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ICHTHYOPLANKTON AND STATION DATA FOR CALIFORNIA COOPERATIVE OCEANIC FISHERIES INVESTIGATIONS SURVEY CRUISES IN 1999

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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Southwest Fisheries Science Center

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ABSTRACT

This report provides ichthyoplankton data and associated station and tow data from California Cooperative Oceanic Fisheries Investigations (CalCOFI) cruises conducted in the Southern California Bight region in 1999. It is the 39th report in a series that presents these data for all biological-oceanographic CalCOFI surveys from 1951 to the present. A total of 254 stations was occupied during quarterly cruises over the survey area which extended from Avila Beach to San Diego, California. Transects extended seaward in a southwesterly direction to a maximum of approximately 330 n. mi. The most seaward station, 90.0 120.0, was approximately 400 n. mi. west of Punta Baja, Baja California, Mexico. The data are listed in a series of four tables; the background, methodology, and information necessary for interpretation of the data are presented in an accompanying text. All pertinent station and tow data, including volumes of water strained and standard haul factors, are listed in the first table. Another table lists, by station and month, standardized counts of each of the 119 larval fish categories identified from survey samples. This series of reports makes the CalCOFI ichthyoplankton and station data available to all investigators and serves as a guide to the computer data base.

INTRODUCTION

This report, the 39th in the series, provides ichthyoplankton and associated station and tow data from California Cooperative Oceanic Fisheries Investigations (CalCOFI) joint biological-oceanographic survey cruises conducted in 1999. This program was initiated in 1949, under the sponsorship of the Marine Research Committee of the State of California, to study the population fluctuations of the Pacific sardine (*Sardinops sagax*) and the environmental factors that may play a role in these fluctuations. CalCOFI is a partnership among the Southwest Fisheries Science Center of the National Marine Fisheries Service (NMFS), the Scripps Institution of Oceanography (SIO), and the California Department of Fish and Game (CDFG). NMFS and SIO supply ships and personnel to conduct the sea surveys, NMFS processes the plankton samples and analyzes the ichthyoplankton from them. SIO processes and analyzes hydrographic and biological samples and analyzes invertebrate groups from the plankton samples.

The boundaries, station placement, and sampling frequency for the CalCOFI surveys were based on the results of joint biological-oceanographic cruises conducted by NMFS and SIO during 1939–41. Originally, CalCOFI cruises were designed to collect sardine eggs and larvae and associated hydrographic data over the entire areal and seasonal spawning range of the species. From 1951 to 1960 the surveys were annual with cruises conducted monthly. The survey area was occupied quarterly during 1961–1965 and in 1966 the surveys became triennial with monthly cruises. Beginning in 1985 annual surveys were resumed, with quarterly cruises occupying only the Southern California Bight region (see Hewitt 1988 and Moser et al. 1993, 1994 for summaries of CalCOFI historical sampling effort).

Hydrographic and biological data from CalCOFI surveys in 1999 have been published by the Scripps Institution of Oceanography (Univ. of Calif., SIO 2000a, b). All available records for all four 1999 CalCOFI surveys were verified and edited to produce this ichthyoplankton data report. These reports make the CalCOFI ichthyoplankton and station data available to all investigators and serve as guides to the computer data base. They are the basic documents against which changes in the data base can be compared as it is modified to correct errors and update earlier identifications. Citations for previous reports in this series are:

Survey	Report	Survey	Report
1951	Ambrose et al. 1987a	1972	Sumida et al. 1988c
1952	Sandknop et al. 1987a	1975	Ambrose et al. 1988c
1953	Stevens et al. 1987a	1978	Sandknop et al. 1988d
1954	Sumida et al. 1987a	1981	Ambrose et al. 1988d
1955	Ambrose et al. 1987b	1984	Stevens et al. 1990
1956	Stevens et al. 1987b	1985	Ambrose et al. 1999a
1957	Sumida et al. 1987b	1986	Charter et al. 1999a
1958	Sandknop et al. 1987b	1987	Sandknop et al. 1999a
1959	Stevens et al. 1987c	1988	Watson et al. 1999a
1960	Ambrose et al. 1987c	1989	Ambrose et al. 1999b
1961	Sandknop et al. 1988a	1990	Charter et al. 1999b
1962	Sumida et al. 1988a	1991	Sandknop et al. 1999b
1963	Ambrose et al. 1988a	1992	Watson et al. 1999b
1964	Sandknop et al. 1988b	1993	Ambrose et al. 1999c
1965	Stevens et al. 1988a	1994	Charter et al. 1999c
1966	Sumida et al. 1988b	1995	Sandknop et al. 1999c
1967	Ambrose et al. 1988b	1996	Watson et al. 1999c
1968	Sandknop et al. 1988c	1997	Ambrose et al. 1999d
1969	Stevens et al. 1988b	1998	Charter et al. 1999d

SAMPLING AREA AND PATTERN

A total of 254 standard CalCOFI survey stations was occupied on four cruises in 1999, employing three research vessels:

9901, RV *Roger Revelle*, 65 stations, January 9–23;

9904, RV *David Starr Jordan*, 61 stations, April 1–15;

9908, RV *New Horizon*, 63 stations, August 7–23;

9910, RV *New Horizon*, 65 stations, October 3–19.

The core survey area extended from Avila Beach to San Diego, California and seaward on six survey lines

to approximately 120–330 n. mi. (Figures 1 and 2).[1] Cruises 9901 and 9904 occupied nine lines, extending northward to Monterey Bay; however, oblique plankton tows were made only in the core area. The most seaward oblique plankton tow station, 90.0 120.0, was approximately 400 n. mi. west of Punta Baja, Baja California, Mexico. On all cruises, lines 76.7 and 80.0 extended seaward to station 100.0, lines 83.3 and 86.7 extended to station 110.0, and lines 90.0 and 93.3 extended to station 120.0 (Figures 1 and 2).

SAMPLING GEAR AND METHODS

In 1978, the standard 1-m ring net with towing bridle was replaced by a bridle-free "bongo" net. The bongo frame (McGowan and Brown 1966; Smith and Richardson 1977) consists of a pair of circular frames connected to a central axle. The axle is free to rotate so that the mouth openings are vertical during the tow. The standard CalCOFI net has 71 cm diameter frames and net material constructed of nylon mesh. Each net consists of a cylindrical section ~ 146 cm long, a truncated conical section ~ 161 cm long, and a detachable cod end. The starboard net, from which the standard sample is taken, is constructed of 0.505 mm mesh. The sample from the port side is used for other purposes; the mesh size is either 0.505 mm or 0.333 mm depending on requirements. The cod end of each net is constructed of 0.333 mm mesh.

The standard tow in 1999 was a double oblique haul to 210 m depth (to 15 m from the bottom in shallow areas) designed to filter a constant amount of water per depth interval (~ 2 m^3/m of depth) over the vertical range of most ichthyoplankters. Hauls were made at a ship speed of 1.5–2.0 knots and initiated by clamping the net to the towing cable above a 34 kg weight suspended below the surface. The net was lowered to ~ 210 m depth by paying out 300 m of wire at 50 m/minute (35 m of depth/minute). After fishing at depth for 30 seconds, the net was retrieved at 20 m/minute (14 m of depth/minute). The angle of stray was recorded every 30 seconds and maintained at 45° (± 3°) by adjusting ship speed and course. After reaching the surface, the nets were washed down and the samples preserved in 5% formalin buffered with sodium borate. At the beginning and end of each tow, readings were made from a flow meter suspended in the mouth of the starboard net. Detailed descriptions of gear and methods are given by Kramer et al. (1972) and Smith and Richardson (1977); Ohman and Smith (1995) provided summaries of historical CalCOFI zooplankton methods and calibration factors for the various gear types.

LABORATORY PROCEDURES

We determined a zooplankton displacement volume for each sample (methods described in Staff, SPFI 1953 and Kramer et al. 1972). Samples containing > 25 ml of plankton were fractioned to ~ 50% of their original volume. Aliquot percentages for fractioned samples are listed in Table 1 under the "Percent Sorted" column. Sorting involved the removal of ichthyoplankton from the samples and identification and separation of: eggs and larvae of Pacific sardine, northern anchovy, and Pacific saury and larvae of Pacific hake. Body lengths of sardine, anchovy, and hake larvae were measured to the nearest 0.5 mm.

A standard haul factor (SHF) was calculated for each tow to make them comparable and to allow estimation of areal abundance. The SHF is calculated by the formula:

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[1]Beginning in 1981 we changed our designation of ordinal survey lines (those ending in "3" and "7") to an exact decimal notation. Thus, lines 77, 83, 87, 93, etc. were changed to 76.7, 83.3, 86.7, 93.3, etc. to indicate the spacing between cardinal lines (those ending in "0"). Scripps Institution of Oceanography continues to use the original designation for ordinal lines (Figures 1and 2 and see Univ. of Calif., SIO 2000a, b).

$$SHF = \frac{10\,D}{V}$$

where D = depth of haul = cosine of the average angle of stray of the towing cable multiplied by cable length (m)

V = total volume of water (m^3) strained during the haul

$$V = R \cdot a \cdot p$$

where R = total number of revolutions of the current meter during the haul

a = area (m^2) of the mouth of the net

p = length of the column of water needed produce one revolution of the current meter

Tow depth, volume of water strained, and standard haul factor are listed in Table 1 for each tow taken during 1999. Detailed descriptions of factors involved in calculating these values are presented in Ahlstrom (1948), Kramer et al. (1972), and Smith and Richardson (1977).

IDENTIFICATION

Identification of ichthyoplankton species beyond those separated during the sorting process was done by a separate group of specialists. Early ontogenetic stages of fishes are inherently difficult to identify and this is further complicated by the large number and diversity of species which contribute to the ichthyoplankton of the California Current region. Most identifications were accomplished by establishing ontogenetic series on the basis of morphology, meristics, and pigmentation, and then linking these series through overlapping features to known metamorphic, juvenile, or adult stages (Powles and Markle 1984). Our ability to identify larvae in the California Current region improved greatly during 1988–1995 as a result of an intensive research project aimed at producing a taxonomic monograph on the ontogenetic stages of fishes of this region (Moser 1996). Except for damaged specimens, most larvae in the 1999 surveys could be identified to species. A total of 119 larval fish categories (including unidentified and disintegrated) was identified for 1999: 98 to species, 16 to genus, and 3 to family or subfamily. Identifications were done in the Ichthyoplankton Ecology Laboratory of the Fisheries Resources Division by the senior author.

With few exceptions, taxonomic categories above species represent small specimens which were damaged and partly disintegrated during capture. The following taxonomic categories in Tables 2–4 require special explanation:

Citharichthys spp. – small or damaged larvae, probably *C. sordidus* and/or *C. stigmaeus* lacking diagnostic characters.

Cyclothone spp. – small or damaged larvae, mostly *C. acclinidens* and/or *C. pseudopallida* lacking diagnostic characters.

Cyclothone acclinidens – larger larvae (primarily postflexion stage) having diagnostic pigmentation characters.

Diaphus spp. – *Diaphus theta* is the dominant *Diaphus* species in the survey area and most, if not all, of the larvae from the SCB region are this species; the generic category is used because a small proportion of the *Diaphus* larvae captured at the outer margin of the survey pattern may represent other species whose larvae are identical to those of *D. theta*.

Disintegrated fish larvae – larvae that could not be identified because of their poor condition; separated from the "unidentified" category to monitor the general condition of the ichthyoplankton samples through the time series.

Howella spp. – larvae represent a single species, either *H. brodiei* or *H. sherborni*; taxonomy of the adult is unresolved.

Hygophum spp.– small or damaged larvae of either *H. atratum* or *H. reinhardtii*.

Lampanyctus spp. – most of the larvae in this category are small (< 5 mm), often poorly preserved, specimens belonging to the subgroup of *Lampanyctus*, characterized by small or absent pectoral fins in adults, placed by Zahuranec (2000) in the genus *Nannobrachium*; two *Nannobrachium* species, *N. ritteri* (formerly *Lampanyctus ritteri*) and *N. regale* (formerly *Lampanyctus regalis*), occur commonly in the present CalCOFI survey pattern; larvae of these species > ~ 5 mm have been identified since 1954; beginning in 1985, larvae of two other species, *N. bristori* and *N. hawaiiensis*, have been identified and included in the CalCOFI data base; in previous data reports these were referred to as *Lampanyctus* "niger" and *Lampanyctus* "no pectorals", respectively (see Moser 1996).

Lyopsetta exilis – see comment for Pleuronectidae.

Melamphaes spp.– small or damaged larvae, mostly *M. lugubris* and/or *M. parvus* lacking diagnostic characters.

Microstoma spp. – larvae of a distinct but undescribed microstomatid species.

Nannobrachium spp. – see comments for *Lampanyctus* spp.

Parophrys vetulus – see comment for Pleuronectidae.

Pleuronectidae – Sakamoto (1984) changed pleuronectid generic designations for species in the CalCOFI area as follows: 1) *Glyptocephalus zachirus* was changed to *Errex zachirus*; 2) *Isopsetta isolepis*, *Lepidopsetta bilineata*, and *Parophrys vetulus* were transferred into *Pleuronectes* and 3) *Lyopsetta exilis* was changed to *Eopsetta exilis*; although these changes were incorporated in the lists of Robins et al. (1991) and Eschmeyer (1998) we follow Nelson (1994) in retaining the older nomenclature because Sakamoto's (1984) changes were based on a phenetic study; also, the older names are used in the major identification guides to fishes of our region (Miller and Lea 1972, Eschmeyer et al. 1983, Matarese et al. 1989, and Moser 1996).

Ruscarius – *Artedius creaseri* and *A. meanyi* were assigned to the genus *Ruscarius* by Begle (1989).

Scopelosaurus spp.– according to Balanov and Savinykh (1999) there are two valid species of this genus in the north Pacific, *S. adleri* and *S. harryi*, but only the former spawns in the California Current region; the generic designation is used here since we have not yet reexamined the historical CalCOFI samples to confirm the findings of Balanov and Savinykh (1999).

Sebastolobus spp. – larvae of this genus < 10 mm in length are not identifiable to species; larvae > 10 mm are identified as *S. alascanus* or *S. altivelis*.

Unidentified fish larvae – larvae that were generally in good condition but could not be identified because of their small size or early stage of development.

Vinciguerria lucetia – *V. lucetia*, an eastern tropical Pacific species, is common in the present CalCOFI region whereas the central water mass species *V. poweriae* is encountered rarely, usually only at the most seaward CalCOFI stations; a small percentage of *V. poweriae* larvae may have been included in the *V. lucetia* category because of the difficulty in separating early larvae which often are virtually identical.

SPECIES SUMMARY

Of the five most abundant larvae in 1999, the Pacific sardine (*Sardinops sagax*) ranked first in abundance, with 37.0% of the total larvae, and 15th in occurrence, with 13.8% positive tows (Tables 2 and 3). Northern anchovy (*Engraulis mordax*) ranked second in abundance with 19.9% of the total larvae and seventh in occurrence (20.1% of the samples). Panama lightfish (*Vinciguerria lucetia*) ranked third with 8.0% of the larvae and ninth in occurrence (18.5 % of the stations). Northern lampfish (*Stenobrachius leucopsarus*) ranked fourth in abundance with 6.9% of the total larvae and first in frequency of occurrence with 32.3% positive tows. California smoothtongue (*Leuroglossus stilbius*) ranked fifth in abundance (5.6% of total larvae) and third in occurrence (28.0% positive tows). The next five most abundant taxa were the rockfish genus *Sebastes* (4.7% of total larvae), Pacific hake *Merluccius productus* (2.3%), popeye blacksmelt *Bathylagus ochotensis* (1.6%), California flashlightfish *Protomyctophum crockeri*(1.2%), and dogtooth lanternfish *Ceratoscopelus townsendi* (1.0%). These species ranked 4th, 8th, 6th, 2nd, and 14th in frequency of occurrence, respectively. The ten most abundant taxa comprised 88.2% of all the larvae collected on CalCOFI cruises in 1999. The remaining 11.8% was distributed among 109 other taxa (including the disintegrated and unidentified categories). Of the ten most abundant taxa, six are midwater species, two are coastal pelagic species, and two are coastal demersal taxa.

EXPLANATION OF TABLES

Table 1. This table lists for each tow the pertinent station and tow data, the volume of water filtered, the standard haul factor, the plankton volume, the percentage of sample sorted, and the total number of fish eggs and larvae. CalCOFI cruises are designated by four digits; the first two indicate the year and the second two the month. Within each cruise the data are listed in order of increasing line and station number (southerly and seaward directions); the order of station occupancy is shown on the station charts (Figures 1and 2). Stations are designated by two groups of numbers; the first set indicates the line and decimal fraction and the second set indicates the station and decimal fraction. Plankton displacement volumes were determined after removal of large organisms (those with individual displacement volumes > 5 ml) and expressed as ml per 1000 m^3 of water filtered. Time is listed as Pacific Standard Time at the start of each tow in 24-hour designation. The values for total fish eggs and larvae are raw counts (unadjusted for percent of sample sorted or standard haul factor). Ship codes are as follows: JD, *David Starr Jordan*; NH, *New Horizon*; RR, *Roger Revelle.* The listings for station latitude and longitude in this table may differ from values given for the same station in the SIO data reports, reflecting the slight difference in position of the net tow and hydrocast. Dates given here and in Figures 1 and 2 for the beginning and end of each cruise are based on Pacific Standard time at the first and last oblique net tow station of the cruise and do not include transit time from port to the first station and to port after the last station. Thus, our cruise

dates may differ slightly from those in SIO reports which are based on GMT prior to 1990 and include transit time to the first station and from the last station.

Table 2. Pooled occurrences of all larval fish taxa taken on CalCOFI survey cruises in 1999 listed in rank order.

Table 3. Pooled counts of all larval fish taxa taken on CalCOFI survey cruises in 1999 listed in rank order. Numbers are adjusted for percent sorted and standard haul factors.

Table 4. Numbers of fish larvae for each taxon, listed by station and calendar month of the tow. Counts are adjusted for percentage of sample sorted and standard haul factor. The orders are listed in phylogenetic sequence (Eschmeyer 1998).

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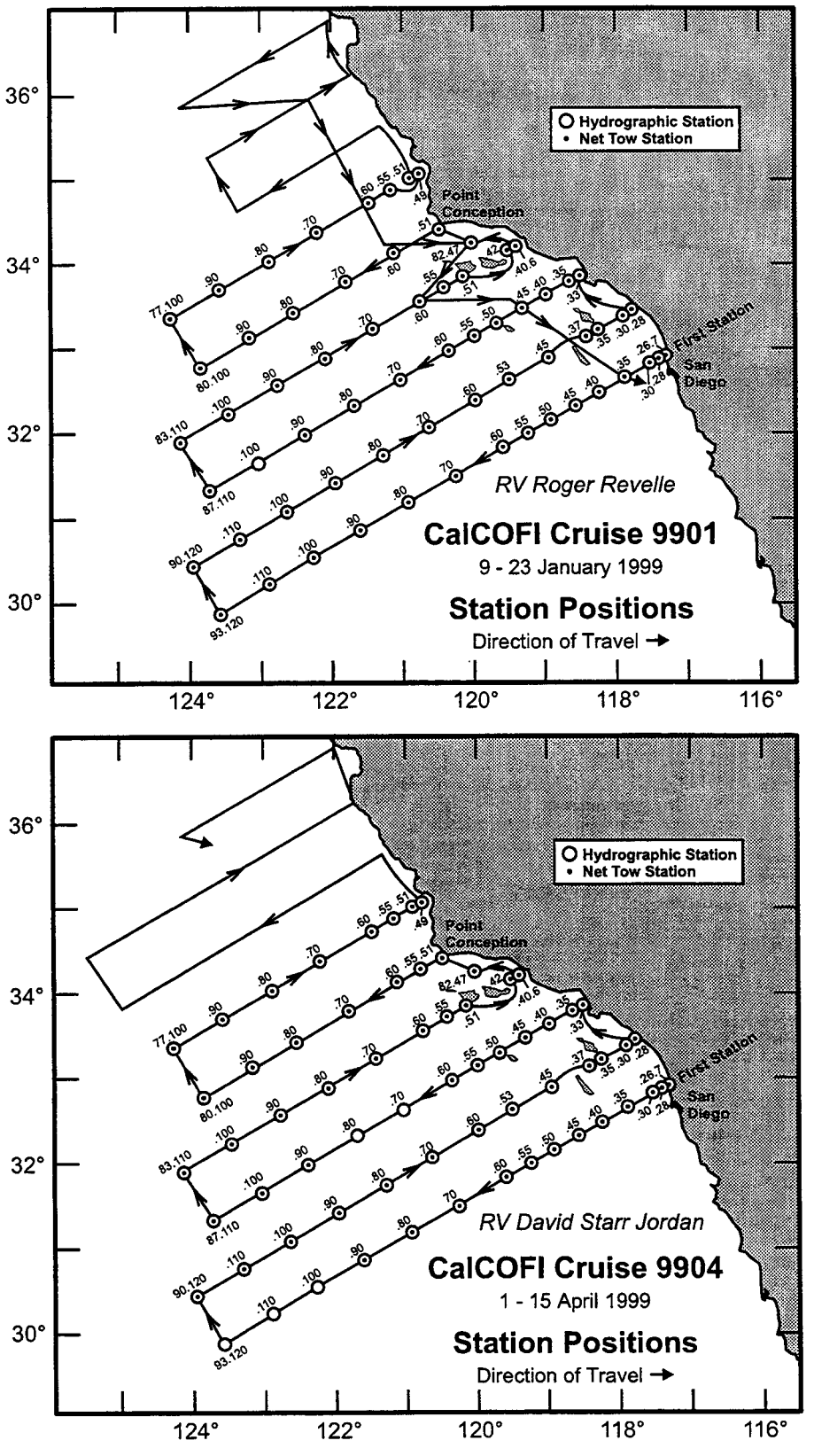

Figure 1. Stations and cruise tracks for CalCOFI cruises 9901 (above) and 9904 (below). Circles indicate hydrographic stations; dots indicate net tow stations.

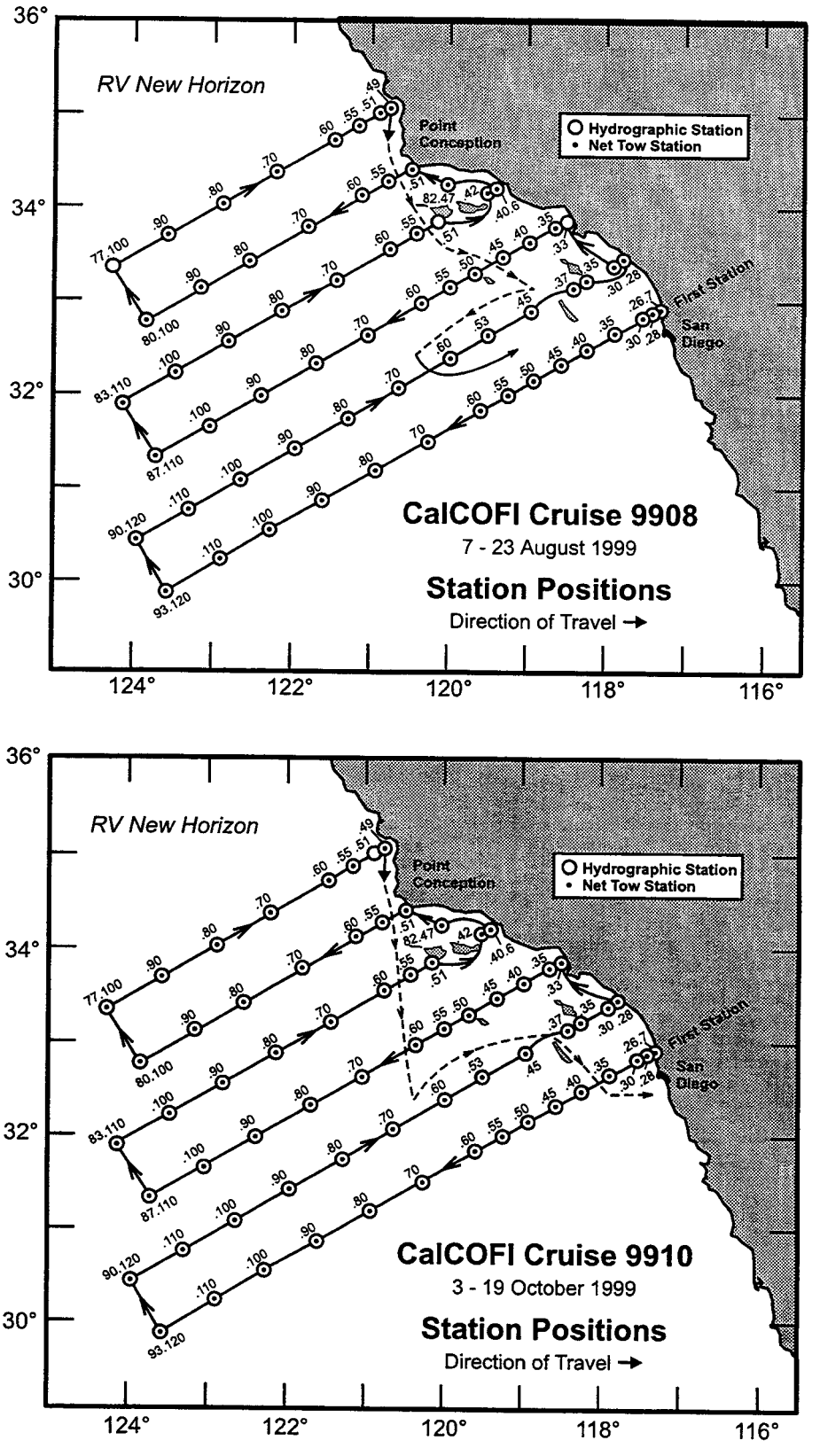

Figure 2. Stations and cruise tracks for CalCOFI cruises 9908 (above) and 9910 (below). Circles indicate hydrographic stations; dots indicate net tow stations.

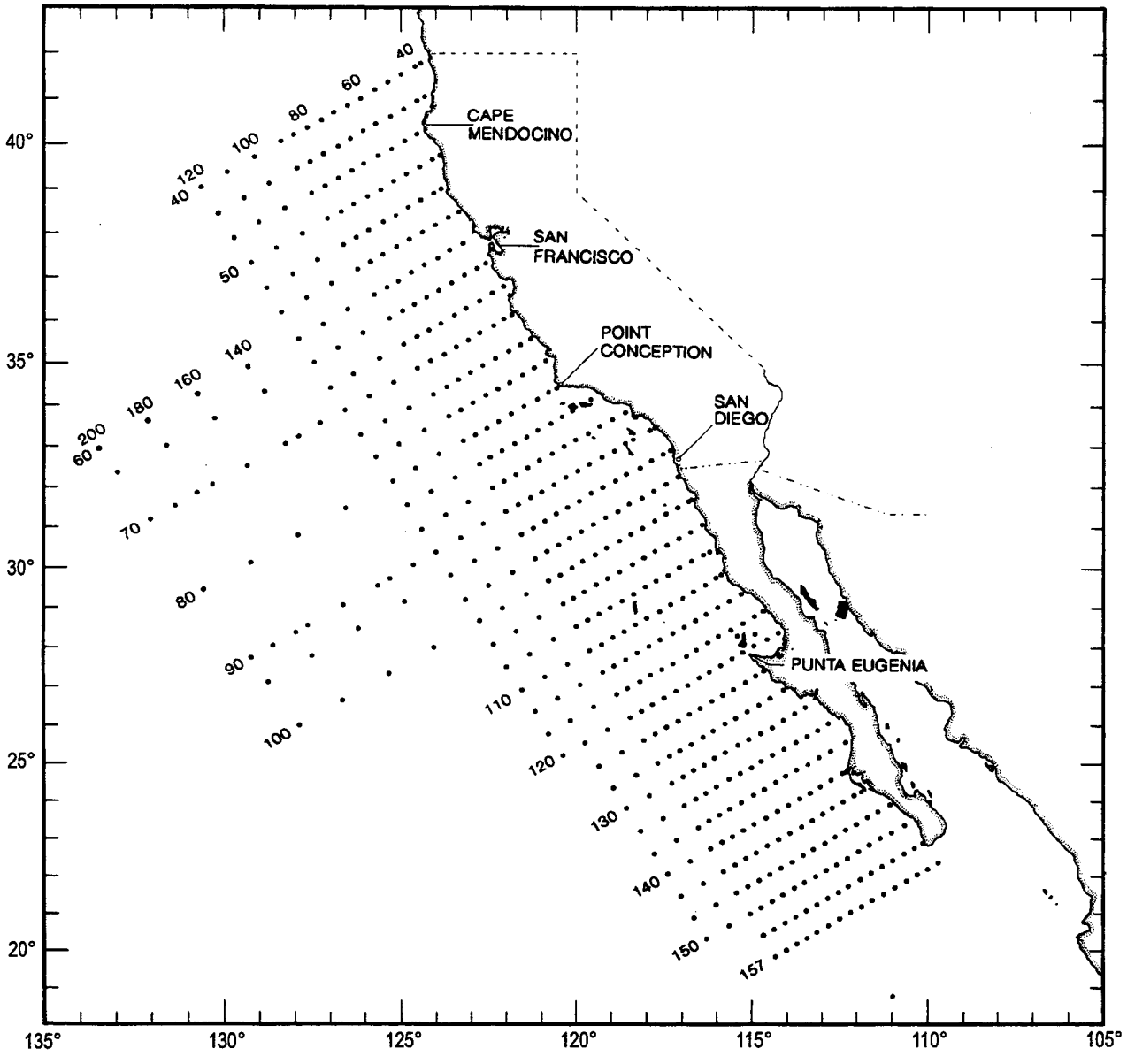

Figure 3. Basic station plan for CalCOFI Cruises.

TABLE 1. Station and plankton tow data for CalCOFI cruises in 1999. Counts for fish eggs and larvae are not adjusted for standard haul factor or percent of sample sorted. Plankton volume given as milliliters per 1000 cubic meters of water strained.

CalCOFI Cruise 9901

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr.	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
76.7	49.0	35	05.3	120	46.6	RR	99	01	24	2355	72	151	4.73	106	100.0	18	4
76.7	51.0	35	01.3	120	55.1	RR	99	01	25	0218	201	467	4.31	118	49.1	26	2
76.7	55.0	34	53.3	121	11.9	RR	99	01	24	1519	203	399	5.08	356	49.3	12	4
76.7	60.0	34	43.3	121	32.9	RR	99	01	24	1131	218	433	5.03	168	50.7	15	32
76.7	70.0	34	23.3	122	14.8	RR	99	01	24	0535	202	435	4.63	214	48.4	13	31
76.7	80.0	34	03.3	122	56.5	RR	99	01	24	0008	207	431	4.81	325	48.6	1	2
76.7	90.0	33	43.3	123	38.0	RR	99	01	23	1616	219	472	4.64	53	100.0	9	5
76.7	100.0	33	23.3	124	19.4	RR	99	01	23	0832	200	480	4.16	25	100.0	8	9
80.0	51.0	34	27.0	120	31.4	RR	99	01	21	2347	69	167	4.12	84	100.0	6	41
80.0	60.0	34	09.0	121	09.0	RR	99	01	22	0429	202	464	4.36	252	48.7	28	43
80.0	70.0	33	49.0	121	50.6	RR	99	01	22	0850	211	437	4.83	121	50.9	36	61
80.0	80.0	33	29.0	122	32.0	RR	99	01	22	1557	198	437	4.54	309	48.9	76	54
80.0	90.0	33	09.0	123	13.3	RR	99	01	22	2115	201	480	4.19	137	50.0	7	13
80.0	100.0	32	49.0	123	54.4	RR	99	01	23	0221	206	485	4.26	97	100.0	19	10
81.8	46.9	34	16.5	120	01.5	RR	99	01	21	1656	211	474	4.46	49	100.0	16	151
83.3	40.6	34	13.5	119	24.7	RR	99	01	21	0858	22	63	3.38	110	100.0	1	27
83.3	42.0	34	10.7	119	30.5	RR	99	01	21	0736	155	627	2.47	34	100.0	13	376
83.3	51.0	33	52.7	120	08.0	RR	99	01	21	0115	96	223	4.30	152	52.9	18	132
83.3	55.0	33	44.7	120	24.6	RR	99	01	20	2153	223	420	5.31	186	48.7	46	106
83.3	60.0	33	34.7	120	45.3	RR	99	01	20	1757	205	435	4.72	184	51.3	52	76
83.3	70.0	33	14.7	121	26.6	RR	99	01	20	0915	205	450	4.56	255	51.3	28	209
83.3	80.0	32	54.7	122	07.7	RR	99	01	20	0444	217	436	4.98	216	52.1	33	23
83.3	90.0	32	34.7	122	48.7	RR	99	01	19	2328	212	466	4.55	88	100.0	17	8
83.3	100.0	32	14.7	123	29.5	RR	99	01	19	1754	207	533	3.89	32	100.0	28	7
83.3	110.0	31	54.7	124	10.2	RR	99	01	19	1159	204	472	4.32	34	100.0	39	4
86.7	33.0	33	53.4	118	29.4	RR	99	01	16	1636	47	132	3.56	175	100.0	17	108
86.7	35.0	33	49.4	118	37.7	RR	99	01	16	1920	213	445	4.79	74	48.5	15	1
86.7	40.0	33	39.4	118	58.5	RR	99	01	17	0242	207	430	4.80	595	49.6	15	14
86.7	45.0	33	29.4	119	19.1	RR	99	01	17	0746	215	419	5.12	546	48.9	1	0
86.7	50.0	33	19.4	119	39.8	RR	99	01	17	1135	60	144	4.17	166	100.0	69	7
86.7	55.0	33	09.4	120	00.4	RR	99	01	17	1503	210	436	4.82	358	49.4	22	43

Table 1. (cont.)

CalCOFI Cruise 9901

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
86.7	60.0	32	59.4	120	21.0	RR	99	01	17	1944	219	432	5.07	148	50.0	55	33
86.7	70.0	32	39.4	121	02.0	RR	99	01	18	0107	203	449	4.52	218	51.0	9	14
86.7	80.0	32	19.4	121	42.9	RR	99	01	18	1150	204	413	4.94	220	51.6	4	2
86.7	90.0	31	59.4	122	23.6	RR	99	01	18	1856	209	444	4.71	131	100.0	24	3
86.7	100.0	31	39.4	123	04.2	RR	99	01	19	0014	206	480	4.29	92	100.0	31	27
86.7	110.0	31	19.4	123	44.6	RR	99	01	19	0527	177	533	3.33	154	100.0	21	32
90.0	28.0	33	29.1	117	46.1	RR	99	01	16	0520	86	215	4.02	116	100.0	6	0
90.0	30.0	33	25.1	117	54.3	RR	99	01	15	2014	206	428	4.80	376	49.7	7	6
90.0	35.0	33	15.1	118	15.0	RR	99	01	15	1610	209	446	4.70	218	51.5	181	1410
90.0	37.0	33	11.1	118	23.2	RR	99	01	15	1304	203	452	4.49	113	52.9	630	693
90.0	45.0	32	55.1	118	56.1	RR	99	01	14	2033	212	446	4.76	343	51.0	2	23
90.0	53.0	32	39.1	119	28.9	RR	99	01	14	1541	210	430	4.88	137	47.5	14	10
90.0	60.0	32	25.1	119	57.6	RR	99	01	14	0425	203	447	4.54	217	49.5	27	471
90.0	70.0	32	05.1	120	38.3	RR	99	01	13	2359	206	462	4.47	199	47.8	9	5
90.0	80.0	31	45.1	121	18.9	RR	99	01	13	1603	209	465	4.50	95	100.0	6	9
90.0	90.0	31	25.1	121	59.4	RR	99	01	13	0826	224	406	5.51	52	100.0	2	9
90.0	100.0	31	05.1	122	39.7	RR	99	01	13	0235	223	421	5.30	100	100.0	14	21
90.0	110.0	30	45.1	123	19.9	RR	99	01	12	2014	222	571	3.89	33	100.0	10	3
90.0	120.0	30	25.1	123	59.9	RR	99	01	12	1122	208	443	4.69	18	100.0	18	9
93.3	26.7	32	57.4	117	18.3	RR	99	01	09	1248	54	108	4.96	37	100.0	0	0
93.3	28.0	32	54.8	117	23.7	RR	99	01	09	1545	218	404	5.39	136	49.1	2	1
93.3	30.0	32	50.8	117	31.9	RR	99	01	09	1900	217	434	4.99	97	52.4	2	2
93.3	35.0	32	40.8	117	52.4	RR	99	01	09	2333	204	439	4.66	1984	50.1	3	3
93.3	40.0	32	30.8	118	12.8	RR	99	01	10	0327	219	447	4.90	154	49.3	5	65
93.3	45.0	32	20.8	118	33.3	RR	99	01	10	0729	185	508	3.64	153	48.7	5	9
93.3	50.0	32	10.8	118	53.6	RR	99	01	10	1132	171	481	3.56	1039	49.6	3	164
93.3	55.0	32	00.8	119	14.0	RR	99	01	10	1559	205	429	4.78	1043	49.1	0	15
93.3	60.0	31	50.8	119	34.3	RR	99	01	10	2003	214	410	5.21	305	51.2	6	5
93.3	70.0	31	30.8	120	14.8	RR	99	01	11	0131	213	437	4.87	172	50.7	3	0
93.3	80.0	31	10.8	120	55.2	RR	99	01	11	0645	196	477	4.11	96	100.0	9	25
93.3	90.0	30	50.8	121	35.4	RR	99	01	11	1313	210	455	4.62	33	100.0	2	13
93.3	100.0	30	30.8	122	15.5	RR	99	01	11	1822	212	472	4.50	40	100.0	8	12
93.3	110.0	30	10.8	122	55.4	RR	99	01	12	0002	215	468	4.59	100	100.0	12	13
93.3	120.0	29	50.8	123	35.2	RR	99	01	12	0532	195	439	4.44	46	100.0	20	73

Table 1. (cont.)

CalCOFI Cruise 9904

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
76.7	49.0	35	05.3	120	46.6	JD	99	04	15	1417	53	107	5.00	637	47.1	4	1
76.7	51.0	35	01.3	120	55.1	JD	99	04	15	1202	214	367	5.83	583	50.9	37	34
76.7	55.0	34	53.3	121	11.9	JD	99	04	15	0845	209	404	5.18	94	47.4	10	33
76.7	60.0	34	43.3	121	32.9	JD	99	04	15	0522	208	418	4.98	53	100.0	14	42
76.7	70.0	34	23.3	122	14.8	JD	99	04	14	2352	207	419	4.95	473	50.5	230	97
76.7	80.0	34	03.3	122	56.5	JD	99	04	14	1803	213	403	5.29	283	49.1	344	978
76.7	90.0	33	43.3	123	38.0	JD	99	04	14	1209	213	300	7.10	237	47.9	182	126
76.7	100.0	33	23.3	124	19.4	JD	99	04	14	0616	210	418	5.03	34	100.0	10	171
80.0	51.0	34	27.0	120	31.4	JD	99	04	12	1612	55	128	4.31	296	50.0	1	1
80.0	55.0	34	19.0	120	48.1	JD	99	04	12	1958	213	417	5.12	648	51.1	5	7
80.0	60.0	34	08.9	121	09.0	JD	99	04	13	0009	214	412	5.19	192	48.1	2	75
80.0	70.0	33	49.0	121	50.6	JD	99	04	13	0607	214	413	5.19	542	50.4	16	103
80.0	80.0	33	28.9	122	32.0	JD	99	04	13	1202	212	415	5.11	147	49.2	315	23
80.0	90.0	33	09.0	123	13.3	JD	99	04	13	1802	209	445	4.71	121	48.1	171	116
80.0	100.0	32	49.0	123	54.4	JD	99	04	14	0001	207	434	4.77	903	49.5	29	113
81.8	46.9	34	16.5	120	01.5	JD	99	04	12	1148	211	432	4.87	187	50.6	19	43
83.3	40.6	34	13.5	119	24.7	JD	99	04	12	0654	24	79	3.04	177	100.0	5	80
83.3	42.0	34	10.7	119	30.5	JD	99	04	12	0512	144	300	4.81	193	51.7	26	56
83.3	51.0	33	52.7	120	08.0	JD	99	04	11	2315	85	176	4.79	607	51.4	6	4
83.3	55.0	33	44.7	120	24.6	JD	99	04	11	1955	202	480	4.20	194	52.7	43	57
83.3	60.0	33	34.7	120	45.3	JD	99	04	11	1543	209	417	5.00	374	49.4	24	284
83.3	70.0	33	14.6	121	26.6	JD	99	04	11	0842	204	459	4.45	122	51.8	50	124
83.3	80.0	32	54.7	122	07.7	JD	99	04	11	0337	216	421	5.13	231	52.6	206	63
83.3	90.0	32	34.6	122	48.7	JD	99	04	10	2156	217	427	5.09	143	100.0	524	564
83.3	100.0	32	14.7	123	29.5	JD	99	04	10	1615	208	455	4.57	123	100.0	195	63
83.3	110.0	31	54.7	124	10.2	JD	99	04	10	0858	210	432	4.86	32	100.0	12	16
86.7	33.0	33	53.4	118	29.4	JD	99	04	07	1825	41	117	3.47	214	100.0	72	1216
86.7	35.0	33	49.4	118	37.7	JD	99	04	07	2126	206	422	4.89	107	53.3	96	63
86.7	40.0	33	39.4	118	58.5	JD	99	04	08	0123	215	413	5.20	155	51.6	23	30
86.7	45.0	33	29.4	119	19.1	JD	99	04	08	0506	212	408	5.20	270	51.8	48	11
86.7	50.0	33	19.4	119	39.8	JD	99	04	08	0811	53	133	4.02	272	52.8	86	11
86.7	55.0	33	09.4	120	00.4	JD	99	04	08	1404	215	421	5.11	57	100.0	45	43
86.7	60.0	32	59.4	120	21.0	JD	99	04	08	1806	214	436	4.90	94	53.7	113	112

Table 1. (cont.)

CalCOFI Cruise 9904

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
86.7	90.0	31	59.4	122	23.6	JD	99	04	09	1207	207	433	4.79	39	100.0	50	68
86.7	100.0	31	39.4	123	04.2	JD	99	04	09	1837	215	439	4.90	39	100.0	19	12
86.7	110.0	31	19.4	123	44.6	JD	99	04	10	0036	217	436	4.98	41	100.0	32	6
90.0	28.0	33	29.1	117	46.1	JD	99	04	07	1002	59	139	4.25	122	100.0	103	23
90.0	30.0	33	25.1	117	54.3	JD	99	04	07	0818	215	420	5.13	195	52.4	112	40
90.0	35.0	33	15.1	118	15.0	JD	99	04	07	0425	193	340	5.69	200	47.1	87	178
90.0	37.0	33	11.1	118	23.2	JD	99	04	07	0143	211	417	5.06	216	48.9	305	89
90.0	45.0	32	55.1	118	56.1	JD	99	04	06	2053	212	427	4.97	408	49.4	74	41
90.0	53.0	32	39.1	119	28.9	JD	99	04	06	1603	212	442	4.79	138	47.5	117	206
90.0	60.0	32	25.1	119	57.6	JD	99	04	06	1115	214	402	5.33	189	52.6	477	280
90.0	70.0	32	05.1	120	38.3	JD	99	04	06	0521	213	420	5.07	119	52.0	100	12
90.0	80.0	31	45.1	121	18.9	JD	99	04	05	2311	213	441	4.82	98	48.0	605	73
90.0	90.0	31	25.1	121	59.4	JD	99	04	05	1707	216	436	4.96	32	100.0	26	44
90.0	100.0	31	05.1	122	39.7	JD	99	04	05	0827	214	444	4.83	14	100.0	9	6
90.0	110.0	30	45.1	123	19.9	JD	99	04	05	0302	208	456	4.57	26	100.0	6	103
90.0	120.0	30	25.1	123	59.9	JD	99	04	04	2041	217	447	4.85	25	100.0	12	507
93.3	26.7	32	57.4	117	18.3	JD	99	04	01	1331	62	147	4.24	130	100.0	72	1
93.3	28.0	32	54.8	117	23.7	JD	99	04	01	1633	206	450	4.58	56	100.0	120	9
93.3	30.0	32	50.8	117	31.9	JD	99	04	01	1938	212	434	4.89	88	52.6	131	14
93.3	35.0	32	40.8	117	52.4	JD	99	04	01	2342	218	419	5.21	98	53.7	43	25
93.3	40.0	32	30.8	118	12.8	JD	99	04	02	0355	212	447	4.75	103	47.8	139	40
93.3	45.0	32	20.8	118	33.3	JD	99	04	02	0819	214	443	4.83	56	100.0	58	157
93.3	50.0	32	10.8	118	53.6	JD	99	04	02	1232	218	429	5.08	51	100.0	84	120
93.3	55.0	32	00.8	119	14.0	JD	99	04	02	1701	214	441	4.86	57	100.0	119	9
93.3	60.0	31	50.8	119	34.3	JD	99	04	02	2119	215	420	5.11	117	53.1	71	7
93.3	70.0	31	30.8	120	14.8	JD	99	04	03	0355	212	431	4.93	79	47.1	47	148
93.3	80.0	31	10.8	120	55.4	JD	99	04	03	0929	206	447	4.60	58	100.0	49	91
93.3	90.0	30	50.8	121	35.4	JD	99	04	03	1648	215	435	4.93	30	100.0	26	485

Table 1. (cont.)

CalCOFI Cruise 9908

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr.	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
76.7	49.0	35	05.1	120	46.5	NH	99	08	23	1211	49	125	3.92	630	49.3	0	88
76.7	51.0	35	01.0	120	55.4	NH	99	08	23	0826	211	419	5.04	227	48.4	1	22
76.7	55.0	34	53.3	121	12.1	NH	99	08	23	0453	211	435	4.84	223	48.5	0	1
76.7	60.0	34	43.2	121	33.1	NH	99	08	23	0057	211	443	4.76	192	48.2	4	0
76.7	70.0	34	23.4	122	14.8	NH	99	08	22	1907	209	442	4.73	229	51.5	3	0
76.7	80.0	34	03.3	122	56.5	NH	99	08	22	1255	211	460	4.59	54	100.0	3	31
76.7	90.0	33	43.2	123	38.0	NH	99	08	22	0503	217	429	5.06	44	100.0	4	12
80.0	51.0	34	26.7	120	31.3	NH	99	08	19	2132	56	126	4.46	55	100.0	0	115
80.0	55.0	34	18.9	120	48.0	NH	99	08	20	0056	216	428	5.03	124	49.1	2	48
80.0	60.0	34	09.0	121	09.2	NH	99	08	20	0857	211	432	4.88	246	50.0	0	0
80.0	70.0	33	49.2	121	50.7	NH	99	08	20	1726	210	458	4.59	70	53.1	0	4
80.0	80.0	33	28.8	122	31.7	NH	99	08	20	2359	215	460	4.69	137	49.2	1	1
80.0	90.0	33	08.6	123	12.8	NH	99	08	21	0613	214	455	4.70	37	100.0	2	1
80.0	100.0	32	48.8	123	52.7	NH	99	08	21	1318	208	462	4.51	22	100.0	261	182
81.8	46.9	34	16.5	120	00.9	NH	99	08	19	1330	209	445	4.69	67	53.3	0	4
83.3	40.6	34	13.6	119	24.8	NH	99	08	19	0620	29	80	3.55	125	100.0	0	67
83.3	42.0	34	10.8	119	30.4	NH	99	08	19	0443	108	214	5.05	140	46.7	2	81
83.3	55.0	33	44.6	120	24.6	NH	99	08	18	1744	212	436	4.86	25	100.0	0	0
83.3	60.0	33	34.5	120	45.3	NH	99	08	18	1306	214	399	5.37	78	54.8	1	0
83.3	70.0	33	14.4	121	26.8	NH	99	08	18	0019	214	457	4.69	160	50.7	4	0
83.3	80.0	32	54.7	122	07.6	NH	99	08	17	1809	207	429	4.82	44	100.0	1	2
83.3	90.0	32	34.2	122	48.8	NH	99	08	17	1231	217	422	5.14	24	100.0	1	11
83.3	100.0	32	14.6	123	29.6	NH	99	08	17	0523	205	446	4.60	27	100.0	58	16
83.3	110.0	31	54.2	124	09.9	NH	99	08	16	2333	213	428	4.97	89	100.0	44	12
86.7	35.0	33	49.4	118	37.7	NH	99	08	14	0337	216	426	5.07	73	51.6	3	1
86.7	40.0	33	39.8	118	58.5	NH	99	08	14	1231	208	444	4.70	47	100.0	1	10
86.7	45.0	33	29.5	119	19.1	NH	99	08	14	1640	206	428	4.81	203	48.3	1	2
86.7	50.0	33	19.4	119	39.8	NH	99	08	14	2023	54	138	3.93	65	100.0	3	25
86.7	55.0	33	09.6	119	59.8	NH	99	08	15	0030	232	475	4.88	143	48.5	2	0
86.7	60.0	32	59.4	120	21.4	NH	99	08	15	0456	210	440	4.76	120	50.9	2	1
86.7	70.0	32	40.3	121	01.1	NH	99	08	15	1210	213	460	4.63	70	46.9	1	2
86.7	80.0	32	19.4	121	42.6	NH	99	08	15	2312	212	436	4.86	250	51.4	4	3
86.7	90.0	31	59.5	122	23.5	NH	99	08	16	0510	202	457	4.42	39	100.0	143	8

Table 1. (cont.)

CalCOFI Cruise 9908

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr.	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
86.7	100.0	31	39.6	123	03.7	NH	99	08	16	1149	216	432	4.99	74	100.0	72	24
86.7	110.0	31	19.3	123	44.5	NH	99	08	16	1729	215	417	5.16	82	100.0	40	24
90.0	28.0	33	29.1	117	46.1	NH	99	08	13	1615	50	109	4.62	111	100.0	5	81
90.0	30.0	33	25.1	117	54.4	NH	99	08	13	1903	209	406	5.16	52	100.0	14	1
90.0	35.0	33	15.2	118	15.2	NH	99	08	13	0841	212	433	4.90	35	100.0	36	37
90.0	37.0	33	11.2	118	23.2	NH	99	08	13	0632	208	424	4.90	49	100.0	25	41
90.0	45.0	32	54.8	118	56.5	NH	99	08	13	0051	209	439	4.77	214	48.9	3	0
90.0	53.0	32	39.0	119	28.9	NH	99	08	12	1914	213	439	4.84	130	47.4	10	0
90.0	60.0	32	24.6	119	57.8	NH	99	08	12	1352	213	421	5.05	102	48.8	4	0
90.0	70.0	32	05.1	120	38.2	NH	99	08	12	0642	213	426	5.00	80	52.9	1	3
90.0	80.0	31	45.0	121	19.1	NH	99	08	12	0018	210	440	4.78	86	100.0	8	1
90.0	90.0	31	25.1	121	59.2	NH	99	08	11	1747	209	434	4.81	92	100.0	10	1
90.0	100.0	31	05.1	122	39.8	NH	99	08	11	0837	212	431	4.93	42	100.0	9	21
90.0	110.0	30	45.2	123	19.7	NH	99	08	11	0151	210	401	5.24	107	100.0	26	86
90.0	120.0	30	24.9	123	59.8	NH	99	08	10	1929	213	431	4.94	44	100.0	348	44
93.3	26.7	32	57.4	117	18.0	NH	99	08	07	1219	91	233	3.90	56	100.0	7	217
93.3	28.0	32	54.7	117	23.7	NH	99	08	07	1609	201	438	4.59	37	100.0	5	13
93.3	30.0	32	50.7	117	31.9	NH	99	08	07	2013	208	454	4.58	117	49.1	0	0
93.3	35.0	32	41.0	117	52.2	NH	99	08	08	0019	210	438	4.80	132	48.3	4	161
93.3	40.0	32	30.8	118	12.8	NH	99	08	08	0416	209	430	4.85	119	49.0	1	1
93.3	45.0	32	20.8	118	33.4	NH	99	08	08	0811	212	439	4.82	43	100.0	1	0
93.3	50.0	32	11.2	118	52.9	NH	99	08	08	1329	211	408	5.16	59	100.0	5	2
93.3	55.0	32	00.9	119	13.9	NH	99	08	08	1737	210	401	5.22	35	100.0	2	3
93.3	60.0	31	51.1	119	33.7	NH	99	08	08	2147	210	438	4.79	116	49.0	4	0
93.3	70.0	31	30.6	120	14.8	NH	99	08	09	0408	202	425	4.75	99	50.0	3	0
93.3	80.0	31	11.2	120	54.5	NH	99	08	09	0833	209	425	4.93	33	100.0	2	28
93.3	90.0	30	50.8	121	35.3	NH	99	08	09	1805	208	397	5.23	70	100.0	2	82
93.3	100.0	30	31.3	122	14.9	NH	99	08	10	0023	209	407	5.13	76	100.0	25	435
93.3	110.0	30	10.8	122	55.4	NH	99	08	10	0603	200	431	4.65	23	100.0	274	102
93.3	120.0	29	51.2	123	34.7	NH	99	08	10	1302	212	400	5.30	30	100.0	95	297

Table 1. (cont.)

CalCOFI Cruise 9910

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
76.7	49.0	35	05.3	120	46.6	NH	99	10	19	0502	59	152	3.89	99	100.0	2	44
76.7	55.0	34	53.3	121	11.9	NH	99	10	18	2247	206	427	4.82	272	48.3	18	1
76.7	60.0	34	43.3	121	32.9	NH	99	10	18	1853	213	442	4.82	204	51.1	4	1
76.7	70.0	34	23.3	122	14.8	NH	99	10	18	1227	215	406	5.29	79	53.1	3	0
76.7	80.0	34	03.3	122	56.3	NH	99	10	18	0613	208	442	4.71	75	48.5	1	0
76.7	90.0	33	43.0	123	38.0	NH	99	10	18	0015	194	431	4.51	209	48.9	0	8
76.7	100.0	33	23.3	124	19.4	NH	99	10	17	1821	205	459	4.46	87	100.0	4	2
80.0	51.0	34	27.0	120	31.3	NH	99	10	15	2300	50	127	3.96	339	46.5	1	30
80.0	55.0	34	19.2	120	47.5	NH	99	10	16	0223	200	461	4.33	171	50.6	22	6
80.0	60.0	34	09.3	121	09.2	NH	99	10	16	0859	198	440	4.50	102	51.1	1	66
80.0	70.0	33	49.0	121	50.5	NH	99	10	16	1808	214	429	4.99	126	48.1	4	3
80.0	80.0	33	29.0	122	32.0	NH	99	10	16	2349	201	491	4.08	98	52.1	0	2
80.0	90.0	33	09.0	123	13.2	NH	99	10	17	0529	209	421	4.96	119	52.0	2	6
80.0	100.0	32	48.9	123	54.4	NH	99	10	17	1208	201	440	4.55	36	100.0	8	10
81.8	46.9	34	16.4	120	01.3	NH	99	10	15	1753	213	405	5.26	180	49.3	17	223
83.3	40.6	34	13.5	119	24.7	NH	99	10	15	0814	20	55	3.57	145	100.0	4	169
83.3	42.0	34	10.7	119	30.5	NH	99	10	15	0921	86	204	4.22	93	100.0	14	67
83.3	51.0	33	52.7	120	08.0	NH	99	10	14	1907	74	162	4.54	74	100.0	0	232
83.3	55.0	33	43.9	120	24.8	NH	99	10	14	1423	210	411	5.11	151	51.6	2	2
83.3	60.0	33	34.4	120	45.8	NH	99	10	14	0918	208	406	5.12	54	100.0	2	0
83.3	70.0	33	14.6	121	26.7	NH	99	10	13	2359	201	452	4.45	146	48.5	6	3
83.3	80.0	32	54.6	122	07.6	NH	99	10	13	1755	213	432	4.92	139	51.7	1	6
83.3	90.0	32	34.4	122	48.0	NH	99	10	13	0850	208	380	5.49	68	100.0	5	3
83.3	100.0	32	14.6	123	29.5	NH	99	10	13	0400	203	434	4.67	35	100.0	45	9
83.3	110.0	31	54.6	124	10.2	NH	99	10	12	2212	206	430	4.78	44	100.0	44	4
86.7	33.0	33	52.9	118	29.3	NH	99	10	09	2002	64	119	5.38	50	100.0	3	13
86.7	35.0	33	49.4	118	37.4	NH	99	10	09	2231	209	413	5.06	167	52.2	0	0
86.7	40.0	33	39.5	118	58.5	NH	99	10	10	0704	209	449	4.65	36	100.0	1	1
86.7	45.0	33	29.3	119	19.0	NH	99	10	10	1154	198	481	4.12	33	100.0	8	3
86.7	50.0	33	19.4	119	39.8	NH	99	10	10	1723	70	177	3.98	56	100.0	1	11
86.7	55.0	33	09.4	120	00.4	NH	99	10	10	2109	201	460	4.37	87	47.5	2	0
86.7	60.0	32	59.3	120	20.8	NH	99	10	11	0103	203	484	4.19	99	50.0	8	0
86.7	70.0	32	39.4	121	02.0	NH	99	10	11	1228	206	464	4.45	54	100.0	3	4

Table 1. (cont.)

CalCOFI Cruise 9910

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
86.7	80.0	32	19.4	121	42.8	NH	99	10	11	2003	212	417	5.07	132	52.7	1	1
86.7	90.0	31	59.5	122	23.4	NH	99	10	12	0156	201	467	4.30	43	100.0	75	11
86.7	100.0	31	39.4	123	03.7	NH	99	10	12	0841	202	434	4.64	25	100.0	97	10
86.7	110.0	31	19.5	123	44.4	NH	99	10	12	1626	207	460	4.51	43	100.0	4	0
90.0	28.0	33	28.8	117	45.8	NH	99	10	09	1402	68	168	4.06	78	100.0	5	20
90.0	30.0	33	25.1	117	54.3	NH	99	10	09	0836	197	431	4.56	53	100.0	13	22
90.0	35.0	33	15.0	118	14.9	NH	99	10	09	0533	203	444	4.58	63	46.4	1	8
90.0	37.0	33	10.7	118	23.6	NH	99	10	09	0237	196	458	4.29	118	51.9	0	7
90.0	45.0	32	55.0	118	56.1	NH	99	10	08	2117	209	433	4.83	257	49.5	0	1
90.0	53.0	32	38.6	119	28.9	NH	99	10	08	1620	215	440	4.89	107	48.9	1	1
90.0	60.0	32	24.4	119	57.3	NH	99	10	08	0916	197	459	4.29	37	100.0	6	2
90.0	70.0	32	05.1	120	38.3	NH	99	10	08	0129	204	486	4.20	47	100.0	19	7
90.0	80.0	31	44.7	121	18.6	NH	99	10	07	1916	223	422	5.28	40	100.0	120	24
90.0	90.0	31	23.9	122	01.1	NH	99	10	07	1258	193	523	3.70	23	100.0	45	9
90.0	100.0	31	05.1	122	39.7	NH	99	10	07	0650	207	487	4.26	21	100.0	43	34
90.0	110.0	30	45.2	123	19.9	NH	99	10	07	0005	216	500	4.32	30	100.0	23	17
90.0	120.0	30	24.3	123	59.5	NH	99	10	06	1745	216	469	4.59	26	100.0	5	8
93.3	26.7	32	57.3	117	18.4	NH	99	10	03	1511	82	233	3.49	39	100.0	0	6
93.3	28.0	32	54.2	117	23.5	NH	99	10	03	1023	213	414	5.15	27	100.0	1	0
93.3	30.0	32	50.8	117	31.8	NH	99	10	03	1818	212	432	4.90	125	51.8	1	0
93.3	35.0	32	40.7	117	52.3	NH	99	10	03	2214	213	420	5.07	60	100.0	6	0
93.3	40.0	32	31.0	118	12.3	NH	99	10	04	0209	209	405	5.14	62	100.0	7	0
93.3	45.0	32	20.8	118	33.2	NH	99	10	04	0605	220	400	5.50	63	100.0	3	5
93.3	50.0	32	10.3	118	53.2	NH	99	10	04	0912	217	403	5.39	50	100.0	4	1
93.3	55.0	32	01.0	119	13.3	NH	99	10	04	1542	210	436	4.81	55	100.0	2	2
93.3	60.0	31	50.8	119	34.3	NH	99	10	04	1938	208	449	4.64	98	52.2	1	2
93.3	70.0	31	30.9	120	14.1	NH	99	10	05	0123	201	475	4.24	93	47.7	8	4
93.3	80.0	31	10.8	120	55.2	NH	99	10	05	0850	211	419	5.03	29	100.0	9	4
93.3	90.0	30	51.2	121	34.9	NH	99	10	05	1637	207	468	4.42	26	100.0	7	5
93.3	100.0	30	30.7	122	15.4	NH	99	10	05	2216	213	434	4.90	37	100.0	88	70
93.3	110.0	30	11.0	122	54.6	NH	99	10	06	0358	211	464	4.54	32	100.0	63	31
93.3	120.0	29	50.7	123	35.0	NH	99	10	06	0840	205	460	4.47	30	100.0	24	61

TABLE 2. Pooled occurrences of fish larvae taken on CalCOFI cruises in 1999.

Rank	Taxon	Occurrences
1	*Stenobrachius leucopsarus*	82
2	*Protomyctophum crockeri*	78
3	*Leuroglossus stilbius*	71
4	*Sebastes* spp.	59
5	*Diogenichthys atlanticus*	57
6	*Bathylagus ochotensis*	56
7	*Engraulis mordax*	51
8	*Merluccius productus*	49
9	*Vinciguerria lucetia*	47
9	*Symbolophorus californiensis*	47
11	*Cyclothone signata*	43
12	*Nannobrachium ritteri*	42
13	*Triphoturus mexicanus*	40
14	*Ceratoscopelus townsendi*	39
15	*Sardinops sagax*	35
16	*Citharichthys stigmaeus*	34
17	*Lampanyctus* spp.	32
18	*Tarletonbeania crenularis*	31
19	*Bathylagus wesethi*	27
20	*Lestidiops ringens*	23
20	*Diaphus* spp.	23
22	*Idiacanthus antrostomus*	22
23	*Trachurus symmetricus*	18
24	*Tetragonurus cuvieri*	17
25	*Sternoptyx* spp.	16
25	*Chauliodus macouni*	16
27	*Melamphaes lugubris*	15
27	*Danaphos oculatus*	15
27	*Argyropelecus sladeni*	15
30	*Nannobrachium regale*	14
31	*Citharichthys sordidus*	13
32	*Cyclothone acclinidens*	11
33	*Hygophum reinhardtii*	9
33	*Scopelarchus analis*	9
33	*Arctozenus risso*	9
36	*Coryphopterus nicholsii*	8
37	*Myctophum nitidulum*	7
37	*Sebastes jordani*	7
37	*Electrona risso*	7
37	*Microstoma* spp.	7
41	*Chromis punctipinnis*	6
41	*Sebastes paucispinis*	6
41	*Vinciguerria poweriae*	6
41	*Scopelogadus bispinosus*	6
45	*Argyropelecus affinis*	5
45	*Cololabis saira*	5
45	*Sebastes aurora*	5
45	*Benthalbella dentata*	5
49	*Trachipterus altivelis*	4

TABLE 2. (cont.)

Rank	Taxon	Occurrences
49	*Rosenblattichthys volucris*	4
49	*Howella* spp.	4
49	*Notolychnus valdiviae*	4
49	*Argentina sialis*	4
49	*Scopelosaurus* spp.	4
49	*Lyopsetta exilis*	4
49	*Sebastolobus altivelis*	4
57	*Nansenia candida*	3
57	*Bathophilus flemingi*	3
57	*Ruscarius creaseri*	3
57	*Argyropelecus hemigymnus*	3
57	*Melamphaes* spp.	3
57	*Microstomus pacificus*	3
57	*Bathylagus pacificus*	3
57	*Notoscopelus resplendens*	3
65	*Zaniolepis latipinnis*	2
65	*Zaniolepis frenata*	2
65	*Lepidogobius lepidus*	2
65	*Icichthys lockingtoni*	2
65	*Oxylebius pictus*	2
65	*Lampadena urophaos*	2
65	*Argyropelecus lychnus*	2
65	*Typhlogobius californiensis*	2
65	*Hypsoblennius jenkinsi*	2
65	*Scopelarchus guentheri*	2
65	*Rathbunella* spp.	2
65	*Ophiodon elongatus*	2
65	*Genyonemus lineatus*	2
65	*Sebastes diploproa*	2
65	Myctophidae	2
65	*Artedius lateralis*	2
65	*Icelinus quadriseriatus*	2
65	Disintegrated fish larvae	2
65	*Bathylagus milleri*	2
84	Sternoptychidae	1
84	*Tactostoma macropus*	1
84	*Photonectes* spp.	1
84	*Stomias atriventer*	1
84	*Cyclothone* spp.	1
84	*Sebastolobus alascanus*	1
84	*Pleuronichthys verticalis*	1
84	*Parophrys vetulus*	1
84	*Citharichthys* spp.	1
84	*Scomber japonicus*	1
84	*Chaenopsis alepidota*	1
84	*Chiasmodon niger*	1
84	Stichaeidae	1
84	*Atractoscion nobilis*	1
84	*Brama japonica*	1
84	*Paralabrax* spp.	1
84	*Xeneretmus leiops*	1
84	*Agonopsis sterletus*	1

TABLE 2. (cont.)

Rank	Taxon	Occurrences
84	*Scorpaenichthys marmoratus*	1
84	*Chilara taylori*	1
84	*Cheilopogon pinnatibarbatus*	1
84	*Parvilux ingens*	1
84	*Hygophum* spp.	1
84	*Loweina rara*	1
84	*Cataetyx rubrirostris*	1
84	Unidentified fish larvae	1
84	*Orthonopias triacis*	1
84	*Gigantactis* spp.	1
84	*Ruscarius meanyi*	1
84	*Melamphaes parvus*	1
84	*Melamphaes simus*	1
84	*Macroramphosus gracilis*	1
84	*Sebastes levis*	1
84	*Sebastolobus* spp.	1
84	*Nannobrachium hawaiiensis*	1
84	*Oneirodes* spp.	1
	Total	1375

TABLE 3. Pooled counts of fish larvae taken on CalCOFI cruises in 1999. Counts are adjusted for percent of sample sorted and standard haul factor (see text).

Rank	Taxon	Count
1	*Sardinops sagax*	29562
2	*Engraulis mordax*	15933
3	*Vinciguerria lucetia*	6430
4	*Stenobrachius leucopsarus*	5503
5	*Leuroglossus stilbius*	4495
6	*Sebastes* spp.	3765
7	*Merluccius productus*	1807
8	*Bathylagus ochotensis*	1308
9	*Protomyctophum crockeri*	994
10	*Ceratoscopelus townsendi*	790
11	*Diogenichthys atlanticus*	733
12	*Citharichthys stigmaeus*	697
13	*Cyclothone signata*	597
14	*Symbolophorus californiensis*	585
15	*Triphoturus mexicanus*	557
16	*Lampanyctus* spp.	521
17	*Nannobrachium ritteri*	515
18	*Trachurus symmetricus*	439
19	*Bathylagus wesethi*	418
20	*Tarletonbeania crenularis*	404
21	*Idiacanthus antrostomus*	381
22	*Diaphus* spp.	269
23	*Sebastes jordani*	196
24	*Lestidiops ringens*	190
25	*Tetragonurus cuvieri*	182
26	*Chauliodus macouni*	137
27	*Nannobrachium regale*	123
28	*Argyropelecus sladeni*	117
29	*Citharichthys sordidus*	114
30	*Sternoptyx* spp.	113
31	*Danaphos oculatus*	102
32	*Melamphaes lugubris*	100
33	*Cyclothone acclinidens*	99
34	*Ruscarius creaseri*	83
35	*Coryphopterus nicholsii*	69
36	*Sebastes aurora*	62
37	*Hygophum reinhardtii*	60
38	*Howella* spp.	59
39	*Scopelarchus analis*	56
39	*Sebastes paucispinis*	56
39	*Arctozenus risso*	56
42	*Orthonopias triacis*	53
42	*Sebastolobus altivelis*	53
44	*Bathylagus pacificus*	52
45	*Chromis punctipinnis*	49
45	*Microstoma* spp.	49
47	*Nansenia candida*	47
47	*Artedius lateralis*	47
49	*Trachipterus altivelis*	39

TABLE 3. (cont.)

Rank	Taxon	Count
50	*Myctophum nitidulum*	37
51	*Electrona risso*	35
51	*Lyopsetta exilis*	35
53	*Vinciguerria poweriae*	34
54	*Benthalbella dentata*	33
55	*Argyropelecus affinis*	29
56	*Scopelogadus bispinosus*	28
57	*Cololabis saira*	27
58	*Argentina sialis*	26
59	*Microstomus pacificus*	25
60	*Notolychnus valdiviae*	24
61	*Argyropelecus hemigymnus*	20
61	*Scopelosaurus* spp.	20
63	*Lampadena urophaos*	19
64	*Rosenblattichthys volucris*	18
64	*Oxylebius pictus*	18
64	*Icichthys lockingtoni*	18
64	*Hypsoblennius jenkinsi*	18
68	*Ophiodon elongatus*	17
69	*Zaniolepis latipinnis*	16
70	*Bathophilus flemingi*	15
70	*Melamphaes* spp.	15
70	Myctophidae	15
70	*Bathylagus milleri*	15
70	*Chaenopsis alepidota*	15
70	*Genyonemus lineatus*	15
76	*Lepidogobius lepidus*	14
76	*Sebastes diploproa*	14
76	*Typhlogobius californiensis*	14
76	*Notoscopelus resplendens*	14
80	*Icelinus quadriseriatus*	13
81	*Parophrys vetulus*	12
82	*Zaniolepis frenata*	11
83	*Sebastolobus* spp.	10
83	*Chilara taylori*	10
83	*Atractoscion nobilis*	10
83	*Tactostoma macropus*	10
83	*Melamphaes parvus*	10
83	*Argyropelecus lychnus*	10
83	Disintegrated fish larvae	10
83	*Stomias atriventer*	10
83	*Xeneretmus leiops*	10
83	Sternoptychidae	10
93	*Sebastolobus alascanus*	9
93	*Macroramphosus gracilis*	9
93	Unidentified fish larvae	9
93	*Scopelarchus guentheri*	9
97	*Rathbunella* spp.	8
97	*Ruscarius meanyi*	8
99	*Chiasmodon niger*	5
99	*Paralabrax* spp.	5

TABLE 3. (cont.)

Rank	Taxon	Count
99	*Photonectes* spp.	5
99	*Scorpaenichthys marmoratus*	5
99	*Parvilux ingens*	5
99	*Brama japonica*	5
99	*Loweina rara*	5
99	*Scomber japonicus*	5
99	*Sebastes levis*	5
99	*Cheilopogon pinnatibarbatus*	5
99	*Cyclothone* spp.	5
110	*Gigantactis* spp.	4
110	*Pleuronichthys verticalis*	4
110	*Melamphaes simus*	4
110	*Oneirodes* spp.	4
110	*Citharichthys* spp.	4
110	*Cataetyx rubrirostris*	4
110	Stichaeidae	4
110	*Hygophum* spp.	4
110	*Nannobrachium hawaiiensis*	4
119	*Agonopsis sterletus*	3
	Total	79991

TABLE 4. Number of fish larvae taken at stations occupied on CalCOFI cruises in 1999. Counts are adjusted for percent of sample sorted and standard haul factor (see text). Unoccupied stations are indicated by a dash.

Sardinops sagax

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	51.0	0.0	-	-	68.7	-	-	-	0.0	-	0.0	-	-
76.7	55.0	0.0	-	-	10.9	-	-	-	0.0	-	0.0	-	-
76.7	60.0	0.0	-	-	29.9	-	-	-	0.0	-	0.0	-	-
76.7	70.0	0.0	-	-	2048.6	-	-	-	0.0	-	0.0	-	-
76.7	80.0	0.0	-	-	3458.4	-	-	-	0.0	-	0.0	-	-
76.7	90.0	0.0	-	-	2490.2	-	-	-	0.0	-	0.0	-	-
76.7	100.0	0.0	-	-	15.1	-	-	-	-	-	0.0	-	-
80.0	80.0	0.0	-	-	2856.2	-	-	-	0.0	-	0.0	-	-
80.0	90.0	0.0	-	-	1547.2	-	-	-	0.0	-	0.0	-	-
80.0	100.0	0.0	-	-	173.5	-	-	-	0.0	-	0.0	-	-
83.3	42.0	0.0	-	-	9.3	-	-	-	0.0	-	0.0	-	-
83.3	55.0	0.0	-	-	63.8	-	-	-	0.0	-	0.0	-	-
83.3	60.0	0.0	-	-	30.4	-	-	-	0.0	-	0.0	-	-
83.3	70.0	0.0	-	-	146.0	-	-	-	0.0	-	0.0	-	-
83.3	80.0	0.0	-	-	1619.0	-	-	-	0.0	-	0.0	-	-
83.3	90.0	0.0	-	-	2422.8	-	-	-	0.0	-	0.0	-	-
83.3	100.0	0.0	-	-	671.8	-	-	-	0.0	-	0.0	-	-
86.7	55.0	0.0	-	-	61.3	-	-	-	0.0	-	0.0	-	-
86.7	60.0	0.0	-	-	885.1	-	-	-	0.0	-	0.0	-	-
86.7	90.0	0.0	-	-	124.5	-	-	-	0.0	-	0.0	-	-
86.7	110.0	0.0	-	-	64.7	-	-	-	0.0	-	0.0	-	-
90.0	37.0	0.0	-	-	10.3	-	-	-	4.9	-	0.0	-	-
90.0	53.0	0.0	-	-	10.1	-	-	-	0.0	-	0.0	-	-
90.0	60.0	0.0	-	-	4063.4	-	-	-	0.0	-	0.0	-	-
90.0	70.0	0.0	-	-	760.5	-	-	-	0.0	-	0.0	-	-
90.0	80.0	0.0	-	-	5241.8	-	-	-	0.0	-	0.0	-	-
90.0	90.0	0.0	-	-	24.8	-	-	-	0.0	-	0.0	-	-
93.3	28.0	0.0	-	-	9.2	-	-	-	0.0	-	0.0	-	-
93.3	45.0	0.0	-	-	24.2	-	-	-	0.0	-	0.0	-	-
93.3	50.0	0.0	-	-	30.5	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Sardinops sagax (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	55.0	0.0	-	-	204.1	-	-	-	0.0	-	0.0	-	-
93.3	60.0	0.0	-	-	307.9	-	-	-	0.0	-	0.0	-	-
93.3	80.0	0.0	-	-	64.4	-	-	-	0.0	-	0.0	-	-
93.3	90.0	0.0	-	-	9.9	-	-	-	0.0	-	0.0	-	-

Engraulis mordax

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	51.0	16.5	-	-	0.0	-	-	-	0.0	-	8.5	-	-
80.0	55.0	-	-	-	0.0	-	-	-	0.0	-	25.7	-	-
81.8	46.9	4.5	-	-	0.0	-	-	-	0.0	-	21.3	-	-
83.3	42.0	2.5	-	-	9.3	-	-	-	0.0	-	8.4	-	-
83.3	51.0	16.3	-	-	0.0	-	-	-	-	-	0.0	-	-
83.3	60.0	0.0	-	-	0.0	-	-	-	9.8	-	0.0	-	-
86.7	33.0	17.8	-	-	48.6	-	-	-	0.0	-	0.0	-	-
86.7	35.0	59.3	-	-	715.6	-	-	-	0.0	-	0.0	-	-
86.7	40.0	19.4	-	-	30.2	-	-	-	0.0	-	0.0	-	-
86.7	45.0	0.0	-	-	20.1	-	-	-	0.0	-	16.5	-	-
86.7	50.0	0.0	-	-	53.3	-	-	-	0.0	-	0.0	-	-
90.0	28.0	24.1	-	-	306.0	-	-	-	9.2	-	8.1	-	-
90.0	30.0	19.3	-	-	861.5	-	-	-	67.1	-	41.0	-	-
90.0	35.0	1405.4	-	-	592.0	-	-	-	142.1	-	0.0	-	-
90.0	37.0	5058.7	-	-	2659.3	-	-	-	83.3	-	0.0	-	-
90.0	45.0	9.3	-	-	40.2	-	-	-	9.8	-	0.0	-	-
90.0	53.0	0.0	-	-	121.0	-	-	-	51.1	-	0.0	-	-
90.0	60.0	0.0	-	-	0.0	-	-	-	10.3	-	0.0	-	-
93.3	26.7	0.0	-	-	233.2	-	-	-	11.7	-	0.0	-	-
93.3	28.0	11.0	-	-	416.8	-	-	-	23.0	-	0.0	-	-
93.3	30.0	9.5	-	-	1013.3	-	-	-	0.0	-	0.0	-	-
93.3	35.0	0.0	-	-	262.0	-	-	-	9.9	-	0.0	-	-
93.3	40.0	0.0	-	-	1033.5	-	-	-	0.0	-	0.0	-	-
93.3	45.0	0.0	-	-	159.4	-	-	-	0.0	-	0.0	-	-
93.3	50.0	0.0	-	-	132.1	-	-	-	0.0	-	0.0	-	-

Argentina sialis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	42.0	0.0	-	-	0.0	-	-	-	0.0	-	4.2	-	-
86.7	33.0	0.0	-	-	3.5	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Argentina sialis (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 35.0	0.0	-	-	9.2	-	-	-	0.0	-	0.0	-	-
86.7 40.0	9.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-

***Microstoma* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 110.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
90.0 80.0	0.0	-	-	0.0	-	-	-	0.0	-	5.3	-	-
93.3 55.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3 60.0	10.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3 70.0	9.6	-	-	10.5	-	-	-	0.0	-	0.0	-	-

Nansenia candida

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 100.0	0.0	-	-	9.6	-	-	-	0.0	-	0.0	-	-
83.3 100.0	0.0	-	-	27.4	-	-	-	0.0	-	0.0	-	-
93.3 70.0	0.0	-	-	10.5	-	-	-	0.0	-	0.0	-	-

Bathylagus milleri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 90.0	0.0	-	-	9.8	-	-	-	0.0	-	0.0	-	-
83.3 90.0	0.0	-	-	5.1	-	-	-	0.0	-	0.0	-	-

Bathylagus ochotensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	0.0	-	-	34.4	-	-	-	0.0	-	0.0	-	-
76.7 55.0	0.0	-	-	21.9	-	-	-	0.0	-	0.0	-	-
76.7 60.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-
76.7 70.0	0.0	-	-	49.0	-	-	-	0.0	-	0.0	-	-
76.7 80.0	0.0	-	-	107.7	-	-	-	0.0	-	0.0	-	-
76.7 90.0	9.3	-	-	14.8	-	-	-	0.0	-	0.0	-	-
76.7 100.0	8.3	-	-	0.0	-	-	-	-	-	0.0	-	-
80.0 60.0	26.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0 70.0	19.0	-	-	10.3	-	-	-	0.0	-	0.0	-	-
80.0 80.0	55.7	-	-	103.9	-	-	-	0.0	-	0.0	-	-
80.0 90.0	8.4	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0 100.0	4.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 60.0	18.4	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 70.0	0.0	-	-	94.5	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Bathylagus ochotensis (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	80.0	38.2	-	-	9.8	-	-	-	0.0	-	0.0	-	-
83.3	90.0	0.0	-	-	35.6	-	-	-	0.0	-	0.0	-	-
83.3	100.0	0.0	-	-	4.6	-	-	-	0.0	-	0.0	-	-
83.3	110.0	0.0	-	-	4.9	-	-	-	5.0	-	0.0	-	-
86.7	33.0	0.0	-	-	6.9	-	-	-	0.0	-	0.0	-	-
86.7	35.0	0.0	-	-	9.2	-	-	-	0.0	-	0.0	-	-
86.7	40.0	0.0	-	-	20.2	-	-	-	0.0	-	0.0	-	-
86.7	45.0	0.0	-	-	10.0	-	-	-	0.0	-	0.0	-	-
86.7	55.0	9.8	-	-	5.1	-	-	-	0.0	-	0.0	-	-
86.7	60.0	60.8	-	-	18.2	-	-	-	0.0	-	0.0	-	-
86.7	90.0	0.0	-	-	14.4	-	-	-	0.0	-	0.0	-	-
86.7	100.0	4.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0	28.0	0.0	-	-	8.5	-	-	-	0.0	-	0.0	-	-
90.0	30.0	0.0	-	-	19.6	-	-	-	0.0	-	0.0	-	-
90.0	35.0	0.0	-	-	24.2	-	-	-	0.0	-	0.0	-	-
90.0	37.0	0.0	-	-	31.0	-	-	-	0.0	-	0.0	-	-
90.0	45.0	0.0	-	-	10.1	-	-	-	0.0	-	0.0	-	-
90.0	53.0	20.5	-	-	10.1	-	-	-	0.0	-	0.0	-	-
90.0	60.0	9.2	-	-	10.1	-	-	-	0.0	-	0.0	-	-
90.0	70.0	0.0	-	-	19.5	-	-	-	0.0	-	0.0	-	-
90.0	80.0	4.5	-	-	70.3	-	-	-	0.0	-	0.0	-	-
93.3	26.7	0.0	-	-	21.2	-	-	-	0.0	-	0.0	-	-
93.3	28.0	0.0	-	-	22.9	-	-	-	0.0	-	0.0	-	-
93.3	40.0	0.0	-	-	9.9	-	-	-	0.0	-	0.0	-	-
93.3	45.0	0.0	-	-	4.8	-	-	-	0.0	-	0.0	-	-
93.3	50.0	0.0	-	-	10.2	-	-	-	0.0	-	0.0	-	-
93.3	55.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3	60.0	10.2	-	-	67.4	-	-	-	0.0	-	0.0	-	-
93.3	70.0	0.0	-	-	41.9	-	-	-	0.0	-	0.0	-	-
93.3	80.0	0.0	-	-	13.8	-	-	-	0.0	-	0.0	-	-
93.3	90.0	0.0	-	-	14.8	-	-	-	0.0	-	0.0	-	-

Bathylagus pacificus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	80.0	0.0	-	-	21.5	-	-	-	0.0	-	0.0	-	-
76.7	90.0	0.0	-	-	14.8	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Bathylagus pacificus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	90.0	0.0	-	-	15.3	-	-	-	0.0	-	0.0	-	-

Bathylagus wesethi

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	100.0	0.0	-	-	0.0	-	-	-	63.1	-	13.7	-	-
83.3	100.0	0.0	-	-	9.1	-	-	-	0.0	-	4.7	-	-
83.3	110.0	0.0	-	-	4.9	-	-	-	9.9	-	4.8	-	-
86.7	60.0	0.0	-	-	0.0	-	-	-	0.0	-	8.4	-	-
86.7	90.0	0.0	-	-	0.0	-	-	-	57.5	-	17.2	-	-
86.7	100.0	0.0	-	-	0.0	-	-	-	25.0	-	9.3	-	-
90.0	45.0	0.0	-	-	0.0	-	-	-	9.8	-	0.0	-	-
90.0	70.0	0.0	-	-	0.0	-	-	-	0.0	-	16.8	-	-
90.0	80.0	0.0	-	-	10.0	-	-	-	0.0	-	15.8	-	-
90.0	90.0	0.0	-	-	0.0	-	-	-	0.0	-	3.7	-	-
90.0	110.0	0.0	-	-	0.0	-	-	-	0.0	-	8.6	-	-
90.0	120.0	0.0	-	-	0.0	-	-	-	9.9	-	0.0	-	-
93.3	55.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3	60.0	0.0	-	-	19.2	-	-	-	0.0	-	0.0	-	-
93.3	80.0	0.0	-	-	4.6	-	-	-	0.0	-	0.0	-	-
93.3	110.0	4.6	-	-	-	-	-	-	46.5	-	13.6	-	-
93.3	120.0	4.4	-	-	-	-	-	-	15.9	-	0.0	-	-

Leuroglossus stilbius

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	51.0	149.2	-	-	103.1	-	-	-	0.0	-	0.0	-	-
76.7	55.0	20.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
76.7	60.0	69.4	-	-	0.0	-	-	-	0.0	-	0.0	-	-
76.7	70.0	9.6	-	-	9.8	-	-	-	9.2	-	0.0	-	-
76.7	80.0	0.0	-	-	10.8	-	-	-	0.0	-	0.0	-	-
76.7	100.0	4.2	-	-	0.0	-	-	-	-	-	0.0	-	-
80.0	51.0	4.1	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	55.0	-	-	-	10.0	-	-	-	20.5	-	0.0	-	-
80.0	60.0	89.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	70.0	19.0	-	-	30.9	-	-	-	0.0	-	0.0	-	-
80.0	80.0	0.0	-	-	31.2	-	-	-	0.0	-	0.0	-	-
80.0	100.0	4.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
81.8	46.9	31.2	-	-	115.5	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Leuroglossus stilbius (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	42.0	7.4	-	-	83.7	-	-	-	0.0	-	0.0	-	-
83.3	51.0	8.1	-	-	0.0	-	-	-	-	-	0.0	-	-
83.3	55.0	141.7	-	-	71.7	-	-	-	0.0	-	0.0	-	-
83.3	60.0	220.8	-	-	40.5	-	-	-	0.0	-	0.0	-	-
83.3	70.0	133.3	-	-	25.8	-	-	-	0.0	-	0.0	-	-
83.3	80.0	9.6	-	-	29.3	-	-	-	0.0	-	0.0	-	-
83.3	90.0	0.0	-	-	25.5	-	-	-	0.0	-	0.0	-	-
86.7	33.0	0.0	-	-	3.5	-	-	-	0.0	-	0.0	-	-
86.7	35.0	19.8	-	-	55.0	-	-	-	9.8	-	0.0	-	-
86.7	40.0	58.1	-	-	70.5	-	-	-	0.0	-	0.0	-	-
86.7	45.0	0.0	-	-	120.5	-	-	-	0.0	-	0.0	-	-
86.7	55.0	68.3	-	-	15.3	-	-	-	0.0	-	0.0	-	-
86.7	60.0	436.0	-	-	18.2	-	-	-	0.0	-	0.0	-	-
86.7	70.0	35.5	-	-	-	-	-	-	0.0	-	0.0	-	-
90.0	28.0	0.0	-	-	4.3	-	-	-	0.0	-	0.0	-	-
90.0	30.0	38.6	-	-	19.6	-	-	-	0.0	-	0.0	-	-
90.0	35.0	173.4	-	-	205.4	-	-	-	0.0	-	0.0	-	-
90.0	37.0	254.6	-	-	289.7	-	-	-	0.0	-	0.0	-	-
90.0	45.0	0.0	-	-	181.1	-	-	-	0.0	-	0.0	-	-
90.0	53.0	20.5	-	-	110.9	-	-	-	0.0	-	0.0	-	-
90.0	60.0	174.3	-	-	60.8	-	-	-	0.0	-	0.0	-	-
90.0	70.0	0.0	-	-	39.0	-	-	-	0.0	-	0.0	-	-
90.0	80.0	0.0	-	-	30.1	-	-	-	0.0	-	0.0	-	-
90.0	90.0	5.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3	28.0	0.0	-	-	41.2	-	-	-	0.0	-	0.0	-	-
93.3	30.0	9.5	-	-	65.1	-	-	-	0.0	-	0.0	-	-
93.3	35.0	0.0	-	-	67.9	-	-	-	0.0	-	5.1	-	-
93.3	40.0	9.9	-	-	89.4	-	-	-	0.0	-	0.0	-	-
93.3	45.0	0.0	-	-	24.2	-	-	-	0.0	-	0.0	-	-
93.3	50.0	7.2	-	-	61.0	-	-	-	0.0	-	0.0	-	-
93.3	55.0	0.0	-	-	29.2	-	-	-	0.0	-	0.0	-	-
93.3	70.0	0.0	-	-	20.9	-	-	-	0.0	-	0.0	-	-
93.3	80.0	0.0	-	-	9.2	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

***Cyclothone* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 90.0	4.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Cyclothone acclinidens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 90.0	4.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.8	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	8.8	-	12.9	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	0.0	-	23.2	-	-
90.0 80.0	0.0	-	-	10.0	-	-	-	0.0	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	0.0	-	9.8	-	-
93.3 110.0	4.6	-	-	-	-	-	-	4.7	-	9.1	-	-

Cyclothone signata

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	0.0	-	-	10.1	-	-	-	-	-	0.0	-	-
80.0 100.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
83.3 90.0	9.1	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 100.0	11.7	-	-	0.0	-	-	-	4.6	-	18.7	-	-
83.3 110.0	38.9	-	-	9.7	-	-	-	0.0	-	4.8	-	-
86.7 90.0	18.8	-	-	4.8	-	-	-	17.7	-	8.6	-	-
86.7 100.0	4.3	-	-	14.7	-	-	-	20.0	-	37.1	-	-
86.7 110.0	10.0	-	-	5.0	-	-	-	5.2	-	0.0	-	-
90.0 70.0	9.4	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 80.0	4.5	-	-	10.0	-	-	-	0.0	-	5.3	-	-
90.0 90.0	0.0	-	-	5.0	-	-	-	0.0	-	7.4	-	-
90.0 100.0	26.5	-	-	0.0	-	-	-	0.0	-	4.3	-	-
90.0 110.0	11.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 120.0	18.8	-	-	14.6	-	-	-	54.3	-	0.0	-	-
93.3 55.0	0.0	-	-	9.7	-	-	-	0.0	-	0.0	-	-
93.3 70.0	0.0	-	-	10.5	-	-	-	0.0	-	0.0	-	-
93.3 80.0	0.0	-	-	4.6	-	-	-	0.0	-	0.0	-	-
93.3 100.0	4.5	-	-	-	-	-	-	5.1	-	19.6	-	-
93.3 110.0	0.0	-	-	-	-	-	-	23.3	-	22.7	-	-
93.3 120.0	13.3	-	-	-	-	-	-	37.1	-	13.4	-	-

TABLE 4. (cont.)

Sternoptychidae

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	60.0	10.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Argyropelecus affinis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	70.0	8.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-
86.7	110.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-
90.0	80.0	0.0	-	-	0.0	-	-	-	0.0	-	5.3	-	-
93.3	110.0	4.6	-	-	-	-	-	-	0.0	-	0.0	-	-

Argyropelecus hemigymnus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	80.0	0.0	-	-	10.0	-	-	-	0.0	-	5.3	-	-
93.3	110.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-

Argyropelecus lychnus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	80.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
93.3	90.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-

Argyropelecus sladeni

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	90.0	13.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	80.0	9.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	60.0	0.0	-	-	0.0	-	-	-	0.0	-	5.1	-	-
83.3	90.0	0.0	-	-	5.1	-	-	-	0.0	-	5.5	-	-
86.7	90.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
86.7	100.0	8.6	-	-	4.9	-	-	-	0.0	-	0.0	-	-
86.7	110.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-
90.0	37.0	0.0	-	-	20.7	-	-	-	0.0	-	0.0	-	-
90.0	80.0	0.0	-	-	10.0	-	-	-	0.0	-	0.0	-	-
90.0	90.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-
90.0	100.0	0.0	-	-	9.7	-	-	-	0.0	-	0.0	-	-
93.3	90.0	0.0	-	-	0.0	-	-	-	5.2	-	0.0	-	-
93.3	110.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-

Danaphos oculatus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	80.0	9.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	90.0	4.6	-	-	5.1	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Danaphos oculatus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
86.7 60.0	0.0	-	-	9.1	-	-	-	0.0	-	0.0	-	-
86.7 70.0	8.9	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7 100.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
90.0 60.0	9.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 90.0	5.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
93.3 30.0	0.0	-	-	0.0	-	-	-	0.0	-	9.5	-	-
93.3 45.0	0.0	-	-	0.0	-	-	-	0.0	-	5.5	-	-
93.3 80.0	0.0	-	-	4.6	-	-	-	0.0	-	0.0	-	-
93.3 90.0	4.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3 100.0	9.0	-	-	-	-	-	-	0.0	-	0.0	-	-

***Sternoptyx* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 70.0	9.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0 100.0	0.0	-	-	0.0	-	-	-	9.0	-	0.0	-	-
83.3 60.0	9.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 90.0	18.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 110.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
86.7 90.0	4.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 100.0	4.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 110.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-
90.0 110.0	0.0	-	-	0.0	-	-	-	5.2	-	0.0	-	-
90.0 120.0	0.0	-	-	9.7	-	-	-	4.9	-	0.0	-	-
93.3 55.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	5.1	-	0.0	-	-
93.3 110.0	4.6	-	-	-	-	-	-	4.7	-	0.0	-	-
93.3 120.0	8.9	-	-	-	-	-	-	0.0	-	0.0	-	-

Vinciguerria lucetia

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	0.0	-	-	5.0	-	-	-	-	-	0.0	-	-
80.0 70.0	0.0	-	-	0.0	-	-	-	0.0	-	10.4	-	-
80.0 100.0	4.3	-	-	0.0	-	-	-	847.9	-	0.0	-	-
81.8 46.9	8.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 90.0	13.7	-	-	0.0	-	-	-	0.0	-	5.5	-	-

TABLE 4. (cont.)

Vinciguerria lucetia (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 100.0	3.9	-	-	0.0	-	-	-	105.8	-	88.7	-	-
83.3 110.0	13.0	-	-	0.0	-	-	-	84.5	-	133.8	-	-
86.7 80.0	0.0	-	-	-	-	-	-	0.0	-	9.6	-	-
86.7 90.0	9.4	-	-	0.0	-	-	-	274.0	-	111.8	-	-
86.7 100.0	4.3	-	-	14.7	-	-	-	224.6	-	269.1	-	-
86.7 110.0	0.0	-	-	5.0	-	-	-	108.4	-	4.5	-	-
90.0 70.0	9.4	-	-	0.0	-	-	-	0.0	-	12.6	-	-
90.0 80.0	0.0	-	-	0.0	-	-	-	0.0	-	343.2	-	-
90.0 90.0	0.0	-	-	0.0	-	-	-	0.0	-	99.9	-	-
90.0 100.0	10.6	-	-	0.0	-	-	-	0.0	-	115.0	-	-
90.0 110.0	0.0	-	-	0.0	-	-	-	10.5	-	30.2	-	-
90.0 120.0	0.0	-	-	0.0	-	-	-	1477.1	-	9.2	-	-
93.3 35.0	0.0	-	-	0.0	-	-	-	0.0	-	5.1	-	-
93.3 70.0	0.0	-	-	10.5	-	-	-	0.0	-	0.0	-	-
93.3 80.0	4.1	-	-	4.6	-	-	-	0.0	-	20.1	-	-
93.3 90.0	0.0	-	-	0.0	-	-	-	0.0	-	13.3	-	-
93.3 100.0	0.0	-	-	-	-	-	-	25.7	-	210.7	-	-
93.3 110.0	0.0	-	-	-	-	-	-	1055.6	-	168.0	-	-
93.3 120.0	4.4	-	-	-	-	-	-	376.3	-	53.6	-	-

Vinciguerria poweriae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-
90.0 100.0	5.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 110.0	3.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 120.0	4.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3 70.0	9.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3 110.0	4.6	-	-	-	-	-	-	0.0	-	0.0	-	-

Chauliodus macouni

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 60.0	0.0	-	-	0.0	-	-	-	0.0	-	9.4	-	-
76.7 70.0	0.0	-	-	9.8	-	-	-	9.2	-	0.0	-	-
76.7 80.0	0.0	-	-	0.0	-	-	-	4.6	-	0.0	-	-
83.3 70.0	0.0	-	-	0.0	-	-	-	27.8	-	0.0	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	5.0	-	0.0	-	-
86.7 60.0	0.0	-	-	9.1	-	-	-	0.0	-	8.4	-	-

TABLE 4. (cont.)

Chauliodus macouni (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 70.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	5.2	-	0.0	-	-
90.0 37.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
90.0 70.0	0.0	-	-	19.5	-	-	-	0.0	-	0.0	-	-
90.0 80.0	0.0	-	-	0.0	-	-	-	4.8	-	0.0	-	-
90.0 90.0	0.0	-	-	0.0	-	-	-	4.8	-	0.0	-	-
90.0 100.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
90.0 110.0	0.0	-	-	0.0	-	-	-	5.2	-	0.0	-	-

Stomias atriventer

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 37.0	0.0	-	-	10.3	-	-	-	0.0	-	0.0	-	-

Bathophilus flemingi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 120.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
93.3 90.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-

***Photonectes* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	0.0	-	-	5.0	-	-	-	-	-	0.0	-	-

Tactostoma macropus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 100.0	0.0	-	-	0.0	-	-	-	10.0	-	0.0	-	-

Idiacanthus antrostomus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 100.0	0.0	-	-	0.0	-	-	-	31.6	-	0.0	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	13.8	-	9.3	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	9.9	-	9.6	-	-
86.7 70.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	4.4	-	60.2	-	-
86.7 110.0	3.3	-	-	0.0	-	-	-	0.0	-	9.0	-	-
90.0 70.0	0.0	-	-	0.0	-	-	-	0.0	-	21.0	-	-
90.0 80.0	0.0	-	-	0.0	-	-	-	0.0	-	84.5	-	-
90.0 90.0	0.0	-	-	0.0	-	-	-	0.0	-	7.4	-	-
90.0 100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
90.0 110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-

TABLE 4. (cont.)

Idiacanthus antrostomus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 120.0	0.0	-	-	0.0	-	-	-	29.6	-	4.6	-	-
93.3 60.0	0.0	-	-	0.0	-	-	-	0.0	-	8.9	-	-
93.3 90.0	0.0	-	-	0.0	-	-	-	0.0	-	4.4	-	-
93.3 100.0	0.0	-	-	-	-	-	-	10.3	-	24.5	-	-
93.3 110.0	0.0	-	-	-	-	-	-	23.3	-	0.0	-	-

Benthalbella dentata

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 70.0	8.9	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
90.0 70.0	0.0	-	-	9.8	-	-	-	0.0	-	0.0	-	-
93.3 90.0	4.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3 100.0	4.5	-	-	-	-	-	-	0.0	-	0.0	-	-

Rosenblattichthys volucris

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 100.0	3.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
90.0 120.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	4.7	-	0.0	-	-

Scopelarchus analis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	0.0	-	-	-	0.0	-	9.6	-	-
86.7 110.0	3.3	-	-	5.0	-	-	-	0.0	-	0.0	-	-
90.0 80.0	0.0	-	-	0.0	-	-	-	0.0	-	5.3	-	-
90.0 120.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	5.1	-	9.8	-	-
93.3 110.0	0.0	-	-	-	-	-	-	0.0	-	9.1	-	-
93.3 120.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-

Scopelarchus guentheri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 100.0	3.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3 50.0	0.0	-	-	0.0	-	-	-	0.0	-	5.4	-	-

***Scopelosaurus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

***Scopelosaurus* spp.** (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	80.0	0.0	-	-	0.0	-	-	-	0.0	-	5.3	-	-
90.0	120.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3	90.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-

Arctozenus risso

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.8	-	-
86.7	100.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
90.0	100.0	10.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0	120.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
93.3	60.0	0.0	-	-	9.6	-	-	-	0.0	-	0.0	-	-
93.3	80.0	0.0	-	-	0.0	-	-	-	0.0	-	5.0	-	-
93.3	90.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3	100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-
93.3	110.0	4.6	-	-	-	-	-	-	0.0	-	0.0	-	-

Lestidiops ringens

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	70.0	9.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	70.0	19.0	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	100.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
83.3	90.0	0.0	-	-	5.1	-	-	-	0.0	-	0.0	-	-
83.3	100.0	0.0	-	-	0.0	-	-	-	13.8	-	0.0	-	-
86.7	80.0	9.6	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7	90.0	4.7	-	-	0.0	-	-	-	30.9	-	0.0	-	-
86.7	110.0	3.3	-	-	5.0	-	-	-	0.0	-	4.5	-	-
90.0	35.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
90.0	53.0	0.0	-	-	0.0	-	-	-	0.0	-	10.0	-	-
90.0	70.0	0.0	-	-	0.0	-	-	-	0.0	-	4.2	-	-
90.0	80.0	0.0	-	-	0.0	-	-	-	0.0	-	10.6	-	-
90.0	100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
90.0	110.0	0.0	-	-	0.0	-	-	-	5.2	-	4.3	-	-
90.0	120.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3	40.0	9.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3	55.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3	60.0	0.0	-	-	0.0	-	-	-	9.8	-	0.0	-	-
93.3	80.0	0.0	-	-	4.6	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Myctophidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 40.0	9.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 90.0	0.0	-	-	4.8	-	-	-	0.0	-	0.0	-	-

Ceratoscopelus townsendi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 100.0	0.0	-	-	0.0	-	-	-	49.6	-	0.0	-	-
83.3 90.0	9.1	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 100.0	58.4	-	-	0.0	-	-	-	73.6	-	32.7	-	-
83.3 110.0	25.9	-	-	0.0	-	-	-	0.0	-	9.6	-	-
86.7 70.0	8.9	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7 90.0	18.8	-	-	0.0	-	-	-	75.1	-	34.4	-	-
86.7 100.0	12.9	-	-	9.8	-	-	-	15.0	-	18.6	-	-
86.7 110.0	3.3	-	-	5.0	-	-	-	15.5	-	0.0	-	-
90.0 70.0	0.0	-	-	0.0	-	-	-	0.0	-	4.2	-	-
90.0 80.0	0.0	-	-	0.0	-	-	-	0.0	-	15.8	-	-
90.0 90.0	0.0	-	-	0.0	-	-	-	4.8	-	18.5	-	-
90.0 100.0	0.0	-	-	9.7	-	-	-	0.0	-	12.8	-	-
90.0 110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
90.0 120.0	4.7	-	-	0.0	-	-	-	39.5	-	0.0	-	-
93.3 45.0	0.0	-	-	0.0	-	-	-	0.0	-	5.5	-	-
93.3 60.0	0.0	-	-	9.6	-	-	-	0.0	-	0.0	-	-
93.3 90.0	0.0	-	-	4.9	-	-	-	0.0	-	8.8	-	-
93.3 100.0	4.5	-	-	-	-	-	-	10.3	-	44.1	-	-
93.3 110.0	0.0	-	-	-	-	-	-	37.2	-	18.2	-	-
93.3 120.0	13.3	-	-	-	-	-	-	26.5	-	13.4	-	-

***Diaphus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 90.0	0.0	-	-	0.0	-	-	-	4.7	-	0.0	-	-
83.3 70.0	0.0	-	-	0.0	-	-	-	0.0	-	9.2	-	-
83.3 90.0	0.0	-	-	0.0	-	-	-	0.0	-	5.5	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	18.4	-	0.0	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	14.9	-	0.0	-	-
86.7 55.0	0.0	-	-	0.0	-	-	-	0.0	-	9.2	-	-
86.7 60.0	0.0	-	-	0.0	-	-	-	0.0	-	25.1	-	-
86.7 80.0	0.0	-	-	-	-	-	-	9.5	-	0.0	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	61.9	-	4.3	-	-

TABLE 4. (cont.)

***Diaphus* spp.** (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 100.0	0.0	-	-	0.0	-	-	-	15.0	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	15.5	-	0.0	-	-
90.0 35.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
90.0 80.0	0.0	-	-	0.0	-	-	-	4.8	-	0.0	-	-
90.0 90.0	0.0	-	-	0.0	-	-	-	14.4	-	0.0	-	-
90.0 110.0	0.0	-	-	0.0	-	-	-	5.2	-	0.0	-	-
93.3 40.0	0.0	-	-	0.0	-	-	-	0.0	-	5.1	-	-
93.3 80.0	0.0	-	-	0.0	-	-	-	0.0	-	5.0	-	-
93.3 90.0	0.0	-	-	0.0	-	-	-	0.0	-	4.4	-	-
93.3 100.0	0.0	-	-	-	-	-	-	5.1	-	4.9	-	-
93.3 110.0	0.0	-	-	-	-	-	-	0.0	-	9.1	-	-
93.3 120.0	0.0	-	-	-	-	-	-	15.9	-	0.0	-	-

Lampadena urophaos

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 100.0	0.0	-	-	0.0	-	-	-	0.0	-	13.9	-	-
93.3 100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-

***Lampanyctus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 49.0	0.0	-	-	10.6	-	-	-	0.0	-	0.0	-	-
76.7 80.0	0.0	-	-	10.8	-	-	-	0.0	-	0.0	-	-
80.0 90.0	0.0	-	-	9.8	-	-	-	0.0	-	0.0	-	-
80.0 100.0	0.0	-	-	28.9	-	-	-	0.0	-	0.0	-	-
83.3 80.0	0.0	-	-	9.8	-	-	-	0.0	-	0.0	-	-
83.3 100.0	19.5	-	-	0.0	-	-	-	0.0	-	4.7	-	-
83.3 110.0	21.6	-	-	9.7	-	-	-	0.0	-	0.0	-	-
86.7 45.0	0.0	-	-	0.0	-	-	-	0.0	-	4.1	-	-
86.7 90.0	0.0	-	-	19.2	-	-	-	4.4	-	0.0	-	-
86.7 100.0	0.0	-	-	14.7	-	-	-	5.0	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	10.3	-	0.0	-	-
90.0 28.0	0.0	-	-	8.5	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	-	20.3	-	-	-	0.0	-	0.0	-	-
90.0 80.0	0.0	-	-	140.6	-	-	-	0.0	-	0.0	-	-
90.0 90.0	0.0	-	-	39.7	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	-	14.5	-	-	-	0.0	-	0.0	-	-
90.0 120.0	18.8	-	-	0.0	-	-	-	4.9	-	0.0	-	-

TABLE 4. (cont.)

***Lampanyctus* spp.** (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	28.0	0.0	-	-	4.6	-	-	-	0.0	-	0.0	-	-
93.3	45.0	0.0	-	-	4.8	-	-	-	0.0	-	0.0	-	-
93.3	50.0	0.0	-	-	10.2	-	-	-	0.0	-	0.0	-	-
93.3	55.0	0.0	-	-	19.4	-	-	-	0.0	-	0.0	-	-
93.3	60.0	10.2	-	-	9.6	-	-	-	0.0	-	0.0	-	-
93.3	80.0	0.0	-	-	4.6	-	-	-	0.0	-	0.0	-	-
93.3	110.0	4.6	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3	120.0	8.9	-	-	-	-	-	-	10.6	-	0.0	-	-

Nannobrachium hawaiiensis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	90.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-

Nannobrachium regale

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	55.0	0.0	-	-	10.9	-	-	-	0.0	-	0.0	-	-
86.7	55.0	0.0	-	-	0.0	-	-	-	10.1	-	0.0	-	-
86.7	90.0	0.0	-	-	4.8	-	-	-	0.0	-	4.3	-	-
86.7	100.0	4.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	110.0	0.0	-	-	0.0	-	-	-	10.3	-	0.0	-	-
90.0	53.0	0.0	-	-	0.0	-	-	-	10.2	-	0.0	-	-
90.0	70.0	0.0	-	-	0.0	-	-	-	0.0	-	4.2	-	-
90.0	80.0	0.0	-	-	30.1	-	-	-	0.0	-	0.0	-	-
90.0	90.0	0.0	-	-	0.0	-	-	-	9.6	-	0.0	-	-
90.0	110.0	0.0	-	-	0.0	-	-	-	5.2	-	0.0	-	-
90.0	120.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3	60.0	0.0	-	-	0.0	-	-	-	9.8	-	0.0	-	-
93.3	80.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-

Nannobrachium ritteri

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	51.0	0.0	-	-	11.5	-	-	-	0.0	-	0.0	-	-
80.0	80.0	9.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	100.0	0.0	-	-	19.3	-	-	-	4.5	-	4.6	-	-
83.3	51.0	0.0	-	-	9.3	-	-	-	-	-	0.0	-	-
83.3	80.0	9.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	90.0	0.0	-	-	5.1	-	-	-	0.0	-	5.5	-	-
83.3	100.0	0.0	-	-	9.1	-	-	-	4.6	-	0.0	-	-

TABLE 4. (cont.)

Nannobrachium ritteri (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	0.0	-	-	-	29.8	-	0.0	-	-
86.7 35.0	19.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 60.0	0.0	-	-	0.0	-	-	-	0.0	-	8.4	-	-
86.7 80.0	9.6	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7 90.0	14.1	-	-	19.2	-	-	-	0.0	-	0.0	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	5.0	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	15.5	-	0.0	-	-
90.0 28.0	0.0	-	-	4.3	-	-	-	0.0	-	0.0	-	-
90.0 35.0	0.0	-	-	12.1	-	-	-	4.9	-	0.0	-	-
90.0 37.0	0.0	-	-	20.7	-	-	-	0.0	-	0.0	-	-
90.0 45.0	9.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 70.0	0.0	-	-	19.5	-	-	-	0.0	-	0.0	-	-
90.0 80.0	4.5	-	-	70.3	-	-	-	4.8	-	0.0	-	-
90.0 90.0	0.0	-	-	0.0	-	-	-	4.8	-	0.0	-	-
90.0 100.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
90.0 110.0	0.0	-	-	4.6	-	-	-	10.5	-	0.0	-	-
90.0 120.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3 40.0	0.0	-	-	9.9	-	-	-	0.0	-	0.0	-	-
93.3 55.0	0.0	-	-	14.6	-	-	-	0.0	-	0.0	-	-
93.3 60.0	0.0	-	-	9.6	-	-	-	0.0	-	0.0	-	-
93.3 70.0	0.0	-	-	20.9	-	-	-	9.5	-	0.0	-	-
93.3 80.0	0.0	-	-	9.2	-	-	-	0.0	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	35.9	-	4.9	-	-
93.3 110.0	0.0	-	-	-	-	-	-	4.7	-	0.0	-	-

Notolychnus valdiviae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.8	-	-
90.0 120.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-
93.3 120.0	0.0	-	-	-	-	-	-	0.0	-	8.9	-	-

Notoscopelus resplendens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 90.0	4.7	-	-	0.0	-	-	-	4.4	-	0.0	-	-
90.0 120.0	4.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Parvilux ingens

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	120.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-

Stenobrachius leucopsarus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	49.0	23.7	-	-	21.2	-	-	-	0.0	-	0.0	-	-
76.7	51.0	61.4	-	-	160.4	-	-	-	0.0	-	0.0	-	-
76.7	55.0	61.8	-	-	54.6	-	-	-	0.0	-	0.0	-	-
76.7	60.0	79.4	-	-	29.9	-	-	-	0.0	-	0.0	-	-
76.7	70.0	19.1	-	-	58.8	-	-	-	0.0	-	0.0	-	-
76.7	80.0	0.0	-	-	53.9	-	-	-	0.0	-	0.0	-	-
76.7	90.0	4.6	-	-	88.9	-	-	-	5.1	-	0.0	-	-
76.7	100.0	4.2	-	-	0.0	-	-	-	-	-	0.0	-	-
80.0	55.0	-	-	-	30.1	-	-	-	0.0	-	0.0	-	-
80.0	60.0	71.6	-	-	10.8	-	-	-	0.0	-	0.0	-	-
80.0	70.0	237.2	-	-	103.0	-	-	-	0.0	-	0.0	-	-
80.0	80.0	250.7	-	-	197.3	-	-	-	0.0	-	0.0	-	-
80.0	90.0	8.4	-	-	58.8	-	-	-	0.0	-	0.0	-	-
80.0	100.0	17.0	-	-	19.3	-	-	-	0.0	-	0.0	-	-
81.8	46.9	13.4	-	-	57.7	-	-	-	0.0	-	0.0	-	-
83.3	40.6	0.0	-	-	3.0	-	-	-	0.0	-	0.0	-	-
83.3	42.0	2.5	-	-	120.9	-	-	-	0.0	-	0.0	-	-
83.3	55.0	10.9	-	-	119.5	-	-	-	0.0	-	0.0	-	-
83.3	60.0	174.8	-	-	141.7	-	-	-	0.0	-	0.0	-	-
83.3	70.0	71.1	-	-	60.1	-	-	-	0.0	-	0.0	-	-
83.3	80.0	57.4	-	-	165.8	-	-	-	0.0	-	0.0	-	-
83.3	90.0	0.0	-	-	96.7	-	-	-	0.0	-	0.0	-	-
83.3	100.0	0.0	-	-	32.0	-	-	-	0.0	-	0.0	-	-
86.7	33.0	0.0	-	-	13.9	-	-	-	0.0	-	0.0	-	-
86.7	35.0	0.0	-	-	9.2	-	-	-	0.0	-	0.0	-	-
86.7	40.0	9.7	-	-	70.5	-	-	-	0.0	-	0.0	-	-
86.7	45.0	0.0	-	-	200.8	-	-	-	0.0	-	0.0	-	-
86.7	50.0	4.2	-	-	60.9	-	-	-	0.0	-	0.0	-	-
86.7	55.0	87.8	-	-	40.9	-	-	-	0.0	-	0.0	-	-
86.7	60.0	50.7	-	-	54.7	-	-	-	0.0	-	0.0	-	-
86.7	70.0	8.9	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7	90.0	0.0	-	-	24.0	-	-	-	0.0	-	4.3	-	-

TABLE 4. (cont.)

Stenobrachius leucopsarus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 100.0	25.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 110.0	23.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 28.0	0.0	-	-	85.0	-	-	-	0.0	-	0.0	-	-
90.0 30.0	0.0	-	-	19.6	-	-	-	0.0	-	0.0	-	-
90.0 35.0	0.0	-	-	145.0	-	-	-	0.0	-	0.0	-	-
90.0 37.0	0.0	-	-	41.4	-	-	-	0.0	-	0.0	-	-
90.0 45.0	0.0	-	-	432.6	-	-	-	0.0	-	0.0	-	-
90.0 53.0	0.0	-	-	40.3	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	-	304.0	-	-	-	0.0	-	0.0	-	-
90.0 70.0	9.4	-	-	19.5	-	-	-	0.0	-	0.0	-	-
90.0 80.0	0.0	-	-	220.9	-	-	-	0.0	-	0.0	-	-
90.0 90.0	0.0	-	-	34.7	-	-	-	4.8	-	0.0	-	-
90.0 110.0	3.9	-	-	0.0	-	-	-	0.0	-	4.3	-	-
93.3 26.7	0.0	-	-	4.2	-	-	-	0.0	-	0.0	-	-
93.3 28.0	0.0	-	-	36.6	-	-	-	0.0	-	0.0	-	-
93.3 30.0	0.0	-	-	18.6	-	-	-	0.0	-	0.0	-	-
93.3 35.0	0.0	-	-	58.2	-	-	-	0.0	-	0.0	-	-
93.3 40.0	0.0	-	-	119.2	-	-	-	0.0	-	0.0	-	-
93.3 50.0	0.0	-	-	66.0	-	-	-	0.0	-	0.0	-	-
93.3 55.0	0.0	-	-	87.5	-	-	-	0.0	-	0.0	-	-
93.3 60.0	0.0	-	-	48.1	-	-	-	0.0	-	0.0	-	-
93.3 70.0	0.0	-	-	125.6	-	-	-	0.0	-	0.0	-	-
93.3 80.0	0.0	-	-	18.4	-	-	-	0.0	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	5.1	-	0.0	-	-

Triphoturus mexicanus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 60.0	0.0	-	-	0.0	-	-	-	19.8	-	0.0	-	-
76.7 90.0	0.0	-	-	0.0	-	-	-	5.1	-	0.0	-	-
80.0 100.0	0.0	-	-	0.0	-	-	-	36.1	-	0.0	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	4.6	-	0.0	-	-
83.3 110.0	4.3	-	-	0.0	-	-	-	19.9	-	0.0	-	-
86.7 50.0	0.0	-	-	0.0	-	-	-	0.0	-	4.0	-	-
86.7 55.0	0.0	-	-	0.0	-	-	-	10.1	-	9.2	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	0.0	-	12.9	-	-
86.7 100.0	0.0	-	-	4.9	-	-	-	5.0	-	9.3	-	-

TABLE 4. (cont.)

Triphoturus mexicanus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	110.0	0.0	-	-	0.0	-	-	-	15.5	-	0.0	-	-
90.0	30.0	0.0	-	-	0.0	-	-	-	5.2	-	4.6	-	-
90.0	35.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
90.0	37.0	0.0	-	-	0.0	-	-	-	19.6	-	0.0	-	-
90.0	53.0	0.0	-	-	0.0	-	-	-	20.4	-	0.0	-	-
90.0	60.0	0.0	-	-	0.0	-	-	-	10.3	-	0.0	-	-
90.0	80.0	0.0	-	-	0.0	-	-	-	0.0	-	5.3	-	-
90.0	100.0	0.0	-	-	0.0	-	-	-	4.9	-	8.5	-	-
90.0	110.0	0.0	-	-	0.0	-	-	-	62.9	-	0.0	-	-
90.0	120.0	0.0	-	-	0.0	-	-	-	24.7	-	0.0	-	-
93.3	35.0	0.0	-	-	0.0	-	-	-	19.9	-	15.2	-	-
93.3	40.0	0.0	-	-	0.0	-	-	-	0.0	-	5.1	-	-
93.3	50.0	0.0	-	-	0.0	-	-	-	15.5	-	10.8	-	-
93.3	55.0	0.0	-	-	14.6	-	-	-	5.2	-	0.0	-	-
93.3	70.0	0.0	-	-	0.0	-	-	-	19.0	-	17.8	-	-
93.3	80.0	0.0	-	-	4.6	-	-	-	0.0	-	5.0	-	-
93.3	100.0	0.0	-	-	-	-	-	-	10.3	-	29.4	-	-
93.3	110.0	0.0	-	-	-	-	-	-	41.9	-	0.0	-	-
93.3	120.0	0.0	-	-	-	-	-	-	10.6	-	0.0	-	-

Diogenichthys atlanticus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	90.0	4.6	-	-	0.0	-	-	-	5.1	-	0.0	-	-
76.7	100.0	8.3	-	-	0.0	-	-	-	-	-	0.0	-	-
80.0	90.0	8.4	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	100.0	12.8	-	-	0.0	-	-	-	36.1	-	4.6	-	-
83.3	80.0	28.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	90.0	4.6	-	-	5.1	-	-	-	0.0	-	0.0	-	-
83.3	100.0	3.9	-	-	9.1	-	-	-	4.6	-	23.4	-	-
83.3	110.0	17.3	-	-	4.9	-	-	-	9.9	-	9.6	-	-
86.7	90.0	0.0	-	-	4.8	-	-	-	17.7	-	21.5	-	-
86.7	100.0	21.5	-	-	0.0	-	-	-	5.0	-	55.7	-	-
86.7	110.0	0.0	-	-	10.0	-	-	-	0.0	-	0.0	-	-
90.0	35.0	0.0	-	-	0.0	-	-	-	0.0	-	9.9	-	-
90.0	70.0	28.1	-	-	19.5	-	-	-	0.0	-	8.4	-	-
90.0	80.0	4.5	-	-	10.0	-	-	-	0.0	-	31.7	-	-

TABLE 4. (cont.)

Diogenichthys atlanticus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	90.0	0.0	-	-	0.0	-	-	-	4.8	-	7.4	-	-
90.0	100.0	5.3	-	-	9.7	-	-	-	4.9	-	17.0	-	-
90.0	110.0	3.9	-	-	4.6	-	-	-	0.0	-	0.0	-	-
90.0	120.0	9.4	-	-	0.0	-	-	-	29.6	-	0.0	-	-
93.3	30.0	0.0	-	-	9.3	-	-	-	0.0	-	0.0	-	-
93.3	35.0	0.0	-	-	0.0	-	-	-	0.0	-	5.1	-	-
93.3	45.0	7.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3	50.0	7.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3	70.0	9.6	-	-	20.9	-	-	-	0.0	-	0.0	-	-
93.3	90.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3	100.0	4.5	-	-	-	-	-	-	0.0	-	49.0	-	-
93.3	110.0	13.8	-	-	-	-	-	-	18.6	-	4.5	-	-
93.3	120.0	13.3	-	-	-	-	-	-	10.6	-	4.5	-	-

Electrona risso

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	100.0	0.0	-	-	5.0	-	-	-	-	-	0.0	-	-
83.3	100.0	0.0	-	-	9.1	-	-	-	0.0	-	0.0	-	-
86.7	90.0	0.0	-	-	4.8	-	-	-	0.0	-	0.0	-	-
86.7	100.0	4.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	110.0	3.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0	70.0	0.0	-	-	0.0	-	-	-	0.0	-	4.2	-	-
93.3	90.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-

***Hygophum* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	110.0	4.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Hygophum reinhardtii

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	100.0	0.0	-	-	0.0	-	-	-	13.5	-	0.0	-	-
83.3	100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-
83.3	110.0	4.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	90.0	9.4	-	-	0.0	-	-	-	4.4	-	0.0	-	-
86.7	100.0	8.6	-	-	0.0	-	-	-	5.0	-	4.6	-	-
93.3	100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-

TABLE 4. (cont.)

Loweina rara

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	120.0	4.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Myctophum nitidulum

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	100.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
83.3	90.0	9.1	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	90.0	4.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	100.0	4.3	-	-	0.0	-	-	-	0.0	-	4.6	-	-
90.0	120.0	4.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3	120.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-

Protomyctophum crockeri

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	51.0	0.0	-	-	11.5	-	-	-	0.0	-	0.0	-	-
76.7	70.0	9.6	-	-	0.0	-	-	-	0.0	-	10.0	-	-
76.7	90.0	0.0	-	-	44.5	-	-	-	0.0	-	0.0	-	-
76.7	100.0	4.2	-	-	5.0	-	-	-	-	-	13.4	-	-
80.0	80.0	0.0	-	-	10.4	-	-	-	0.0	-	0.0	-	-
80.0	90.0	0.0	-	-	9.8	-	-	-	4.7	-	19.1	-	-
80.0	100.0	4.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
81.8	46.9	4.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	70.0	26.7	-	-	17.2	-	-	-	0.0	-	9.2	-	-
83.3	80.0	9.6	-	-	19.5	-	-	-	4.8	-	0.0	-	-
83.3	90.0	0.0	-	-	15.3	-	-	-	0.0	-	0.0	-	-
83.3	100.0	0.0	-	-	22.9	-	-	-	0.0	-	0.0	-	-
83.3	110.0	13.0	-	-	0.0	-	-	-	5.0	-	4.8	-	-
86.7	40.0	0.0	-	-	0.0	-	-	-	4.7	-	0.0	-	-
86.7	55.0	19.5	-	-	5.1	-	-	-	0.0	-	0.0	-	-
86.7	60.0	0.0	-	-	0.0	-	-	-	0.0	-	8.4	-	-
86.7	70.0	8.9	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7	80.0	9.6	-	-	-	-	-	-	18.9	-	0.0	-	-
86.7	90.0	0.0	-	-	9.6	-	-	-	4.4	-	0.0	-	-
86.7	100.0	17.2	-	-	4.9	-	-	-	5.0	-	0.0	-	-
86.7	110.0	20.0	-	-	10.0	-	-	-	0.0	-	0.0	-	-
90.0	30.0	9.7	-	-	0.0	-	-	-	0.0	-	9.1	-	-
90.0	35.0	18.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0	37.0	0.0	-	-	10.3	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Protomyctophum crockeri (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	53.0	0.0	-	-	30.3	-	-	-	0.0	-	0.0	-	-
90.0	60.0	0.0	-	-	20.3	-	-	-	0.0	-	8.6	-	-
90.0	70.0	9.4	-	-	39.0	-	-	-	0.0	-	0.0	-	-
90.0	80.0	4.5	-	-	30.1	-	-	-	14.3	-	5.3	-	-
90.0	90.0	0.0	-	-	0.0	-	-	-	0.0	-	3.7	-	-
90.0	100.0	5.3	-	-	0.0	-	-	-	4.9	-	0.0	-	-
90.0	110.0	0.0	-	-	13.7	-	-	-	15.7	-	0.0	-	-
93.3	28.0	0.0	-	-	0.0	-	-	-	0.0	-	5.2	-	-
93.3	35.0	9.3	-	-	0.0	-	-	-	9.9	-	0.0	-	-
93.3	40.0	29.8	-	-	9.9	-	-	-	9.9	-	5.1	-	-
93.3	45.0	22.4	-	-	4.8	-	-	-	4.8	-	0.0	-	-
93.3	50.0	7.2	-	-	0.0	-	-	-	0.0	-	5.4	-	-
93.3	55.0	0.0	-	-	4.9	-	-	-	5.2	-	0.0	-	-
93.3	60.0	0.0	-	-	67.4	-	-	-	0.0	-	0.0	-	-
93.3	70.0	0.0	-	-	20.9	-	-	-	0.0	-	8.9	-	-
93.3	80.0	28.8	-	-	9.2	-	-	-	0.0	-	0.0	-	-
93.3	90.0	0.0	-	-	19.7	-	-	-	0.0	-	0.0	-	-
93.3	100.0	4.5	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3	120.0	4.4	-	-	-	-	-	-	0.0	-	0.0	-	-

Symbolophorus californiensis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	90.0	0.0	-	-	0.0	-	-	-	5.1	-	0.0	-	-
76.7	100.0	4.2	-	-	0.0	-	-	-	-	-	0.0	-	-
80.0	100.0	0.0	-	-	9.6	-	-	-	31.6	-	0.0	-	-
83.3	70.0	0.0	-	-	8.6	-	-	-	0.0	-	9.2	-	-
83.3	100.0	3.9	-	-	9.1	-	-	-	4.6	-	4.7	-	-
83.3	110.0	21.6	-	-	9.7	-	-	-	14.9	-	9.6	-	-
86.7	60.0	0.0	-	-	0.0	-	-	-	0.0	-	8.4	-	-
86.7	90.0	18.8	-	-	0.0	-	-	-	30.9	-	0.0	-	-
86.7	100.0	4.3	-	-	14.7	-	-	-	0.0	-	4.6	-	-
86.7	110.0	0.0	-	-	14.9	-	-	-	0.0	-	0.0	-	-
90.0	60.0	0.0	-	-	0.0	-	-	-	0.0	-	8.6	-	-
90.0	70.0	18.7	-	-	0.0	-	-	-	9.5	-	4.2	-	-
90.0	80.0	0.0	-	-	0.0	-	-	-	0.0	-	73.9	-	-
90.0	90.0	0.0	-	-	19.8	-	-	-	0.0	-	7.4	-	-

TABLE 4. (cont.)

Symbolophorus californiensis (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	110.0	15.6	-	-	4.6	-	-	-	10.5	-	30.2	-	-
90.0	120.0	9.4	-	-	4.9	-	-	-	14.8	-	0.0	-	-
93.3	55.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3	60.0	0.0	-	-	9.6	-	-	-	0.0	-	0.0	-	-
93.3	70.0	0.0	-	-	20.9	-	-	-	0.0	-	0.0	-	-
93.3	90.0	0.0	-	-	14.8	-	-	-	5.2	-	0.0	-	-
93.3	100.0	4.5	-	-	-	-	-	-	5.1	-	4.9	-	-
93.3	110.0	4.6	-	-	-	-	-	-	9.3	-	9.1	-	-
93.3	120.0	13.3	-	-	-	-	-	-	0.0	-	0.0	-	-

Tarletonbeania crenularis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	60.0	0.0	-	-	5.0	-	-	-	0.0	-	9.4	-	-
76.7	70.0	9.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
76.7	80.0	0.0	-	-	21.5	-	-	-	9.2	-	0.0	-	-
76.7	90.0	0.0	-	-	14.8	-	-	-	0.0	-	0.0	-	-
80.0	60.0	35.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	70.0	19.0	-	-	20.6	-	-	-	0.0	-	0.0	-	-
80.0	80.0	18.6	-	-	20.8	-	-	-	0.0	-	0.0	-	-
80.0	100.0	4.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	55.0	0.0	-	-	15.9	-	-	-	0.0	-	0.0	-	-
83.3	60.0	36.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	80.0	0.0	-	-	9.8	-	-	-	0.0	-	0.0	-	-
83.3	100.0	0.0	-	-	4.6	-	-	-	0.0	-	0.0	-	-
86.7	40.0	9.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	50.0	0.0	-	-	0.0	-	-	-	3.9	-	0.0	-	-
86.7	55.0	9.8	-	-	15.3	-	-	-	0.0	-	0.0	-	-
86.7	100.0	4.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0	37.0	8.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0	53.0	0.0	-	-	20.2	-	-	-	0.0	-	0.0	-	-
90.0	60.0	0.0	-	-	10.1	-	-	-	0.0	-	0.0	-	-
90.0	100.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
93.3	50.0	0.0	-	-	5.1	-	-	-	0.0	-	0.0	-	-
93.3	55.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3	60.0	10.2	-	-	9.6	-	-	-	0.0	-	0.0	-	-
93.3	70.0	0.0	-	-	20.9	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Tarletonbeania crenularis (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	80.0	0.0	-	-	9.2	-	-	-	0.0	-	0.0	-	-

Trachipterus altivelis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	70.0	19.0	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	90.0	0.0	-	-	0.0	-	-	-	5.1	-	0.0	-	-
90.0	53.0	0.0	-	-	0.0	-	-	-	10.2	-	0.0	-	-
90.0	100.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-

Merluccius productus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	49.0	0.0	-	-	10.6	-	-	-	0.0	-	0.0	-	-
76.7	51.0	0.0	-	-	11.5	-	-	-	0.0	-	0.0	-	-
76.7	55.0	20.6	-	-	10.9	-	-	-	0.0	-	0.0	-	-
76.7	70.0	47.8	-	-	78.4	-	-	-	0.0	-	0.0	-	-
76.7	80.0	0.0	-	-	21.5	-	-	-	0.0	-	0.0	-	-
80.0	51.0	4.1	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	55.0	-	-	-	10.0	-	-	-	0.0	-	0.0	-	-
80.0	60.0	17.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	80.0	362.1	-	-	41.5	-	-	-	0.0	-	0.0	-	-
80.0	90.0	33.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	100.0	29.8	-	-	9.6	-	-	-	0.0	-	0.0	-	-
83.3	55.0	10.9	-	-	8.0	-	-	-	0.0	-	0.0	-	-
83.3	60.0	0.0	-	-	20.2	-	-	-	0.0	-	0.0	-	-
83.3	70.0	8.9	-	-	51.5	-	-	-	0.0	-	0.0	-	-
83.3	80.0	152.9	-	-	68.3	-	-	-	0.0	-	0.0	-	-
83.3	90.0	0.0	-	-	5.1	-	-	-	0.0	-	0.0	-	-
83.3	100.0	0.0	-	-	41.1	-	-	-	0.0	-	0.0	-	-
83.3	110.0	0.0	-	-	0.0	-	-	-	5.0	-	0.0	-	-
86.7	40.0	0.0	-	-	10.1	-	-	-	0.0	-	0.0	-	-
86.7	55.0	0.0	-	-	20.4	-	-	-	0.0	-	0.0	-	-
86.7	80.0	9.6	-	-	-	-	-	-	0.0	-	0.0	-	-
90.0	35.0	0.0	-	-	12.1	-	-	-	0.0	-	0.0	-	-
90.0	37.0	17.0	-	-	10.3	-	-	-	0.0	-	0.0	-	-
90.0	45.0	0.0	-	-	20.1	-	-	-	0.0	-	0.0	-	-
90.0	53.0	0.0	-	-	30.3	-	-	-	0.0	-	0.0	-	-
90.0	60.0	9.2	-	-	20.3	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Merluccius productus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 70.0	0.0	-	-	9.8	-	-	-	0.0	-	0.0	-	-
90.0 80.0	0.0	-	-	90.4	-	-	-	0.0	-	0.0	-	-
90.0 100.0	5.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3 28.0	0.0	-	-	13.7	-	-	-	0.0	-	0.0	-	-
93.3 30.0	0.0	-	-	18.6	-	-	-	0.0	-	0.0	-	-
93.3 35.0	0.0	-	-	19.4	-	-	-	0.0	-	0.0	-	-
93.3 40.0	0.0	-	-	19.9	-	-	-	0.0	-	0.0	-	-
93.3 45.0	0.0	-	-	9.7	-	-	-	0.0	-	0.0	-	-
93.3 50.0	0.0	-	-	61.0	-	-	-	0.0	-	0.0	-	-
93.3 55.0	0.0	-	-	63.2	-	-	-	0.0	-	0.0	-	-
93.3 60.0	0.0	-	-	77.0	-	-	-	0.0	-	0.0	-	-
93.3 70.0	0.0	-	-	125.6	-	-	-	0.0	-	0.0	-	-
93.3 80.0	0.0	-	-	41.4	-	-	-	0.0	-	0.0	-	-
93.3 90.0	0.0	-	-	9.9	-	-	-	0.0	-	0.0	-	-

Chilara taylori

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 55.0	0.0	-	-	0.0	-	-	-	0.0	-	10.0	-	-

Cataetyx rubrirostris

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	0.0	-	-	4.3	-	-	-	0.0	-	0.0	-	-

***Oneirodes* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-

***Gigantactis* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-

Cololabis saira

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	0.0	-	-	0.0	-	-	-	-	-	4.5	-	-
86.7 40.0	9.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 90.0	4.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
93.3 120.0	4.4	-	-	-	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Cheilopogon pinnatibarbatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 37.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-

***Melamphaes* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	0.0	-	-	5.0	-	-	-	-	-	0.0	-	-
80.0 100.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-

Melamphaes lugubris

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 90.0	4.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0 100.0	0.0	-	-	9.6	-	-	-	0.0	-	9.1	-	-
86.7 70.0	0.0	-	-	-	-	-	-	9.9	-	0.0	-	-
86.7 80.0	0.0	-	-	-	-	-	-	9.5	-	0.0	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	4.4	-	0.0	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	5.0	-	0.0	-	-
90.0 100.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
90.0 110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
93.3 60.0	0.0	-	-	0.0	-	-	-	9.8	-	0.0	-	-
93.3 70.0	0.0	-	-	10.5	-	-	-	0.0	-	0.0	-	-
93.3 80.0	4.1	-	-	4.6	-	-	-	0.0	-	0.0	-	-
93.3 90.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-

Melamphaes parvus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 70.0	0.0	-	-	9.8	-	-	-	0.0	-	0.0	-	-

Melamphaes simus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 120.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-

Scopelogadus bispinosus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.6	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-
83.3 110.0	4.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
93.3 80.0	0.0	-	-	0.0	-	-	-	0.0	-	5.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	5.1	-	0.0	-	-

TABLE 4. (cont.)

Macroramphosus gracilis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	30.0	0.0	-	-	9.3	-	-	-	0.0	-	0.0	-	-

Sebastes spp.

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	49.0	56.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
76.7	51.0	17.6	-	-	0.0	-	-	-	10.4	-	0.0	-	-
76.7	55.0	10.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
76.7	80.0	9.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	51.0	0.0	-	-	8.6	-	-	-	0.0	-	0.0	-	-
80.0	60.0	9.0	-	-	10.8	-	-	-	0.0	-	0.0	-	-
81.8	46.9	8.9	-	-	9.6	-	-	-	0.0	-	96.0	-	-
83.3	40.6	3.4	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	42.0	19.8	-	-	18.6	-	-	-	0.0	-	0.0	-	-
83.3	51.0	81.3	-	-	9.3	-	-	-	-	-	0.0	-	-
83.3	55.0	316.2	-	-	55.8	-	-	-	0.0	-	0.0	-	-
83.3	60.0	9.2	-	-	10.1	-	-	-	0.0	-	0.0	-	-
86.7	33.0	35.6	-	-	152.7	-	-	-	0.0	-	16.1	-	-
86.7	35.0	49.4	-	-	64.2	-	-	-	9.8	-	0.0	-	-
86.7	40.0	19.4	-	-	20.2	-	-	-	0.0	-	0.0	-	-
86.7	45.0	0.0	-	-	100.4	-	-	-	0.0	-	0.0	-	-
86.7	50.0	275.2	-	-	342.6	-	-	-	3.9	-	0.0	-	-
86.7	55.0	19.5	-	-	61.3	-	-	-	0.0	-	0.0	-	-
86.7	60.0	10.1	-	-	36.5	-	-	-	9.4	-	0.0	-	-
90.0	28.0	0.0	-	-	0.0	-	-	-	4.6	-	4.1	-	-
90.0	30.0	0.0	-	-	166.4	-	-	-	0.0	-	0.0	-	-
90.0	35.0	9.1	-	-	48.3	-	-	-	4.9	-	0.0	-	-
90.0	37.0	8.5	-	-	31.0	-	-	-	0.0	-	0.0	-	-
90.0	45.0	0.0	-	-	50.3	-	-	-	0.0	-	0.0	-	-
90.0	53.0	71.9	-	-	746.2	-	-	-	0.0	-	0.0	-	-
90.0	60.0	36.7	-	-	243.2	-	-	-	10.3	-	0.0	-	-
93.3	26.7	0.0	-	-	8.5	-	-	-	0.0	-	0.0	-	-
93.3	30.0	0.0	-	-	65.1	-	-	-	0.0	-	0.0	-	-
93.3	35.0	0.0	-	-	9.7	-	-	-	0.0	-	0.0	-	-
93.3	40.0	0.0	-	-	89.4	-	-	-	0.0	-	0.0	-	-
93.3	45.0	0.0	-	-	29.0	-	-	-	0.0	-	0.0	-	-
93.3	50.0	0.0	-	-	50.8	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

***Sebastes* spp.** (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 55.0	0.0	-	-	63.2	-	-	-	0.0	-	0.0	-	-
93.3 60.0	0.0	-	-	19.2	-	-	-	0.0	-	0.0	-	-

Sebastes aurora

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	0.0	-	-	22.9	-	-	-	0.0	-	0.0	-	-
86.7 45.0	0.0	-	-	10.0	-	-	-	0.0	-	0.0	-	-
86.7 55.0	0.0	-	-	5.1	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	-	20.3	-	-	-	0.0	-	0.0	-	-
93.3 26.7	0.0	-	-	4.2	-	-	-	0.0	-	0.0	-	-

Sebastes diploproa

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 55.0	-	-	-	0.0	-	-	-	0.0	-	8.6	-	-
83.3 60.0	0.0	-	-	0.0	-	-	-	0.0	-	5.1	-	-

Sebastes jordani

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 51.0	32.5	-	-	0.0	-	-	-	-	-	0.0	-	-
83.3 55.0	21.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 35.0	45.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 53.0	30.8	-	-	40.3	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	-	20.3	-	-	-	0.0	-	0.0	-	-
93.3 26.7	0.0	-	-	4.2	-	-	-	0.0	-	0.0	-	-

Sebastes levis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 28.0	0.0	-	-	4.6	-	-	-	0.0	-	0.0	-	-

Sebastes paucispinis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 55.0	0.0	-	-	8.0	-	-	-	0.0	-	0.0	-	-
86.7 50.0	4.2	-	-	15.2	-	-	-	0.0	-	0.0	-	-
90.0 30.0	0.0	-	-	9.8	-	-	-	0.0	-	0.0	-	-
90.0 53.0	0.0	-	-	10.1	-	-	-	0.0	-	0.0	-	-
93.3 30.0	0.0	-	-	9.3	-	-	-	0.0	-	0.0	-	-

***Sebastolobus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 90.0	0.0	-	-	9.8	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Sebastolobus alascanus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 70.0	0.0	-	-	0.0	-	-	-	9.2	-	0.0	-	-

Sebastolobus altivelis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 70.0	0.0	-	-	0.0	-	-	-	0.0	-	27.5	-	-
90.0 60.0	0.0	-	-	0.0	-	-	-	10.3	-	0.0	-	-
90.0 80.0	0.0	-	-	0.0	-	-	-	9.6	-	0.0	-	-
93.3 50.0	0.0	-	-	0.0	-	-	-	5.2	-	0.0	-	-

Oxylebius pictus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 45.0	0.0	-	-	10.0	-	-	-	0.0	-	0.0	-	-
86.7 50.0	0.0	-	-	7.6	-	-	-	0.0	-	0.0	-	-

Zaniolepis frenata

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 51.0	8.1	-	-	0.0	-	-	-	-	-	0.0	-	-
86.7 33.0	0.0	-	-	3.5	-	-	-	0.0	-	0.0	-	-

Zaniolepis latipinnis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
81.8 46.9	0.0	-	-	0.0	-	-	-	0.0	-	10.7	-	-
86.7 40.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-

Ophiodon elongatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 51.0	0.0	-	-	9.3	-	-	-	-	-	0.0	-	-
86.7 50.0	0.0	-	-	7.6	-	-	-	0.0	-	0.0	-	-

Artedius lateralis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 51.0	0.0	-	-	9.3	-	-	-	-	-	0.0	-	-
86.7 50.0	0.0	-	-	38.1	-	-	-	0.0	-	0.0	-	-

Icelinus quadriseriatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 51.0	0.0	-	-	9.3	-	-	-	-	-	0.0	-	-
90.0 28.0	0.0	-	-	4.3	-	-	-	0.0	-	0.0	-	-

Orthonopias triacis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 50.0	0.0	-	-	53.3	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Ruscarius creaseri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 51.0	0.0	-	-	9.3	-	-	-	-	-	0.0	-	-
86.7 50.0	0.0	-	-	53.3	-	-	-	0.0	-	0.0	-	-
93.3 26.7	0.0	-	-	21.2	-	-	-	0.0	-	0.0	-	-

Ruscarius meanyi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 50.0	0.0	-	-	7.6	-	-	-	0.0	-	0.0	-	-

Scorpaenichthys marmoratus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 49.0	4.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Agonopsis sterletus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 33.0	0.0	-	-	3.5	-	-	-	0.0	-	0.0	-	-

Xeneretmus leiops

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 45.0	0.0	-	-	10.0	-	-	-	0.0	-	0.0	-	-

***Paralabrax* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 35.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-

***Howella* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 100.0	0.0	-	-	0.0	-	-	-	18.0	-	0.0	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	13.8	-	0.0	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	22.1	-	0.0	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	5.0	-	0.0	-	-

Trachurus symmetricus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 90.0	0.0	-	-	29.6	-	-	-	0.0	-	0.0	-	-
80.0 90.0	0.0	-	-	19.6	-	-	-	0.0	-	0.0	-	-
83.3 70.0	0.0	-	-	17.2	-	-	-	0.0	-	0.0	-	-
83.3 80.0	0.0	-	-	78.0	-	-	-	0.0	-	0.0	-	-
83.3 90.0	0.0	-	-	20.4	-	-	-	0.0	-	0.0	-	-
83.3 100.0	0.0	-	-	32.0	-	-	-	0.0	-	0.0	-	-
86.7 90.0	0.0	-	-	4.8	-	-	-	4.4	-	0.0	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	5.0	-	0.0	-	-
86.7 110.0	0.0	-	-	14.9	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Trachurus symmetricus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 70.0	0.0	-	-	9.8	-	-	-	0.0	-	0.0	-	-
90.0 80.0	0.0	-	-	90.4	-	-	-	0.0	-	0.0	-	-
90.0 120.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3 55.0	0.0	-	-	34.0	-	-	-	0.0	-	0.0	-	-
93.3 60.0	0.0	-	-	19.2	-	-	-	0.0	-	0.0	-	-
93.3 70.0	0.0	-	-	20.9	-	-	-	0.0	-	0.0	-	-
93.3 80.0	0.0	-	-	13.8	-	-	-	0.0	-	0.0	-	-
93.3 90.0	0.0	-	-	19.7	-	-	-	0.0	-	0.0	-	-

Brama japonica

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 100.0	0.0	-	-	0.0	-	-	-	4.6	-	0.0	-	-

Atractoscion nobilis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 37.0	0.0	-	-	10.3	-	-	-	0.0	-	0.0	-	-

Genyonemus lineatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 49.0	0.0	-	-	0.0	-	-	-	0.0	-	3.9	-	-
81.8 46.9	0.0	-	-	0.0	-	-	-	0.0	-	10.7	-	-

Chromis punctipinnis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	0.0	-	-	0.0	-	-	-	9.2	-	4.1	-	-
90.0 35.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
93.3 26.7	0.0	-	-	0.0	-	-	-	15.6	-	0.0	-	-
93.3 40.0	0.0	-	-	0.0	-	-	-	0.0	-	10.3	-	-
93.3 50.0	0.0	-	-	0.0	-	-	-	5.2	-	0.0	-	-

***Rathbunella* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 50.0	4.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3 26.7	0.0	-	-	4.2	-	-	-	0.0	-	0.0	-	-

Stichaeidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	0.0	-	-	4.3	-	-	-	0.0	-	0.0	-	-

Chiasmodon niger

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 120.0	4.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Chaenopsis alepidota

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 50.0	0.0	-	-	15.2	-	-	-	0.0	-	0.0	-	-

Hypsoblennius jenkinsi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 40.6	0.0	-	-	0.0	-	-	-	0.0	-	14.3	-	-
90.0 28.0	0.0	-	-	0.0	-	-	-	0.0	-	4.1	-	-

Coryphopterus nicholsii

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 49.0	0.0	-	-	0.0	-	-	-	0.0	-	3.9	-	-
76.7 55.0	0.0	-	-	0.0	-	-	-	0.0	-	10.0	-	-
80.0 55.0	-	-	-	0.0	-	-	-	0.0	-	8.6	-	-
83.3 70.0	0.0	-	-	0.0	-	-	-	9.3	-	0.0	-	-
86.7 45.0	10.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 35.0	0.0	-	-	12.1	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	-	10.1	-	-	-	0.0	-	0.0	-	-
93.3 40.0	0.0	-	-	0.0	-	-	-	0.0	-	5.1	-	-

Lepidogobius lepidus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 33.0	3.6	-	-	10.4	-	-	-	0.0	-	0.0	-	-

Typhlogobius californiensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 37.0	0.0	-	-	10.3	-	-	-	0.0	-	0.0	-	-
93.3 26.7	0.0	-	-	4.2	-	-	-	0.0	-	0.0	-	-

Scomber japonicus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 110.0	0.0	-	-	0.0	-	-	-	5.2	-	0.0	-	-

Icichthys lockingtoni

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 70.0	0.0	-	-	8.6	-	-	-	0.0	-	0.0	-	-
83.3 100.0	0.0	-	-	9.1	-	-	-	0.0	-	0.0	-	-

Tetragonurus cuvieri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 70.0	0.0	-	-	0.0	-	-	-	0.0	-	19.9	-	-
76.7 80.0	0.0	-	-	0.0	-	-	-	0.0	-	9.7	-	-
76.7 90.0	4.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0 100.0	0.0	-	-	0.0	-	-	-	18.0	-	0.0	-	-

TABLE 4. (cont.)

Tetragonurus cuvieri (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	110.0	0.0	-	-	0.0	-	-	-	5.0	-	0.0	-	-
86.7	90.0	0.0	-	-	0.0	-	-	-	4.4	-	12.9	-	-
86.7	100.0	0.0	-	-	0.0	-	-	-	5.0	-	0.0	-	-
90.0	60.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
90.0	80.0	0.0	-	-	0.0	-	-	-	0.0	-	15.8	-	-
90.0	90.0	0.0	-	-	0.0	-	-	-	0.0	-	11.1	-	-
90.0	100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
90.0	110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.3	-	-
90.0	120.0	0.0	-	-	0.0	-	-	-	0.0	-	9.2	-	-
93.3	55.0	0.0	-	-	0.0	-	-	-	0.0	-	4.8	-	-
93.3	70.0	0.0	-	-	0.0	-	-	-	0.0	-	44.4	-	-
93.3	80.0	0.0	-	-	0.0	-	-	-	0.0	-	5.0	-	-

***Citharichthys* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	28.0	0.0	-	-	4.3	-	-	-	0.0	-	0.0	-	-

Citharichthys sordidus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	55.0	0.0	-	-	0.0	-	-	-	0.0	-	10.0	-	-
76.7	60.0	0.0	-	-	0.0	-	-	-	0.0	-	9.4	-	-
80.0	70.0	0.0	-	-	0.0	-	-	-	0.0	-	10.4	-	-
80.0	90.0	0.0	-	-	9.8	-	-	-	0.0	-	0.0	-	-
83.3	42.0	0.0	-	-	0.0	-	-	-	0.0	-	4.2	-	-
86.7	70.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-
90.0	53.0	0.0	-	-	10.1	-	-	-	10.2	-	0.0	-	-
90.0	60.0	9.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0	80.0	4.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3	35.0	9.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3	45.0	0.0	-	-	14.5	-	-	-	0.0	-	0.0	-	-
93.3	60.0	0.0	-	-	0.0	-	-	-	9.8	-	0.0	-	-

Citharichthys stigmaeus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	55.0	10.3	-	-	0.0	-	-	-	0.0	-	149.7	-	-
76.7	60.0	0.0	-	-	0.0	-	-	-	19.8	-	9.4	-	-
76.7	70.0	19.1	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	55.0	-	-	-	0.0	-	-	-	0.0	-	145.5	-	-

TABLE 4. (cont.)

Citharichthys stigmaeus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	60.0	0.0	-	-	0.0	-	-	-	0.0	-	8.8	-	-
80.0	70.0	0.0	-	-	0.0	-	-	-	0.0	-	20.7	-	-
80.0	80.0	0.0	-	-	10.4	-	-	-	9.5	-	0.0	-	-
81.8	46.9	0.0	-	-	0.0	-	-	-	0.0	-	42.7	-	-
83.3	42.0	0.0	-	-	0.0	-	-	-	21.6	-	42.2	-	-
83.3	55.0	0.0	-	-	0.0	-	-	-	0.0	-	19.8	-	-
83.3	60.0	9.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	35.0	0.0	-	-	0.0	-	-	-	9.8	-	0.0	-	-
86.7	45.0	0.0	-	-	0.0	-	-	-	10.0	-	12.4	-	-
86.7	50.0	0.0	-	-	0.0	-	-	-	3.9	-	0.0	-	-
86.7	60.0	0.0	-	-	0.0	-	-	-	9.4	-	0.0	-	-
90.0	30.0	0.0	-	-	0.0	-	-	-	0.0	-	4.6	-	-
90.0	37.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
90.0	45.0	0.0	-	-	10.1	-	-	-	9.8	-	0.0	-	-
90.0	60.0	0.0	-	-	20.3	-	-	-	0.0	-	0.0	-	-
90.0	100.0	5.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3	28.0	11.0	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3	35.0	9.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
93.3	40.0	0.0	-	-	0.0	-	-	-	0.0	-	5.1	-	-
93.3	45.0	7.5	-	-	4.8	-	-	-	0.0	-	5.5	-	-
93.3	55.0	0.0	-	-	0.0	-	-	-	0.0	-	4.8	-	-
93.3	60.0	10.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Lyopsetta exilis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	33.0	0.0	-	-	3.5	-	-	-	0.0	-	0.0	-	-
86.7	35.0	0.0	-	-	18.3	-	-	-	0.0	-	0.0	-	-
86.7	40.0	0.0	-	-	10.1	-	-	-	0.0	-	0.0	-	-
90.0	28.0	0.0	-	-	4.3	-	-	-	0.0	-	0.0	-	-

Microstomus pacificus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	80.0	0.0	-	-	0.0	-	-	-	0.0	-	9.5	-	-
83.3	90.0	0.0	-	-	0.0	-	-	-	0.0	-	5.5	-	-
90.0	60.0	0.0	-	-	10.1	-	-	-	0.0	-	0.0	-	-

TABLE 4. (cont.)

Parophrys vetulus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 40.6	0.0	-	-	12.2	-	-	-	0.0	-	0.0	-	-

Pleuronichthys verticalis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 33.0	3.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Disintegrated fish larvae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 120.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
93.3 110.0	4.6	-	-	-	-	-	-	0.0	-	0.0	-	-

Unidentified fish larvae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 30.0	0.0	-	-	9.3	-	-	-	0.0	-	0.0	-	-

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ALPHABETICAL INDEX INDEX TO TABLE 4

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