-	3	-	-	-	-	-	-	1	1	-	2
9-191	-	1	1	2	0	-	2	-	-	-	-	-	-	0	1	-	1
192-	4	-	1	1	1	0	-	1	-	-	-	-	-	0	2	-	2
5- 7	-	-	-	0	1	-	1	-	-	-	-	-	-	0	1	-	1
8-200	-	-	-	2	0	-	2	-	-	-	-	-	-	0	-	-	0
201-	3	-	-	-	0	2	-	2	-	-	-	-	-	1	-	-	1
4- 6	-	-	-	1	0	-	1	-	-	-	-	-	-	1	-	-	1
7- 9	-	-	-	-	1	-	1	-	-	-	-	-	-	0	-	-	0
210-	2	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
3- 5	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
6- 8	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
9-221	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
222-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5- 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
231-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4- 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7- 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
240-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	34	70	104	33	46	17	96	40	60	100	-	-	106	43	40	23	106

Appendix Table 3 (cont'd)

Haul no.	19				23				GTM	GTF	GTU	GT
	M	F	U	T	M	F	U	T				
70- 92	-	-	6	6	-	-	75	75	-	-	178	178
93- 95	-	-	1	1	-	-	7	7	-	1	31	32
96- 98	-	-	-	-	-	-	4	4	-	0	14	14
99-101	-	-	-	-	-	-	4	4	-	0	8	8
102- 4	-	-	-	-	-	-	3	3	-	0	9	9
5- 7	-	-	-	-	-	-	1	1	-	0	4	3
8-110	-	-	-	-	-	-	0	0	-	0	0	0
111- 3	-	-	-	-	-	-	1	1	=	1	2	3
4- 6	-	-	-	-	-	-	-	-	-	1	2	3
7- 9	-	-	-	-	-	-	-	-	-	0	0	0
120- 2	-	-	-	-	-	-	-	-	-	0	0	0
3- 5	-	-	-	-	-	-	-	-	-	0	0	0
6- 8	-	-	-	-	-	-	-	-	-	0	0	0
9-131	-	-	-	-	-	-	-	-	-	1	0	1
132- 4	-	-	-	-	1	-	-	1	2	0	0	2
5- 7	-	-	-	-	0	1	-	1	1	4	-	5
8-140	-	-	-	-	0	0	-	0	6	3	-	9
141- 3	1	-	-	1	1	1	-	2	9	9	-	18
4- 6	0	-	-	0	0	0	-	0	6	10	-	16
7- 9	2	-	-	2	1	0	-	1	26	19	-	45
150- 2	0	1	-	0	1	1	-	2	27	39	-	66
3- 5	0	1	-	0	2	0	-	2	26	39	-	65
6- 8	1	5	-	1	0	0	-	0	40	69	-	109
9-161	4	2	-	4	0	0	-	0	40	35	-	75
162- 4	6	4	-	6	0	3	-	3	59	52	-	111
5- 7	2	4	-	2	1	0	-	1	21	35	-	56
8-170	6	1	-	6	0	1	-	1	22	18	-	40
171- 3	3	9	-	3	0	1	-	1	10	21	-	31

Appendix Table 3 (cont'd)

Haul no.	19				23				GTM	GTF	GTU	GT
	M	F	U	T	M	F	U	T				
174-176	3	5	-	8	0	-	-	0	12	16	-	28
7- 9	2	6	-	8	1	-	-	1	11	14	-	25
180- 2	1	5	-	6	-	-	-	-	5	15	-	20
3- 5	3	4	-	7	-	-	-	-	14	12	-	26
6- 8	1	0	-	1	-	-	-	-	5	5	-	10
9-191	1	1	-	2	-	-	-	-	7	5	-	12
192- 4	0	2	-	2	-	-	-	-	15	6	-	21
5- 7	1	2	-	3	-	-	-	-	9	7	-	16
8-200	2	1	-	3	-	-	-	-	15	7	-	22
201- 3	2	1	-	3	-	-	-	-	20	14	-	34
4- 6	-	-	-	-	-	-	-	-	16	4	-	20
7- 9	-	-	-	-	-	-	-	-	9	11	-	20
210- 2	-	-	-	-	-	-	-	-	6	10	-	16
3- 5	-	-	-	-	-	-	-	-	8	9	-	17
6- 8	-	-	-	-	-	-	-	-	6	10	-	16
9-221	-	-	-	-	-	-	-	-	6	4	-	10
222- 4	-	-	-	-	-	-	-	-	5	2	-	7
5- 7	-	-	-	-	-	-	-	-	4	1	-	5
8-230	-	-	-	-	-	-	-	-	2	1	-	3
231- 3	-	-	-	-	-	-	-	-	2	2	-	4
4- 6	-	-	-	-	-	-	-	-	2	0	-	2
7- 9	-	-	-	-	-	-	-	-	-	1	-	1
240- 2	-	-	-	-	-	-	-	-	-	1	-	1
Total	41	54	7	102	8	8	95	111	474	514	248	1236

Appendix Table 4. Size composition of dogfish (*Squalus acanthias*), numbers sampled, by haul and sex, for G.B. REED Cruise GBR79-7, October 29–November 16, 1979.

Fork length (cm)	Haul no.								
	3			9			12		
	M	F	T	M	F	T	M	F	T
48	1	—	1	—	—	—	—	—	—
49	0	—	0	—	—	—	—	—	—
50	0	—	0	—	—	—	—	—	—
51	0	—	0	—	—	—	—	—	—
52	0	—	0	—	—	—	—	—	—
53	0	2	2	—	—	—	—	—	—
54	0	0	0	—	—	—	—	—	—
55	0	0	0	—	—	—	—	—	—
56	0	0	0	—	—	—	—	—	—
57	0	0	0	—	—	—	—	1	1
58	0	0	0	—	—	—	—	0	0
59	0	1	1	—	—	—	—	0	0
60	0	1	1	—	—	—	—	0	0
61	2	2	4	—	—	—	—	0	0
62	1	0	1	—	—	—	—	1	1
63	0	0	0	—	—	—	1	1	2
64	0	1	1	—	—	—	0	0	0
65	0	1	1	—	—	—	0	0	0
66	0	0	0	—	—	—	1	0	1
67	0	0	0	—	—	—	2	0	2
68	0	0	0	—	—	—	0	2	2
69	0	0	0	—	—	—	0	0	0
70	0	0	0	—	—	—	1	0	1
71	0	0	0	—	—	—	0	0	0
72	1	0	1	—	—	—	0	0	0
73	0	0	0	—	—	—	1	1	2
74	0	1	1	—	—	—	0	2	2
75	0	0	0	—	—	—	2	0	2
76	0	0	0	—	—	—	2	0	2
77	0	0	0	—	—	—	0	1	1
78	0	0	0	1	—	1	2	—	2
79	0	0	0	0	—	0	2	—	2
80	1	0	1	1	—	1	1	—	1
81	0	0	0	1	—	1	0	—	0
82	0	0	0	—	—	0	0	—	0
83	1	1	2	—	—	0	0	—	0
84	—	—	—	—	—	0	1	—	1
85	—	—	—	—	—	0	—	—	—
86	—	—	—	—	—	0	—	—	—
87	—	—	—	—	—	0	—	—	—
88	—	—	—	—	—	0	—	—	—
89	—	—	—	—	—	0	—	—	—

Appendix Table 4 cont'd.

Fork length (cm)	Haul no.								
	3			9			12		
	M	F	T	M	F	T	M	F	T
90	-	-	-	-	-	-	0	-	-
91	-	-	-	-	-	-	0	-	-
92	-	-	-	-	-	-	0	-	-
93	-	-	-	-	-	-	0	-	-
94	-	-	-	-	-	-	0	-	-
95	-	-	-	-	-	-	0	-	-
96	-	-	-	-	-	-	0	-	-
97	-	-	-	-	-	-	0	-	-
98	-	-	-	-	-	-	0	-	-
99	-	-	-	-	-	-	0	-	-
100	-	-	-	-	1	1	-	-	-
101	-	-	-	-	1	1	-	-	-
Total	7	10	17	3	2	5	16	9	25

Appendix Table 4 (cont'd)

Appendix Table 4 (cont'd)

Fork length (cm)	Haul no.								
	13			14			19		
	M	F	T	M	F	T	M	F	T
90	-	-	-	-	-	-	-	-	-
91	-	-	-	-	-	-	-	-	-
92	-	-	-	-	-	-	-	-	-
93	-	-	-	-	-	-	-	-	-
94	-	-	-	-	-	-	-	-	-
95	-	-	-	-	-	-	-	-	-
96	-	-	-	-	-	-	-	-	-
97	-	-	-	-	-	-	-	-	-
98	-	-	-	-	-	-	-	-	-
99	-	-	-	-	-	-	-	-	-
100	-	-	-	-	-	-	-	-	-
101	-	-	-	-	-	-	-	-	-
Total	109	99	208	54	33	87	47	11	58

Appendix Table 4 (cont'd)

Fork length (cm)	Haul no.								
	20			26			GTM	GTF	GT
	M	F	T	M	F	T			
48	-	-	-	-	-	-	1	-	1
49	-	-	-	-	-	-	0	-	0
50	-	-	-	-	-	-	0	-	0
51	-	-	-	-	-	-	0	-	0
52	-	-	-	-	-	-	0	1	1
53	-	-	-	-	-	-	0	2	2
54	-	-	-	-	-	-	0	0	0
55	-	-	-	-	-	-	2	0	2
56	-	-	-	-	-	-	3	3	6
57	-	1	1	-	1	1	2	4	6
58	-	0	0	-	0	0	4	2	6
59	-	0	0	-	0	0	3	6	9
60	1	0	1	-	1	1	4	5	9
61	0	0	0	-	0	0	7	6	13
62	1	0	1	2	1	3	11	13	24
63	0	0	0	2	1	3	8	10	18
64	0	0	0	0	1	1	13	8	21
65	0	1	1	0	1	1	9	7	16
66	0	0	0	1	3	4	9	16	25
67	0	1	1	1	0	1	13	9	22
68	0	0	0	0	0	0	8	14	22
69	1	0	1	0	0	0	13	11	24
70	1	1	2	0	0	0	13	8	21
71	0	0	0	0	1	1	9	9	18
72	0	0	0	0	0	0	10	7	17
73	0	0	0	0	1	1	14	9	23
74	1	0	1	0	1	1	13	10	23
75	2	0	2	0	0	0	7	4	11
76	3	2	5	0	1	1	17	5	22
77	2	2	4	0	0	0	15	3	18
78	7	0	7	0	0	0	17	6	23
79	3	0	3	1	1	2	13	3	16
80	3	0	3	1	0	1	13	0	13
81	4	1	5	-	0	0	10	2	12
82	0	0	0	-	0	0	1	1	2
83	2	1	3	-	0	0	6	2	8
84	2	1	3	-	0	0	7	1	8
85	1	2	3	-	0	0	3	2	5
86	0	0	0	-	0	0	0	0	0
87	2	0	2	-	1	1	2	1	3
88	-	0	0	-	-	-	-	0	0
89	-	1	1	-	-	-	-	1	1

Appendix Table 4 (cont'd)

Fork length (cm)	Haul no.									
	20			26			GTM	GTF	GT	
	M	F	T	M	F	T				
90	-	2	2	-	-	-	-	2	2	
91	-	0	0	-	-	-	-	0	0	
92	-	1	1	-	-	-	-	1	1	
93	-	1	1	-	-	-	-	1	1	
94	-	-	-	-	-	-	-	0	0	
95	-	-	-	-	-	-	-	0	0	
96	-	-	-	-	-	-	-	0	0	
97	-	-	-	-	-	-	-	0	0	
98	-	-	-	-	-	-	-	0	0	
99	-	-	-	-	-	-	-	0	0	
100	-	-	-	-	-	-	-	1	1	
101	-	-	-	-	-	-	-	1	1	
Total	36	18	54	8	15	23	280	197	477	

Appendix Table 5. Size composition of chinook salmon (Oncorhynchus tshawytscha) numbers sampled, by haul and sex for G.B. REED Cruise GBR79-7, October 29-November 16, 1979.

Time	Date	Tow no.	Length (cm)	Sex	Wt. (kg)	Stomach contents
1456	Nov 1/79	2	38	M	0.6	3 cc digested fish
			41	F	0.7	4 cc digested fish
			45	M	1.1	0.5 cc digested material
			50	F	1.4	5 cc digested fish
0907	Nov 4/79	5	43	-	1.0	Empty
1341	Nov 7/79	10	75	M	6.8	1 herring, 1 shrimp
1610	Nov 7/79	11	65	F	3.5	Empty
1121	Nov 14/79	23	-	-	1.2	-
1325	Nov 14/79	24	21	M		1 juvenile herring
			26	F		1 juvenile herring
			27	F	1.0	2 juvenile herring
			28	M		1 juvenile herring
			29	M		2 juvenile herring
1527	Nov 14/79	25	45	F	5.4	6 cc of digested fish
			57	M		1 herring and 2 juvenile fish eulachons
1853	Nov 14/79	26	48	F		1 juvenile herring

Appendix Table 6. Size composition of Pacific ocean perch, (Sebastes alutus), by haul for G. B. REED Cruise GBR79-7, October 29- November 16, 1979.

Fork length (cm)	Haul no.		
	3		
	M	F	T
27	-	1	1
28	4	0	4
29	7	3	10
30	1	0	1
31	2	1	3
32	0	1	1
33	0	-	0
34	1	-	1
Total	15	6	21

Appendix Table 7. Size composition of yellowtail rockfish (Sebastodes flavidus), numbers sampled, by haul and sex, for G. B. REED Cruise GBR79-7, October 29-November 16, 1979.

Fork length (cm)	Haul no.											
	8			23			24			GTM	GTF	GT
	M	F	T	M	F	T	M	F	T			
26	1	-	1	-	-	-	-	-	-	1	-	1
27	0	1	1	-	-	-	-	-	-	0	1	1
28	3	3	6	-	-	-	-	-	-	3	3	6
29	2	2	4	-	-	-	-	-	-	2	2	4
30	3	0	3	-	-	-	-	-	-	3	0	3
31	-	0	0	-	-	-	-	-	-	0	0	0
32	-	0	0	-	-	-	-	-	-	0	0	0
33	-	3	3	-	-	-	-	-	-	0	3	3
34	-	1	1	-	-	-	1	-	1	1	1	2
35	-	-	-	-	-	-	0	-	0	0	0	0
36	-	-	-	-	-	-	0	-	0	0	0	0
37	-	-	-	-	-	-	0	-	0	0	0	0
38	-	-	-	1	-	1	0	-	0	1	0	1
39	-	-	-	1	-	1	1	-	1	2	0	2
40	-	-	-	1	-	1	0	-	0	1	0	1
41	-	-	-	0	1	1	0	1	1	0	2	2
42	-	-	-	0	1	1	0	0	0	0	0	1
43	-	-	-	0	0	0	0	0	0	0	0	0
44	-	-	-	1	1	2	0	0	0	1	1	2
45	-	-	-	-	0	0	0	0	0	0	0	0
46	-	-	-	-	1	1	2	1	3	2	2	4
47	-	-	-	-	1	1	0	0	0	0	1	1
48	-	-	-	-	0	0	0	0	0	0	0	0
49	-	-	-	-	1	1	1	0	1	1	1	2
50	-	-	-	-	-	-	-	0	0	0	0	0
51	-	-	-	-	-	-	-	0	0	0	0	0
52	-	-	-	-	-	-	-	1	1	0	1	1
Total	9	10	19	4	6	10	5	3	8	18	19	37

Appendix Table 8. Size composition of redstripe rockfish (Sebastodes proriger), numbers sampled by haul and sex, for G.B. REED Cruise GBR79-7, October 29-November 16, 1979.

Fork length (cm)	Haul no.											
	8			11			14			GTM	GTF	GT
	M	F	T	M	F	T	M	F	T			
19	1	-	1	-	-	-	-	-	-	1	-	1
20	1	-	1	-	-	-	-	-	-	1	-	1
21	3	5	8	-	-	-	-	-	-	3	5	8
22	22	17	39	-	-	-	-	-	-	22	17	39
23	20	15	35	-	-	-	-	-	-	20	15	35
24	22	18	40	-	-	-	-	-	-	22	18	40
25	16	12	28	1	-	1	-	-	-	17	12	29
26	7	6	13	1	-	1	-	-	-	8	6	14
27	4	2	6	4	-	4	-	-	-	8	2	10
28	2	7	9	2	1	3	-	-	-	4	8	12
29	-	-	-	1	0	1	1	-	1	2	0	2
30	-	-	-	0	1	1	3	-	3	3	1	4
31	-	-	-	1	2	3	-	2	2	1	4	5
32	-	-	-	-	3	3	-	3	3	0	6	6
33	-	-	-	-	2	2	-	0	0	0	2	2
34	-	-	-	-	2	2	-	3	3	0	5	5
35	-	-	-	-	0	0	-	1	1	0	1	1
36	-	-	-	-	0	0	-	4	4	0	4	4
37	-	-	-	-	1	1	-	2	2	0	3	3
38	-	-	-	-	0	0	-	0	0	0	0	0
39	-	-	-	-	1	1	-	3	3	0	4	4
40	-	-	-	-	-	-	-	2	2	0	2	2
41	-	-	-	-	-	-	-	1	1	0	1	1
Total	98	82	180	10	13	23	4	21	25	112	116	228

Appendix Table 9. Size composition of canary rockfish (Sebastodes pinniger), numbers sampled, by haul and sex, for G.B. REED Cruise GBR79-7, October 29-November 16, 1979.

Fork length (cm)	Haul no.		
	M	F	T
43	1	-	1
44	0	-	0
45	0	-	0
46	2	-	2
47	2	-	2
48	0	-	0
49	0	-	0
50	2	-	2
51	0	2	2
52	0	0	0
53	1	1	2
Total	8	3	11

