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ICHTHYOPLANKTON AND STATION DATA FOR CALIFORNIA COOPERATIVE OCEANIC FISHERIES INVESTIGATIONS SURVEY CRUISES IN 1985

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
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 1985. It is the 25th report in a series that presents these data for all biological-oceanographic CalCOFI surveys from 1951 to the present. A total of 261 stations was occupied during quarterly cruises over the survey area which extended from Avila Beach, California to 120km south of Punta Baja, Baja California, Mexico. 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 140 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 25th 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 1985. 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 historical CalCOFI sampling effort).

Hydrographic and biological data from the 1985 CalCOFI survey have been published by the Scripps Institution of Oceanography (Univ. of Calif., SIO 1985, 1986). All available records for the 1985 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 ichthyoplankton 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	1963	Ambrose et al. 1988a
1952	Sandknop et al. 1987a	1964	Sandknop et al. 1988b
1953	Stevens et al. 1987a	1965	Stevens et al. 1988a
1954	Sumida et al. 1987a	1966	Sumida et al. 1988b
1955	Ambrose et al. 1987b	1967	Ambrose et al. 1988b
1956	Stevens et al. 1987b	1968	Sandknop et al. 1988c
1957	Sumida et al. 1987b	1969	Stevens et al. 1988b
1958	Sandknop et al. 1987b	1972	Sumida et al. 1988c
1959	Stevens et al. 1987c	1975	Ambrose et al. 1988c
1960	Ambrose et al. 1987c	1978	Sandknop et al. 1988d
1961	Sandknop et al. 1988a	1981	Ambrose et al. 1988d
1962	Sumida et al. 1988a	1984	Stevens et al. 1990

SAMPLING AREA AND PATTERN

A total of 261 standard CalCOFI survey stations was occupied on four cruises in 1985, employing three research vessels:

8502, RV *McArthur*, 51 stations, February 19–March 4 and
RV *David Starr Jordan*, 37 stations, March 10–17;

8505, RV *David Starr Jordan*, 53 stations, May 1–18;

8508, RV *New Horizon*, 60 stations, August 9–22;

8511, RV *New Horizon*, 60 stations, November 1–13.

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]. The most seaward station, 90.0 120.0 was approximately 400 n. mi. west of Punta Baja, Baja California, Mexico. CalCOFI line 76.7 extended seaward to station 80.0 on cruises 8502 and 8505 and to station 120.0 on cruises 8508 and 8511. Line 80.0 extended to station 90.0 on cruise 8505 and to station 120.0 on all other cruises. On all cruises lines 83.3 and 86.7 extended seaward to station 70.0 and lines 90.0 and 93.3 extended to station 120.0 (Figures 1 and 2). Following the completion of the core pattern on cruise 8502, an additional 37 stations were occupied off Baja California on lines 96.7 (to station 70.0), 100.0 (to station 60.0), 103.3 (to station 60.0), 106.7 (to station 45.0), and 110.0 (to station 50.0). On cruise 8505, 12 additional transects were occupied between lines 80.0

[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 equidistant 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 1985, 1986).

and 93.3. A total of 419 vertical "CalVET" tows was taken at 4 n. mi. intervals on these transects and on lines 83.3 to 93.0 seaward to station 70.0 (see Smith et al. 1985 for a detailed description of the CalVET net and sampling procedure). Data from CalVet tows is not included in the standard CalCOFI ichthyoplankton data base.

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 1985 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:

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

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 1985. 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 1985 surveys could be identified to species. A total of 140 categories (including "unidentified" and "disintegrated") was identified for 1985: 107 to species, 22 to genus, 7 to family or subfamily, and 2 to order. Identifications were done in the Ichthyoplankton Ecology Laboratory of the Coastal Fisheries Resources Division by William Isham and Ernesto Calix (MEC Analytical Systems), working closely with larval fish identification experts in the laboratory who checked each sample.

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:

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

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

Diaphus spp. – *Diaphus theta* is the dominant *Diaphus* species in the survey area and most, if not all, of the larvae from the Southern California Bight 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.

Lampanyctus spp. - primarily small (< 5.0 mm) larvae of *L. ritteri* and *L. regalis*; Zahuranec (In Press) has placed 17 species of *Lampanyctus* with small or absent pectoral fins in the genus *Nannobrachium*; four of these species occur in the current CalCOFI survey area (*L. regalis*, *L. ritteri*, and two undescribed species designated here by the descriptive names *Lampanyctus* "no pectorals" and *Lampanyctus* "niger").

Lepidopsetta bilineata - see comment for Pleuronectidae.

Lyopsetta exilis - see comment for Pleuronectidae.

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

Paralepididae - small or damaged larvae, probably *Lestidiops ringens* lacking diagnostic characters.

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).

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 rarely encountered; a small percentage of *V. poweriae* larvae may have been included in the *V. lucetia* category because of the difficulty in separating early larvae of the two species.

SPECIES SUMMARY

Of the five most abundant larvae, the northern anchovy (*Engraulis mordax*) ranked first in abundance and in frequency of occurrence during 1985; they represented 38.7% of the total fish larvae and occurred in 55.6% of the total samples (Tables 2 and 3). They were almost twice as abundant as the second most abundant species, the Pacific hake (*Merluccius productus*), which had 21.5% of the total larvae and ranked sixth in occurrence (19.9% of the total samples). The California smoothtongue (*Leuroglossus stilbius*) was the third most abundant taxon with 7.2% of the total larvae and ranked fourth in frequency of occurrence (29.5% of the samples). The myctophid *Stenobrachius leucopsarus* ranked fourth in abundance (6.6% of total larvae) and second in total occurrences (32.6% of the samples). The rockfish genus *Sebastes* ranked fifth in abundance (5.2% of total larvae) and third in total occurrences (31.4% of the samples). The next five most abundant taxa were the Pacific sardine *Sardinops sagax* (3.3% of total larvae), the Panama lightfish *Vinciguerria lucetia* (1.6%), the white croaker *Genyonemus lineatus* (1.2%), the dogtooth lampfish *Ceratoscopelus townsendi* (0.9%), and the California flashlightfish *Protomyctophum crockeri* (0.8%). These

species ranked 29th, 10th, 28th, 13th, and 5th in frequency of occurrence, respectively. The 10 most abundant taxa comprised 87% of all the larvae collected on CalCOFI cruises in 1985. The remaining 13% was distributed among 130 other taxa (including the "disintegrated" and "unidentified" categories). Of the ten most abundant taxa, half were midwater species, three were coastal demersal taxa, and two were coastal pelagic species.

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 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 1 and 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. Time is listed as Pacific Standard Time at the start of each tow in 24-hour designation. 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. 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*; M4, *McArthur*; NH, *New Horizon*. 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 1and 2 for the beginning and end of each cruise are based on Pacific Standard time at the first and last 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 1985 listed in rank order.

Table 3. Pooled counts of all larval fish taxa taken on CalCOFI survey cruises in 1985 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. Orders and families are listed in phylogenetic sequence (Eschmeyer 1998); genera and species are listed alphabetically.

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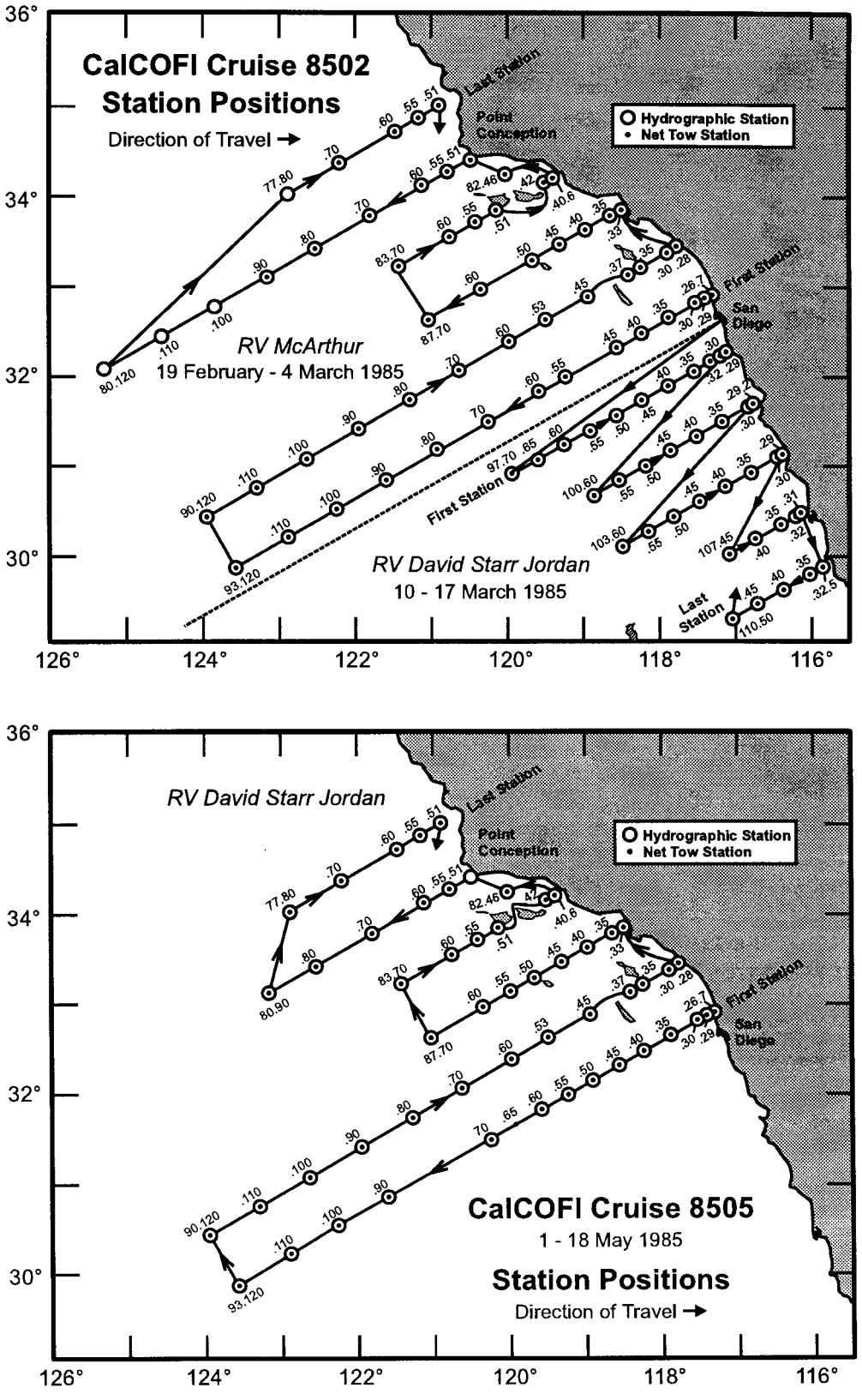

Figure 1. Stations and cruise tracks for CalCOFI cruises 8502 (above) and 8505 (below). Circles indicate hydrographic stations; dots indicate net tow stations.

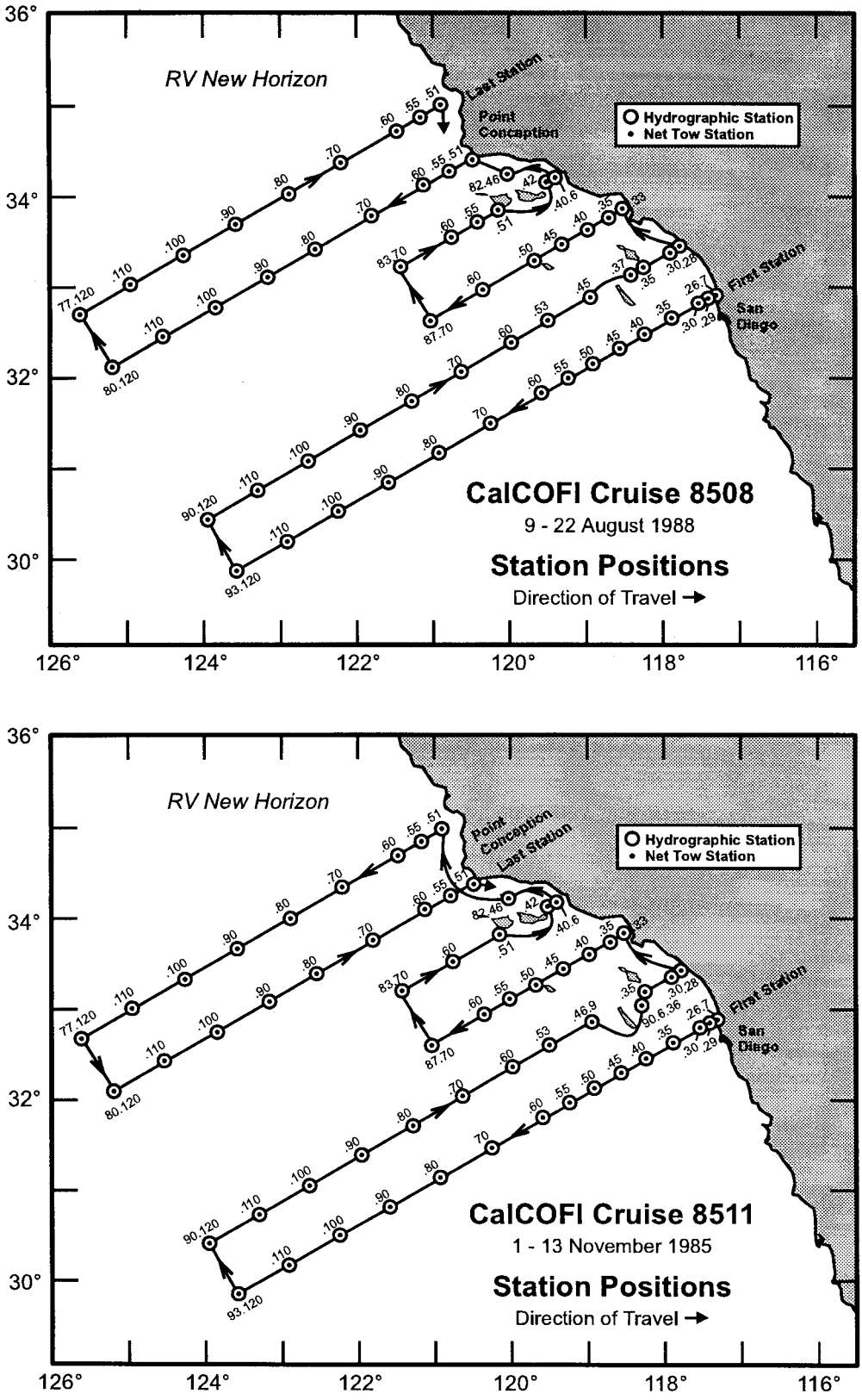

Figure 2. Stations and cruise tracks for CalCOFI cruises 8508 (above) and 8511 (below). Symbols as in Figure 1.

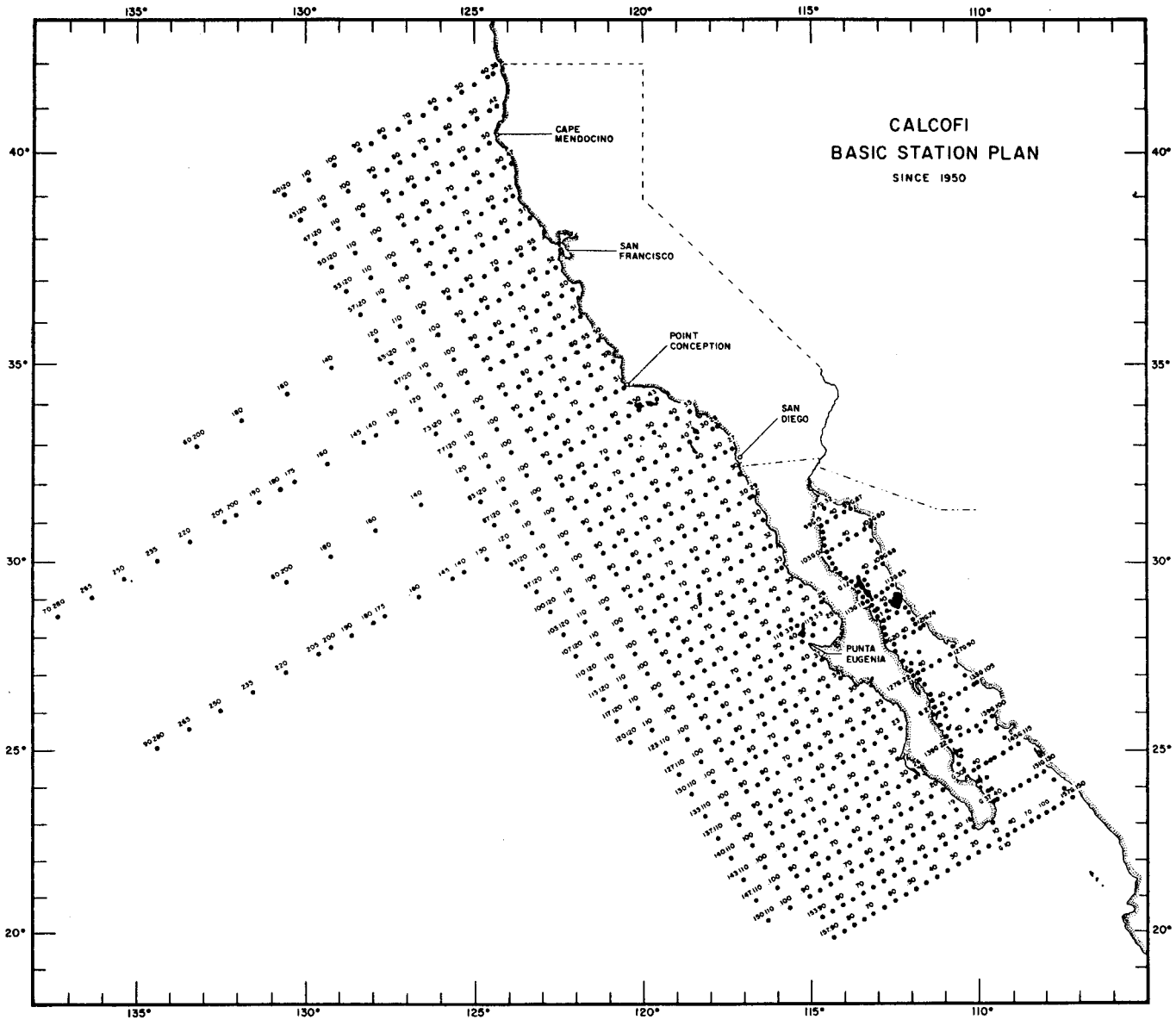

Figure 3. Basic station plan for CalCOFI Cruises.

TABLE 1. Station and plankton tow data for CalCOFI cruises in 1985. 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 8502

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 (cu. m)	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
76.7	51.0	35	01.3	120	55.0	M4	85	03	04	1835	208	454	4.58	434	50.8	152	15
76.7	55.0	34	53.2	121	12.2	M4	85	03	04	1500	217	429	5.06	282	53.7	95	151
76.7	60.0	34	43.6	121	33.2	M4	85	03	04	1145	225	442	5.10	272	51.7	81	65
76.7	70.0	34	23.4	122	14.5	M4	85	03	04	0635	217	480	4.51	258	50.0	1269	64
80.0	51.0	34	27.0	120	31.5	M4	85	02	28	1800	64	137	4.64	182	100.0	216	36
80.0	55.0	34	19.1	120	48.0	M4	85	02	28	2119	215	420	5.11	286	50.0	116	211
80.0	60.0	34	09.1	121	08.2	M4	85	03	01	0040	208	420	4.95	309	52.3	140	75
80.0	70.0	33	48.9	121	50.5	M4	85	03	01	0536	220	395	5.56	144	50.9	318	220
80.0	80.0	33	29.0	122	31.9	M4	85	03	01	1104	221	412	5.36	56	100.0	9	25
80.0	90.0	33	08.9	123	13.6	M4	85	03	01	1645	219	435	5.04	32	100.0	9	16
82.0	46.0	34	16.4	119	56.3	M4	85	02	28	1040	216	420	5.15	143	53.3	332	184
83.3	40.6	34	13.5	119	24.6	M4	85	02	28	0724	21	54	3.93	262	100.0	79	223
83.3	42.0	34	10.6	119	30.4	M4	85	02	28	0500	125	255	4.91	251	50.0	228	179
83.3	51.0	33	52.5	120	07.7	M4	85	02	28	0005	78	182	4.28	297	48.1	499	957
83.3	55.0	33	44.6	120	24.7	M4	85	02	27	2119	214	423	5.07	288	52.5	76	82
83.3	60.0	33	34.9	120	45.0	M4	85	02	27	1740	215	439	4.90	55	100.0	2	79
83.3	70.0	33	14.4	121	26.6	M4	85	02	27	1210	213	435	4.90	143	51.6	244	123
86.7	33.0	33	53.3	118	29.3	M4	85	02	26	0625	53	124	4.29	257	50.0	266	978
86.7	35.0	33	49.4	118	37.7	M4	85	02	26	0846	218	418	5.21	129	48.1	118	129
86.7	40.0	33	39.3	118	58.4	M4	85	02	26	1240	213	401	5.30	112	57.8	232	262
86.7	45.0	33	29.4	119	19.0	M4	85	02	26	1617	212	427	4.97	124	47.2	407	997
86.7	50.0	33	19.4	119	39.9	M4	85	02	26	1924	70	161	4.35	261	57.1	370	82
86.7	60.0	32	59.6	120	20.8	M4	85	02	27	0020	212	433	4.89	178	51.9	75	161
86.7	70.0	32	39.3	121	02.0	M4	85	02	27	0555	204	457	4.46	44	100.0	7	20
90.0	28.0	33	28.6	117	46.5	M4	85	02	26	0130	212	425	4.99	125	52.8	21	26
90.0	30.0	33	25.1	117	54.6	M4	85	02	25	2302	213	416	5.12	154	46.9	159	790
90.0	35.0	33	15.2	118	14.9	M4	85	02	25	1910	215	420	5.13	138	48.3	229	1674
90.0	37.0	33	11.0	118	23.2	M4	85	02	25	1640	206	439	4.68	23	100.0	132	266
90.0	45.0	32	55.1	118	56.4	M4	85	02	25	1112	209	414	5.06	118	55.1	43	307

Table 1. (cont.)

CalCOFI Cruise 8502

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 (cu. m)	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
90.0	53.0	32	39.2	119	28.9	M4	85	02	25	0635	221	413	5.36	126	50.0	35	238
90.0	60.0	32	23.1	119	58.0	M4	85	02	25	0230	217	428	5.08	136	51.7	71	2821
90.0	70.0	32	05.2	120	38.7	M4	85	02	24	2105	209	461	4.52	98	55.6	255	845
90.0	80.0	31	45.2	121	19.0	M4	85	02	24	1515	216	415	5.19	24	100.0	4	10
90.0	90.0	31	25.3	121	58.2	M4	85	02	24	0929	210	440	4.76	23	100.0	9	18
90.0	100.0	31	05.6	122	39.6	M4	85	02	24	0225	216	422	5.12	52	100.0	34	73
90.0	110.0	30	45.1	123	19.9	M4	85	02	23	2040	206	426	4.84	139	52.5	13	55
90.0	120.0	30	25.0	124	00.0	M4	85	02	23	1525	214	436	4.91	18	100.0	9	14
93.3	26.7	32	57.2	117	18.1	M4	85	02	19	1320	46	114	4.01	184	100.0	187	0
93.3	29.0	32	53.2	117	28.0	M4	85	02	19	1630	208	416	5.00	91	52.6	30	4
93.3	30.0	32	50.7	117	32.0	M4	85	02	19	1943	215	413	5.21	82	52.9	78	67
93.3	35.0	32	40.5	117	52.5	M4	85	02	20	0030	224	409	5.47	95	51.3	33	168
93.3	40.0	32	30.4	118	12.3	M4	85	02	20	0405	211	437	4.84	78	50.0	15	273
93.3	45.0	32	20.7	118	33.2	M4	85	02	21	1125	211	491	4.29	53	50.0	61	83
93.3	55.0	32	02.1	119	14.2	M4	85	02	21	1718	213	506	4.20	34	100.0	45	356
93.3	60.0	31	49.9	119	35.0	M4	85	02	21	2108	215	483	4.45	99	50.0	20	114
93.3	70.0	31	31.4	120	14.5	M4	85	02	22	0300	214	479	4.46	203	53.6	20	70
93.3	80.0	31	12.0	120	54.1	M4	85	02	22	0820	215	466	4.62	21	100.0	53	41
93.3	90.0	30	50.8	121	35.0	M4	85	02	22	1600	213	460	4.62	17	100.0	2	53
93.3	100.0	30	30.1	122	15.5	M4	85	02	22	2157	207	462	4.47	24	100.0	17	29
93.3	110.0	30	10.1	122	54.7	M4	85	02	23	0300	216	457	4.74	35	100.0	66	31
93.3	120.0	29	50.6	123	35.2	M4	85	02	23	0939	210	456	4.61	44	100.0	46	53
96.7	29.0	32	17.4	117	04.8	JD	85	03	11	1128	42	103	4.12	175	100.0	10	331
96.7	30.0	32	15.4	117	08.8	JD	85	03	11	1027	50	110	4.55	91	100.0	23	342
96.7	32.0	32	11.4	117	17.0	JD	85	03	11	0845	213	426	4.99	33	100.0	47	6
96.7	35.0	32	05.4	117	29.3	JD	85	03	11	0540	208	446	4.66	31	100.0	1	2
96.7	40.0	31	55.3	117	49.5	JD	85	03	11	0225	213	414	5.15	114	57.4	14	4
96.7	45.0	31	45.4	118	09.8	JD	85	03	10	2310	208	415	5.01	241	51.0	3	9
96.7	50.0	31	35.4	118	30.1	JD	85	03	10	1800	207	410	5.06	200	48.8	225	49
96.7	55.0	31	25.4	118	50.3	JD	85	03	10	1430	213	412	5.16	189	53.8	173	55
96.7	60.0	31	15.4	119	10.5	JD	85	03	10	1106	215	413	5.22	262	48.1	149	74
96.7	65.0	31	05.3	119	30.5	JD	85	03	10	0750	207	433	4.79	120	50.0	2	13

Table 1. (cont.)

CalCOFI Cruise 8502

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 (cu. m)	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
96.7	70.0	30	55.5	119	50.7	JD	85	03	10	0450	211	435	4.86	262	49.1	36	9
100.0	29.2	31	42.8	116	43.4	JD	85	03	13	0826	14	37	3.86	323	100.0	7	1
100.0	30.0	31	41.2	116	46.6	JD	85	03	13	0730	210	415	5.07	142	49.2	13	0
100.0	35.0	31	31.2	117	06.9	JD	85	03	13	0400	208	414	5.03	426	54.0	1	0
100.0	40.0	31	21.2	117	27.0	JD	85	03	13	0018	214	404	5.30	203	53.7	2	70
100.0	45.0	31	11.2	117	47.2	JD	85	03	12	2115	217	405	5.35	212	55.8	47	171
100.0	50.0	31	01.2	118	07.3	JD	85	03	12	1700	213	426	5.01	108	56.5	19	23
100.0	55.0	30	51.4	118	27.3	JD	85	03	12	1355	215	392	5.50	153	50.0	89	35
100.0	60.0	30	41.2	118	47.2	JD	85	03	12	1045	217	417	5.20	29	100.0	35	26
103.3	29.0	31	08.9	116	20.5	JD	85	03	15	0516	14	47	2.97	169	100.0	37	88
103.3	30.0	31	06.9	116	24.5	JD	85	03	15	0437	54	132	4.12	121	100.0	28	77
103.3	35.0	30	56.9	116	44.6	JD	85	03	15	0111	205	411	4.98	88	55.6	16	30
103.3	40.0	30	46.9	117	04.7	JD	85	03	14	2125	211	409	5.16	357	53.4	32	20
103.3	45.0	30	36.9	117	24.7	JD	85	03	14	1700	209	413	5.06	276	49.1	43	7
103.3	50.0	30	26.3	117	44.5	JD	85	03	14	1355	218	423	5.15	47	100.0	25	20
103.3	55.0	30	16.9	118	04.7	JD	85	03	14	1040	210	409	5.14	39	100.0	56	35
103.3	60.0	30	06.9	118	24.7	JD	85	03	14	0724	211	425	4.96	54	100.0	59	44
106.7	31.0	30	29.5	116	05.8	JD	85	03	16	0745	14	42	3.22	239	100.0	5	21
106.7	32.0	30	27.5	116	09.8	JD	85	03	16	0651	160	328	4.88	49	100.0	17	51
106.7	35.0	30	21.5	116	21.7	JD	85	03	16	0440	211	409	5.15	61	100.0	88	120
106.7	40.0	30	11.5	116	41.8	JD	85	03	16	0135	213	415	5.14	60	100.0	10	0
106.7	45.0	30	01.5	117	01.7	JD	85	03	15	2230	214	399	5.36	185	48.6	9	2
110.0	32.5	29	52.2	115	49.9	JD	85	03	17	0156	44	105	4.17	934	48.0	27	0
110.0	35.0	29	47.2	115	59.8	JD	85	03	17	0342	209	406	5.15	76	51.6	39	83
110.0	40.0	29	37.1	116	19.5	JD	85	03	17	0635	210	430	4.88	33	100.0	16	129
110.0	45.0	29	27.2	116	39.5	JD	85	03	17	0957	212	422	5.03	19	100.0	3	1
110.0	50.0	29	17.2	116	59.2	JD	85	03	17	1305	209	421	4.95	104	50.0	29	3

Table 1. (cont.)

CalCOFI Cruise 8505

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 (cu. m)	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
76.7	51.0	35	01.2	120	55.2	JD	85	05	18	1238	208	411	5.06	234	52.1	7	388
76.7	55.0	34	53.3	121	11.9	JD	85	05	18	0946	214	388	5.53	469	51.6	22	73
76.7	60.0	34	43.3	121	33.0	JD	85	05	18	0553	204	468	4.37	227	45.3	9	10
76.7	70.0	34	23.2	122	14.9	JD	85	05	17	2350	215	402	5.35	331	51.1	15	12
76.7	80.0	34	03.2	122	56.5	JD	85	05	17	1833	210	406	5.16	200	52.0	17	32
80.0	55.0	34	19.0	120	48.2	JD	85	05	16	1602	210	408	5.14	255	51.0	18	6
80.0	60.0	34	09.0	121	09.0	JD	85	05	16	1954	209	401	5.22	302	50.4	53	41
80.0	70.0	33	48.7	121	50.5	JD	85	05	17	0132	210	398	5.27	272	51.9	15	21
80.0	80.0	33	29.0	122	32.0	JD	85	05	17	0640	207	416	4.97	99	46.3	30	29
80.0	90.0	33	09.0	123	13.3	JD	85	05	17	1156	213	413	5.17	56	100.0	10	21
82.0	46.0	34	16.1	119	56.3	JD	85	05	15	1653	207	352	5.89	1376	50.8	7	4
83.3	40.6	34	13.5	119	24.6	JD	85	05	14	1135	21	44	4.67	3098	50.0	73	96
83.3	42.0	34	10.5	119	30.6	JD	85	05	14	0925	77	155	5.00	5868	49.4	11	18
83.3	51.0	33	52.7	120	08.0	JD	85	05	14	0320	85	149	5.67	1046	50.6	13	181
83.3	55.0	33	44.6	120	24.7	JD	85	05	13	2318	214	404	5.30	609	48.8	14	7
83.3	60.0	33	34.7	120	45.2	JD	85	05	13	1857	214	391	5.47	261	51.0	6	4
83.3	70.0	33	14.4	121	26.9	JD	85	05	13	1017	217	397	5.46	282	50.0	7	36
86.7	33.0	33	53.4	118	29.4	JD	85	05	11	1740	56	105	5.30	706	48.6	6	61
86.7	35.0	33	49.4	118	37.9	JD	85	05	11	1957	210	359	5.85	367	51.5	13	9
86.7	40.0	33	39.3	118	58.5	JD	85	05	11	2359	214	392	5.46	331	50.8	40	445
86.7	45.0	33	29.4	119	19.1	JD	85	05	12	0440	207	419	4.93	3401	51.4	3	1
86.7	50.0	33	19.4	119	39.8	JD	85	05	12	0850	63	128	4.92	3425	50.7	46	5
86.7	55.0	33	09.4	120	00.4	JD	85	05	12	1304	218	368	5.91	3629	48.4	7	3
86.7	60.0	32	59.4	120	21.1	JD	85	05	12	1711	215	413	5.21	526	47.5	6	5
86.7	70.0	32	39.4	121	02.1	JD	85	05	13	0326	213	411	5.19	268	52.7	20	63
90.0	28.0	33	29.1	117	46.2	JD	85	05	07	2119	64	130	4.90	355	56.5	12	477
90.0	30.0	33	25.2	117	54.4	JD	85	05	07	1912	210	396	5.30	379	48.7	13	227
90.0	35.0	33	15.1	118	15.0	JD	85	05	07	1429	212	406	5.23	182	51.4	4	21
90.0	37.0	33	11.2	118	23.3	JD	85	05	07	1147	209	402	5.21	3276	48.6	0	6
90.0	45.0	32	55.1	118	56.0	JD	85	05	07	0520	204	381	5.36	5138	49.7	4	0
90.0	53.0	32	39.1	119	28.9	JD	85	05	06	2305	207	404	5.14	5385	50.3	25	2
90.0	60.0	32	25.2	119	57.7	JD	85	05	06	1809	208	408	5.11	294	51.7	11	92

Table 1. (cont.)

CalCOFI Cruise 8505

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 (cu. m)	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
90.0	70.0	32	05.0	120	38.3	JD	85	05	06	1110	208	416	5.00	149	51.6	31	28
90.0	80.0	31	45.3	121	19.0	JD	85	05	06	0433	204	454	4.49	810	50.8	20	10
90.0	90.0	31	25.1	121	59.3	JD	85	05	05	2211	217	416	5.21	135	50.0	37	13
90.0	100.0	31	05.1	122	39.7	JD	85	05	05	1626	209	420	4.98	60	100.0	42	65
90.0	110.0	30	44.9	123	19.8	JD	85	05	05	0952	220	436	5.03	37	100.0	83	28
90.0	120.0	30	25.0	123	59.8	JD	85	05	05	0340	218	436	5.00	32	100.0	67	86
93.3	26.7	32	57.4	117	18.2	JD	85	05	01	0038	70	155	4.53	233	50.0	2	147
93.3	29.0	32	52.8	117	27.9	JD	85	05	01	0513	207	418	4.97	69	48.3	52	181
93.3	30.0	32	50.8	117	32.0	JD	85	05	01	0845	211	396	5.32	86	52.9	77	197
93.3	35.0	32	40.8	117	52.4	JD	85	05	01	1627	209	392	5.33	646	49.4	39	314
93.3	40.0	32	30.7	118	12.8	JD	85	05	01	2047	210	420	5.00	200	45.2	1	0
93.3	45.0	32	20.8	118	33.3	JD	85	05	02	0159	215	419	5.14	3617	50.8	2	0
93.3	50.0	32	10.7	118	53.5	JD	85	05	02	2146	217	416	5.22	2042	49.1	29	0
93.3	55.0	32	00.7	119	14.0	JD	85	05	03	0242	210	449	4.69	321	47.9	28	8
93.3	60.0	31	50.8	119	34.6	JD	85	05	03	0730	213	418	5.10	60	100.0	6	266
93.3	65.0	31	40.8	119	54.5	JD	85	05	03	1104	213	444	4.79	97	48.8	1	652
93.3	70.0	31	30.8	120	14.8	JD	85	05	03	1600	209	452	4.63	594	48.5	8	4
93.3	90.0	30	50.8	121	35.6	JD	85	05	04	0329	218	446	4.89	323	47.2	19	39
93.3	100.0	30	29.9	122	15.6	JD	85	05	04	0926	215	451	4.77	40	100.0	20	15
93.3	110.0	30	10.8	122	55.4	JD	85	05	04	1529	212	453	4.69	24	100.0	37	151
93.3	120.0	29	50.9	123	35.2	JD	85	05	04	2104	215	415	5.18	29	100.0	86	70

Table 1. (cont.)

CalCOFI Cruise 8508

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 (cu. m)	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
76.7	51.0	35	01.3	120	55.2	NH	85	08	22	0420	211	416	5.07	183	47.4	8	2
76.7	55.0	34	53.3	121	12.0	NH	85	08	22	0038	212	407	5.22	177	47.2	5	0
76.7	60.0	34	43.4	121	33.0	NH	85	08	21	2100	199	451	4.41	206	47.3	7	4
76.7	70.0	34	23.4	122	15.0	NH	85	08	21	1535	212	455	4.67	99	44.4	5	4
76.7	80.0	34	03.2	122	56.4	NH	85	08	21	0905	210	420	5.01	152	53.1	9	3
76.7	90.0	33	43.4	123	38.1	NH	85	08	21	0343	211	431	4.88	58	100.0	7	3
76.7	100.0	33	23.3	124	19.6	NH	85	08	20	2202	215	443	4.86	41	100.0	37	10
76.7	110.0	33	03.4	125	00.7	NH	85	08	20	1625	212	452	4.70	22	100.0	14	11
76.7	120.0	32	43.3	125	41.6	NH	85	08	20	1015	214	424	5.04	38	100.0	49	31
80.0	51.0	34	27.0	120	31.5	NH	85	08	18	1334	56	120	4.65	600	50.0	7	29
80.0	55.0	34	18.9	120	48.2	NH	85	08	18	1649	208	426	4.89	129	49.0	14	4
80.0	60.0	34	09.0	121	09.0	NH	85	08	18	2044	206	436	4.72	101	54.5	20	0
80.0	70.0	33	49.1	121	50.6	NH	85	08	19	0220	209	441	4.74	250	47.3	34	4
80.0	80.0	33	29.0	122	32.0	NH	85	08	19	0755	206	446	4.63	56	100.0	3	1
80.0	90.0	33	08.9	123	13.4	NH	85	08	19	1322	215	426	5.06	31	100.0	17	4
80.0	100.0	32	49.0	123	54.5	NH	85	08	19	1915	213	422	5.04	59	100.0	10	10
80.0	110.0	32	29.0	124	35.3	NH	85	08	20	0003	211	424	4.97	59	100.0	11	27
80.0	120.0	32	09.0	125	16.1	NH	85	08	20	0510	210	415	5.08	41	100.0	75	76
82.0	46.0	34	16.2	119	56.3	NH	85	08	18	0725	206	418	4.92	141	47.5	128	10
83.3	40.6	34	12.6	119	24.9	NH	85	08	18	0340	26	65	3.99	643	48.9	177	465
83.3	42.0	34	10.7	119	30.5	NH	85	08	18	0205	116	215	5.41	210	48.9	133	649
83.3	51.0	33	52.7	120	08.0	NH	85	08	17	2022	86	191	4.51	89	100.0	33	193
83.3	55.0	33	44.7	120	24.6	NH	85	08	17	1737	208	420	4.96	110	56.5	9	3
83.3	60.0	33	34.8	120	45.6	NH	85	08	17	1255	215	402	5.35	134	51.9	9	1
83.3	70.0	33	14.7	121	26.6	NH	85	08	17	0720	211	401	5.27	45	100.0	10	7
86.7	33.0	33	53.4	118	29.4	NH	85	08	15	2122	52	103	5.03	897	50.0	13	35
86.7	35.0	33	49.4	118	37.6	NH	85	08	16	0015	205	436	4.70	241	50.5	11	3
86.7	40.0	33	39.4	118	58.5	NH	85	08	16	0545	210	422	4.97	114	54.2	17	13
86.7	45.0	33	29.4	119	19.3	NH	85	08	16	1030	211	373	5.64	123	47.8	18	13
86.7	50.0	33	19.5	119	39.8	NH	85	08	16	1342	65	128	5.09	273	45.7	26	74
86.7	60.0	32	59.3	120	21.0	NH	85	08	16	2021	215	411	5.24	380	47.4	14	9
86.7	70.0	32	39.4	121	02.0	NH	85	08	17	0130	216	406	5.32	222	51.1	14	1

Table 1. (cont.)

CalCOFI Cruise 8508

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 (cu. m)	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
90.0	28.0	33	29.2	117	46.2	NH	85	08	15	1545	56	125	4.48	255	40.6	22	53
90.0	30.0	33	25.0	117	54.4	NH	85	08	15	1253	211	413	5.11	70	44.8	14	53
90.0	35.0	33	15.1	118	15.3	NH	85	08	15	0900	215	391	5.50	125	42.9	5	18
90.0	37.0	33	11.1	118	23.4	NH	85	08	15	0645	212	403	5.26	697	55.9	1	14
90.0	45.0	32	55.0	118	56.3	NH	85	08	15	0005	210	457	4.60	131	53.3	2	6
90.0	53.0	32	39.1	119	28.9	NH	85	08	14	1557	210	419	5.00	60	100.0	24	3
90.0	60.0	32	25.1	119	57.6	NH	85	08	14	0855	211	410	5.13	273	51.8	3	4
90.0	70.0	32	05.3	120	39.3	NH	85	08	14	0240	204	406	5.03	239	45.4	5	4
90.0	80.0	31	45.1	121	18.8	NH	85	08	13	2041	207	431	4.80	125	51.9	5	1
90.0	90.0	31	25.9	121	59.0	NH	85	08	13	1507	207	437	4.74	50	100.0	17	13
90.0	100.0	31	05.3	122	39.6	NH	85	08	13	0905	211	434	4.87	23	100.0	31	65
90.0	110.0	30	44.5	123	20.5	NH	85	08	13	0320	217	431	5.04	42	100.0	37	35
90.0	120.0	30	25.1	123	59.6	NH	85	08	12	2136	218	431	5.06	46	100.0	63	19
93.3	26.7	32	56.8	117	18.5	NH	85	08	09	1057	59	121	4.85	124	100.0	23	49
93.3	29.0	32	52.7	117	27.9	NH	85	08	09	1444	207	437	4.73	46	100.0	0	0
93.3	30.0	32	50.9	117	32.1	NH	85	08	09	1741	209	426	4.91	61	46.2	2	2
93.3	35.0	32	41.0	117	52.4	NH	85	08	09	2310	210	408	5.13	122	52.0	8	8
93.3	40.0	32	31.0	118	12.8	NH	85	08	10	0628	211	426	4.97	167	56.3	6	3
93.3	45.0	32	20.8	118	33.3	NH	85	08	10	1035	212	412	5.14	95	48.7	3	15
93.3	50.0	32	10.8	118	53.6	NH	85	08	10	1737	206	431	4.77	95	51.2	3	4
93.3	55.0	32	00.9	119	13.9	NH	85	08	10	2240	208	424	4.91	118	44.0	9	1
93.3	60.0	31	50.9	119	34.4	NH	85	08	11	0225	214	414	5.17	174	44.4	6	4
93.3	70.0	31	30.8	120	14.8	NH	85	08	11	0800	216	414	5.21	133	54.5	5	3
93.3	80.0	31	10.7	120	55.2	NH	85	08	11	1453	211	447	4.71	63	50.0	11	10
93.3	90.0	30	50.8	121	35.5	NH	85	08	11	2039	213	434	4.90	67	51.7	14	4
93.3	100.0	30	30.9	122	15.6	NH	85	08	12	0220	210	445	4.72	47	100.0	146	179
93.3	110.0	30	10.9	122	55.4	NH	85	08	12	0840	216	443	4.87	36	100.0	43	24
93.3	120.0	29	50.8	123	35.3	NH	85	08	12	1543	207	438	4.74	30	100.0	21	17

Table 1. (cont.)

CalCOFI Cruise 8511

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 (cu. m)	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
76.7	51.0	35	01.3	120	55.3	NH	85	11	10	0225	215	429	5.01	91	46.2	0	5
76.7	55.0	34	53.3	121	11.9	NH	85	11	10	0605	209	415	5.05	58	100.0	11	4
76.7	60.0	34	43.3	121	32.9	NH	85	11	10	1040	209	437	4.80	69	53.3	2	0
76.7	70.0	34	23.2	122	14.8	NH	85	11	10	1610	205	467	4.39	34	100.0	0	1
76.7	80.0	34	03.2	122	56.6	NH	85	11	10	2215	209	455	4.58	571	47.7	1	1
76.7	90.0	33	43.1	123	38.1	NH	85	11	11	0350	209	445	4.70	238	56.6	2	3
76.7	100.0	33	23.3	124	19.5	NH	85	11	11	0905	208	453	4.59	499	50.0	1	3
76.7	110.0	33	03.3	125	00.8	NH	85	11	11	1540	213	537	3.98	15	100.0	4	8
76.7	120.0	32	43.2	125	41.8	NH	85	11	11	2112	212	419	5.06	45	100.0	41	6
80.0	51.0	34	27.0	120	31.4	NH	85	11	13	2025	58	123	4.70	146	100.0	71	109
80.0	55.0	34	19.0	120	48.2	NH	85	11	13	1735	209	423	4.95	182	51.9	14	11
80.0	60.0	34	09.0	121	09.1	NH	85	11	13	1355	218	411	5.31	501	54.4	1	3
80.0	70.0	33	49.0	121	50.6	NH	85	11	13	0745	207	442	4.69	580	50.0	0	0
80.0	80.0	33	29.0	122	31.9	NH	85	11	13	0225	220	416	5.29	539	44.6	1	8
80.0	90.0	33	09.1	123	13.1	NH	85	11	12	2107	211	429	4.92	681	50.7	0	2
80.0	100.0	32	48.9	123	54.4	NH	85	11	12	1558	207	448	4.61	29	100.0	8	3
80.0	110.0	32	29.0	124	35.3	NH	85	11	12	0950	209	480	4.35	33	100.0	7	10
80.0	120.0	32	09.1	125	16.1	NH	85	11	12	0250	268	548	4.89	44	100.0	13	10
82.0	46.0	34	16.2	119	56.3	NH	85	11	09	1813	210	436	4.81	57	100.0	6	10
83.3	40.6	34	13.5	119	24.7	NH	85	11	09	1350	23	51	4.57	40	100.0	57	436
83.3	42.0	34	10.6	119	30.5	NH	85	11	09	1240	106	230	4.60	30	100.0	58	20
83.3	51.0	33	52.7	120	08.0	NH	85	11	09	0510	85	221	3.84	27	100.0	8	29
83.3	60.0	33	34.7	120	45.3	NH	85	11	08	2215	212	468	4.53	53	100.0	2	67
83.3	70.0	33	14.7	121	26.8	NH	85	11	08	1533	220	354	6.22	421	51.7	5	1
86.7	33.0	33	53.4	118	29.4	NH	85	11	07	0650	49	104	4.69	116	100.0	44	205
86.7	35.0	33	49.4	118	37.7	NH	85	11	07	0910	215	397	5.41	58	100.0	17	6
86.7	40.0	33	39.3	118	58.6	NH	85	11	07	1355	214	409	5.24	142	44.8	3	4
86.7	45.0	33	29.4	119	19.2	NH	85	11	07	1755	211	417	5.07	221	45.7	1	3
86.7	50.0	33	19.3	119	39.9	NH	85	11	07	2033	64	138	4.64	145	100.0	3	3
86.7	55.0	33	09.5	120	00.5	NH	85	11	07	2350	226	403	5.60	159	50.0	2	0
86.7	60.0	32	59.5	120	21.1	NH	85	11	08	0325	214	412	5.20	148	50.8	3	0
86.7	70.0	32	39.5	121	02.0	NH	85	11	08	0850	212	430	4.94	121	46.2	4	1

Table 1. (cont.)

CalCOFI Cruise 8511

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 (cu. m)	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Larvae	Total Eggs
90.0	28.0	33	29.1	117	46.1	NH	85	11	07	0125	47	108	4.36	130	100.0	35	46
90.0	30.0	33	21.1	117	54.4	NH	85	11	06	2330	214	391	5.46	135	49.1	20	7
90.0	35.0	33	15.1	118	15.0	NH	85	11	06	1947	206	411	5.01	92	47.4	16	55
90.0	46.9	32	51.3	119	04.1	NH	85	11	06	0710	207	424	4.89	2028	49.4	0	6
90.0	53.0	32	39.3	119	28.9	NH	85	11	06	0240	221	397	5.57	166	48.5	3	1
90.0	60.0	32	25.2	119	57.5	NH	85	11	05	2200	208	408	5.09	179	49.3	2	1
90.0	70.0	32	05.1	120	38.4	NH	85	11	05	1645	210	408	5.14	191	51.3	0	1
90.0	80.0	31	44.8	121	19.4	NH	85	11	05	1055	215	421	5.10	394	50.0	0	5
90.0	90.0	31	25.1	121	59.6	NH	85	11	05	0455	210	415	5.07	101	47.6	3	3
90.0	100.0	31	05.3	122	39.6	NH	85	11	04	2310	211	412	5.14	53	100.0	18	17
90.0	110.0	30	45.1	123	19.9	NH	85	11	04	1735	210	395	5.31	33	100.0	22	13
90.0	120.0	30	25.1	124	00.0	NH	85	11	04	1215	214	398	5.38	38	100.0	27	2
90.6	36.0	33	07.2	118	15.0	NH	85	11	06	1710	210	403	5.22	55	100.0	11	2
93.3	26.7	32	57.4	117	18.2	NH	85	11	01	1212	49	100	4.87	120	100.0	38	22
93.3	29.0	32	52.8	117	27.9	NH	85	11	01	1445	209	385	5.42	140	51.9	11	23
93.3	30.0	32	50.6	117	32.1	NH	85	11	01	1735	206	392	5.25	148	44.8	9	6
93.3	35.0	32	39.4	117	52.3	NH	85	11	01	2200	209	400	5.22	185	51.4	8	6
93.3	40.0	32	30.9	118	12.9	NH	85	11	02	0145	216	392	5.53	128	48.0	1	1
93.3	45.0	32	20.8	118	33.3	NH	85	11	02	0600	212	394	5.38	548	49.1	2	1
93.3	50.0	32	10.8	118	53.6	NH	85	11	02	0955	212	407	5.22	59	100.0	4	2
93.3	55.0	32	00.9	119	14.0	NH	85	11	02	1505	216	399	5.41	55	100.0	4	2
93.3	60.0	31	50.8	119	34.2	NH	85	11	02	1845	208	425	4.88	139	49.2	5	22
93.3	70.0	31	30.8	120	14.8	NH	85	11	03	0005	210	420	5.01	179	48.0	5	3
93.3	80.0	31	11.0	120	55.2	NH	85	11	03	0600	208	418	4.99	60	100.0	1	14
93.3	90.0	30	50.9	121	35.4	NH	85	11	03	1200	215	405	5.31	44	100.0	1	3
93.3	100.0	30	30.6	122	15.6	NH	85	11	03	1835	210	407	5.16	258	51.4	6	39
93.3	110.0	30	10.7	122	55.5	NH	85	11	04	0000	217	398	5.46	38	100.0	59	10
93.3	120.0	29	50.9	123	35.0	NH	85	11	04	0550	209	406	5.15	32	100.0	58	3

TABLE 2. Pooled occurrences of fish larvae taken on CalCOFI cruises in 1985.

Rank	Taxon	Occurrences
1	*Engraulis mordax*	145
2	*Stenobrachius leucopsarus*	85
3	*Sebastes* spp.	82
4	*Leuroglossus stilbius*	77
5	*Protomyctophum crockeri*	68
6	*Merluccius productus*	52
7	*Lampanyctus ritteri*	47
8	*Symbolophorus californiensis*	46
9	*Diogenichthys atlanticus*	42
10	*Triphoturus mexicanus*	40
10	*Vinciguerria lucetia*	40
12	*Citharichthys stigmaeus*	37
13	*Ceratoscopelus townsendi*	35
14	*Bathylagus ochotensis*	31
15	*Bathylagus wesethi*	27
15	Disintegrated fish larvae	27
17	*Cyclothone* spp.	26
18	*Idiacanthus antrostomus*	25
19	*Cyclothone signata*	23
20	*Diaphus* spp.	21
21	Myctophidae	19
22	*Tarletonbeania crenularis*	18
23	*Citharichthys sordidus*	17
23	*Lestidiops ringens*	17
23	*Scomber japonicus*	17
26	*Trachurus symmetricus*	16
27	*Lampanyctus* spp.	14
27	Unidentified fish larvae	14
29	*Sardinops sagax*	13
29	*Genyonemus lineatus*	13
31	*Melamphaes lugubris*	11
31	*Oxyjulis californica*	11
33	*Citharichthys* spp.	10
33	*Melamphaes* spp.	10
35	*Argentina sialis*	9
35	*Chauliodus macouni*	9
37	*Microstoma* spp.	8
37	*Electrona risso*	8
37	*Pleuronichthys verticalis*	8
40	*Tetragonurus cuvieri*	7
40	*Argyropelecus sladeni*	7
40	*Lyopsetta exilis*	7
40	*Sternoptyx* spp.	7
44	*Paralabrax* spp.	6
44	*Coryphopterus nicholsii*	6
44	*Howella* spp.	6
47	*Oxylebius pictus*	5
47	*Stomias atriventer*	5
47	*Danaphos oculatus*	5

TABLE 2. (cont.)

Rank	Taxon	Occurrences
47	*Myctophum nitidulum*	5
47	*Sebastes jordani*	5
47	*Tactostoma macropus*	5
47	Sternoptychidae	5
54	Stomiiformes	4
54	*Nansenia candida*	4
54	*Sebastes paucispinis*	4
54	*Hygophum atratum*	4
54	*Hygophum reinhardtii*	4
54	*Paralichthys californicus*	4
54	*Parophrys vetulus*	4
54	*Chromis punctipinnis*	4
54	*Argyropelecus hemigymnus*	4
54	*Trachipterus altivelis*	4
54	*Hypsoblennius gentilis*	4
54	*Bathophilus flemingi*	4
54	*Scopelarchus guentheri*	4
54	*Notoscopelus resplendens*	4
68	*Chiasmodon niger*	3
68	*Hippoglossina stomata*	3
68	*Notolychnus valdiviae*	3
68	*Aristostomias scintillans*	3
68	Melanostomiinae	3
68	*Parvilux ingens*	3
68	*Lampanyctus regalis*	3
68	*Microstomus pacificus*	3
68	*Scopelogadus bispinosus*	3
68	*Lampanyctus* "no pectorals"	3
68	*Argyropelecus* spp.	3
68	*Argyropelecus lychnus*	3
80	*Lampadena urophaos*	2
80	*Magnisudis atlantica*	2
80	Paralepididae	2
80	*Synodus lucioceps*	2
80	*Scopelarchus analis*	2
80	*Benthalbella dentata*	2
80	*Eustomias* spp.	2
80	*Cyclothone acclinidens*	2
80	*Bathylagus pacificus*	2
80	*Lampanyctus steinbecki*	2
80	*Artedius harringtoni*	2
80	*Icelinus quadriseriatus*	2
80	*Sphyraena argentea*	2
80	*Hypsoblennius* spp.	2
80	Oneirodidae	2
80	*Icichthys lockingtoni*	2
80	*Hypsoblennius jenkinsi*	2
80	*Loweina rara*	2
80	*Rathbunella* spp.	2
80	*Lythrypnus* spp.	2

TABLE 2. (cont.)

Rank	Taxon	Occurrences
80	*Zaniolepis frenata*	2
80	*Halichoeres semicinctus*	2
80	*Sebastolobus* spp.	2
80	*Semicossyphus pulcher*	2
80	Cottidae	2
105	*Argyropelecus affinis*	1
105	*Artedius* spp.	1
105	*Gonostoma ebelingi*	1
105	*Gonostoma* spp.	1
105	*Diplophos taenia*	1
105	*Scorpaenichthys marmoratus*	1
105	*Xeneretmus leiops*	1
105	*Pleuronichthys coenosus*	1
105	Perciformes	1
105	*Cheilotrema saturnum*	1
105	*Bathylagus milleri*	1
105	*Seriphus politus*	1
105	*Symphurus atricaudus*	1
105	*Paricelinus hopliticus*	1
105	*Ophidion scrippsae*	1
105	*Lampanyctus* "niger"	1
105	*Lythrypnus dalli*	1
105	*Lampanyctus tenuiformes*	1
105	*Typhlogobius californiensis*	1
105	Pleuronectidae	1
105	*Lythrypnus zebra*	1
105	*Lepidogobius lepidus*	1
105	*Scopelosaurus harryi*	1
105	*Diplospinus multistriatus*	1
105	*Lepidopsetta bilineata*	1
105	*Rosenblattichthys volucris*	1
105	*Sebastes aurora*	1
105	*Caulophryne* spp.	1
105	*Oneirodes* spp.	1
105	*Gigantactis* spp.	1
105	*Bathophilus* spp.	1
105	*Cololabis saira*	1
105	*Melamphaes simus*	1
105	*Citharichthys xanthostigma*	1
105	*Poromitra crassiceps*	1
105	*Scopelarchus* spp.	1
	Total	1477

TABLE 3. Pooled counts of fish larvae taken on the CalCOFI cruises in 1985. Counts are adjusted for percent of sample sorted and standard haul factor (see text).

Rank	Taxon	Count
1	*Engraulis mordax*	38638
2	*Merluccius productus*	21492
3	*Leuroglossus stilbius*	7200
4	*Stenobrachius leucopsarus*	6595
5	*Sebastes* spp.	5168
6	*Sardinops sagax*	3346
7	*Vinciguerria lucetia*	1587
8	*Genyonemus lineatus*	1192
9	*Ceratoscopelus townsendi*	881
10	*Protomyctophum crockeri*	806
11	*Triphoturus mexicanus*	776
12	*Lampanyctus ritteri*	647
13	*Diaphus* spp.	639
14	*Diogenichthys atlanticus*	630
15	*Symbolophorus californiensis*	626
16	*Citharichthys stigmaeus*	611
17	*Bathylagus ochotensis*	606
18	*Cyclothone* spp.	570
19	*Trachurus symmetricus*	562
20	*Idiacanthus antrostomus*	487
21	*Bathylagus wesethi*	470
22	*Cyclothone signata*	434
23	Disintegrated fish larvae	343
24	*Scomber japonicus*	324
25	*Oxyjulis californica*	313
26	*Citharichthys sordidus*	299
27	*Tarletonbeania crenularis*	226
28	*Sebastes jordani*	188
29	Unidentified fish larvae	175
30	*Chromis punctipinnis*	168
31	Myctophidae	159
32	*Paralabrax* spp.	147
33	*Lestidiops ringens*	142
34	*Pleuronichthys verticalis*	136
35	*Lyopsetta exilis*	131
36	*Microstoma* spp.	125
37	*Lepidogobius lepidus*	117
37	*Lampanyctus* spp.	117
39	*Citharichthys* spp.	113
40	*Argentina sialis*	108
41	*Melamphaes lugubris*	103
42	*Chauliodus macouni*	93
43	*Melamphaes* spp.	89
44	*Lythrypnus dalli*	77
45	*Howella* spp.	75
46	*Tetragonurus cuvieri*	72
47	*Hypsoblennius* spp.	66

TABLE 3. (cont.)

Rank	Taxon	Count
48	*Electrona risso*	60
49	*Parophrys vetulus*	57
50	*Paralichthys californicus*	56
50	*Nansenia candida*	56
52	*Sternoptyx* spp.	53
53	*Bathophilus flemingi*	50
54	*Argyropelecus sladeni*	48
55	Sternoptychidae	46
56	*Coryphopterus nicholsii*	43
57	*Danaphos oculatus*	41
57	*Sebastes paucispinis*	41
59	*Hippoglossina stomata*	40
60	*Hypsoblennius gentilis*	38
61	*Tactostoma macropus*	37
61	*Hygophum reinhardtii*	37
61	*Zaniolepis frenata*	37
64	*Oxylebius pictus*	36
65	*Semicossyphus pulcher*	35
65	*Microstomus pacificus*	35
67	*Argyropelecus* spp.	34
67	*Hypsoblennius jenkinsi*	34
67	*Trachipterus altivelis*	34
67	*Myctophum nitidulum*	34
67	*Sebastolobus* spp.	34
72	*Artedius harringtoni*	33
72	*Rathbunella* spp.	33
74	Melanostomiinae	31
75	*Notoscopelus resplendens*	29
75	*Stomias atriventer*	29
75	*Hygophum atratum*	29
75	Pleuronectidae	29
79	*Lampanyctus regalis*	28
80	*Argyropelecus lychnus*	26
80	*Typhlogobius californiensis*	26
80	Stomiiformes	26
83	*Parvilux ingens*	25
83	Cottidae	25
83	*Scopelarchus guentheri*	25
86	*Paricelinus hopliticus*	23
87	*Seriphus politus*	21
87	*Halichoeres semicinctus*	21
89	*Aristostomias scintillans*	20
89	*Notolychnus valdiviae*	20
89	*Scopelogadus bispinosus*	20
89	*Lampanyctus* "no pectorals"	20
93	*Sphyraena argentea*	19
93	*Icichthys lockingtoni*	19
93	*Argyropelecus hemigymnus*	19
96	*Synodus lucioceps*	18

TABLE 3. (cont.)

Rank	Taxon	Count
96	*Bathylagus pacificus*	18
98	*Loweina rara*	16
99	*Icelinus quadriseriatus*	15
99	*Cyclothone acclinidens*	15
99	*Chiasmodon niger*	15
102	*Lampadena urophaos*	14
102	*Lythrypnus* spp.	14
104	*Sebastes aurora*	11
104	*Symphurus atricaudus*	11
104	*Citharichthys xanthostigma*	11
107	*Bathophilus* spp.	10
107	*Gonostoma* spp.	10
107	*Magnisudis atlantica*	10
107	*Eustomias* spp.	10
107	*Lythrypnus zebra*	10
107	Perciformes	10
107	*Scopelarchus analis*	10
107	Paralepididae	10
107	Oneirodidae	10
107	*Lampanyctus steinbecki*	10
107	*Cololabis saira*	10
118	*Artedius* spp.	9
118	*Xeneretmus leiops*	9
118	*Scorpaenichthys marmoratus*	9
118	*Lepidopsetta bilineata*	9
118	*Bathylagus milleri*	9
118	*Ophidion scrippsae*	9
118	*Benthalbella dentata*	9
125	*Cheilotrema saturnum*	8
125	*Pleuronichthys coenosus*	8
127	*Caulophryne* spp.	5
127	*Gigantactis* spp.	5
127	*Diplospinus multistriatus*	5
127	*Scopelarchus* spp.	5
127	*Poromitra crassiceps*	5
127	*Diplophos taenia*	5
127	*Melamphaes simus*	5
127	*Rosenblattichthys volucris*	5
127	*Oneirodes* spp.	5
127	*Argyropelecus affinis*	5
127	*Lampanyctus* "niger"	5
127	*Lampanyctus tenuiformes*	5
127	*Scopelosaurus harryi*	5
140	*Gonostoma ebelingi*	4
	Total	99901

TABLE 4. Number of fish larvae taken at stations occupied on CalCOFI cruises in 1985. 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.
80.0	55.0	-	0.0	-	-	0.0	-	-	29.9	-	-	0.0	-
82.0	46.0	-	0.0	-	-	0.0	-	-	683.6	-	-	0.0	-
83.3	40.6	-	0.0	-	-	597.8	-	-	758.8	-	-	0.0	-
83.3	42.0	-	0.0	-	-	0.0	-	-	918.3	-	-	0.0	-
86.7	33.0	-	214.5	-	-	10.9	-	-	0.0	-	-	0.0	-
86.7	35.0	-	43.3	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0	28.0	-	0.0	-	-	0.0	-	-	0.0	-	-	4.4	-
90.0	35.0	-	0.0	-	-	0.0	-	-	0.0	-	-	52.8	-
90.0	70.0	-	16.3	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	29.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.4	-
110.0	40.0	-	-	4.9	-	-	-	-	-	-	-	-	-

Engraulis mordax

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	51.0	-	-	63.1	-	0.0	-	-	10.7	-	-	0.0	-
76.7	55.0	-	-	94.2	-	42.9	-	-	0.0	-	-	30.3	-
76.7	60.0	-	-	98.6	-	0.0	-	-	0.0	-	-	9.0	-
76.7	70.0	-	-	63.1	-	0.0	-	-	0.0	-	-	0.0	-
76.7	80.0	-	-	-	-	19.8	-	-	0.0	-	-	0.0	-
80.0	51.0	-	612.5	-	-	0.0	-	-	0.0	-	-	178.6	-
80.0	55.0	-	245.3	-	-	0.0	-	-	89.8	-	-	76.3	-
80.0	60.0	-	-	548.9	-	20.7	-	-	0.0	-	-	0.0	-
80.0	70.0	-	-	43.7	-	20.3	-	-	0.0	-	-	0.0	-
82.0	46.0	-	1951.8	-	-	11.6	-	-	424.7	-	-	19.2	-
83.3	40.6	-	267.2	-	-	0.0	-	-	310.1	-	-	260.5	-
83.3	42.0	-	1021.3	-	-	0.0	-	-	177.0	-	-	253.0	-
83.3	51.0	-	3728.3	-	-	22.4	-	-	121.8	-	-	15.4	-

TABLE 4. (cont.)

Engraulis mordax (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	55.0	-	444.2	-	-	54.3	-	-	61.5	-	-	-	-
83.3	60.0	-	0.0	-	-	21.5	-	-	82.5	-	-	0.0	-
83.3	70.0	-	512.8	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	33.0	-	918.1	-	-	21.8	-	-	90.5	-	-	42.2	-
86.7	35.0	-	574.1	-	-	56.8	-	-	37.2	-	-	43.3	-
86.7	40.0	-	981.1	-	-	215.0	-	-	119.2	-	-	35.1	-
86.7	45.0	-	2864.1	-	-	0.0	-	-	106.2	-	-	0.0	-
86.7	50.0	-	2392.1	-	-	9.7	-	-	111.4	-	-	0.0	-
86.7	55.0	-	-	-	-	36.6	-	-	-	-	-	0.0	-
86.7	60.0	-	310.9	-	-	0.0	-	-	44.2	-	-	0.0	-
86.7	70.0	-	0.0	-	-	29.5	-	-	10.4	-	-	0.0	-
90.0	28.0	-	170.1	-	-	60.7	-	-	121.4	-	-	104.6	-
90.0	30.0	-	1266.4	-	-	65.3	-	-	125.5	-	-	211.3	-
90.0	35.0	-	1540.1	-	-	20.4	-	-	51.3	-	-	42.3	-
90.0	37.0	-	416.5	-	-	0.0	-	-	9.4	-	-	-	-
90.0	45.0	-	64.3	-	-	0.0	-	-	0.0	-	-	-	-
90.0	53.0	-	75.0	-	-	0.0	-	-	95.0	-	-	0.0	-
90.0	60.0	-	265.3	-	-	69.2	-	-	0.0	-	-	0.0	-
90.0	70.0	-	382.1	-	-	29.1	-	-	0.0	-	-	0.0	-
90.0	80.0	-	0.0	-	-	53.0	-	-	0.0	-	-	0.0	-
90.0	90.0	-	0.0	-	-	10.4	-	-	0.0	-	-	0.0	-
90.6	36.0	-	-	-	-	-	-	-	-	-	-	5.2	-
93.3	26.7	-	112.3	-	-	9.1	-	-	58.2	-	-	97.4	-
93.3	29.0	-	76.0	-	-	504.2	-	-	0.0	-	-	94.0	-
93.3	30.0	-	157.6	-	-	714.0	-	-	0.0	-	-	82.0	-
93.3	35.0	-	53.3	-	-	399.2	-	-	0.0	-	-	60.9	-
93.3	40.0	-	58.1	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	45.0	-	463.3	-	-	20.2	-	-	0.0	-	-	0.0	-
93.3	50.0	-	-	-	-	202.0	-	-	0.0	-	-	0.0	-
93.3	55.0	-	172.2	-	-	97.9	-	-	22.3	-	-	0.0	-

TABLE 4. (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
						Engraulis mordax (cont.)							
93.3	60.0	-	151.3	-	-	0.0	-	-	23.3	-	-	0.0	-
93.3	70.0	-	116.5	-	-	9.5	-	-	0.0	-	-	0.0	-
93.3	80.0	-	4.6	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	100.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.0	-
96.7	29.0	-	-	28.8	-	-	-	-	-	-	-	-	-
96.7	30.0	-	-	9.1	-	-	-	-	-	-	-	-	-
96.7	32.0	-	-	109.8	-	-	-	-	-	-	-	-	-
96.7	40.0	-	-	35.9	-	-	-	-	-	-	-	-	-
96.7	45.0	-	-	29.5	-	-	-	-	-	-	-	-	-
96.7	50.0	-	-	2063.4	-	-	-	-	-	-	-	-	-
96.7	55.0	-	-	1323.6	-	-	-	-	-	-	-	-	-
96.7	60.0	-	-	911.6	-	-	-	-	-	-	-	-	-
96.7	65.0	-	-	9.6	-	-	-	-	-	-	-	-	-
96.7	70.0	-	-	9.9	-	-	-	-	-	-	-	-	-
100.0	29.2	-	-	3.9	-	-	-	-	-	-	-	-	-
100.0	30.0	-	-	30.9	-	-	-	-	-	-	-	-	-
100.0	40.0	-	-	9.9	-	-	-	-	-	-	-	-	-
100.0	45.0	-	-	431.5	-	-	-	-	-	-	-	-	-
100.0	50.0	-	-	133.0	-	-	-	-	-	-	-	-	-
100.0	55.0	-	-	792.0	-	-	-	-	-	-	-	-	-
100.0	60.0	-	-	62.4	-	-	-	-	-	-	-	-	-
103.3	29.0	-	-	38.6	-	-	-	-	-	-	-	-	-
103.3	30.0	-	-	16.5	-	-	-	-	-	-	-	-	-
103.3	35.0	-	-	125.4	-	-	-	-	-	-	-	-	-
103.3	40.0	-	-	299.6	-	-	-	-	-	-	-	-	-
103.3	45.0	-	-	443.1	-	-	-	-	-	-	-	-	-
103.3	50.0	-	-	118.5	-	-	-	-	-	-	-	-	-
103.3	55.0	-	-	287.8	-	-	-	-	-	-	-	-	-
103.3	60.0	-	-	238.1	-	-	-	-	-	-	-	-	-
106.7	31.0	-	-	9.7	-	-	-	-	-	-	-	-	-

TABLE 4. (cont.)

Engraulis mordax (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
106.7 32.0	-	-	4.9	-	-	-	-	-	-	-	-	-
106.7 35.0	-	-	442.9	-	-	-	-	-	-	-	-	-
106.7 40.0	-	-	10.3	-	-	-	-	-	-	-	-	-
106.7 45.0	-	-	77.2	-	-	-	-	-	-	-	-	-
110.0 32.5	-	-	165.1	-	-	-	-	-	-	-	-	-
110.0 35.0	-	-	209.6	-	-	-	-	-	-	-	-	-
110.0 40.0	-	-	39.0	-	-	-	-	-	-	-	-	-
110.0 45.0	-	-	5.0	-	-	-	-	-	-	-	-	-
110.0 50.0	-	-	19.8	-	-	-	-	-	-	-	-	-

Argentina sialis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	9.0	-	0.0	-	-	0.0	-	-	0.0	-
80.0 60.0	-	-	18.9	-	0.0	-	-	0.0	-	-	0.0	-
82.0 46.0	-	9.7	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 35.0	-	10.8	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 40.0	-	0.0	-	-	0.0	-	-	9.2	-	-	0.0	-
90.0 28.0	-	18.9	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 30.0	-	10.9	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 45.0	-	0.0	-	-	10.8	-	-	0.0	-	-	-	-
100.0 50.0	-	-	8.9	-	-	-	-	-	-	-	-	-

***Microstoma* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 110.0	-	-	-	-	-	-	-	0.0	-	-	4.0	-
80.0 80.0	-	-	5.4	-	0.0	-	-	0.0	-	-	0.0	-
80.0 100.0	-	-	-	-	-	-	-	0.0	-	-	9.2	-
86.7 40.0	-	55.0	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 45.0	-	21.1	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 45.0	-	0.0	-	-	0.0	-	-	10.6	-	-	0.0	-
93.3 70.0	-	0.0	-	-	9.5	-	-	0.0	-	-	0.0	-
93.3 100.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.0	-

TABLE 4. (cont.)

Nansenia candida

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	80.0	-	-	5.4	-	21.5	-	-	0.0	-	-	0.0	-
86.7	70.0	-	0.0	-	-	19.7	-	-	0.0	-	-	0.0	-
90.0	90.0	-	0.0	-	-	10.4	-	-	0.0	-	-	0.0	-

Bathylagus milleri

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	60.0	-	9.4	-	-	0.0	-	-	0.0	-	-	0.0	-

Bathylagus ochotensis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	55.0	-	-	84.8	-	0.0	-	-	0.0	-	-	0.0	-
76.7	60.0	-	-	9.9	-	28.9	-	-	0.0	-	-	0.0	-
76.7	70.0	-	-	72.2	-	10.5	-	-	0.0	-	-	0.0	-
76.7	80.0	-	-	-	-	19.8	-	-	0.0	-	-	0.0	-
80.0	55.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-
80.0	60.0	-	-	0.0	-	31.1	-	-	0.0	-	-	0.0	-
80.0	70.0	-	-	32.8	-	10.2	-	-	0.0	-	-	0.0	-
80.0	90.0	-	-	0.0	-	10.3	-	-	0.0	-	-	0.0	-
82.0	46.0	-	9.7	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3	51.0	-	8.9	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3	55.0	-	9.7	-	-	0.0	-	-	0.0	-	-	-	-
83.3	60.0	-	4.9	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3	70.0	-	9.5	-	-	10.9	-	-	0.0	-	-	0.0	-
86.7	33.0	-	8.6	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	35.0	-	21.7	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	70.0	-	0.0	-	-	29.5	-	-	0.0	-	-	0.0	-
90.0	35.0	-	10.6	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0	53.0	-	42.9	-	-	20.4	-	-	0.0	-	-	0.0	-
90.0	70.0	-	0.0	-	-	9.7	-	-	0.0	-	-	0.0	-
90.0	80.0	-	0.0	-	-	17.7	-	-	0.0	-	-	0.0	-
93.3	30.0	-	19.7	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	35.0	-	0.0	-	-	0.0	-	-	9.9	-	-	0.0	-

TABLE 4. (cont.)

Bathylagus ochotensis (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 80.0	-	4.6	-	-	0.0	-	-	0.0	-	-	0.0	-
96.7 60.0	-	-	21.7	-	-	-	-	-	-	-	-	-
100.0 35.0	-	-	9.3	-	-	-	-	-	-	-	-	-
103.3 29.0	-	-	3.0	-	-	-	-	-	-	-	-	-

Bathylagus pacificus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	9.0	-	0.0	-	-	0.0	-	-	0.0	-
80.0 60.0	-	-	9.5	-	0.0	-	-	0.0	-	-	0.0	-

Bathylagus wesethi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	9.0	-	0.0	-	-	0.0	-	-	0.0	-
76.7 100.0	-	-	-	-	-	-	-	4.9	-	-	0.0	-
76.7 110.0	-	-	-	-	-	-	-	4.7	-	-	0.0	-
76.7 120.0	-	-	-	-	-	-	-	15.1	-	-	0.0	-
80.0 70.0	-	-	0.0	-	0.0	-	-	10.0	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	35.6	-	-	4.9	-
90.0 90.0	-	0.0	-	-	62.5	-	-	14.2	-	-	0.0	-
90.0 100.0	-	0.0	-	-	19.9	-	-	68.2	-	-	0.0	-
90.0 110.0	-	0.0	-	-	35.2	-	-	10.1	-	-	0.0	-
90.0 120.0	-	0.0	-	-	25.0	-	-	35.4	-	-	5.4	-
93.3 50.0	-	-	-	-	0.0	-	-	9.3	-	-	0.0	-
93.3 80.0	-	0.0	-	-	0.0	-	-	18.8	-	-	0.0	-
93.3 90.0	-	0.0	-	-	0.0	-	-	19.0	-	-	0.0	-
93.3 100.0	-	0.0	-	-	4.8	-	-	14.2	-	-	10.0	-
93.3 110.0	-	0.0	-	-	9.4	-	-	9.7	-	-	5.5	-
93.3 120.0	-	0.0	-	-	5.2	-	-	4.7	-	-	0.0	-

Leuroglossus stilbius

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	766.3	-	19.4	-	-	0.0	-	-	0.0	-
76.7 55.0	-	-	339.2	-	32.2	-	-	0.0	-	-	0.0	-

TABLE 4. (cont.)

Leuroglossus stilbius (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 60.0	-	-	295.9	-	0.0	-	-	0.0	-	-	0.0	-
76.7 70.0	-	-	45.1	-	10.5	-	-	0.0	-	-	0.0	-
76.7 80.0	-	-	-	-	9.9	-	-	0.0	-	-	0.0	-
80.0 51.0	-	9.3	-	-	0.0	-	-	0.0	-	-	0.0	-
80.0 55.0	-	173.7	-	-	10.1	-	-	0.0	-	-	0.0	-
80.0 60.0	-	-	407.0	-	51.8	-	-	0.0	-	-	0.0	-
80.0 70.0	-	-	98.3	-	0.0	-	-	0.0	-	-	0.0	-
80.0 80.0	-	-	10.7	-	0.0	-	-	0.0	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	5.1	-	-	0.0	-
82.0 46.0	-	425.1	-	-	34.8	-	-	0.0	-	-	0.0	-
83.3 42.0	-	206.2	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3 51.0	-	89.0	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3 55.0	-	9.7	-	-	54.3	-	-	0.0	-	-	-	-
83.3 60.0	-	0.0	-	-	21.5	-	-	0.0	-	-	0.0	-
83.3 70.0	-	57.0	-	-	10.9	-	-	0.0	-	-	0.0	-
86.7 35.0	-	216.6	-	-	68.2	-	-	0.0	-	-	0.0	-
86.7 40.0	-	421.8	-	-	53.7	-	-	0.0	-	-	0.0	-
86.7 45.0	-	758.1	-	-	9.6	-	-	0.0	-	-	0.0	-
86.7 50.0	-	7.6	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 60.0	-	207.3	-	-	21.9	-	-	0.0	-	-	0.0	-
86.7 70.0	-	0.0	-	-	9.8	-	-	0.0	-	-	0.0	-
90.0 30.0	-	316.6	-	-	32.6	-	-	0.0	-	-	0.0	-
90.0 35.0	-	594.8	-	-	0.0	-	-	0.0	-	-	10.6	-
90.0 37.0	-	103.0	-	-	0.0	-	-	0.0	-	-	-	-
90.0 45.0	-	73.5	-	-	21.6	-	-	0.0	-	-	-	-
90.0 53.0	-	42.9	-	-	10.2	-	-	0.0	-	-	0.0	-
90.0 60.0	-	9.8	-	-	9.9	-	-	0.0	-	-	0.0	-
90.0 70.0	-	81.3	-	-	19.4	-	-	0.0	-	-	0.0	-
90.0 90.0	-	4.8	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 110.0	-	0.0	-	-	15.1	-	-	0.0	-	-	0.0	-

TABLE 4. (cont.)

Leuroglossus stilbius (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 120.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.8	-
93.3 29.0	-	38.0	-	-	10.3	-	-	0.0	-	-	0.0	-
93.3 30.0	-	226.5	-	-	20.1	-	-	0.0	-	-	0.0	-
93.3 35.0	-	74.6	-	-	0.0	-	-	9.9	-	-	0.0	-
93.3 40.0	-	38.7	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 45.0	-	34.3	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 55.0	-	12.6	-	-	58.7	-	-	11.2	-	-	0.0	-
93.3 70.0	-	0.0	-	-	9.5	-	-	0.0	-	-	0.0	-
96.7 29.0	-	-	4.1	-	-	-	-	-	-	-	-	-
96.7 30.0	-	-	9.1	-	-	-	-	-	-	-	-	-
96.7 32.0	-	-	89.8	-	-	-	-	-	-	-	-	-
96.7 40.0	-	-	9.0	-	-	-	-	-	-	-	-	-
96.7 55.0	-	-	19.2	-	-	-	-	-	-	-	-	-
96.7 70.0	-	-	9.9	-	-	-	-	-	-	-	-	-
100.0 45.0	-	-	9.6	-	-	-	-	-	-	-	-	-
103.3 30.0	-	-	4.1	-	-	-	-	-	-	-	-	-
103.3 35.0	-	-	9.0	-	-	-	-	-	-	-	-	-
103.3 40.0	-	-	9.7	-	-	-	-	-	-	-	-	-
106.7 32.0	-	-	19.5	-	-	-	-	-	-	-	-	-
106.7 35.0	-	-	5.2	-	-	-	-	-	-	-	-	-
110.0 35.0	-	-	109.8	-	-	-	-	-	-	-	-	-
110.0 40.0	-	-	19.5	-	-	-	-	-	-	-	-	-

Stomiiformes

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 120.0	-	-	-	-	-	-	-	5.1	-	-	0.0	-
90.0 30.0	-	10.9	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 120.0	-	4.6	-	-	0.0	-	-	4.7	-	-	0.0	-

***Cyclothone* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 70.0	-	-	0.0	-	0.0	-	-	10.5	-	-	0.0	-

TABLE 4. (cont.)

Cyclothone **spp.** (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	-	-	-	-	-	-	-	34.0	-	-	0.0	-
76.7 120.0	-	-	-	-	-	-	-	20.2	-	-	70.8	-
80.0 90.0	-	-	0.0	-	10.3	-	-	0.0	-	-	0.0	-
80.0 100.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
80.0 110.0	-	-	-	-	-	-	-	9.9	-	-	4.3	-
80.0 120.0	-	-	-	-	-	-	-	50.8	-	-	0.0	-
90.0 80.0	-	0.0	-	-	0.0	-	-	9.2	-	-	0.0	-
90.0 100.0	-	0.0	-	-	14.9	-	-	0.0	-	-	0.0	-
90.0 110.0	-	18.4	-	-	20.1	-	-	0.0	-	-	0.0	-
90.0 120.0	-	9.8	-	-	55.0	-	-	0.0	-	-	0.0	-
93.3 60.0	-	0.0	-	-	5.1	-	-	0.0	-	-	0.0	-
93.3 90.0	-	0.0	-	-	31.1	-	-	9.5	-	-	0.0	-
93.3 100.0	-	0.0	-	-	4.8	-	-	28.3	-	-	0.0	-
93.3 110.0	-	56.9	-	-	0.0	-	-	9.7	-	-	0.0	-
93.3 120.0	-	41.5	-	-	31.1	-	-	4.7	-	-	0.0	-
100.0 60.0	-	-	5.2	-	-	-	-	-	-	-	-	-

Cyclothone acclinidens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 110.0	-	4.7	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 120.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.3	-

Cyclothone signata

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 100.0	-	-	-	-	-	-	-	0.0	-	-	4.6	-
86.7 70.0	-	0.0	-	-	0.0	-	-	20.8	-	-	0.0	-
90.0 90.0	-	4.8	-	-	10.4	-	-	0.0	-	-	0.0	-
90.0 100.0	-	5.1	-	-	5.0	-	-	14.6	-	-	5.1	-
90.0 110.0	-	9.2	-	-	5.0	-	-	25.2	-	-	10.6	-
90.0 120.0	-	0.0	-	-	0.0	-	-	40.5	-	-	10.8	-
93.3 80.0	-	4.6	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 90.0	-	0.0	-	-	0.0	-	-	19.0	-	-	0.0	-

TABLE 4. (cont.)

Cyclothone signata (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 100.0	-	13.4	-	-	0.0	-	-	61.4	-	-	10.0	-
93.3 110.0	-	9.5	-	-	0.0	-	-	24.4	-	-	49.1	-
93.3 120.0	-	0.0	-	-	0.0	-	-	0.0	-	-	72.1	-

Diplophos taenia

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 120.0	-	-	-	-	-	-	-	5.1	-	-	0.0	-

***Gonostoma* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 70.0	-	0.0	-	-	9.7	-	-	0.0	-	-	0.0	-

Gonostoma ebelingi

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

Sternoptychidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 55.0	-	0.0	-	-	0.0	-	-	8.8	-	-	-	-
83.3 60.0	-	0.0	-	-	0.0	-	-	0.0	-	-	4.5	-
86.7 70.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.7	-
90.0 100.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.1	-
93.3 110.0	-	0.0	-	-	0.0	-	-	0.0	-	-	16.4	-

***Argyropelecus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 110.0	-	-	-	-	-	-	-	0.0	-	-	4.3	-
80.0 120.0	-	-	-	-	-	-	-	0.0	-	-	14.7	-
90.0 110.0	-	0.0	-	-	15.1	-	-	0.0	-	-	0.0	-

Argyropelecus affinis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 90.0	-	-	5.0	-	0.0	-	-	0.0	-	-	0.0	-

Argyropelecus hemigymnus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 120.0	-	-	-	-	-	-	-	5.1	-	-	0.0	-
86.7 70.0	-	4.5	-	-	0.0	-	-	0.0	-	-	0.0	-

TABLE 4. (cont.)

Argyropelecus hemigymnus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 120.0	-	4.6	-	-	0.0	-	-	0.0	-	-	5.2	-

Argyropelecus lychnus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 110.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.6	-
93.3 120.0	-	0.0	-	-	5.2	-	-	0.0	-	-	0.0	-
110.0 50.0	-	-	9.9	-	-	-	-	-	-	-	-	-

Argyropelecus sladeni

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 60.0	-	-	0.0	-	10.4	-	-	0.0	-	-	0.0	-
86.7 70.0	-	4.5	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 90.0	-	0.0	-	-	10.4	-	-	0.0	-	-	0.0	-
90.0 110.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-
93.3 50.0	-	-	-	-	0.0	-	-	9.3	-	-	0.0	-
93.3 110.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.5	-
100.0 60.0	-	-	5.2	-	-	-	-	-	-	-	-	-

Danaphos oculatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	0.0	-	0.0	-	-	10.7	-	-	0.0	-
80.0 90.0	-	-	0.0	-	5.2	-	-	0.0	-	-	0.0	-
83.3 55.0	-	9.7	-	-	0.0	-	-	0.0	-	-	-	-
90.0 35.0	-	0.0	-	-	10.2	-	-	0.0	-	-	0.0	-
90.0 110.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-

Sternoptyx spp.

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 110.0	-	-	-	-	-	-	-	4.7	-	-	0.0	-
80.0 100.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	10.2	-	-	0.0	-
90.0 120.0	-	0.0	-	-	0.0	-	-	5.1	-	-	0.0	-
93.3 80.0	-	0.0	-	-	0.0	-	-	9.4	-	-	0.0	-
93.3 110.0	-	0.0	-	-	9.4	-	-	0.0	-	-	0.0	-
93.3 120.0	-	0.0	-	-	10.4	-	-	0.0	-	-	0.0	-

TABLE 4. (cont.)

Vinciguerria lucetia

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	100.0	-	-	-	-	-	-	-	4.9	-	-	0.0	-
76.7	120.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
80.0	90.0	-	-	0.0	-	0.0	-	-	25.3	-	-	0.0	-
80.0	100.0	-	-	-	-	-	-	-	5.0	-	-	4.6	-
80.0	120.0	-	-	-	-	-	-	-	10.2	-	-	9.8	-
86.7	70.0	-	4.5	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0	90.0	-	4.8	-	-	72.9	-	-	9.5	-	-	0.0	-
90.0	100.0	-	20.5	-	-	0.0	-	-	4.9	-	-	5.1	-
90.0	110.0	-	18.4	-	-	25.2	-	-	75.6	-	-	31.9	-
90.0	120.0	-	14.7	-	-	30.0	-	-	20.2	-	-	10.8	-
90.6	36.0	-	-	-	-	-	-	-	-	-	-	5.2	-
93.3	70.0	-	0.0	-	-	0.0	-	-	0.0	-	-	20.9	-
93.3	80.0	-	0.0	-	-	0.0	-	-	9.4	-	-	0.0	-
93.3	90.0	-	0.0	-	-	51.8	-	-	47.4	-	-	0.0	-
93.3	100.0	-	13.4	-	-	23.8	-	-	420.1	-	-	0.0	-
93.3	110.0	-	90.1	-	-	89.1	-	-	68.2	-	-	27.3	-
93.3	120.0	-	4.6	-	-	217.6	-	-	19.0	-	-	36.1	-
103.3	60.0	-	-	9.9	-	-	-	-	-	-	-	-	-
106.7	40.0	-	-	20.6	-	-	-	-	-	-	-	-	-

Chauliodus macouni

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	55.0	-	-	0.0	-	0.0	-	-	11.1	-	-	0.0	-
80.0	55.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-
80.0	60.0	-	-	0.0	-	20.7	-	-	0.0	-	-	0.0	-
80.0	110.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
83.3	70.0	-	9.5	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	45.0	-	0.0	-	-	0.0	-	-	11.8	-	-	0.0	-
86.7	70.0	-	0.0	-	-	0.0	-	-	10.4	-	-	0.0	-
93.3	35.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.2	-
93.3	110.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.5	-

TABLE 4. (cont.)

Stomias atriventer

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 100.0	-	0.0	-	-	5.0	-	-	0.0	-	-	5.1	-
93.3 110.0	-	9.5	-	-	0.0	-	-	0.0	-	-	0.0	-
100.0 60.0	-	-	5.2	-	-	-	-	-	-	-	-	-
103.3 60.0	-	-	5.0	-	-	-	-	-	-	-	-	-

Melanostomiinae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 40.6	-	0.0	-	-	0.0	-	-	16.3	-	-	0.0	-
90.0 100.0	-	5.1	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 110.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-

***Bathophilus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 90.0	-	0.0	-	-	10.4	-	-	0.0	-	-	0.0	-

Bathophilus flemingi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 120.0	-	-	-	-	-	-	-	30.2	-	-	0.0	-
90.0 110.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-
93.3 110.0	-	4.7	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 120.0	-	0.0	-	-	5.2	-	-	0.0	-	-	0.0	-

***Eustomias* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 120.0	-	-	-	-	-	-	-	5.1	-	-	0.0	-
90.0 120.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.4	-

Tactostoma macropus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 120.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	5.1	-	-	0.0	-
93.3 70.0	-	8.3	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 80.0	-	0.0	-	-	0.0	-	-	9.4	-	-	0.0	-
110.0 50.0	-	-	9.9	-	-	-	-	-	-	-	-	-

TABLE 4. (cont.)

Aristostomias scintillans

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 100.0	-	5.1	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 110.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-
93.3 110.0	-	4.7	-	-	0.0	-	-	0.0	-	-	0.0	-

Idiacanthus antrostomus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	-	-	-	-	-	-	-	24.3	-	-	9.2	-
76.7 110.0	-	-	-	-	-	-	-	28.2	-	-	8.0	-
76.7 120.0	-	-	-	-	-	-	-	15.1	-	-	45.5	-
80.0 90.0	-	-	0.0	-	0.0	-	-	5.1	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	66.0	-	-	14.7	-
90.0 90.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.7	-
90.0 100.0	-	0.0	-	-	0.0	-	-	9.7	-	-	10.3	-
90.0 110.0	-	0.0	-	-	15.1	-	-	0.0	-	-	10.6	-
90.0 120.0	-	0.0	-	-	0.0	-	-	45.5	-	-	21.5	-
93.3 70.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.4	-
93.3 80.0	-	0.0	-	-	0.0	-	-	9.4	-	-	0.0	-
93.3 90.0	-	0.0	-	-	0.0	-	-	37.9	-	-	0.0	-
93.3 100.0	-	0.0	-	-	0.0	-	-	9.4	-	-	0.0	-
93.3 110.0	-	0.0	-	-	4.7	-	-	24.4	-	-	21.8	-
93.3 120.0	-	0.0	-	-	0.0	-	-	14.2	-	-	15.5	-

Benthalbella dentata

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 90.0	-	4.8	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 100.0	-	4.5	-	-	0.0	-	-	0.0	-	-	0.0	-

Rosenblattichthys volucris

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 120.0	-	0.0	-	-	0.0	-	-	5.1	-	-	0.0	-

***Scopelarchus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 110.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.5	-

TABLE 4. (cont.)

Scopelarchus analis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 120.0	-	-	-	-	-	-	-	0.0	-	-	4.9	-
93.3 120.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.2	-

Scopelarchus guentheri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 120.0	-	-	-	-	-	-	-	0.0	-	-	5.1	-
80.0 120.0	-	-	-	-	-	-	-	5.1	-	-	0.0	-
90.0 90.0	-	0.0	-	-	10.4	-	-	0.0	-	-	0.0	-
90.0 120.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-

Scopelosaurus harryi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 110.0	-	4.7	-	-	0.0	-	-	0.0	-	-	0.0	-

Synodus lucioceps

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 40.6	-	0.0	-	-	0.0	-	-	8.2	-	-	0.0	-
86.7 33.0	-	0.0	-	-	0.0	-	-	10.1	-	-	0.0	-

Paralepididae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 120.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
90.0 120.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-

Lestidiops ringens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	-	-	-	-	-	-	-	14.6	-	-	0.0	-
76.7 110.0	-	-	-	-	-	-	-	4.7	-	-	0.0	-
80.0 90.0	-	-	5.0	-	0.0	-	-	0.0	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	10.2	-	-	0.0	-
83.3 70.0	-	9.5	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 35.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.4	-
86.7 60.0	-	9.4	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 70.0	-	0.0	-	-	9.7	-	-	0.0	-	-	0.0	-
90.0 90.0	-	0.0	-	-	0.0	-	-	23.7	-	-	0.0	-

TABLE 4. (cont.)

Lestidiops ringens (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 100.0	-	0.0	-	-	0.0	-	-	4.9	-	-	5.1	-
90.0 110.0	-	0.0	-	-	0.0	-	-	5.0	-	-	0.0	-
93.3 35.0	-	0.0	-	-	0.0	-	-	9.9	-	-	0.0	-
93.3 55.0	-	0.0	-	-	9.8	-	-	0.0	-	-	0.0	-
93.3 100.0	-	0.0	-	-	4.8	-	-	0.0	-	-	0.0	-
93.3 120.0	-	0.0	-	-	5.2	-	-	0.0	-	-	0.0	-
106.7 40.0	-	-	5.1	-	-	-	-	-	-	-	-	-

Magnisudis atlantica

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 80.0	-	-	5.4	-	0.0	-	-	0.0	-	-	0.0	-
93.3 120.0	-	4.6	-	-	0.0	-	-	0.0	-	-	0.0	-

Myctophidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 55.0	-	-	0.0	-	10.7	-	-	0.0	-	-	0.0	-
80.0 60.0	-	-	0.0	-	0.0	-	-	8.7	-	-	0.0	-
80.0 90.0	-	-	0.0	-	5.2	-	-	0.0	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	5.1	-	-	0.0	-
83.3 70.0	-	0.0	-	-	0.0	-	-	10.5	-	-	0.0	-
90.0 100.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.1	-
90.0 110.0	-	9.2	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 120.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-
93.3 40.0	-	0.0	-	-	0.0	-	-	8.8	-	-	0.0	-
93.3 50.0	-	-	-	-	0.0	-	-	0.0	-	-	5.2	-
93.3 55.0	-	0.0	-	-	9.8	-	-	0.0	-	-	0.0	-
93.3 65.0	-	-	-	-	9.8	-	-	-	-	-	-	-
93.3 70.0	-	0.0	-	-	9.5	-	-	0.0	-	-	0.0	-
93.3 80.0	-	4.6	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 90.0	-	0.0	-	-	20.7	-	-	0.0	-	-	0.0	-
93.3 100.0	-	0.0	-	-	9.5	-	-	0.0	-	-	0.0	-
93.3 110.0	-	4.7	-	-	9.4	-	-	0.0	-	-	0.0	-

TABLE 4. (cont.)

Myctophidae (cont.)

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

Ceratoscopelus townsendi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	-	-	-	-	-	-	-	53.5	-	-	0.0	-
76.7 110.0	-	-	-	-	-	-	-	9.4	-	-	0.0	-
76.7 120.0	-	-	-	-	-	-	-	20.2	-	-	10.1	-
80.0 60.0	-	-	0.0	-	0.0	-	-	8.7	-	-	0.0	-
80.0 80.0	-	-	0.0	-	10.7	-	-	4.6	-	-	0.0	-
80.0 90.0	-	-	0.0	-	0.0	-	-	10.1	-	-	0.0	-
80.0 100.0	-	-	-	-	-	-	-	15.1	-	-	0.0	-
80.0 110.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	81.3	-	-	4.9	-
86.7 70.0	-	0.0	-	-	0.0	-	-	20.8	-	-	0.0	-
90.0 60.0	-	0.0	-	-	0.0	-	-	9.9	-	-	0.0	-
90.0 80.0	-	0.0	-	-	0.0	-	-	9.2	-	-	0.0	-
90.0 100.0	-	25.6	-	-	19.9	-	-	0.0	-	-	0.0	-
90.0 110.0	-	9.2	-	-	45.3	-	-	15.1	-	-	15.9	-
90.0 120.0	-	0.0	-	-	100.0	-	-	55.7	-	-	10.8	-
93.3 80.0	-	4.6	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 90.0	-	0.0	-	-	10.4	-	-	0.0	-	-	0.0	-
93.3 100.0	-	8.9	-	-	0.0	-	-	80.2	-	-	0.0	-
93.3 110.0	-	19.0	-	-	4.7	-	-	9.7	-	-	60.1	-
93.3 120.0	-	0.0	-	-	20.7	-	-	19.0	-	-	72.1	-

***Diaphus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 55.0	-	-	0.0	-	0.0	-	-	11.1	-	-	0.0	-
76.7 60.0	-	-	0.0	-	0.0	-	-	18.6	-	-	0.0	-
76.7 80.0	-	-	-	-	0.0	-	-	37.7	-	-	0.0	-
76.7 90.0	-	-	-	-	-	-	-	14.6	-	-	0.0	-
76.7 100.0	-	-	-	-	-	-	-	9.7	-	-	0.0	-

TABLE 4. (cont.)

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

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	110.0	-	-	-	-	-	-	-	4.7	-	-	0.0	-
76.7	120.0	-	-	-	-	-	-	-	15.1	-	-	0.0	-
80.0	60.0	-	-	0.0	-	0.0	-	-	95.3	-	-	0.0	-
80.0	70.0	-	-	0.0	-	0.0	-	-	290.6	-	-	0.0	-
80.0	80.0	-	-	0.0	-	21.5	-	-	0.0	-	-	0.0	-
86.7	70.0	-	0.0	-	-	0.0	-	-	31.2	-	-	0.0	-
90.0	70.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-
90.0	80.0	-	5.2	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0	90.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.7	-
90.0	110.0	-	0.0	-	-	0.0	-	-	5.0	-	-	0.0	-
90.0	120.0	-	0.0	-	-	0.0	-	-	5.1	-	-	0.0	-
93.3	80.0	-	0.0	-	-	0.0	-	-	9.4	-	-	0.0	-
93.3	90.0	-	0.0	-	-	20.7	-	-	0.0	-	-	0.0	-
93.3	110.0	-	0.0	-	-	0.0	-	-	4.9	-	-	0.0	-
93.3	120.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.2	-
96.7	60.0	-	-	10.9	-	-	-	-	-	-	-	-	-

Lampadena urophaos

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0	46.0	-	0.0	-	-	0.0	-	-	0.0	-	-	4.8	-
93.3	100.0	-	0.0	-	-	0.0	-	-	9.4	-	-	0.0	-

***Lampanyctus* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	90.0	-	-	-	-	-	-	-	4.9	-	-	0.0	-
76.7	100.0	-	-	-	-	-	-	-	9.7	-	-	0.0	-
76.7	120.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
80.0	80.0	-	-	0.0	-	0.0	-	-	4.6	-	-	0.0	-
83.3	51.0	-	0.0	-	-	0.0	-	-	4.5	-	-	0.0	-
90.0	70.0	-	8.1	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0	90.0	-	4.8	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0	100.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-

TABLE 4. (cont.)

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

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 120.0	-	0.0	-	-	5.0	-	-	10.1	-	-	0.0	-
93.3 55.0	-	0.0	-	-	9.8	-	-	0.0	-	-	0.0	-
93.3 110.0	-	0.0	-	-	4.7	-	-	0.0	-	-	0.0	-
93.3 120.0	-	18.4	-	-	20.7	-	-	0.0	-	-	0.0	-

***Lampanyctus* "niger"**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 120.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-

***Lampanyctus* "no pectorals"**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 90.0	-	-	0.0	-	5.2	-	-	0.0	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	5.1	-	-	0.0	-
90.0 120.0	-	0.0	-	-	10.0	-	-	0.0	-	-	0.0	-

Lampanyctus regalis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 60.0	-	-	0.0	-	0.0	-	-	9.3	-	-	0.0	-
80.0 60.0	-	-	0.0	-	0.0	-	-	8.7	-	-	0.0	-
86.7 70.0	-	0.0	-	-	9.8	-	-	0.0	-	-	0.0	-

Lampanyctus ritteri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 110.0	-	-	-	-	-	-	-	4.7	-	-	0.0	-
80.0 51.0	-	0.0	-	-	0.0	-	-	0.0	-	-	4.7	-
80.0 60.0	-	-	0.0	-	20.7	-	-	0.0	-	-	0.0	-
80.0 70.0	-	-	0.0	-	30.5	-	-	10.0	-	-	0.0	-
80.0 90.0	-	-	10.1	-	0.0	-	-	5.1	-	-	0.0	-
80.0 100.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
80.0 110.0	-	-	-	-	-	-	-	19.9	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	15.2	-	-	0.0	-
83.3 60.0	-	0.0	-	-	0.0	-	-	0.0	-	-	4.5	-
83.3 70.0	-	0.0	-	-	0.0	-	-	10.5	-	-	0.0	-
86.7 40.0	-	9.2	-	-	0.0	-	-	0.0	-	-	0.0	-

TABLE 4. (cont.)

Lampanyctus ritteri (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 60.0	-	9.4	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 70.0	-	4.5	-	-	49.2	-	-	41.6	-	-	0.0	-
90.0 45.0	-	0.0	-	-	0.0	-	-	8.6	-	-	-	-
90.0 60.0	-	9.8	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 70.0	-	0.0	-	-	87.2	-	-	11.1	-	-	0.0	-
90.0 80.0	-	10.4	-	-	8.8	-	-	0.0	-	-	0.0	-
90.0 90.0	-	4.8	-	-	20.8	-	-	4.7	-	-	0.0	-
90.0 100.0	-	20.5	-	-	14.9	-	-	4.9	-	-	5.1	-
90.0 110.0	-	0.0	-	-	5.0	-	-	5.0	-	-	0.0	-
90.0 120.0	-	4.9	-	-	5.0	-	-	5.1	-	-	0.0	-
93.3 26.7	-	0.0	-	-	0.0	-	-	4.8	-	-	0.0	-
93.3 35.0	-	0.0	-	-	0.0	-	-	9.9	-	-	0.0	-
93.3 60.0	-	8.9	-	-	10.2	-	-	0.0	-	-	0.0	-
93.3 80.0	-	13.9	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 90.0	-	9.2	-	-	10.4	-	-	0.0	-	-	0.0	-
93.3 100.0	-	0.0	-	-	9.5	-	-	0.0	-	-	0.0	-
93.3 120.0	-	32.3	-	-	0.0	-	-	0.0	-	-	0.0	-
96.7 70.0	-	-	9.9	-	-	-	-	-	-	-	-	-
100.0 60.0	-	-	31.2	-	-	-	-	-	-	-	-	-
106.7 40.0	-	-	5.1	-	-	-	-	-	-	-	-	-

Lampanyctus steinbecki

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 110.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-
93.3 120.0	-	0.0	-	-	5.2	-	-	0.0	-	-	0.0	-

Lampanyctus tenuiformes

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 120.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.2	-

Notolychnus valdiviae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 120.0	-	0.0	-	-	0.0	-	-	5.1	-	-	0.0	-

TABLE 4. (cont.)

Notolychnus valdiviae (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 100.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.0	-
93.3 120.0	-	0.0	-	-	5.2	-	-	0.0	-	-	0.0	-

Notoscopelus resplendens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 110.0	-	9.2	-	-	10.1	-	-	0.0	-	-	0.0	-
90.0 120.0	-	0.0	-	-	5.0	-	-	5.1	-	-	0.0	-

Parvilux ingens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 70.0	-	-	0.0	-	10.2	-	-	0.0	-	-	0.0	-
90.0 100.0	-	0.0	-	-	0.0	-	-	4.9	-	-	0.0	-
90.0 110.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-

Stenobrachius leucopsarus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	36.1	-	19.4	-	-	0.0	-	-	0.0	-
76.7 55.0	-	-	150.8	-	75.0	-	-	0.0	-	-	0.0	-
76.7 60.0	-	-	148.0	-	38.6	-	-	0.0	-	-	0.0	-
76.7 70.0	-	-	153.3	-	115.2	-	-	0.0	-	-	0.0	-
76.7 80.0	-	-	-	-	39.7	-	-	0.0	-	-	0.0	-
80.0 51.0	-	111.4	-	-	0.0	-	-	0.0	-	-	0.0	-
80.0 55.0	-	112.4	-	-	70.5	-	-	0.0	-	-	0.0	-
80.0 60.0	-	-	94.6	-	269.3	-	-	8.7	-	-	0.0	-
80.0 70.0	-	-	65.5	-	20.3	-	-	0.0	-	-	0.0	-
80.0 80.0	-	-	10.7	-	0.0	-	-	0.0	-	-	0.0	-
82.0 46.0	-	473.5	-	-	23.2	-	-	0.0	-	-	0.0	-
83.3 40.6	-	15.7	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3 42.0	-	510.6	-	-	20.2	-	-	0.0	-	-	0.0	-
83.3 51.0	-	347.0	-	-	44.8	-	-	0.0	-	-	0.0	-
83.3 55.0	-	125.5	-	-	21.7	-	-	0.0	-	-	-	-
83.3 60.0	-	4.9	-	-	10.7	-	-	0.0	-	-	0.0	-
83.3 70.0	-	142.4	-	-	32.8	-	-	0.0	-	-	0.0	-

TABLE 4. (cont.)

Stenobrachius leucopsarus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	33.0	-	197.3	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	35.0	-	184.1	-	-	22.7	-	-	0.0	-	-	0.0	-
86.7	40.0	-	311.8	-	-	64.5	-	-	0.0	-	-	0.0	-
86.7	45.0	-	189.5	-	-	19.2	-	-	0.0	-	-	0.0	-
86.7	50.0	-	7.6	-	-	67.9	-	-	22.3	-	-	0.0	-
86.7	55.0	-	-	-	-	36.6	-	-	-	-	-	0.0	-
86.7	60.0	-	56.5	-	-	32.9	-	-	11.1	-	-	0.0	-
86.7	70.0	-	0.0	-	-	39.4	-	-	0.0	-	-	0.0	-
90.0	28.0	-	9.5	-	-	17.3	-	-	0.0	-	-	0.0	-
90.0	30.0	-	98.3	-	-	43.5	-	-	0.0	-	-	0.0	-
90.0	35.0	-	233.7	-	-	0.0	-	-	0.0	-	-	10.6	-
90.0	37.0	-	51.5	-	-	0.0	-	-	0.0	-	-	-	-
90.0	45.0	-	36.7	-	-	10.8	-	-	0.0	-	-	-	-
90.0	53.0	-	21.4	-	-	40.9	-	-	0.0	-	-	0.0	-
90.0	60.0	-	39.3	-	-	19.8	-	-	0.0	-	-	0.0	-
90.0	70.0	-	0.0	-	-	87.2	-	-	0.0	-	-	0.0	-
90.0	80.0	-	0.0	-	-	44.2	-	-	0.0	-	-	0.0	-
90.0	100.0	-	5.1	-	-	0.0	-	-	0.0	-	-	0.0	-
90.6	36.0	-	-	-	-	-	-	-	-	-	-	5.2	-
93.3	26.7	-	493.2	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	29.0	-	66.5	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	30.0	-	206.8	-	-	0.0	-	-	0.0	-	-	11.7	-
93.3	35.0	-	53.3	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	40.0	-	29.0	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	50.0	-	-	-	-	31.9	-	-	0.0	-	-	0.0	-
93.3	55.0	-	4.2	-	-	88.1	-	-	0.0	-	-	0.0	-
93.3	60.0	-	17.8	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	70.0	-	0.0	-	-	0.0	-	-	9.6	-	-	0.0	-
93.3	90.0	-	0.0	-	-	10.4	-	-	0.0	-	-	0.0	-
96.7	30.0	-	-	22.8	-	-	-	-	-	-	-	-	-

TABLE 4. (cont.)

Stenobrachius leucopsarus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
96.7 32.0	-	-	20.0	-	-	-	-	-	-	-	-	-
96.7 40.0	-	-	80.7	-	-	-	-	-	-	-	-	-
96.7 50.0	-	-	10.4	-	-	-	-	-	-	-	-	-
96.7 55.0	-	-	19.2	-	-	-	-	-	-	-	-	-
96.7 60.0	-	-	21.7	-	-	-	-	-	-	-	-	-
103.3 60.0	-	-	5.0	-	-	-	-	-	-	-	-	-
106.7 32.0	-	-	4.9	-	-	-	-	-	-	-	-	-
110.0 40.0	-	-	4.9	-	-	-	-	-	-	-	-	-
110.0 50.0	-	-	29.7	-	-	-	-	-	-	-	-	-

Triphoturus mexicanus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 60.0	-	-	0.0	-	0.0	-	-	9.3	-	-	0.0	-
80.0 100.0	-	-	-	-	-	-	-	0.0	-	-	9.2	-
80.0 110.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
82.0 46.0	-	0.0	-	-	0.0	-	-	10.4	-	-	0.0	-
83.3 51.0	-	0.0	-	-	0.0	-	-	9.0	-	-	0.0	-
86.7 45.0	-	0.0	-	-	0.0	-	-	35.4	-	-	0.0	-
86.7 50.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-
86.7 60.0	-	0.0	-	-	0.0	-	-	22.1	-	-	0.0	-
86.7 70.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.7	-
90.0 28.0	-	0.0	-	-	0.0	-	-	11.0	-	-	0.0	-
90.0 53.0	-	0.0	-	-	0.0	-	-	5.0	-	-	23.0	-
90.0 80.0	-	0.0	-	-	0.0	-	-	27.7	-	-	0.0	-
90.0 90.0	-	0.0	-	-	41.7	-	-	9.5	-	-	0.0	-
90.0 100.0	-	5.1	-	-	5.0	-	-	9.7	-	-	10.3	-
90.0 110.0	-	0.0	-	-	20.1	-	-	30.2	-	-	0.0	-
90.0 120.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-
90.6 36.0	-	-	-	-	-	-	-	-	-	-	15.7	-
93.3 26.7	-	0.0	-	-	0.0	-	-	29.1	-	-	0.0	-
93.3 29.0	-	0.0	-	-	20.6	-	-	0.0	-	-	0.0	-

TABLE 4. (cont.)

Triphoturus mexicanus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 30.0	-	0.0	-	-	40.2	-	-	10.6	-	-	0.0	-
93.3 35.0	-	0.0	-	-	10.8	-	-	0.0	-	-	0.0	-
93.3 40.0	-	0.0	-	-	0.0	-	-	26.5	-	-	0.0	-
93.3 45.0	-	0.0	-	-	0.0	-	-	10.6	-	-	0.0	-
93.3 55.0	-	0.0	-	-	0.0	-	-	44.6	-	-	0.0	-
93.3 60.0	-	0.0	-	-	0.0	-	-	11.6	-	-	0.0	-
93.3 70.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.4	-
93.3 80.0	-	0.0	-	-	0.0	-	-	9.4	-	-	0.0	-
93.3 100.0	-	0.0	-	-	0.0	-	-	42.5	-	-	0.0	-
93.3 110.0	-	4.7	-	-	0.0	-	-	9.7	-	-	65.5	-
93.3 120.0	-	0.0	-	-	77.7	-	-	0.0	-	-	10.3	-

Diogenichthys atlanticus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 120.0	-	-	-	-	-	-	-	40.3	-	-	60.7	-
76.7 120.0	-	-	-	-	-	-	-	40.3	-	-	60.7	-
80.0 55.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-
80.0 80.0	-	-	0.0	-	0.0	-	-	0.0	-	-	11.9	-
80.0 90.0	-	-	5.0	-	0.0	-	-	0.0	-	-	0.0	-
80.0 100.0	-	-	-	-	-	-	-	0.0	-	-	4.6	-
80.0 110.0	-	-	-	-	-	-	-	0.0	-	-	8.7	-
80.0 120.0	-	-	-	-	-	-	-	5.1	-	-	0.0	-
83.3 55.0	-	9.7	-	-	0.0	-	-	0.0	-	-	-	-
83.3 70.0	-	9.5	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 60.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.3	-
90.0 80.0	-	5.2	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 90.0	-	4.8	-	-	10.4	-	-	4.7	-	-	0.0	-
90.0 100.0	-	35.8	-	-	10.0	-	-	0.0	-	-	15.4	-
90.0 110.0	-	18.4	-	-	15.1	-	-	0.0	-	-	26.5	-
90.0 120.0	-	14.7	-	-	5.0	-	-	20.2	-	-	32.3	-
93.3 55.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.4	-

TABLE 4. (cont.)

Diogenichthys atlanticus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 60.0	-	0.0	-	-	5.1	-	-	0.0	-	-	9.9	-
93.3 80.0	-	4.6	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 100.0	-	17.9	-	-	0.0	-	-	4.7	-	-	10.0	-
93.3 110.0	-	23.7	-	-	14.1	-	-	0.0	-	-	27.3	-
93.3 120.0	-	36.9	-	-	10.4	-	-	9.5	-	-	30.9	-
96.7 50.0	-	-	10.4	-	-	-	-	-	-	-	-	-
103.3 50.0	-	-	5.2	-	-	-	-	-	-	-	-	-
106.7 45.0	-	-	11.0	-	-	-	-	-	-	-	-	-

Electrona risso

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 90.0	-	-	-	-	-	-	-	9.8	-	-	0.0	-
80.0 70.0	-	-	0.0	-	10.2	-	-	0.0	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	0.0	-	-	4.9	-
82.0 46.0	-	0.0	-	-	0.0	-	-	0.0	-	-	4.8	-
90.0 100.0	-	10.2	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 110.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-
90.0 120.0	-	0.0	-	-	10.0	-	-	0.0	-	-	5.4	-

Hygophum atratum

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 100.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-
90.0 120.0	-	0.0	-	-	0.0	-	-	5.1	-	-	0.0	-
93.3 110.0	-	0.0	-	-	9.4	-	-	0.0	-	-	0.0	-
96.7 70.0	-	-	9.9	-	-	-	-	-	-	-	-	-

Hygophum reinhardtii

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 120.0	-	-	-	-	-	-	-	5.1	-	-	0.0	-
93.3 110.0	-	9.5	-	-	0.0	-	-	0.0	-	-	5.5	-
93.3 120.0	-	18.4	-	-	0.0	-	-	0.0	-	-	0.0	-

Loweina rara

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 45.0	-	0.0	-	-	0.0	-	-	0.0	-	-	11.0	-

TABLE 4. (cont.)

Loweina rara (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 120.0	-	0.0	-	-	5.2	-	-	0.0	-	-	0.0	-

Myctophum nitidulum

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 90.0	-	0.0	-	-	10.4	-	-	0.0	-	-	0.0	-
90.0 120.0	-	0.0	-	-	0.0	-	-	5.1	-	-	0.0	-
93.3 110.0	-	4.7	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 120.0	-	0.0	-	-	0.0	-	-	9.5	-	-	5.2	-

Protomyctophum crockeri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	0.0	-	9.7	-	-	0.0	-	-	0.0	-
76.7 55.0	-	-	0.0	-	0.0	-	-	11.1	-	-	0.0	-
76.7 60.0	-	-	0.0	-	0.0	-	-	9.3	-	-	9.0	-
76.7 70.0	-	-	18.0	-	10.5	-	-	0.0	-	-	0.0	-
76.7 80.0	-	-	-	-	9.9	-	-	9.4	-	-	0.0	-
76.7 90.0	-	-	-	-	-	-	-	0.0	-	-	8.3	-
76.7 120.0	-	-	-	-	-	-	-	10.1	-	-	0.0	-
80.0 55.0	-	0.0	-	-	30.2	-	-	0.0	-	-	0.0	-
80.0 60.0	-	-	0.0	-	41.4	-	-	26.0	-	-	0.0	-
80.0 70.0	-	-	0.0	-	20.3	-	-	10.0	-	-	0.0	-
80.0 90.0	-	-	10.1	-	0.0	-	-	15.2	-	-	0.0	-
80.0 110.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
83.3 55.0	-	0.0	-	-	21.7	-	-	0.0	-	-	-	-
83.3 60.0	-	0.0	-	-	10.7	-	-	0.0	-	-	0.0	-
83.3 70.0	-	0.0	-	-	0.0	-	-	21.1	-	-	0.0	-
86.7 35.0	-	0.0	-	-	0.0	-	-	9.3	-	-	0.0	-
86.7 50.0	-	0.0	-	-	0.0	-	-	0.0	-	-	4.6	-
86.7 60.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.2	-
86.7 70.0	-	13.4	-	-	0.0	-	-	10.4	-	-	10.7	-
90.0 30.0	-	0.0	-	-	0.0	-	-	11.4	-	-	11.1	-

TABLE 4. (cont.)

Protomyctophum crockeri (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 53.0	-	10.7	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 70.0	-	0.0	-	-	9.7	-	-	0.0	-	-	0.0	-
90.0 80.0	-	0.0	-	-	26.5	-	-	0.0	-	-	0.0	-
90.0 90.0	-	0.0	-	-	20.8	-	-	4.7	-	-	10.7	-
90.0 100.0	-	5.1	-	-	0.0	-	-	0.0	-	-	15.4	-
90.0 110.0	-	0.0	-	-	0.0	-	-	5.0	-	-	5.3	-
90.0 120.0	-	0.0	-	-	5.0	-	-	25.3	-	-	0.0	-
93.3 35.0	-	0.0	-	-	10.8	-	-	9.9	-	-	0.0	-
93.3 50.0	-	-	-	-	0.0	-	-	0.0	-	-	5.2	-
93.3 55.0	-	0.0	-	-	0.0	-	-	11.2	-	-	5.4	-
93.3 60.0	-	0.0	-	-	5.1	-	-	0.0	-	-	29.8	-
93.3 70.0	-	0.0	-	-	19.1	-	-	0.0	-	-	10.4	-
93.3 80.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.0	-
93.3 90.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.3	-
93.3 110.0	-	9.5	-	-	0.0	-	-	14.6	-	-	10.9	-
93.3 120.0	-	18.4	-	-	0.0	-	-	0.0	-	-	5.2	-
96.7 35.0	-	-	4.7	-	-	-	-	-	-	-	-	-
96.7 60.0	-	-	10.9	-	-	-	-	-	-	-	-	-
100.0 55.0	-	-	22.0	-	-	-	-	-	-	-	-	-
100.0 60.0	-	-	5.2	-	-	-	-	-	-	-	-	-
103.3 29.0	-	-	3.0	-	-	-	-	-	-	-	-	-
103.3 50.0	-	-	5.2	-	-	-	-	-	-	-	-	-
106.7 40.0	-	-	10.3	-	-	-	-	-	-	-	-	-
106.7 45.0	-	-	11.0	-	-	-	-	-	-	-	-	-
110.0 40.0	-	-	4.9	-	-	-	-	-	-	-	-	-
110.0 45.0	-	-	5.0	-	-	-	-	-	-	-	-	-
110.0 50.0	-	-	9.9	-	-	-	-	-	-	-	-	-

Symbolophorus californiensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	27.0	-	0.0	-	-	0.0	-	-	0.0	-

TABLE 4. (cont.)

Symbolophorus californiensis (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	55.0	-	-	0.0	-	0.0	-	-	11.1	-	-	0.0	-
76.7	80.0	-	-	-	-	9.9	-	-	0.0	-	-	0.0	-
76.7	100.0	-	-	-	-	-	-	-	14.6	-	-	0.0	-
76.7	120.0	-	-	-	-	-	-	-	5.0	-	-	10.1	-
80.0	60.0	-	-	0.0	-	10.4	-	-	8.7	-	-	0.0	-
80.0	70.0	-	-	10.9	-	0.0	-	-	0.0	-	-	0.0	-
80.0	80.0	-	-	0.0	-	10.7	-	-	0.0	-	-	0.0	-
80.0	90.0	-	-	0.0	-	10.3	-	-	15.2	-	-	0.0	-
80.0	100.0	-	-	-	-	-	-	-	10.1	-	-	0.0	-
80.0	120.0	-	-	-	-	-	-	-	20.3	-	-	0.0	-
83.3	70.0	-	0.0	-	-	10.9	-	-	10.5	-	-	0.0	-
86.7	50.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-
90.0	60.0	-	0.0	-	-	0.0	-	-	9.9	-	-	10.3	-
90.0	70.0	-	0.0	-	-	38.8	-	-	0.0	-	-	0.0	-
90.0	80.0	-	0.0	-	-	26.5	-	-	0.0	-	-	0.0	-
90.0	90.0	-	0.0	-	-	41.7	-	-	0.0	-	-	0.0	-
90.0	100.0	-	15.4	-	-	10.0	-	-	0.0	-	-	5.1	-
90.0	110.0	-	18.4	-	-	0.0	-	-	5.0	-	-	0.0	-
90.0	120.0	-	0.0	-	-	0.0	-	-	20.2	-	-	5.4	-
93.3	45.0	-	0.0	-	-	0.0	-	-	10.6	-	-	0.0	-
93.3	55.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.4	-
93.3	60.0	-	0.0	-	-	5.1	-	-	0.0	-	-	0.0	-
93.3	70.0	-	0.0	-	-	9.5	-	-	0.0	-	-	0.0	-
93.3	80.0	-	9.2	-	-	0.0	-	-	18.8	-	-	0.0	-
93.3	90.0	-	0.0	-	-	20.7	-	-	0.0	-	-	0.0	-
93.3	100.0	-	0.0	-	-	23.8	-	-	14.2	-	-	0.0	-
93.3	110.0	-	28.4	-	-	4.7	-	-	24.4	-	-	5.5	-
93.3	120.0	-	9.2	-	-	10.4	-	-	9.5	-	-	0.0	-
110.0	45.0	-	-	5.0	-	-	-	-	-	-	-	-	-

TABLE 4. (cont.)

Tarletonbeania crenularis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	0.0	-	19.4	-	-	10.7	-	-	0.0	-
76.7 55.0	-	-	0.0	-	21.4	-	-	11.1	-	-	0.0	-
76.7 60.0	-	-	9.9	-	9.6	-	-	0.0	-	-	0.0	-
76.7 70.0	-	-	9.0	-	0.0	-	-	10.5	-	-	0.0	-
80.0 55.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-
80.0 60.0	-	-	0.0	-	20.7	-	-	0.0	-	-	0.0	-
80.0 70.0	-	-	10.9	-	0.0	-	-	10.0	-	-	0.0	-
80.0 80.0	-	-	5.4	-	0.0	-	-	0.0	-	-	0.0	-
83.3 70.0	-	0.0	-	-	10.9	-	-	0.0	-	-	0.0	-
86.7 45.0	-	0.0	-	-	0.0	-	-	11.8	-	-	0.0	-
86.7 60.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-
90.0 70.0	-	0.0	-	-	0.0	-	-	22.2	-	-	0.0	-
93.3 30.0	-	0.0	-	-	0.0	-	-	10.6	-	-	0.0	-

Trachipterus altivelis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 55.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-
80.0 60.0	-	-	0.0	-	10.4	-	-	0.0	-	-	0.0	-
80.0 90.0	-	-	5.0	-	0.0	-	-	0.0	-	-	0.0	-
93.3 50.0	-	-	-	-	0.0	-	-	9.3	-	-	0.0	-

Merluccius productus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	90.2	-	0.0	-	-	0.0	-	-	0.0	-
76.7 55.0	-	-	56.5	-	0.0	-	-	0.0	-	-	5.0	-
76.7 60.0	-	-	207.2	-	0.0	-	-	0.0	-	-	0.0	-
76.7 70.0	-	-	11022.4	-	0.0	-	-	0.0	-	-	0.0	-
76.7 80.0	-	-	-	-	9.9	-	-	0.0	-	-	0.0	-
80.0 51.0	-	27.8	-	-	0.0	-	-	0.0	-	-	4.7	-
80.0 55.0	-	367.9	-	-	0.0	-	-	0.0	-	-	0.0	-
80.0 60.0	-	-	179.8	-	10.4	-	-	0.0	-	-	0.0	-
80.0 70.0	-	-	3178.7	-	0.0	-	-	0.0	-	-	0.0	-

TABLE 4. (cont.)

Station		*Merluccius productus* (cont.)											
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0	46.0	-	106.3	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3	42.0	-	137.5	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3	51.0	-	124.6	-	-	11.2	-	-	0.0	-	-	0.0	-
83.3	55.0	-	48.3	-	-	0.0	-	-	0.0	-	-	-	-
83.3	70.0	-	1528.9	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	35.0	-	21.7	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	40.0	-	64.2	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	45.0	-	126.4	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	50.0	-	30.5	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	60.0	-	47.1	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	70.0	-	0.0	-	-	9.8	-	-	0.0	-	-	0.0	-
90.0	30.0	-	10.9	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0	35.0	-	21.2	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0	37.0	-	9.4	-	-	0.0	-	-	0.0	-	-	-	-
90.0	45.0	-	55.1	-	-	0.0	-	-	0.0	-	-	-	-
90.0	53.0	-	53.6	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0	60.0	-	334.1	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0	70.0	-	1577.1	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0	90.0	-	9.5	-	-	10.4	-	-	0.0	-	-	0.0	-
93.3	30.0	-	9.8	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	40.0	-	0.0	-	-	11.1	-	-	0.0	-	-	0.0	-
93.3	50.0	-	-	-	-	10.6	-	-	0.0	-	-	0.0	-
93.3	70.0	-	41.6	-	-	9.5	-	-	0.0	-	-	0.0	-
93.3	80.0	-	184.8	-	-	0.0	-	-	0.0	-	-	0.0	-
96.7	50.0	-	-	248.9	-	-	-	-	-	-	-	-	-
96.7	55.0	-	-	211.0	-	-	-	-	-	-	-	-	-
96.7	60.0	-	-	618.6	-	-	-	-	-	-	-	-	-
96.7	65.0	-	-	9.6	-	-	-	-	-	-	-	-	-
96.7	70.0	-	-	316.7	-	-	-	-	-	-	-	-	-
100.0	40.0	-	-	9.9	-	-	-	-	-	-	-	-	-

TABLE 4. (cont.)

Merluccius productus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
100.0 45.0	-	-	9.6	-	-	-	-	-	-	-	-	-
100.0 50.0	-	-	17.7	-	-	-	-	-	-	-	-	-
100.0 55.0	-	-	165.0	-	-	-	-	-	-	-	-	-
100.0 60.0	-	-	62.4	-	-	-	-	-	-	-	-	-
103.3 60.0	-	-	34.7	-	-	-	-	-	-	-	-	-
110.0 35.0	-	-	10.0	-	-	-	-	-	-	-	-	-
110.0 50.0	-	-	9.9	-	-	-	-	-	-	-	-	-

Ophidion scrippsae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	-	0.0	-	-	0.0	-	-	9.3	-	-	0.0	-

***Caulophryne* spp.**

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

Oneirodidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 100.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
90.0 100.0	-	0.0	-	-	0.0	-	-	4.9	-	-	0.0	-

***Oneirodes* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 110.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.5	-

***Gigantactis* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 120.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.4	-

Cololabis saira

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 70.0	-	-	0.0	-	10.2	-	-	0.0	-	-	0.0	-

***Melamphaes* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 110.0	-	-	-	-	-	-	-	4.7	-	-	0.0	-
80.0 80.0	-	-	0.0	-	0.0	-	-	4.6	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	0.0	-	-	4.9	-

TABLE 4. (cont.)

***Melamphaes* spp.** (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 100.0	-	5.1	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 110.0	-	0.0	-	-	20.1	-	-	0.0	-	-	0.0	-
90.0 120.0	-	0.0	-	-	15.0	-	-	0.0	-	-	0.0	-
93.3 80.0	-	9.2	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 100.0	-	0.0	-	-	9.5	-	-	0.0	-	-	0.0	-
93.3 110.0	-	4.7	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 120.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.3	-

Melamphaes lugubris

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 80.0	-	-	5.4	-	21.5	-	-	0.0	-	-	0.0	-
90.0 35.0	-	0.0	-	-	0.0	-	-	12.8	-	-	0.0	-
90.0 70.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-
90.0 90.0	-	0.0	-	-	10.4	-	-	9.5	-	-	0.0	-
90.0 110.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-
93.3 40.0	-	0.0	-	-	0.0	-	-	8.8	-	-	0.0	-
93.3 110.0	-	0.0	-	-	0.0	-	-	4.9	-	-	0.0	-
93.3 120.0	-	0.0	-	-	5.2	-	-	4.7	-	-	0.0	-

Melamphaes simus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 110.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-

Poromitra crassiceps

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 120.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.2	-

Scopelogadus bispinosus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 110.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-
90.0 120.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.4	-
93.3 60.0	-	0.0	-	-	0.0	-	-	0.0	-	-	9.9	-

***Sebastes* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	324.6	-	0.0	-	-	42.8	-	-	0.0	-

TABLE 4. (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
						***Sebastes* spp.** (cont.)							
76.7	55.0	-	-	122.5	-	42.9	-	-	0.0	-	-	10.1	-
76.7	60.0	-	-	19.7	-	9.6	-	-	0.0	-	-	0.0	-
76.7	70.0	-	-	54.1	-	0.0	-	-	0.0	-	-	0.0	-
80.0	51.0	-	69.6	-	-	0.0	-	-	18.6	-	-	18.8	-
80.0	55.0	-	265.7	-	-	10.1	-	-	0.0	-	-	38.2	-
80.0	60.0	-	-	37.9	-	31.1	-	-	0.0	-	-	0.0	-
80.0	70.0	-	-	21.8	-	0.0	-	-	0.0	-	-	0.0	-
82.0	46.0	-	87.0	-	-	11.6	-	-	0.0	-	-	0.0	-
83.3	40.6	-	11.8	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3	42.0	-	166.9	-	-	50.6	-	-	11.1	-	-	9.2	-
83.3	51.0	-	97.9	-	-	56.0	-	-	0.0	-	-	11.5	-
83.3	55.0	-	57.9	-	-	0.0	-	-	0.0	-	-	-	-
83.3	70.0	-	38.0	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	33.0	-	85.8	-	-	0.0	-	-	10.1	-	-	0.0	-
86.7	35.0	-	130.0	-	-	0.0	-	-	37.2	-	-	5.4	-
86.7	40.0	-	247.6	-	-	86.0	-	-	0.0	-	-	0.0	-
86.7	45.0	-	263.2	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	50.0	-	289.5	-	-	359.1	-	-	0.0	-	-	4.6	-
86.7	60.0	-	28.3	-	-	11.0	-	-	0.0	-	-	0.0	-
90.0	30.0	-	10.9	-	-	0.0	-	-	11.4	-	-	0.0	-
90.0	35.0	-	31.9	-	-	10.2	-	-	0.0	-	-	21.1	-
90.0	37.0	-	32.8	-	-	0.0	-	-	0.0	-	-	-	-
90.0	45.0	-	165.3	-	-	0.0	-	-	8.6	-	-	-	-
90.0	53.0	-	128.6	-	-	183.9	-	-	5.0	-	-	0.0	-
90.0	60.0	-	39.3	-	-	9.9	-	-	0.0	-	-	0.0	-
90.6	36.0	-	-	-	-	-	-	-	-	-	-	5.2	-
93.3	26.7	-	144.4	-	-	9.1	-	-	14.5	-	-	14.6	-
93.3	29.0	-	85.6	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	30.0	-	108.3	-	-	0.0	-	-	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	35.0	-	170.6	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	40.0	-	19.4	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	45.0	-	25.7	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	50.0	-	-	-	-	53.2	-	-	0.0	-	-	10.4	-
93.3	70.0	-	0.0	-	-	0.0	-	-	9.6	-	-	0.0	-
96.7	29.0	-	-	8.2	-	-	-	-	-	-	-	-	-
96.7	30.0	-	-	50.0	-	-	-	-	-	-	-	-	-
96.7	32.0	-	-	15.0	-	-	-	-	-	-	-	-	-
96.7	55.0	-	-	86.3	-	-	-	-	-	-	-	-	-
100.0	29.2	-	-	23.2	-	-	-	-	-	-	-	-	-
103.3	29.0	-	-	53.5	-	-	-	-	-	-	-	-	-
103.3	30.0	-	-	94.8	-	-	-	-	-	-	-	-	-
103.3	35.0	-	-	9.0	-	-	-	-	-	-	-	-	-
106.7	31.0	-	-	6.4	-	-	-	-	-	-	-	-	-
106.7	32.0	-	-	53.7	-	-	-	-	-	-	-	-	-
106.7	35.0	-	-	5.2	-	-	-	-	-	-	-	-	-
110.0	32.5	-	-	60.8	-	-	-	-	-	-	-	-	-
110.0	35.0	-	-	59.9	-	-	-	-	-	-	-	-	-
110.0	40.0	-	-	4.9	-	-	-	-	-	-	-	-	-

Sebastes aurora

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
96.7	60.0	-	-	10.9	-	-	-	-	-	-	-	-	-

Sebastes jordani

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	40.6	-	7.9	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3	42.0	-	58.9	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3	51.0	-	8.9	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	33.0	-	8.6	-	-	0.0	-	-	0.0	-	-	0.0	-
100.0	30.0	-	-	103.0	-	-	-	-	-	-	-	-	-

TABLE 4. (cont.)

Sebastes paucispinis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	-	9.7	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3 42.0	-	9.8	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3 55.0	-	9.7	-	-	0.0	-	-	0.0	-	-	-	-
86.7 45.0	-	10.5	-	-	0.0	-	-	0.0	-	-	0.0	-

***Sebastolobus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 55.0	-	-	18.8	-	0.0	-	-	0.0	-	-	0.0	-
86.7 50.0	-	15.2	-	-	0.0	-	-	0.0	-	-	0.0	-

Oxylebius pictus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	-	4.6	-	-	0.0	-	-	0.0	-	-	9.4	-
80.0 60.0	-	-	9.5	-	0.0	-	-	0.0	-	-	0.0	-
83.3 42.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-
103.3 29.0	-	-	3.0	-	-	-	-	-	-	-	-	-

Zaniolepis frenata

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 51.0	-	0.0	-	-	11.2	-	-	0.0	-	-	0.0	-
86.7 33.0	-	25.7	-	-	0.0	-	-	0.0	-	-	0.0	-

Cottidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 50.0	-	15.2	-	-	9.7	-	-	0.0	-	-	0.0	-

***Artedius* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
96.7 30.0	-	-	9.1	-	-	-	-	-	-	-	-	-

Artedius harringtoni

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 33.0	-	0.0	-	-	21.8	-	-	0.0	-	-	0.0	-
86.7 50.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-

Icelinus quadriseriatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 33.0	-	0.0	-	-	0.0	-	-	10.1	-	-	0.0	-

TABLE 4. (cont.)

Icelinus quadriseriatus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
96.7 30.0	-	-	4.5	-	-	-	-	-	-	-	-	-

Paricelinus hopliticus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 50.0	-	22.9	-	-	0.0	-	-	0.0	-	-	0.0	-

Scorpaenichthys marmoratus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	-	0.0	-	-	0.0	-	-	0.0	-	-	9.4	-

Xeneretmus leiops

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

Perciformes

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 35.0	-	0.0	-	-	0.0	-	-	9.9	-	-	0.0	-

***Paralabrax* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	-	0.0	-	-	0.0	-	-	41.4	-	-	0.0	-
83.3 40.6	-	0.0	-	-	0.0	-	-	32.6	-	-	0.0	-
83.3 42.0	-	0.0	-	-	0.0	-	-	22.1	-	-	0.0	-
83.3 51.0	-	0.0	-	-	0.0	-	-	9.0	-	-	0.0	-
86.7 35.0	-	0.0	-	-	0.0	-	-	9.3	-	-	0.0	-
86.7 50.0	-	0.0	-	-	0.0	-	-	33.4	-	-	0.0	-

***Howella* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	-	-	-	-	-	-	-	9.7	-	-	0.0	-
76.7 120.0	-	-	-	-	-	-	-	40.3	-	-	0.0	-
80.0 90.0	-	-	5.0	-	0.0	-	-	0.0	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	10.2	-	-	0.0	-
90.0 110.0	-	0.0	-	-	0.0	-	-	5.0	-	-	0.0	-
93.3 100.0	-	0.0	-	-	0.0	-	-	4.7	-	-	0.0	-

TABLE 4. (cont.)

Trachurus symmetricus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 80.0	-	-	-	-	29.8	-	-	0.0	-	-	0.0	-
80.0 80.0	-	-	0.0	-	75.1	-	-	0.0	-	-	0.0	-
83.3 40.6	-	0.0	-	-	0.0	-	-	24.5	-	-	0.0	-
86.7 45.0	-	0.0	-	-	0.0	-	-	11.8	-	-	0.0	-
90.0 90.0	-	0.0	-	-	10.4	-	-	0.0	-	-	0.0	-
90.0 100.0	-	0.0	-	-	64.7	-	-	0.0	-	-	0.0	-
90.0 110.0	-	0.0	-	-	70.4	-	-	0.0	-	-	0.0	-
90.0 120.0	-	0.0	-	-	15.0	-	-	0.0	-	-	0.0	-
90.6 36.0	-	-	-	-	-	-	-	-	-	-	5.2	-
93.3 90.0	-	0.0	-	-	20.7	-	-	0.0	-	-	0.0	-
93.3 100.0	-	4.5	-	-	4.8	-	-	0.0	-	-	0.0	-
93.3 110.0	-	0.0	-	-	14.1	-	-	0.0	-	-	0.0	-
100.0 50.0	-	-	8.9	-	-	-	-	-	-	-	-	-
100.0 60.0	-	-	5.2	-	-	-	-	-	-	-	-	-
110.0 50.0	-	-	198.0	-	-	-	-	-	-	-	-	-

Cheilotrema saturnum

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 40.6	-	0.0	-	-	0.0	-	-	8.2	-	-	0.0	-

Genyonemus lineatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	-	134.6	-	-	0.0	-	-	0.0	-	-	103.4	-
80.0 70.0	-	-	10.9	-	0.0	-	-	0.0	-	-	0.0	-
82.0 46.0	-	58.0	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3 42.0	-	39.3	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3 51.0	-	8.9	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 33.0	-	712.1	-	-	0.0	-	-	0.0	-	-	42.2	-
86.7 35.0	-	10.8	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 40.0	-	0.0	-	-	10.7	-	-	0.0	-	-	0.0	-
86.7 60.0	-	18.8	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 28.0	-	0.0	-	-	0.0	-	-	0.0	-	-	39.2	-
103.3 29.0	-	-	3.0	-	-	-	-	-	-	-	-	-

TABLE 4. (cont.)

Seriphus politus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	-	0.0	-	-	0.0	-	-	20.7	-	-	0.0	-

Chromis punctipinnis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	-	0.0	-	-	0.0	-	-	20.7	-	-	0.0	-
83.3 40.6	-	0.0	-	-	0.0	-	-	57.1	-	-	0.0	-
83.3 42.0	-	0.0	-	-	0.0	-	-	66.4	-	-	0.0	-
86.7 45.0	-	0.0	-	-	0.0	-	-	23.6	-	-	0.0	-

Halichoeres semicinctus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	-	0.0	-	-	0.0	-	-	10.4	-	-	0.0	-
83.3 42.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-

Oxyjulis californica

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	-	0.0	-	-	0.0	-	-	20.7	-	-	0.0	-
83.3 40.6	-	0.0	-	-	0.0	-	-	57.1	-	-	0.0	-
83.3 42.0	-	0.0	-	-	0.0	-	-	88.5	-	-	0.0	-
83.3 51.0	-	8.9	-	-	0.0	-	-	4.5	-	-	0.0	-
83.3 55.0	-	0.0	-	-	0.0	-	-	8.8	-	-	-	-
83.3 60.0	-	0.0	-	-	0.0	-	-	10.3	-	-	0.0	-
86.7 50.0	-	0.0	-	-	0.0	-	-	78.0	-	-	0.0	-
90.0 53.0	-	0.0	-	-	0.0	-	-	5.0	-	-	0.0	-
90.0 60.0	-	0.0	-	-	0.0	-	-	9.9	-	-	0.0	-
93.3 35.0	-	0.0	-	-	0.0	-	-	19.7	-	-	0.0	-

Semicossyphus pulcher

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 40.6	-	0.0	-	-	0.0	-	-	24.5	-	-	0.0	-
83.3 42.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-

***Rathbunella* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 50.0	-	30.5	-	-	0.0	-	-	0.0	-	-	0.0	-
103.3 29.0	-	-	3.0	-	-	-	-	-	-	-	-	-

TABLE 4. (cont.)

Chiasmodon niger

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 120.0	-	-	-	-	-	-	-	0.0	-	-	5.1	-
90.0 110.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.3	-
90.0 120.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.4	-

***Hypsoblennius* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 42.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-
90.0 28.0	-	0.0	-	-	0.0	-	-	55.2	-	-	0.0	-

Hypsoblennius gentilis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	-	0.0	-	-	0.0	-	-	10.4	-	-	0.0	-
83.3 40.6	-	0.0	-	-	0.0	-	-	8.2	-	-	0.0	-
86.7 35.0	-	0.0	-	-	0.0	-	-	9.3	-	-	0.0	-
90.0 28.0	-	0.0	-	-	0.0	-	-	11.0	-	-	0.0	-

Hypsoblennius jenkinsi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	-	0.0	-	-	0.0	-	-	22.1	-	-	0.0	-
93.3 30.0	-	0.0	-	-	0.0	-	-	0.0	-	-	11.7	-

Coryphopterus nicholsii

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 40.6	-	3.9	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3 42.0	-	9.8	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 35.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.4	-
86.7 50.0	-	7.6	-	-	0.0	-	-	0.0	-	-	4.6	-
86.7 70.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.7	-

Lepidogobius lepidus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 33.0	-	0.0	-	-	0.0	-	-	0.0	-	-	117.3	-

***Lythrypnus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 53.0	-	0.0	-	-	0.0	-	-	5.0	-	-	0.0	-
110.0 32.5	-	-	8.7	-	-	-	-	-	-	-	-	-

TABLE 4. (cont.)

Lythrypnus dalli

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 42.0	-	0.0	-	-	0.0	-	-	77.4	-	-	0.0	-

Lythrypnus zebra

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	-	0.0	-	-	0.0	-	-	10.4	-	-	0.0	-

Typhlogobius californiensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	-	0.0	-	-	26.0	-	-	0.0	-	-	0.0	-

Sphyraena argentea

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 80.0	-	-	0.0	-	10.7	-	-	0.0	-	-	0.0	-
83.3 40.6	-	0.0	-	-	0.0	-	-	8.2	-	-	0.0	-

Diplospinus multistriatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 100.0	-	5.1	-	-	0.0	-	-	0.0	-	-	0.0	-

Scomber japonicus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 80.0	-	-	-	-	9.9	-	-	0.0	-	-	0.0	-
80.0 55.0	-	0.0	-	-	0.0	-	-	10.0	-	-	0.0	-
80.0 80.0	-	-	0.0	-	128.8	-	-	0.0	-	-	0.0	-
82.0 46.0	-	0.0	-	-	0.0	-	-	20.7	-	-	0.0	-
83.3 40.6	-	0.0	-	-	0.0	-	-	40.8	-	-	0.0	-
83.3 42.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-
86.7 40.0	-	0.0	-	-	0.0	-	-	9.2	-	-	0.0	-
86.7 55.0	-	-	-	-	12.2	-	-	-	-	-	0.0	-
86.7 60.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-
90.0 28.0	-	0.0	-	-	0.0	-	-	11.0	-	-	0.0	-
90.0 53.0	-	0.0	-	-	0.0	-	-	5.0	-	-	0.0	-
90.0 100.0	-	0.0	-	-	19.9	-	-	0.0	-	-	0.0	-
90.0 110.0	-	0.0	-	-	5.0	-	-	0.0	-	-	0.0	-
93.3 26.7	-	0.0	-	-	0.0	-	-	4.8	-	-	0.0	-

TABLE 4. (cont.)

Scomber japonicus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 40.0	-	0.0	-	-	0.0	-	-	8.8	-	-	0.0	-
93.3 55.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.4	-
93.3 70.0	-	0.0	-	-	0.0	-	-	9.6	-	-	0.0	-

Icichthys lockingtoni

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 70.0	-	-	9.0	-	0.0	-	-	0.0	-	-	0.0	-
80.0 55.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-

Tetragonurus cuvieri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 80.0	-	-	-	-	0.0	-	-	0.0	-	-	9.6	-
80.0 100.0	-	-	-	-	-	-	-	0.0	-	-	4.6	-
80.0 110.0	-	-	-	-	-	-	-	0.0	-	-	13.0	-
90.0 120.0	-	0.0	-	-	0.0	-	-	5.1	-	-	0.0	-
93.3 55.0	-	0.0	-	-	0.0	-	-	11.2	-	-	0.0	-
93.3 70.0	-	0.0	-	-	0.0	-	-	19.1	-	-	0.0	-
93.3 80.0	-	0.0	-	-	0.0	-	-	9.4	-	-	0.0	-

***Citharichthys* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	-	9.7	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3 40.6	-	0.0	-	-	9.3	-	-	0.0	-	-	0.0	-
83.3 42.0	-	0.0	-	-	10.1	-	-	0.0	-	-	0.0	-
86.7 45.0	-	21.1	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 60.0	-	9.4	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 70.0	-	8.1	-	-	0.0	-	-	0.0	-	-	0.0	-
90.6 36.0	-	-	-	-	-	-	-	-	-	-	5.2	-
93.3 26.7	-	0.0	-	-	0.0	-	-	0.0	-	-	9.7	-
93.3 29.0	-	9.5	-	-	0.0	-	-	0.0	-	-	20.9	-

Citharichthys sordidus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 55.0	-	-	18.8	-	0.0	-	-	0.0	-	-	5.0	-

TABLE 4. (cont.)

Citharichthys sordidus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	60.0	-	-	9.9	-	0.0	-	-	9.3	-	-	0.0	-
76.7	80.0	-	-	-	-	0.0	-	-	18.9	-	-	0.0	-
80.0	51.0	-	0.0	-	-	0.0	-	-	18.6	-	-	0.0	-
80.0	55.0	-	0.0	-	-	0.0	-	-	10.0	-	-	9.5	-
80.0	60.0	-	-	9.5	-	0.0	-	-	0.0	-	-	0.0	-
82.0	46.0	-	0.0	-	-	0.0	-	-	31.1	-	-	0.0	-
83.3	40.6	-	0.0	-	-	0.0	-	-	40.8	-	-	0.0	-
83.3	42.0	-	49.1	-	-	20.2	-	-	22.1	-	-	0.0	-
90.0	37.0	-	4.7	-	-	0.0	-	-	0.0	-	-	-	-
93.3	29.0	-	9.5	-	-	0.0	-	-	0.0	-	-	0.0	-
96.7	60.0	-	-	10.9	-	-	-	-	-	-	-	-	-

Citharichthys stigmaeus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	51.0	-	-	0.0	-	0.0	-	-	10.7	-	-	0.0	-
76.7	55.0	-	-	0.0	-	0.0	-	-	0.0	-	-	5.0	-
76.7	60.0	-	-	0.0	-	0.0	-	-	9.3	-	-	0.0	-
76.7	70.0	-	-	0.0	-	10.5	-	-	21.0	-	-	0.0	-
76.7	80.0	-	-	-	-	9.9	-	-	18.9	-	-	0.0	-
76.7	90.0	-	-	-	-	-	-	-	0.0	-	-	8.3	-
80.0	51.0	-	13.9	-	-	0.0	-	-	0.0	-	-	0.0	-
80.0	60.0	-	-	0.0	-	0.0	-	-	8.7	-	-	9.8	-
80.0	70.0	-	-	0.0	-	0.0	-	-	10.0	-	-	0.0	-
82.0	46.0	-	9.7	-	-	0.0	-	-	10.4	-	-	0.0	-
83.3	40.6	-	0.0	-	-	0.0	-	-	8.2	-	-	0.0	-
83.3	42.0	-	0.0	-	-	0.0	-	-	0.0	-	-	4.6	-
83.3	51.0	-	8.9	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3	70.0	-	0.0	-	-	0.0	-	-	0.0	-	-	48.1	-
86.7	33.0	-	17.2	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	35.0	-	21.7	-	-	0.0	-	-	0.0	-	-	32.5	-
86.7	40.0	-	0.0	-	-	0.0	-	-	9.2	-	-	0.0	-

TABLE 4. (cont.)

Citharichthys stigmaeus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 45.0	-	10.5	-	-	0.0	-	-	11.8	-	-	11.1	-
86.7 55.0	-	-	-	-	0.0	-	-	-	-	-	22.4	-
86.7 60.0	-	0.0	-	-	0.0	-	-	44.2	-	-	10.2	-
90.0 30.0	-	0.0	-	-	0.0	-	-	11.4	-	-	0.0	-
90.0 35.0	-	0.0	-	-	0.0	-	-	0.0	-	-	31.7	-
90.6 36.0	-	-	-	-	-	-	-	-	-	-	10.4	-
93.3 26.7	-	0.0	-	-	0.0	-	-	0.0	-	-	63.3	-
93.3 35.0	-	0.0	-	-	0.0	-	-	0.0	-	-	10.2	-
93.3 40.0	-	0.0	-	-	0.0	-	-	0.0	-	-	11.5	-
93.3 45.0	-	0.0	-	-	0.0	-	-	0.0	-	-	11.0	-
93.3 50.0	-	-	-	-	10.6	-	-	0.0	-	-	0.0	-
93.3 60.0	-	0.0	-	-	0.0	-	-	34.9	-	-	0.0	-

Citharichthys xanthostigma

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 42.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-

Hippoglossina stomata

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	-	0.0	-	-	0.0	-	-	18.6	-	-	0.0	-
80.0 55.0	-	10.2	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 28.0	-	0.0	-	-	0.0	-	-	11.0	-	-	0.0	-

Paralichthys californicus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	-	4.6	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3 40.6	-	0.0	-	-	0.0	-	-	32.6	-	-	0.0	-
86.7 33.0	-	8.6	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 40.0	-	0.0	-	-	0.0	-	-	9.2	-	-	0.0	-

Pleuronectidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	-	29.0	-	-	0.0	-	-	0.0	-	-	0.0	-

Lepidopsetta bilineata

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

TABLE 4. (cont.)

Lyopsetta exilis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	51.0	-	-	36.1	-	0.0	-	-	0.0	-	-	0.0	-
76.7	55.0	-	-	9.4	-	0.0	-	-	0.0	-	-	0.0	-
80.0	51.0	-	4.6	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3	42.0	-	29.5	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3	51.0	-	8.9	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	35.0	-	21.7	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7	45.0	-	21.1	-	-	0.0	-	-	0.0	-	-	0.0	-

Microstomus pacificus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	51.0	-	4.6	-	-	0.0	-	-	0.0	-	-	0.0	-
80.0	70.0	-	-	0.0	-	20.3	-	-	0.0	-	-	0.0	-
83.3	55.0	-	9.7	-	-	0.0	-	-	0.0	-	-	-	-

Parophrys vetulus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	55.0	-	10.2	-	-	0.0	-	-	0.0	-	-	0.0	-
80.0	60.0	-	-	9.5	-	0.0	-	-	0.0	-	-	0.0	-
82.0	46.0	-	19.3	-	-	0.0	-	-	0.0	-	-	0.0	-
83.3	40.6	-	0.0	-	-	18.7	-	-	0.0	-	-	0.0	-

Pleuronichthys coenosus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	40.6	-	0.0	-	-	0.0	-	-	8.2	-	-	0.0	-

Pleuronichthys verticalis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	40.6	-	3.9	-	-	56.0	-	-	0.0	-	-	0.0	-
86.7	33.0	-	42.9	-	-	10.9	-	-	10.1	-	-	4.7	-
90.0	28.0	-	0.0	-	-	0.0	-	-	0.0	-	-	4.4	-
103.3	29.0	-	-	3.0	-	-	-	-	-	-	-	-	-

Symphurus atricaudus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	53.0	-	0.0	-	-	0.0	-	-	0.0	-	-	11.5	-

TABLE 4. (cont.)

Disintegrated fish larvae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 55.0	-	-	0.0	-	10.7	-	-	0.0	-	-	0.0	-
76.7 70.0	-	-	0.0	-	0.0	-	-	10.5	-	-	0.0	-
76.7 90.0	-	-	-	-	-	-	-	4.9	-	-	0.0	-
76.7 110.0	-	-	-	-	-	-	-	0.0	-	-	4.0	-
76.7 120.0	-	-	-	-	-	-	-	10.1	-	-	0.0	-
80.0 51.0	-	0.0	-	-	0.0	-	-	0.0	-	-	4.7	-
80.0 55.0	-	0.0	-	-	0.0	-	-	0.0	-	-	9.5	-
80.0 80.0	-	-	0.0	-	21.5	-	-	0.0	-	-	0.0	-
80.0 90.0	-	-	0.0	-	5.2	-	-	10.1	-	-	0.0	-
80.0 110.0	-	-	-	-	-	-	-	5.0	-	-	0.0	-
82.0 46.0	-	9.7	-	-	0.0	-	-	10.4	-	-	0.0	-
83.3 42.0	-	0.0	-	-	0.0	-	-	33.2	-	-	0.0	-
83.3 51.0	-	0.0	-	-	0.0	-	-	0.0	-	-	3.8	-
83.3 70.0	-	0.0	-	-	0.0	-	-	0.0	-	-	12.0	-
86.7 50.0	-	0.0	-	-	0.0	-	-	11.1	-	-	0.0	-
86.7 60.0	-	0.0	-	-	0.0	-	-	11.1	-	-	10.2	-
90.0 100.0	-	0.0	-	-	0.0	-	-	24.4	-	-	0.0	-
90.0 110.0	-	9.2	-	-	15.1	-	-	0.0	-	-	0.0	-
90.0 120.0	-	0.0	-	-	20.0	-	-	0.0	-	-	0.0	-
93.3 30.0	-	39.4	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 110.0	-	19.0	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3 120.0	-	13.8	-	-	0.0	-	-	0.0	-	-	5.2	-

Unidentified fish larvae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	-	4.6	-	-	0.0	-	-	0.0	-	-	0.0	-
80.0 120.0	-	-	-	-	-	-	-	15.2	-	-	0.0	-
86.7 33.0	-	42.9	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 35.0	-	21.7	-	-	0.0	-	-	0.0	-	-	0.0	-
86.7 40.0	-	18.3	-	-	0.0	-	-	0.0	-	-	0.0	-
90.0 30.0	-	10.9	-	-	0.0	-	-	0.0	-	-	0.0	-

TABLE 4. (cont.)

Station		Unidentified fish larvae (cont.)										
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	90.0	-	0.0	-	-	10.4	-	-	0.0	-	-	0.0	-
90.0	100.0	-	5.1	-	-	10.0	-	-	0.0	-	-	0.0	-
90.0	120.0	-	0.0	-	-	10.0	-	-	0.0	-	-	10.8	-
93.3	100.0	-	8.9	-	-	0.0	-	-	0.0	-	-	0.0	-
93.3	110.0	-	0.0	-	-	0.0	-	-	0.0	-	-	5.5	-
93.3	120.0	-	0.0	-	-	5.2	-	-	0.0	-	-	0.0	-

PHYLOGENETIC INDEX TO TABLE 4

ALPHABETICAL INDEX TO TABLE 4

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