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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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ABSTRACT

This report provides ichthyoplankton data and associated station and tow data for Manta (surface) tows taken on California Cooperative Oceanic Fisheries Investigations (CalCOFI) cruises in 1984. It is the third report in a series that presents surface tow data for all biological-oceanographic CalCOFI surveys from 1977 to the present. A total of 951 net tow stations was occupied during eight monthly multi-vessel cruises over the survey area which extended from Pt. Reyes, California to Bahia Rosario, Baja California, Mexico, and seaward to several hundred miles. A total of 826 Manta net tows was taken during 1984. The data for stations on which Manta tows were taken 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 filtered are listed in the first table. Another table lists, by station and month, standardized counts of each of the 115 larval fish categories identified from Manta tows taken on the surveys. 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 third in a series of surface tow data reports, provides ichthyoplankton and associated station and Manta net tow data from California Cooperative Oceanic Fisheries Investigations (CalCOFI) joint biological-oceanographic survey cruises conducted in 1984. 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 (SWFSC) 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 in oblique net tows and hydrographic data associated with the tows 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; Moser et al. 1993, 1994, and 2001a for summaries of historical CalCOFI sampling effort). Neuston[1] sampling with the Manta net (Figure 1) was initiated in 1977-78. Station and ichthyoplankton data for oblique tows taken on the 1984 CalCOFI survey are published in Stevens et al. (1990). Ahlstrom and Stevens (1976), Gruber et al. (1982) and Doyle (1992a, b) provided initial information on the distribution and abundance of surface ichthyoplankton in the northeastern Pacific.

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[1]Usage of the term "neuston" for surface-living marine organisms is controversial because it was applied originally to organisms associated with the surface film in freshwater habitats (Naumann 1917). Banse (1975) reviewed in detail the evolution of the usage of this term, a related term, "pleuston", and the various subdivisions of each. Neuston is now used by most workers in referring to the uppermost (upper ~10–20 cm) layer of the sea and to the assemblage of organisms that lives in that zone, either permanently or facultatively (Zaitsev 1970; Hempel and Weikert 1972; Peres 1982; Doyle 1992b). We accept this definition and use it interchangeably with the more general term "surface" (e.g., surface waters, surface zone, surface tow, surface assemblage).

Hydrographic and biological data from the 1984 CalCOFI survey were published by Scripps Institution of Oceanography (Univ. of Calif., SIO 1984a–d , 1985). All available records for Manta tows on the 1984 CalCOFI survey were verified and edited to produce this data report. The CalCOFI ichthyoplankton data reports make 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
1977-78	Moser et al. 2001b
1980-81	Ambrose et al. 2002

SAMPLING AREA AND PATTERN

The 1984 CalCOFI survey consisted of eight cruises which occupied stations during portions of all months from January to July and during October. A total of 826 Manta net tows was taken on 951 CalCOFI net tow stations occupied on the survey (Table 1; Figures 2–10). Two vessels were employed on the survey, the NOAA vessel RV *David Starr Jordan* and the SIO vessel RV *New Horizon*. Dates and numbers of stations sampled with the Manta net in 1984 (Figures 3–10) are summarized below:

8401, RV *David Starr Jordan*, 77 stations, 5–25 January and
RV *New Horizon,* 75 stations, 4–23 January;

8402, RV *New Horizon*, 69 stations, 9 February–3 March;

8403, RV *David Starr Jordan*, 101 stations, 9 February–22 March;

8404, RV *David Starr Jordan*, 34 stations, 10–30 April and
RV *New Horizon*, 62 stations, 9–29 April;

8405, RV *David Starr Jordan*, 68 stations, 17 May–1 June;

8406, RV *New Horizon*, 81 stations, 5–23 June;

8407, RV *David Starr Jordan*, 64 stations, 11–29 July and
RV *New Horizon*, 85 stations, 5–24 July;

8410, RV *David Starr Jordan*, 64 stations, 3–23 October and
RV *New Horizon*, 46 stations, 18 October–5 November.

In 1984, cruises 8401, 8402, 8403, 8404, 8407, and 8410 covered the CalCOFI survey area from line 60.0, off Point Reyes, California, to line 110.0, off Bahia Rosario, Baja California, Mexico. Cruise 8405 surveyed the northern part of this pattern (lines 60.0 to 87.0) and Cruise 8406 covered the southern section (lines 90.0 to 110.0). On most of the cruises, coverage extended seaward to station 100.0, approximately 200–300 n. mi. offshore. Cruises 8402 and 8403, in combination, covered the inshore and offshore portions of the pattern; the inner part of the pattern (seaward to station 60.0) was covered on Cruise 8403 and Cruise 8402 occupied stations seaward of station 60.0 on most of the survey lines. On Cruise 8404 coverage of lines 60.0 through 73.3 extended only to station 70.0 (approximately 80–180 n. mi. offshore) and on Cruise 8410

coverage of lines 63.3 through 76.7 ended with station 80 (approximately 120–220 n. mi. offshore) (Figures 2–10, Table 1).

SAMPLING GEAR AND METHODS

Plankton tows were made with a modified version of the Manta net originally designed by Brown and Cheng (1981). It consists of a rectangular mouth 15.5 cm deep and 86 cm wide attached to a frame that supports square lateral extensions covered with plywood and urethane foam (Figure 1). These extensions stabilize the net when it is towed and keep the top of the net at the sea surface. The net material is constructed of 0.505 mm nylon mesh. The towing bridle is asymmetrical with one side longer than the other; when the net is towed this bridle arrangement forces the mouth away from the ship at a slight angle. A General Oceanics flowmeter was suspended across the center of the net mouth to measure the amount of water filtered during each tow. At each Manta tow station the tow line from the bridle was attached to the hydrographic wire and then lowered to slightly below the surface of the water before the net was deployed. The net was towed at a ship speed of 1.0–2.0 knots. Samples were preserved in 5% buffered formalin and returned to the plankton sorting laboratory at the SWFSC at the end of the cruise.

LABORATORY PROCEDURES

The ichthyoplankton was removed from the invertebrate portion of each sample and bottled separately in 3% buffered formalin. In addition to fish eggs and larvae, some samples contained surface-living juvenile, and occasionally adult, stages of fishes; these were removed and bottled separately in 3% formalin. The volume of water filtered by each net was computed from the flowmeter readings. A "standard haul factor" is used for oblique CalCOFI net tows to calculate the total number of ichthyoplankters of a taxon per unit surface area (Kramer et al 1972; Smith and Richardson 1977; Moser et al. 1993). A requirement for this is the entire depth distribution of the taxon must be encompassed during the tow. The Manta net samples only the upper ~15.5 cm of the water column and most, if not all, ichthyoplankton taxa that inhabit the surface zone have a vertical range > 15.5 cm. Even taxa associated with the immediate surface layer may range deeper than 15.5 cm as a result of diel migratory patterns or vertical mixing (Hempel and Weikert 1972; Doyle 1992b). Calculation of total numbers of eggs or larvae per unit surface area from Manta net samples awaits accurate information on the fine-scale vertical distribution of these organisms in the upper region of the water column. Even if there are few species whose larvae are restricted to the upper 15.5 cm of the water column, the time series of Manta samples provides a useful index of relative abundance for species whose larvae appear in these samples. In this report we express quantities of eggs or larvae in each sample as unadjusted counts or as numbers of eggs or larvae per unit volume of water filtered by the net.

IDENTIFICATION

Constituent taxa in the samples were identified by the following ichthyoplankton experts: D. A. Ambrose, E. M. Sandknop, and E. G. Stevens. Early ontogenetic stages of fishes are difficult to identify; most identifications were based on descriptions of ontogenetic series of fishes in published identification guides to early stages of fishes in the northeastern Pacific (Matarese et al. 1989; Moser 1996). Larval specimens that could not be identified with these guides were identified 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 (Miller and Lea 1972; Eschmeyer et al. 1983; Powles and Markle 1984). Except for damaged specimens, most of the larvae and juvenile/adults taken in the surface tows could be identified to species. A total of 115 larval fish categories (including the unidentified and disintegrated categories) was identified: 94 to species, 12 to genus, 4 to family, 1 to suborder, and 2 to order.

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.

Diaphus spp.–*Diaphus theta* is the dominant *Diaphus* species in the survey area; the generic category is used because a small proportion of the *Diaphus* larvae captured at the seaward and the southern margin of the survey pattern may represent other species whose larvae are identical to those of *D. theta* (see Berry and Perkins 1966, Wisner 1976, and Butler et al. 1997 for distributional information on *Diaphus* species in the CalCOFI region).

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.

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

Lyopsetta exilis–Sakamoto (1984) changed pleuronectid generic designations for some of the species in the CalCOFI area, including *Lyopsetta exilis*, which was transferred into *Eopsetta* and *Parophrys vetulus*, which was transferred into *Pleuronectes*; 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).

Parophrys vetulus–see comment for *Lyopsetta exilis*.

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, northern anchovy (*Engraulis mordax*) ranked first in abundance with 59.9% of the total fish larvae and second in occurrence with larvae collected in 14.7% of the total samples (Tables 2 and 3). They were more than six and one-half times as abundant as the second most abundant species, Pacific saury (*Cololabis saira*), which had 8.9% of the total larvae and ranked first in

occurrence (19.0% of the total samples). The rockfish genus *Sebastes* was the third most abundant taxon with 5.9% of the total larvae and ranked third in frequency of occurrence (6.8% of the samples). Cabezon (*Scorpaenichthys marmoratus*) ranked fourth in abundance (5.0% of total larvae) and fourth in total occurrences (4.4% of the samples). Mussel blenny (*Hypsoblennius jenkinsi*) ranked fifth in abundance (3.1% of total larvae) and fifth in total occurrences (3.8% of the samples). The next five most abundant taxa were Pacific sardine *Sardinops sagax* (2.3% of total larvae), jacksmelt *Atherinopsis californiensis* (1.9%), Pacific mackerel *Scomber japonicus* (1.6%), splitnose rockfish *Sebastes diploproa* (1.5%), and shortbelly rockfish *Sebastes jordani* (1.3%). These species ranked tied for 15th with two other taxa, 10th, 8th, 9th, and tied for 23rd in frequency of occurrence, respectively. The 10 most abundant taxa comprised 91.5% of all the larvae collected in Manta net tows on CalCOFI cruises in 1984. The remaining 8.5% was distributed among 105 other taxa. Of the ten most abundant taxa, half were coastal demersal species, four were coastal pelagic taxa, and one was epipelagic.

In comparison with the surface collections, among the 135 taxa collected in the oblique tows during the 1984 survey, northern anchovy also was the most abundant (41.4% of the larvae) and was two and one-half times more abundant than the second-ranked Panama lightfish, which accounted for 16.5% of the total (Stevens et al. 1990). Among the ten most abundant taxa in the oblique tows in 1984, only two (northern anchovy and *Sebastes* spp.) also were among the ten most abundant in the Manta tows. Several highly ranked taxa from the Manta tows in 1984 (mussel blenny, jacksmelt, and splitnose rockfish) were not distinguishable when the 1984 oblique collections were identified; these collections would have to be reexamined to determine whether they were included among taxa identified to genus or family.

EXPLANATION OF TABLES

Table 1. This table lists for each tow the pertinent station and tow data, the volume of water filtered, and the total number of fish eggs and larvae for ichthyoplankton stations occupied during the 1984 CalCOFI survey. Cruises are designated by a six character alphanumeric code; the first two digits indicate the year and the second two the month, followed by the ship code, JD (*David Starr Jordan*) or NH (*New Horizon*). 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 3–10). 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. The values for total fish eggs and larvae are raw counts (unadjusted for volume of water filtered). 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.

Table 2. Pooled occurrences of all larval fish taxa taken in Manta nets on the RV *David Starr Jordan* and the RV *New Horizon* during the 1984 CalCOFI survey. Taxa are listed in rank order.

Table 3. Pooled counts (unadjusted for volume of water filtered) of all larval fish taxa taken in Manta net tows on the the RV *David Starr Jordan* and the RV *New Horizon* during the 1984 CalCOFI survey. Taxa are listed in rank order.

Table 4. Numbers of fish larvae for each taxon taken in Manta net tows on the RV *David Starr Jordan* and the RV *New Horizon* during the 1984 CalCOFI survey. Numbers of larvae are listed as number per 100 m^3 of water filtered. Orders and families are listed in phylogenetic sequence (Eschmeyer 1998); other taxa are listed alphabetically.

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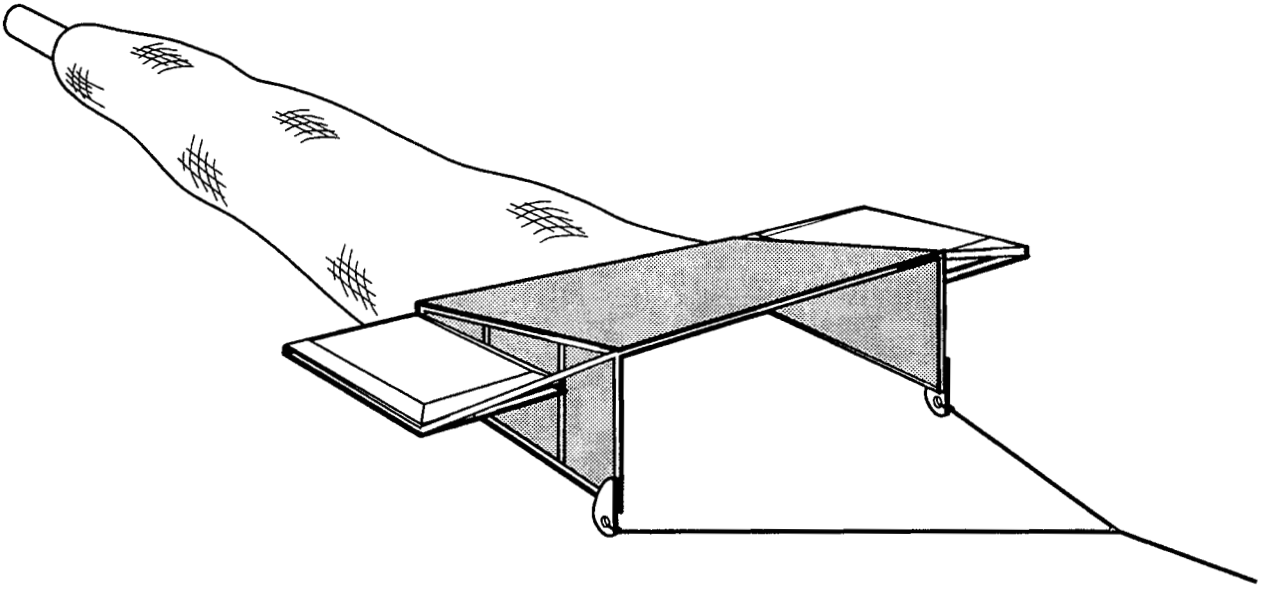

Figure 1. Diagram of the Manta net used on CalCOFI surveys.

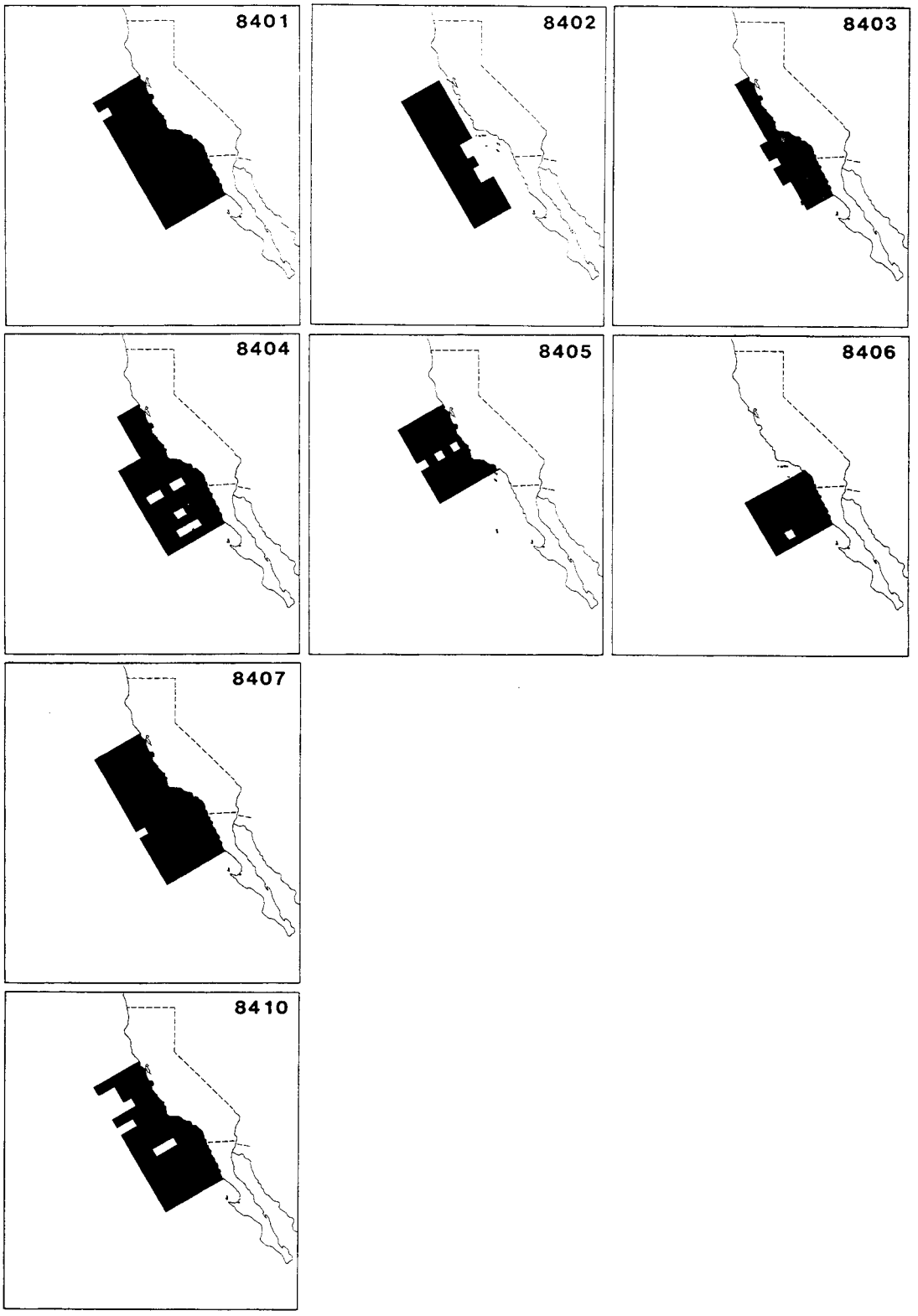

Figure 2. Composite arrangement of diagrammatic charts showing areas sampled on each CalCOFI cruise during 1984.

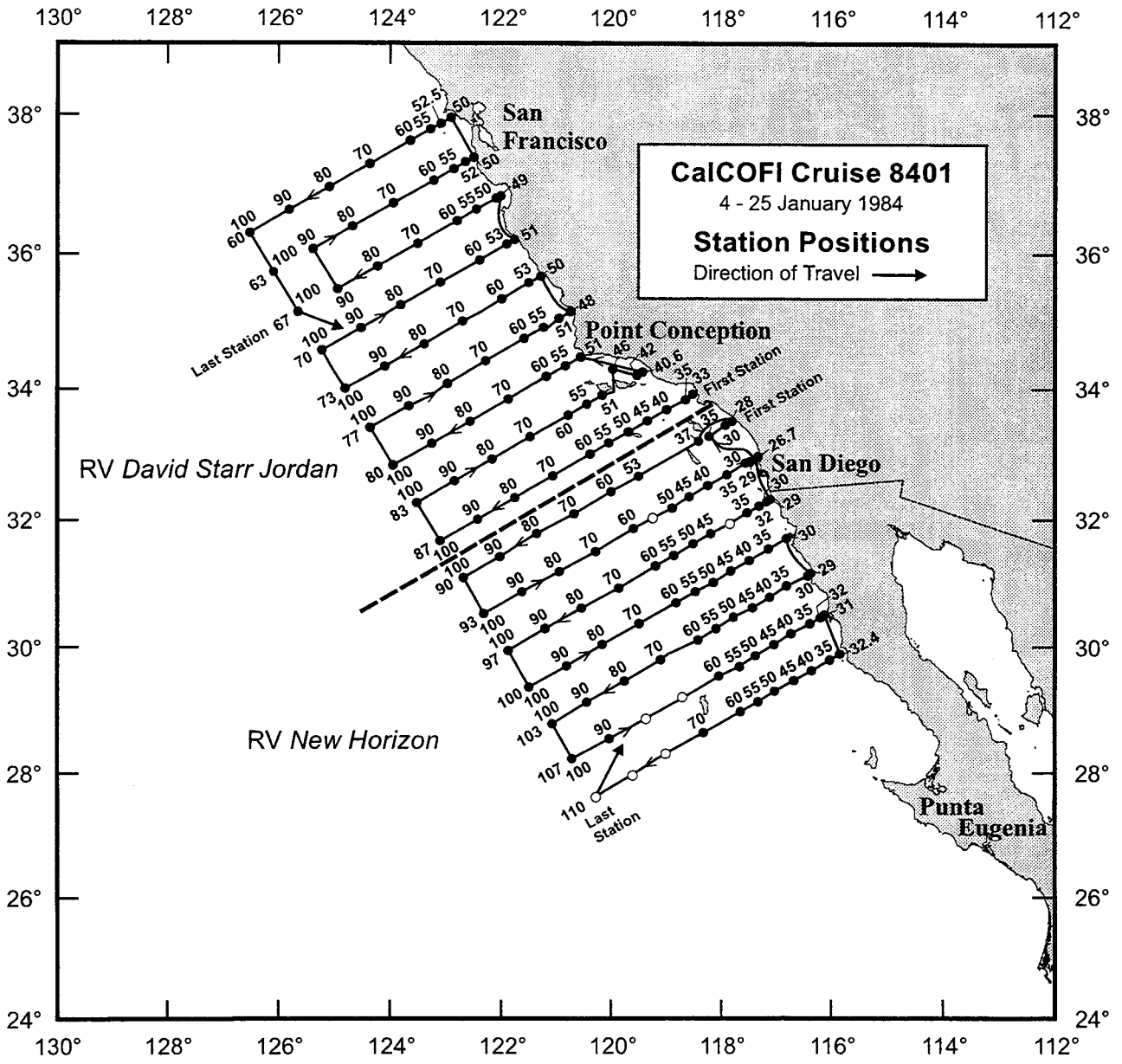

Figure 3. Stations and cruise tracks for CalCOFI Cruise 8401. Dots indicate stations where Manta and oblique tows were taken; open circles indicate stations where only oblique tows were taken. A single Manta tow without an accompanying oblique tow was taken at station 63.3 100.0 and at station 66.7 50.0. Stations 80.0 60.0, 80.0 70.0, and 83.3 100.0 were sampled twice.

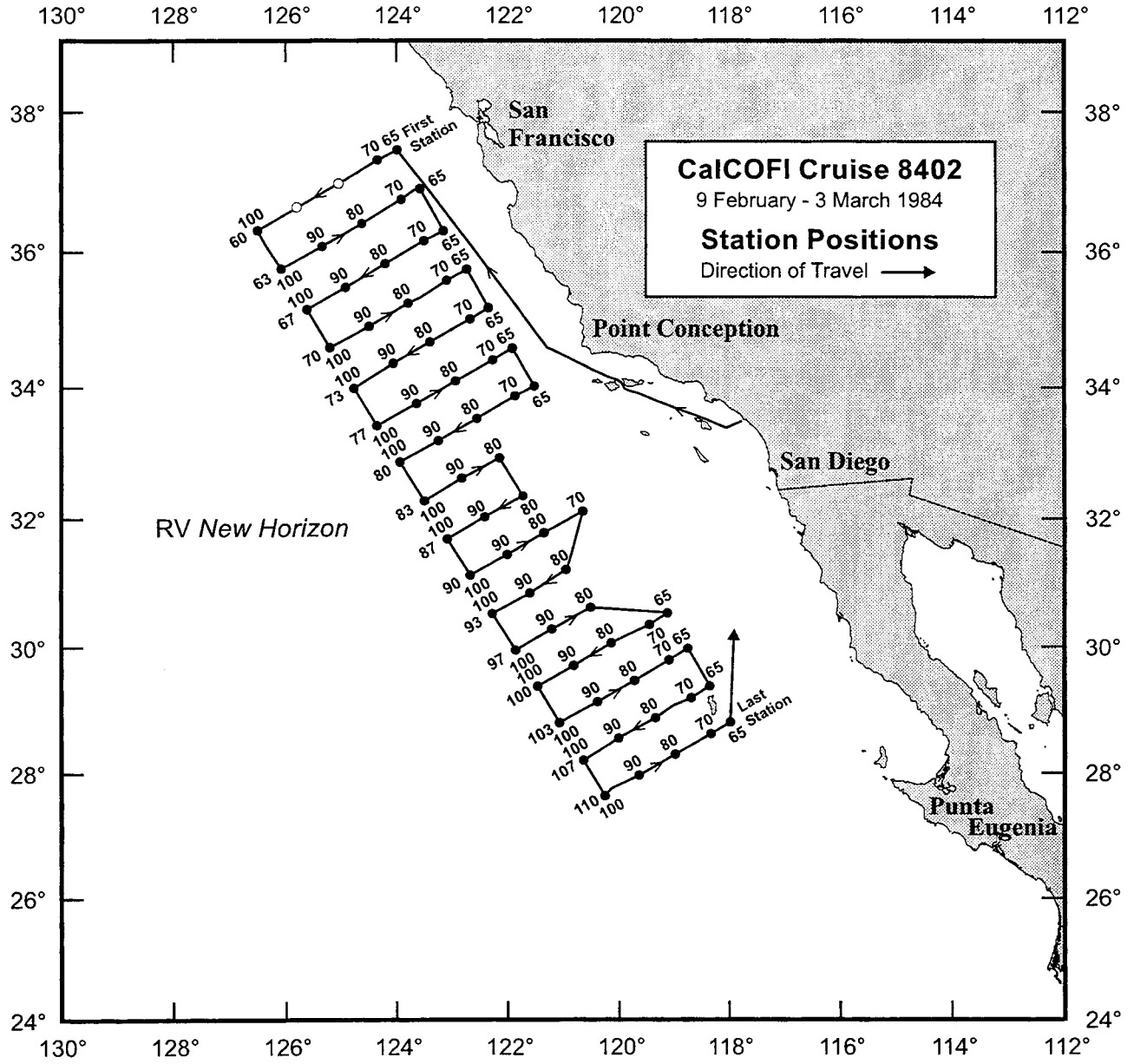

Figure 4. Stations and cruise tracks for CalCOFI Cruise 8402. Symbols as in Figure 3.

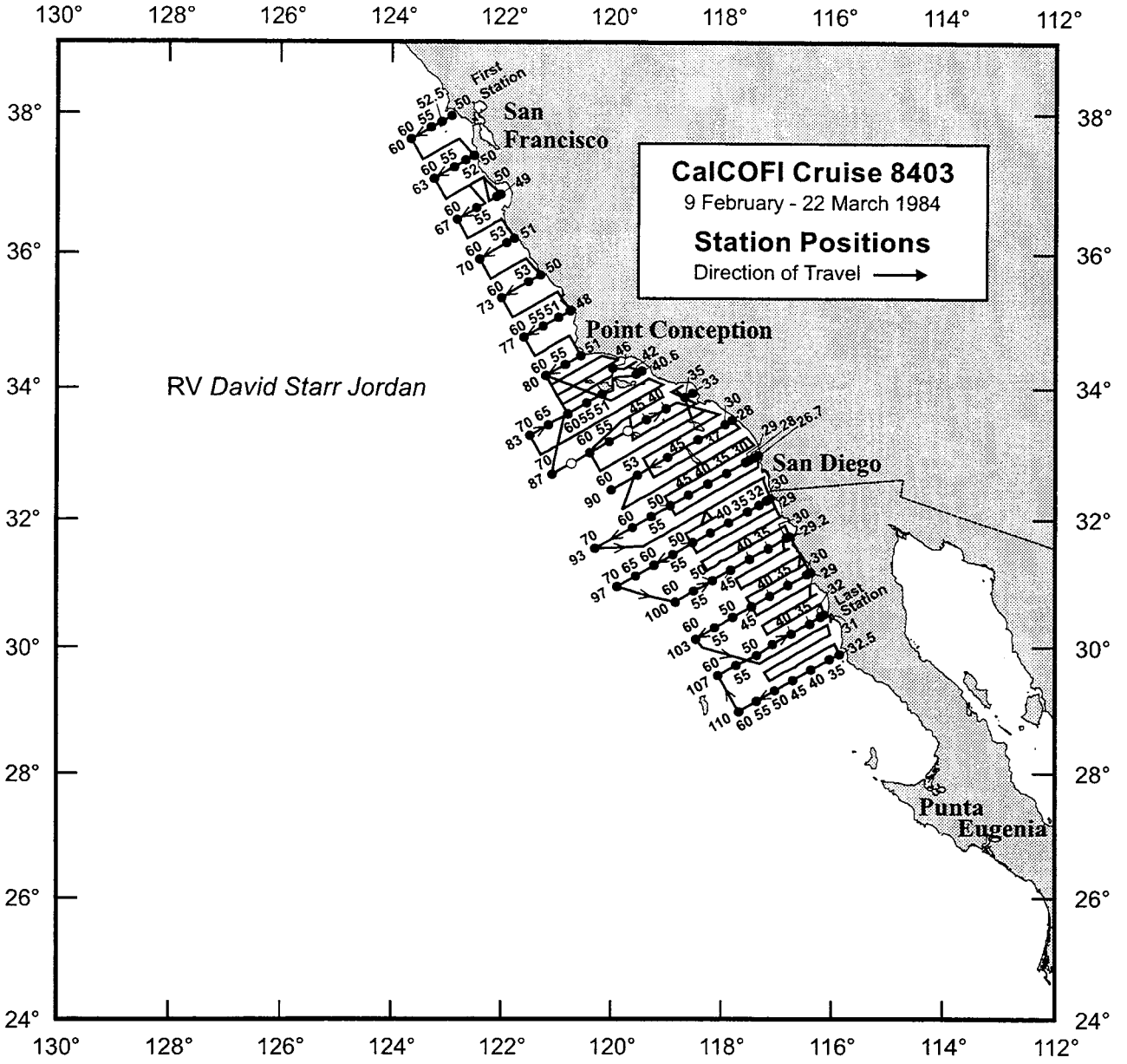

Figure 5. Stations and cruise tracks for CalCOFI Cruise 8403. Symbols as in Figure 3. Stations 90.0 45.0, and 93.3 40.0 were sampled twice. Manta tows were taken on base CalCOFI lines only; Manta tows were not taken on intermediate cruise track lines.

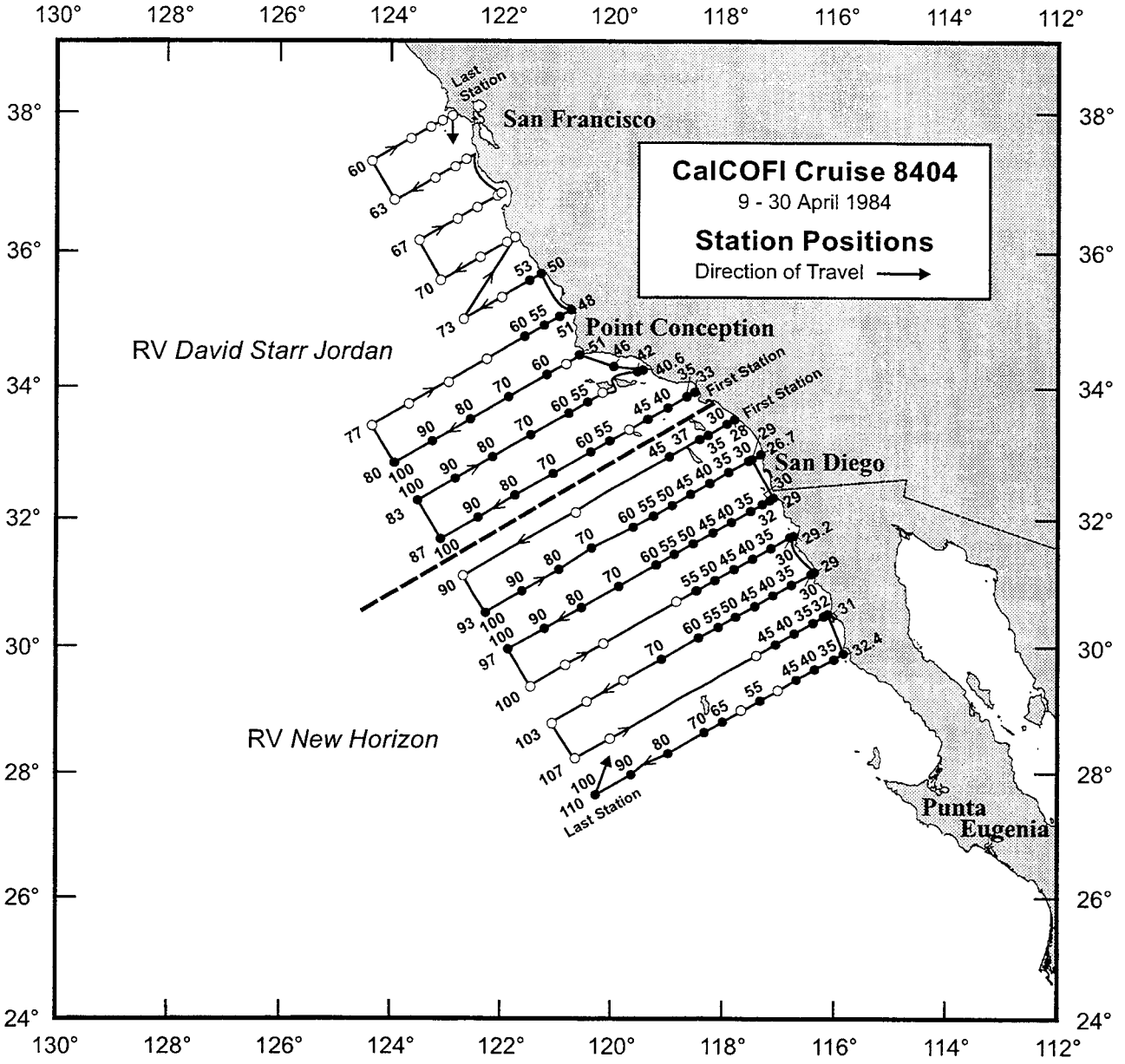

Figure 6. Stations and cruise tracks for CalCOFI Cruise 8404. Symbols as in Figure 3. Stations 80.0 60.0, 80.0 70.0, and 83.3 100.0 were sampled twice.

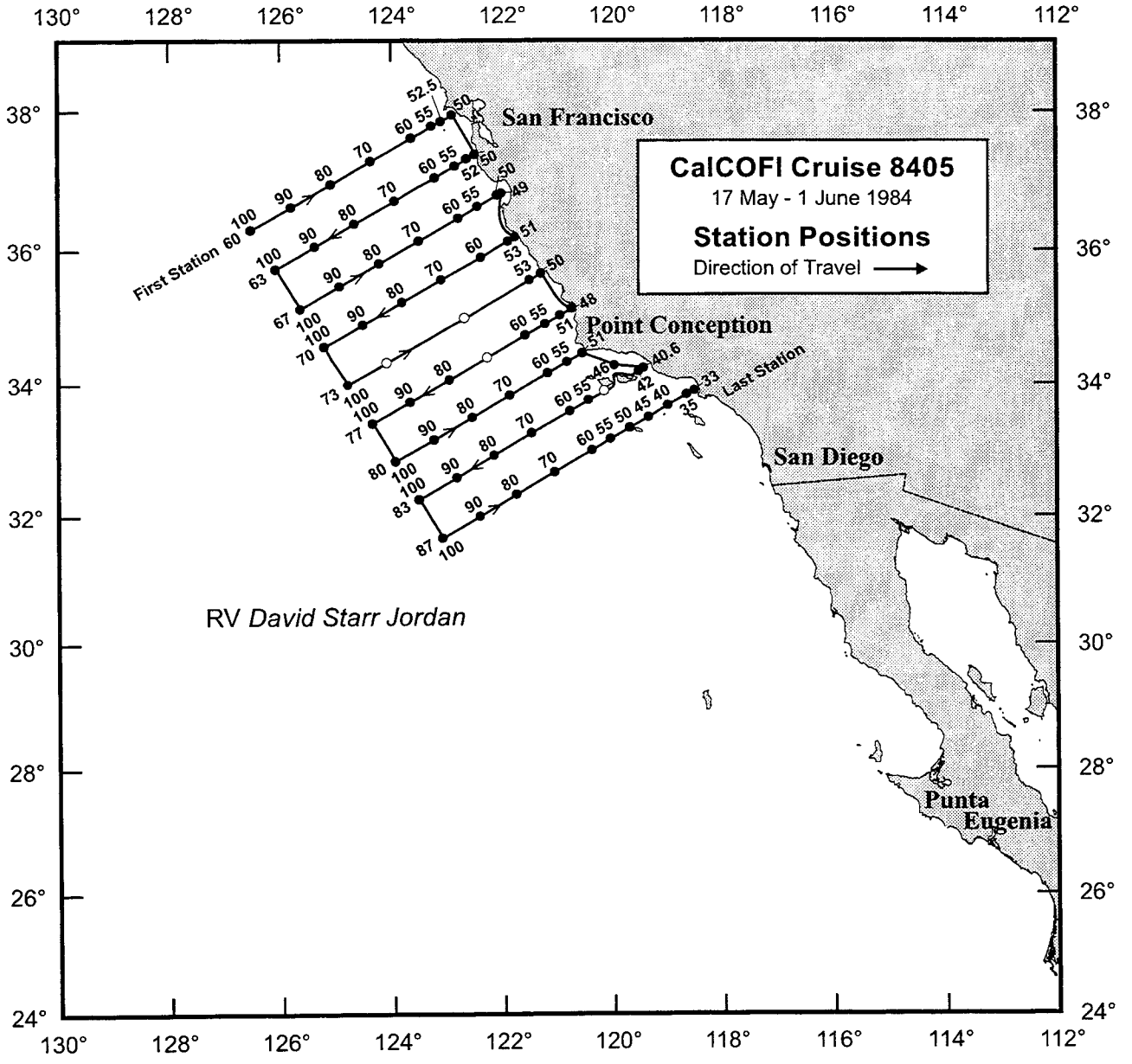

Figure 7. Stations and cruise tracks for CalCOFI Cruise 8405. Symbols as in Figure 3. Manta tows without accompanying oblique tows were taken at stations 60.0 60.0 and 73.3 100.0.

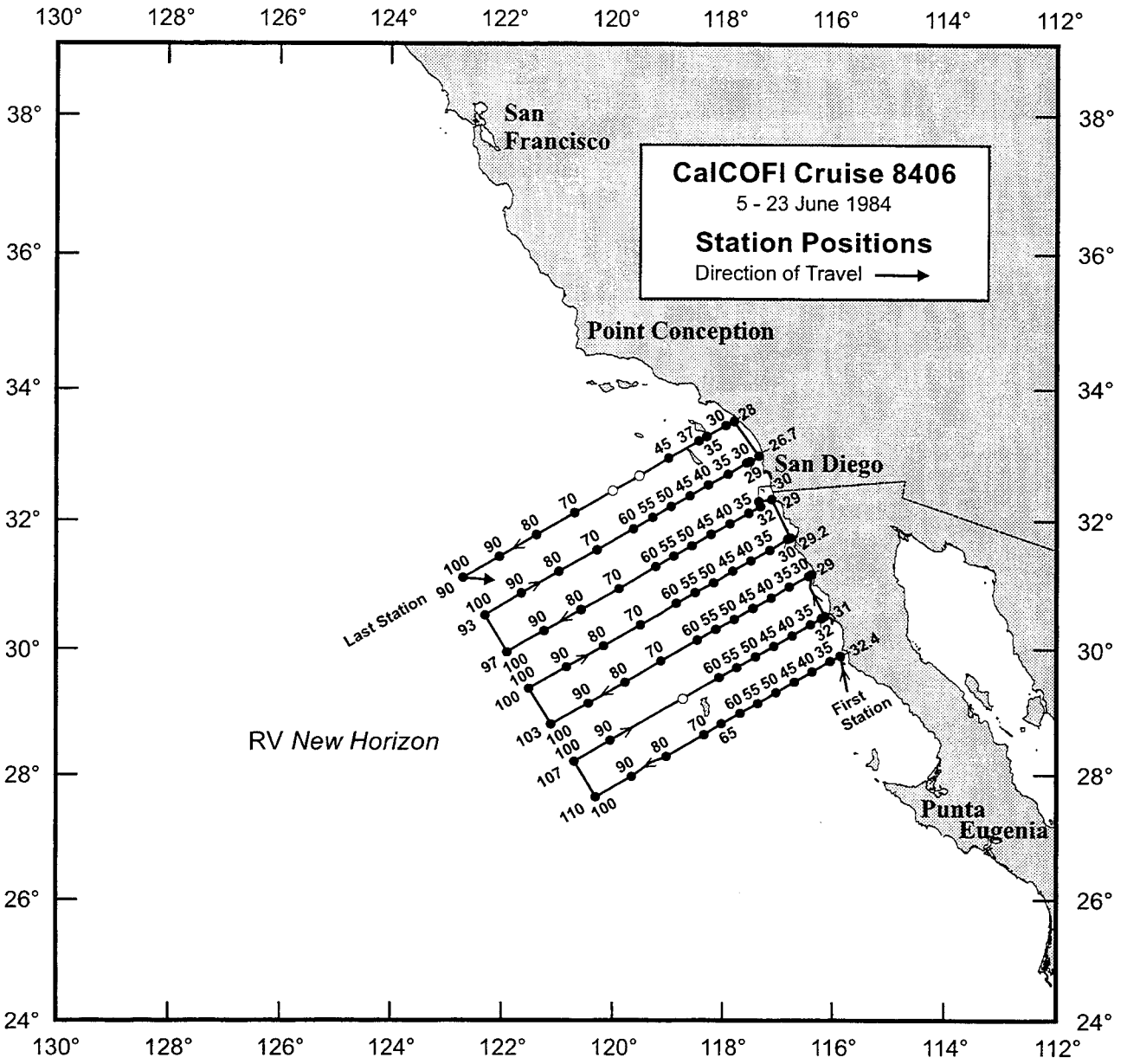

Figure 8. Stations and cruise tracks for CalCOFI Cruise 8406. Symbols as in Figure 3.

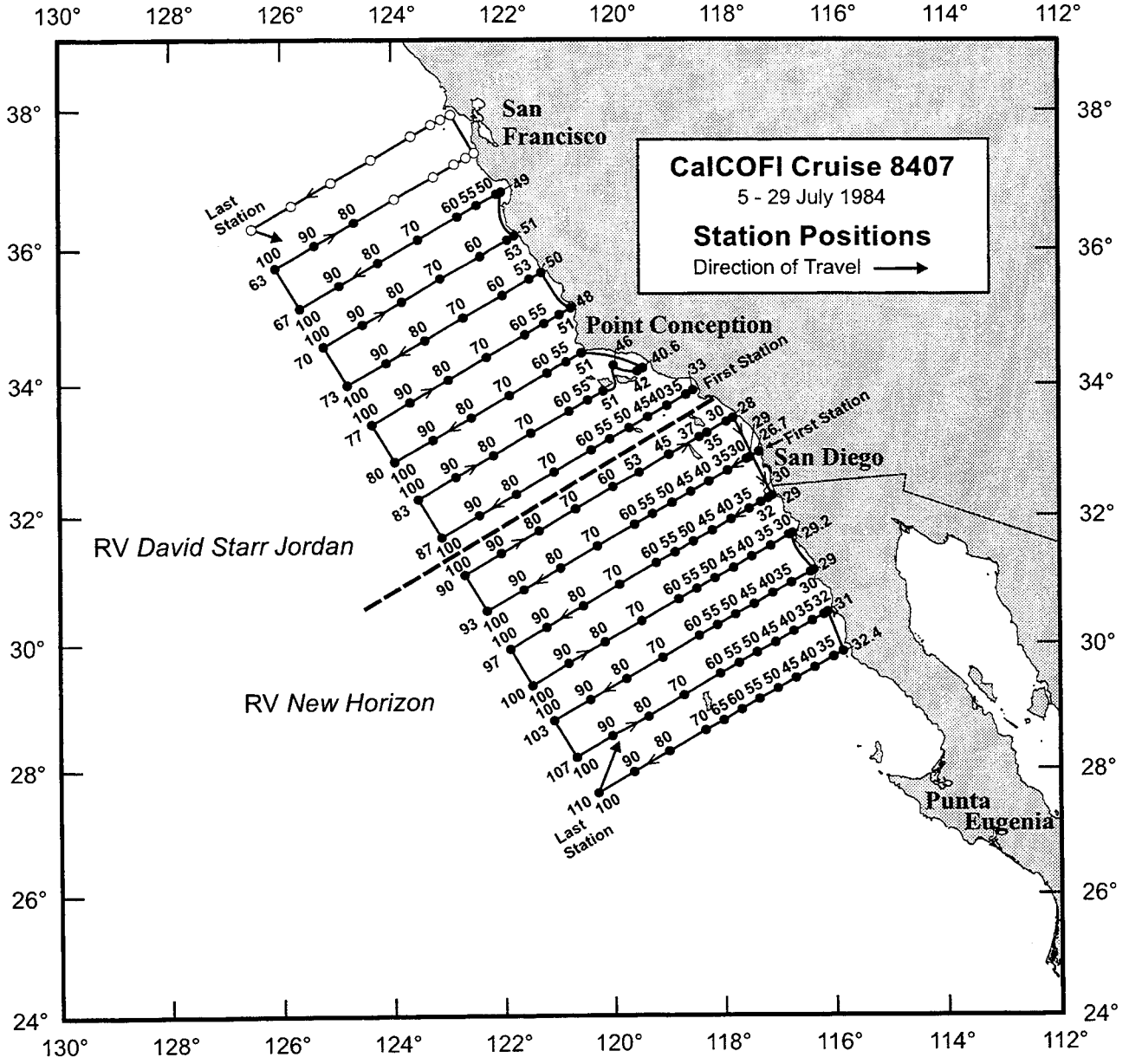

Figure 9. Stations and cruise tracks for CalCOFI Cruise 8407. Symbols as in Figure 3. A Manta tow without an accompanying oblique tow was taken at station 90.0 100.0. Stations 80.0 60.0, 80.0 70.0, and 83.3 100.0 were sampled twice.

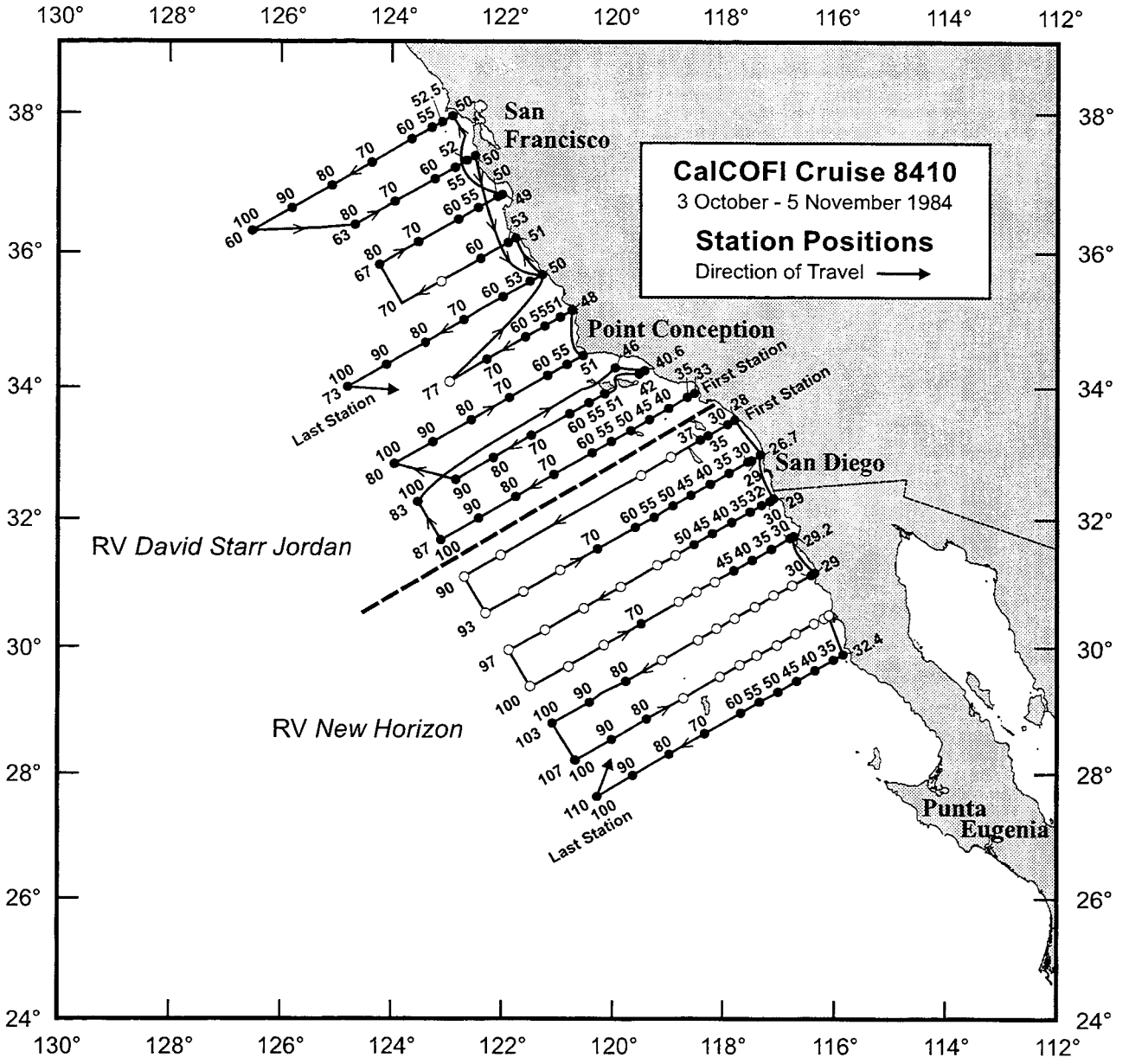

Figure 10. Station pattern and cruise tracks for CalCOFI Cruise 8410. Symbols as in Figure 3. A single Manta tow without an accompanying oblique tow was taken at station 63.3 50.0. Station 73.3 50.0 was sampled twice, once on October 15 and again on October 22.

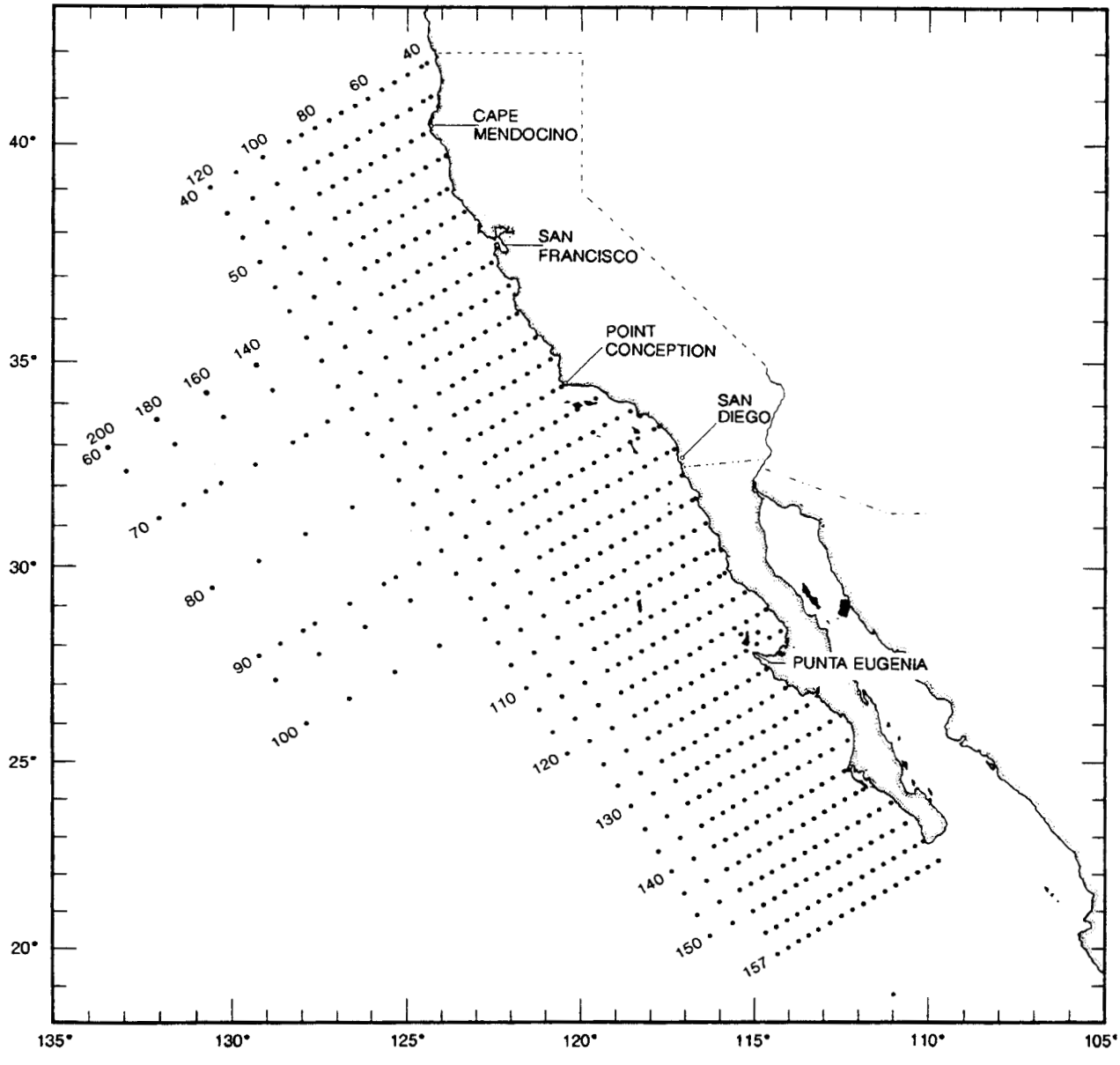

Figure 11. The basic station plan for CalCOFI cruises from 1950 - 1984.

TABLE 1. Station and plankton tow data for Manta tows taken on the 1984 CalCOFI survey. Numbers of fish eggs and larvae are raw counts, unadjusted for volume (cubic meters) of water filtered.

CalCOFI Cruise 8401

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
60.0	50.0	37	56.8	122	52.9	JD	84	01	23	0210	81	1	1774
60.0	52.5	37	51.8	123	03.8	JD	84	01	23	0415	82	38	217
60.0	55.0	37	46.8	123	14.7	JD	84	01	23	0740	71	111	124
60.0	60.0	37	36.8	123	36.5	JD	84	01	23	1220	72	2	2
60.0	70.0	37	16.8	124	19.9	JD	84	01	23	2010	87	3	9
60.0	80.0	36	56.8	125	03.2	JD	84	01	24	0225	74	0	2
60.0	90.0	36	36.8	125	46.3	JD	84	01	24	0855	86	1	4
60.0	100.0	36	16.8	126	29.1	JD	84	01	24	1530	76	0	0
63.3	50.0	37	22.6	122	28.4	JD	84	01	22	2035	74	65	59
63.3	52.0	37	18.6	122	37.1	JD	84	01	22	1805	77	13	212
63.3	55.0	37	12.6	122	50.1	JD	84	01	22	1535	87	37	58
63.3	60.0	37	02.6	123	11.7	JD	84	01	22	1205	76	0	6
63.3	70.0	36	42.6	123	54.8	JD	84	01	22	0550	81	4	7
63.3	80.0	36	22.6	124	37.7	JD	84	01	22	0001	75	3	5
63.3	90.0	36	02.6	125	20.5	JD	84	01	21	1810	80	3	4
63.3	100.0	35	42.6	126	03.0	JD	84	01	24	2125	81	0	0
66.7	49.0	36	49.2	121	59.1	JD	84	01	20	0735	83	5	2854
66.7	50.0	36	47.2	122	03.4	JD	84	01	20	1110	82	20	438
66.7	55.0	36	37.2	122	24.9	JD	84	01	20	1445	87	0	5
66.7	60.0	36	27.2	122	46.4	JD	84	01	20	1820	92	8	3
66.7	70.0	36	07.2	123	29.1	JD	84	01	20	2345	93	3	9
66.7	80.0	35	47.2	124	11.7	JD	84	01	21	0535	86	7	3
66.7	90.0	35	27.2	124	54.2	JD	84	01	21	1210	76	0	2
66.7	100.0	35	07.2	125	36.4	JD	84	01	25	0305	74	1	1
70.0	51.0	36	10.9	121	43.6	JD	84	01	20	0150	99	30	73
70.0	53.0	36	06.9	121	52.1	JD	84	01	19	2305	79	0	0
70.0	60.0	35	52.9	122	21.9	JD	84	01	19	1722	92	0	2
70.0	70.0	35	32.9	123	04.4	JD	84	01	19	1040	90	0	1
70.0	80.0	35	12.9	123	46.7	JD	84	01	19	0415	82	3	6
70.0	90.0	34	52.9	124	28.8	JD	84	01	18	2200	87	21	0
70.0	100.0	34	32.9	125	10.8	JD	84	01	18	1535	94	8	3
73.3	50.0	35	38.6	121	15.3	JD	84	01	16	2335	85	342	3
73.3	53.0	35	32.6	121	28.1	JD	84	01	17	0305	90	57	16
73.3	60.0	35	18.6	121	57.7	JD	84	01	17	0850	90	1	5
73.3	70.0	34	58.6	122	39.9	JD	84	01	17	1600	83	1	1
73.3	80.0	34	38.6	123	21.9	JD	84	01	17	2155	79	3	1
73.3	90.0	34	18.6	124	03.7	JD	84	01	18	0325	98	6	0
73.3	100.0	33	58.6	124	45.4	JD	84	01	18	0910	84	3	0
76.7	48.0	35	07.3	120	42.4	JD	84	01	16	1730	96	147	593
76.7	51.0	35	01.3	120	55.1	JD	84	01	16	1420	72	1	0
76.7	55.0	34	53.3	121	11.9	JD	84	01	16	0940	67	3	0
76.7	60.0	34	43.3	121	32.9	JD	84	01	16	0430	107	52	0
76.7	70.0	34	23.3	122	14.8	JD	84	01	15	2105	92	29	40
76.7	80.0	34	03.3	122	56.5	JD	84	01	15	1445	95	0	2
76.7	90.0	33	43.3	123	38.0	JD	84	01	15	0845	96	0	59
76.7	100.0	33	23.3	124	19.4	JD	84	01	15	0230	85	1	2
80.0	51.0	34	27.0	120	31.4	JD	84	01	11	2250	101	29	1

TABLE 1. (cont.) CalCOFI Cruise 8401 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
80.0	55.0	34	19.0	120	48.1	JD	84	01	12	0255	81	27	5
80.0	60.0	34	09.5	121	09.0	JD	84	01	12	2320	101	17	7
80.0	60.0	34	09.5	121	09.0	JD	84	01	12	1235	94	0	5
80.0	70.0	33	49.0	121	50.6	JD	84	01	13	1210	91	0	1
80.0	70.0	33	49.0	121	50.6	JD	84	01	13	2300	93	3	2
80.0	80.0	33	29.0	122	32.0	JD	84	01	14	0655	85	20	0
80.0	90.0	33	09.0	123	13.3	JD	84	01	14	1400	100	2	5
80.0	100.0	32	49.0	123	54.4	JD	84	01	14	2035	86	9	2
82.0	46.0	34	16.2	119	56.3	JD	84	01	10	1555	82	8	2
83.3	40.6	34	13.5	119	24.7	JD	84	01	10	2210	96	2	73
83.3	42.0	34	10.7	119	30.5	JD	84	01	10	1955	87	14	16
83.3	51.0	33	52.7	120	08.0	JD	84	01	10	0920	85	0	79
83.3	55.0	33	44.8	120	24.7	JD	84	01	10	0615	84	117	35
83.3	60.0	33	34.7	120	45.3	JD	84	01	10	0205	80	72	2
83.3	70.0	33	14.8	121	26.6	JD	84	01	09	1950	99	1	2
83.3	80.0	32	54.7	122	07.7	JD	84	01	09	1355	91	0	9
83.3	90.0	32	34.8	122	48.6	JD	84	01	09	0705	94	1	1
83.3	100.0	32	14.7	123	29.6	JD	84	01	08	1810	93	7	1
83.3	100.0	32	14.7	123	29.6	JD	84	01	08	1210	79	2	3
86.7	33.0	33	53.4	118	29.7	JD	84	01	05	0420	116	33	69
86.7	35.0	33	48.7	118	37.6	JD	84	01	05	0855	122	8	29
86.7	40.0	33	39.4	118	58.5	JD	84	01	05	1555	90	48	26
86.7	45.0	33	29.3	119	19.2	JD	84	01	05	2100	80	52	441
86.7	50.0	33	19.4	119	39.8	JD	84	01	06	0255	89	18	1109
86.7	55.0	33	09.4	120	00.7	JD	84	01	06	0750	104	280	1001
86.7	60.0	32	59.4	120	21.0	JD	84	01	06	2035	92	1	2
86.7	70.0	32	39.4	121	02.0	JD	84	01	07	0335	90	0	2
86.7	80.0	32	19.4	121	42.9	JD	84	01	07	1020	94	1	5
86.7	90.0	31	59.4	122	23.6	JD	84	01	07	1720	96	2	2
86.7	100.0	31	39.4	123	04.2	JD	84	01	07	2350	85	0	2
90.0	28.0	33	29.1	117	47.0	NH	84	01	05	0520	90	0	5
90.0	30.0	33	25.6	117	54.0	NH	84	01	05	0227	101	9	801
90.0	35.0	33	15.4	118	12.0	NH	84	01	04	2205	109	6	601
90.0	37.0	33	11.1	118	23.1	NH	84	01	05	1400	107	1	1000
90.0	53.0	32	39.0	119	29.1	NH	84	01	05	2333	104	10	443
90.0	60.0	32	24.6	119	58.1	NH	84	01	07	0020	78	3	39
90.0	70.0	32	04.6	120	38.7	NH	84	01	07	0742	96	0	7
90.0	80.0	31	45.7	121	19.2	NH	84	01	08	0602	85	14	3
90.0	90.0	31	24.5	121	59.6	NH	84	01	08	1220	92	1	2
90.0	100.0	31	05.0	122	39.0	NH	84	01	08	1840	98	17	7
93.3	26.7	32	57.4	117	18.2	NH	84	01	12	0345	96	2	3
93.3	29.0	32	52.2	117	27.2	NH	84	01	12	0148	82	2	0
93.3	30.0	32	51.0	117	31.7	NH	84	01	11	0735	59	0	2
93.3	35.0	32	40.7	117	52.1	NH	84	01	10	2153	90	3	11
93.3	40.0	32	30.5	118	12.9	NH	84	01	10	1753	129	8	7
93.3	45.0	32	20.4	118	33.3	NH	84	01	10	1352	109	0	17
93.3	50.0	32	09.4	118	52.3	NH	84	01	10	0930	119	0	11
93.3	60.0	31	50.3	119	34.1	NH	84	01	10	0115	119	2	6
93.3	70.0	31	29.2	120	15.1	NH	84	01	09	1925	122	5	4

TABLE 1. (cont.) CalCOFI Cruise 8401 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
93.3	80.0	31	10.4	120	54.5	NH	84	01	09	1320	70	2	37
93.3	90.0	30	51.3	121	35.2	NH	84	01	09	0650	84	28	7
93.3	100.0	30	30.5	122	16.9	NH	84	01	09	0030	107	12	17
96.7	29.0	32	17.5	117	05.0	NH	84	01	12	1214	73	16	319
96.7	30.0	32	15.4	117	08.7	NH	84	01	12	1347	74	4	6
96.7	32.0	32	11.4	117	16.7	NH	84	01	12	1555	74	0	1
96.7	35.0	32	05.4	117	29.8	NH	84	01	12	1914	71	1	155
96.7	45.0	31	45.8	118	09.9	NH	84	01	13	0320	60	0	76
96.7	50.0	31	36.0	118	29.5	NH	84	01	13	0740	72	0	6
96.7	55.0	31	25.6	118	50.2	NH	84	01	13	1155	31	0	15
96.7	60.0	31	15.6	119	10.3	NH	84	01	13	1551	93	2	33
96.7	70.0	30	54.8	119	49.8	NH	84	01	13	2153	59	2	20
96.7	80.0	30	35.9	120	30.6	NH	84	01	14	0412	72	2	2
96.7	90.0	30	16.3	121	10.3	NH	84	01	14	0950	70	2	6
96.7	100.0	29	55.6	121	50.2	NH	84	01	14	1601	87	0	18
100.0	30.0	31	41.1	116	46.6	NH	84	01	17	0002	61	5	0
100.0	35.0	31	31.4	117	06.3	NH	84	01	16	1955	68	2	0
100.0	40.0	31	20.7	117	27.4	NH	84	01	16	1522	81	2	2
100.0	45.0	31	10.9	117	47.8	NH	84	01	16	1150	59	0	3
100.0	50.0	31	00.3	118	07.5	NH	84	01	16	0710	74	1	6
100.0	55.0	30	51.1	118	27.1	NH	84	01	16	0255	81	4	7
100.0	60.0	30	41.2	118	47.9	NH	84	01	15	2246	76	0	13
100.0	70.0	30	21.3	119	28.0	NH	84	01	15	1700	63	1	14
100.0	80.0	30	01.3	120	07.7	NH	84	01	15	1005	69	0	3
100.0	90.0	29	41.0	120	46.9	NH	84	01	15	0415	86	21	17
100.0	100.0	29	20.9	121	27.6	NH	84	01	14	2152	100	2	6
103.3	29.0	31	09.0	116	21.0	NH	84	01	17	0550	70	84	551
103.3	30.0	31	06.5	116	24.3	NH	84	01	17	0750	87	1	2
103.3	35.0	30	57.1	116	47.0	NH	84	01	17	1215	52	0	0
103.3	40.0	30	46.0	117	05.3	NH	84	01	17	1529	53	1	0
103.3	45.0	30	36.5	117	23.9	NH	84	01	17	2026	49	3	1
103.3	50.0	30	27.7	117	44.8	NH	84	01	18	0025	76	4	2
103.3	55.0	30	16.5	118	04.0	NH	84	01	18	0348	61	2	3
103.3	60.0	30	05.6	118	24.2	NH	84	01	18	0755	62	2	15
103.3	70.0	29	46.7	119	04.5	NH	84	01	18	1357	67	0	11
103.3	80.0	29	26.9	119	43.6	NH	84	01	18	1943	73	1	23
103.3	90.0	29	06.9	120	24.8	NH	84	01	19	0138	73	7	11
103.3	100.0	28	46.2	121	02.3	NH	84	01	19	0722	66	9	10
106.7	31.0	30	29.6	116	05.8	NH	84	01	21	1500	119	24	243
106.7	32.0	30	27.1	116	10.0	NH	84	01	21	1304	90	0	833
106.7	35.0	30	21.2	116	21.5	NH	84	01	21	0958	86	0	4
106.7	40.0	30	11.6	116	41.9	NH	84	01	21	0533	60	0	2
106.7	45.0	30	01.5	117	00.7	NH	84	01	21	0122	76	1	0
106.7	50.0	29	51.2	117	21.2	NH	84	01	20	2124	113	7	69
106.7	55.0	29	40.5	117	38.7	NH	84	01	20	1738	73	1	27
106.7	60.0	29	31.4	118	01.2	NH	84	01	20	1351	89	0	61
106.7	90.0	28	32.0	119	59.9	NH	84	01	19	2003	91	1	32
106.7	100.0	28	12.7	120	40.6	NH	84	01	19	1350	62	2	9
110.0	32.4	29	52.4	115	49.5	NH	84	01	21	2335	71	5	1016

TABLE 1. (cont.) CalCOFI Cruise 8401 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
110.0	35.0	29	46.8	116	00.1	NH	84	01	22	0235	72	1	0
110.0	40.0	29	36.6	116	19.7	NH	84	01	22	0635	87	2	0
110.0	45.0	29	27.6	116	39.0	NH	84	01	22	1035	74	0	3
110.0	50.0	29	17.6	117	00.1	NH	84	01	22	1449	81	0	6
110.0	55.0	29	07.6	117	18.1	NH	84	01	22	1843	82	0	17
110.0	60.0	28	57.7	117	37.4	NH	84	01	22	2236	96	9	0
110.0	70.0	28	37.6	118	17.8	NH	84	01	23	0423	98	6	32

CalCOFI Cruise 8402

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
60.0	65.0	37	26.2	123	58.4	NH	84	02	09	1110	68	8	14
60.0	70.0	37	17.2	124	19.7	NH	84	02	09	1555	38	35	14
60.0	100.0	36	16.4	126	28.9	NH	84	02	10	1005	51	7	0
63.3	65.0	36	52.6	123	33.6	NH	84	02	11	1410	87	28	12
63.3	70.0	36	43.2	123	53.9	NH	84	02	11	1010	81	33	10
63.3	80.0	36	22.4	124	37.2	NH	84	02	11	0415	83	15	0
63.3	90.0	36	02.7	125	20.1	NH	84	02	10	2216	29	8	1
63.3	100.0	35	43.0	126	03.7	NH	84	02	10	1610	97	43	2
66.7	65.0	36	16.3	123	08.1	NH	84	02	11	1955	93	17	7
66.7	70.0	36	07.3	123	29.3	NH	84	02	11	2345	92	17	2
66.7	80.0	35	47.3	124	11.5	NH	84	02	12	0535	66	7	2
66.7	90.0	35	26.8	124	54.8	NH	84	02	12	1115	93	56	7
66.7	100.0	35	06.9	125	35.9	NH	84	02	12	1745	81	44	72
70.0	65.0	35	42.6	122	43.2	NH	84	02	13	2031	112	232	2
70.0	70.0	35	32.5	123	04.8	NH	84	02	13	1620	95	7	7
70.0	80.0	35	12.3	123	46.1	NH	84	02	13	1007	126	41	3
70.0	90.0	34	52.5	124	28.9	NH	84	02	13	0420	93	34	24
70.0	100.0	34	33.3	125	11.1	NH	84	02	12	2301	96	71	56
73.3	65.0	35	08.8	122	19.5	NH	84	02	14	0210	89	34	2
73.3	70.0	34	58.7	122	39.4	NH	84	02	14	0610	91	57	10
73.3	80.0	34	38.5	123	22.6	NH	84	02	14	1220	73	8	4
73.3	90.0	34	19.4	124	02.3	NH	84	02	14	1743	81	22	29
73.3	100.0	33	57.2	124	45.7	NH	84	02	14	2333	103	22	2
76.7	65.0	34	33.1	121	54.2	NH	84	02	16	0340	92	25	10
76.7	70.0	34	22.5	122	15.2	NH	84	02	15	2344	118	19	7
76.7	80.0	34	03.4	122	55.5	NH	84	02	15	1753	102	4	2
76.7	90.0	33	43.2	123	37.3	NH	84	02	15	1213	91	10	2
76.7	100.0	33	23.2	124	20.4	NH	84	02	15	0600	103	37	1
80.0	65.0	33	59.2	121	29.7	NH	84	02	16	0915	90	1	3
80.0	70.0	33	49.9	121	51.0	NH	84	02	16	1329	76	6	2
80.0	80.0	33	29.3	122	32.4	NH	84	02	17	1720	73	31	2
80.0	90.0	33	09.4	123	13.8	NH	84	02	17	2311	133	43	13
80.0	100.0	32	50.3	123	55.2	NH	84	02	18	0520	111	48	11
83.3	80.0	32	53.9	122	07.9	NH	84	02	19	1900	97	75	0
83.3	90.0	32	35.5	122	48.5	NH	84	02	19	1323	73	2	3
83.3	100.0	32	14.4	123	28.6	NH	84	02	18	1325	78	12	6
86.7	80.0	32	19.4	121	42.8	NH	84	02	20	0025	86	24	4

TABLE 1. (cont.) CalCOFI Cruise 8402 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
86.7	90.0	31	59.7	122	24.2	NH	84	02	20	0600	83	15	1
86.7	100.0	31	39.3	123	04.4	NH	84	02	20	1152	94	10	0
90.0	70.0	32	04.7	120	38.1	NH	84	02	21	1435	95	0	5
90.0	80.0	31	45.1	121	19.8	NH	84	02	21	0455	88	10	2
90.0	90.0	31	24.9	121	59.6	NH	84	02	20	2328	118	22	2
90.0	100.0	31	05.8	122	39.6	NH	84	02	20	1810	86	11	11
93.3	80.0	31	11.2	120	56.1	NH	84	02	26	0710	94	19	3
93.3	90.0	30	49.4	121	35.1	NH	84	02	26	1305	88	11	16
93.3	100.0	30	30.2	122	15.9	NH	84	02	26	1830	84	26	64
96.7	80.0	30	35.7	120	29.8	NH	84	02	27	1310	80	6	38
96.7	90.0	30	15.3	121	11.3	NH	84	02	27	0725	92	7	29
96.7	100.0	29	55.9	121	50.5	NH	84	02	27	0040	81	14	1
100.0	65.0	30	30.7	119	06.7	NH	84	02	27	2110	110	26	60
100.0	70.0	30	19.9	119	26.3	NH	84	02	28	0110	80	5	9
100.0	80.0	30	02.4	120	07.7	NH	84	02	28	0655	53	5	0
100.0	90.0	29	40.8	120	47.8	NH	84	02	28	1300	81	10	76
100.0	100.0	29	21.4	121	26.6	NH	84	02	28	1850	74	20	103
103.3	65.0	29	57.1	118	44.2	NH	84	02	29	2313	94	10	9
103.3	70.0	29	46.5	119	04.5	NH	84	02	29	1855	83	4	1
103.3	80.0	29	26.9	119	42.8	NH	84	02	29	1300	87	11	355
103.3	90.0	29	06.9	120	22.7	NH	84	02	29	0650	102	4	32
103.3	100.0	28	47.0	121	03.6	NH	84	02	29	0040	80	3	52
106.7	65.0	29	21.8	118	20.7	NH	84	03	01	0505	80	29	18
106.7	70.0	29	10.8	118	40.8	NH	84	03	01	0920	101	8	42
106.7	80.0	28	51.6	119	19.7	NH	84	03	01	1515	81	4	111
106.7	90.0	28	31.8	120	00.0	NH	84	03	01	2138	50	8	18
106.7	100.0	28	11.0	120	37.9	NH	84	03	02	0345	78	13	59
110.0	65.0	28	47.5	117	57.9	NH	84	03	03	1025	71	14	17
110.0	70.0	28	36.4	118	19.0	NH	84	03	03	0530	93	2	7
110.0	80.0	28	16.8	118	58.3	NH	84	03	02	2245	94	13	19
110.0	90.0	27	56.4	119	37.8	NH	84	03	02	1625	82	12	87
110.0	100.0	27	36.6	120	14.8	NH	84	03	02	0935	80	4	10

CalCOFI Cruise 8403

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
60.0	50.0	37	56.8	122	52.9	JD	84	02	09	1225	73	125	633
60.0	52.5	37	51.8	123	03.8	JD	84	02	09	1450	86	724	192
60.0	55.0	37	46.8	123	14.7	JD	84	02	09	1805	95	161	6
60.0	60.0	37	36.8	123	36.5	JD	84	02	09	2305	101	26	22
63.3	50.0	37	22.6	122	28.4	JD	84	02	10	1100	92	125	5782
63.3	52.0	37	18.6	122	37.1	JD	84	02	10	1320	88	25	1442
63.3	55.0	37	12.6	122	50.1	JD	84	02	10	1605	104	67	32
63.3	60.0	37	02.6	123	11.7	JD	84	02	10	2135	108	36	10
66.7	49.0	36	49.2	121	59.1	JD	84	02	11	1228	95	23	11
66.7	50.0	36	46.9	122	03.8	JD	84	02	11	1440	87	41	69
66.7	55.0	36	37.2	122	24.9	JD	84	02	12	0321	92	149	16
66.7	60.0	36	27.1	122	46.4	JD	84	02	12	0835	99	7	201

TABLE 1. (cont.) CalCOFI Cruise 8403 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
70.0	51.0	36	10.9	121	43.6	JD	84	02	13	0115	90	8	18
70.0	53.0	36	06.9	121	52.1	JD	84	02	13	0435	105	184	5
70.0	60.0	35	52.9	122	21.8	JD	84	02	13	1102	106	4	68
73.3	50.0	35	38.6	121	15.2	JD	84	02	14	0110	74	292	4
73.3	53.0	35	32.6	121	28.1	JD	84	02	14	0453	87	89	4
73.3	60.0	35	18.5	121	57.8	JD	84	02	14	1125	101	7	4
76.7	48.0	35	07.3	120	42.4	JD	84	02	15	0300	92	74	6859
76.7	51.0	35	01.3	120	55.2	JD	84	02	15	0630	92	40	3
76.7	55.0	34	53.3	121	11.9	JD	84	02	15	1050	98	5	0
76.7	60.0	34	43.3	121	32.9	JD	84	02	15	1550	88	13	16
80.0	51.0	34	27.0	120	31.3	JD	84	02	16	0620	104	154	0
80.0	55.0	34	19.0	120	48.0	JD	84	02	16	1035	92	8	3
80.0	60.0	34	09.0	121	09.0	JD	84	02	20	2150	95	6	2
82.0	46.0	34	16.1	119	56.2	JD	84	02	19	1400	85	5	0
83.3	40.6	34	13.5	119	24.7	JD	84	02	19	2255	108	1	1611
83.3	42.0	34	10.7	119	30.5	JD	84	02	20	0050	93	0	0
83.3	51.0	33	52.6	120	08.0	JD	84	02	20	0623	117	176	14
83.3	55.0	33	44.6	120	24.5	JD	84	02	20	1007	92	3	4
83.3	60.0	33	34.7	120	45.3	JD	84	02	20	1510	95	4	1
83.3	65.0	33	24.7	121	05.9	JD	84	02	24	0410	76	6	1
83.3	70.0	33	14.7	121	26.5	JD	84	02	23	2340	81	5	1
86.7	33.0	33	53.4	118	29.4	JD	84	02	27	0025	77	219	224
86.7	35.0	33	49.4	118	37.7	JD	84	02	27	0335	82	72	1422
86.7	40.0	33	39.4	118	58.5	JD	84	02	29	1700	90	20	46
86.7	45.0	33	29.4	119	19.1	JD	84	02	29	1100	92	52	1931
86.7	55.0	33	09.4	120	00.3	JD	84	02	28	2340	95	138	9
86.7	60.0	32	59.4	120	21.0	JD	84	02	28	1700	84	1	4
86.7	70.0	32	39.4	121	02.0	JD	84	02	24	1505	94	0	0
90.0	28.0	33	29.0	117	46.2	JD	84	03	02	1900	114	84	1000
90.0	30.0	33	25.0	117	54.3	JD	84	03	02	2255	97	498	1254
90.0	37.0	33	11.2	118	23.4	JD	84	03	03	0445	91	1	942
90.0	45.0	32	55.1	118	56.1	JD	84	03	03	2300	107	64	1338
90.0	45.0	32	55.1	118	56.1	JD	84	03	03	1205	86	5	3194
90.0	53.0	32	39.1	119	28.9	JD	84	03	04	1230	76	0	8692
90.0	60.0	32	25.1	119	57.6	JD	84	03	04	1805	79	33	9
93.3	26.7	32	57.4	117	18.2	JD	84	03	07	0940	111	9	3
93.3	28.0	32	54.8	117	23.7	JD	84	03	08	0200	108	361	8000
93.3	29.0	32	52.8	117	27.8	JD	84	03	08	0350	90	23	962
93.3	30.0	32	50.8	117	32.0	JD	84	03	07	2220	99	73	792
93.3	30.0	32	50.8	117	32.0	JD	84	03	07	1155	104	3	6
93.3	35.0	32	40.7	117	52.4	JD	84	03	08	1100	100	3	1398
93.3	40.0	32	30.8	118	12.8	JD	84	03	08	1725	100	2	282
93.3	45.0	32	20.8	118	33.3	JD	84	03	09	0005	85	11	143
93.3	50.0	32	10.8	118	53.6	JD	84	03	09	0410	72	2	98
93.3	55.0	32	00.8	119	14.0	JD	84	03	09	0800	90	3	52
93.3	60.0	31	50.7	119	34.3	JD	84	03	09	1215	81	0	4
93.3	70.0	31	30.8	120	14.9	JD	84	03	09	1815	80	269	22
96.7	29.0	32	17.4	117	04.8	JD	84	03	13	1415	81	37	62
96.7	30.0	32	15.4	117	08.8	JD	84	03	13	1550	57	69	50

TABLE 1. (cont.) CalCOFI Cruise 8403 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
96.7	32.0	32	11.4	117	17.0	JD	84	03	13	1740	94	2	0
96.7	35.0	32	05.5	117	29.2	JD	84	03	13	2230	95	173	0
96.7	40.0	31	55.4	117	49.5	JD	84	03	14	0250	89	209	0
96.7	45.0	31	45.4	118	09.8	JD	84	03	14	0730	88	12	2222
96.7	50.0	31	36.5	118	29.0	JD	84	03	14	1125	95	1	1026
96.7	55.0	31	25.4	118	50.3	JD	84	03	14	1625	85	2	5
96.7	60.0	31	15.5	119	10.6	JD	84	03	14	2230	84	16	1
96.7	65.0	31	05.4	119	30.6	JD	84	03	15	0310	97	19	3
96.7	70.0	30	55.7	119	50.8	JD	84	03	15	0740	101	5	8
100.0	29.2	31	42.5	116	43.4	JD	84	03	16	2250	82	6	4
100.0	30.0	31	41.2	116	46.6	JD	84	03	16	2055	86	759	0
100.0	35.0	31	31.2	117	06.9	JD	84	03	16	1425	93	1	33
100.0	40.0	31	21.4	117	27.3	JD	84	03	16	1000	73	2	72
100.0	45.0	31	11.2	117	47.2	JD	84	03	16	0525	101	44	28
100.0	50.0	31	01.0	118	07.3	JD	84	03	16	0025	90	0	1
100.0	55.0	30	51.1	118	27.5	JD	84	03	15	1940	85	3	0
100.0	60.0	30	41.2	118	47.5	JD	84	03	15	1512	86	0	3
103.3	29.0	31	08.9	116	20.5	JD	84	03	17	0352	107	13	1363
103.3	30.0	31	06.9	116	24.5	JD	84	03	17	0537	87	447	45
103.3	35.0	30	56.8	116	44.7	JD	84	03	17	1010	70	0	2
103.3	40.0	30	46.9	117	04.7	JD	84	03	17	1450	85	0	1
103.3	45.0	30	36.9	117	24.7	JD	84	03	17	1937	84	1	17
103.3	50.0	30	26.9	117	44.7	JD	84	03	18	0020	87	3	126
103.3	55.0	30	16.9	118	04.7	JD	84	03	18	0500	100	25	4
103.3	60.0	30	06.3	118	24.9	JD	84	03	18	0936	69	0	2
106.7	31.0	30	29.5	116	05.8	JD	84	03	22	1454	94	45	28
106.7	32.0	30	27.5	116	09.8	JD	84	03	22	1257	92	205	8
106.7	35.0	30	20.5	116	21.1	JD	84	03	22	0947	90	15	0
106.7	40.0	30	11.5	116	41.6	JD	84	03	22	0526	94	0	1
106.7	45.0	30	01.2	117	01.5	JD	84	03	22	0030	75	0	0
106.7	50.0	29	50.8	117	19.4	JD	84	03	21	2040	74	1	27
106.7	55.0	29	41.5	117	41.4	JD	84	03	21	1632	84	0	15
106.7	60.0	29	31.5	118	01.3	JD	84	03	21	1241	93	0	10
110.0	32.5	29	52.2	115	49.2	JD	84	03	20	0850	87	28	151
110.0	35.0	29	47.1	115	59.7	JD	84	03	20	1143	74	63	0
110.0	40.0	29	37.2	116	19.7	JD	84	03	20	1605	93	0	0
110.0	45.0	29	27.2	116	39.5	JD	84	03	20	1950	104	4	0
110.0	50.0	29	17.4	116	59.3	JD	84	03	20	2328	78	13	1
110.0	55.0	29	07.2	117	19.0	JD	84	03	21	0311	94	40	0
110.0	60.0	28	57.2	117	38.7	JD	84	03	21	0655	92	0	5

CalCOFI Cruise 8404

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
73.3	50.0	35	38.6	121	15.5	JD	84	04	22	1201	96	1	16
73.3	53.0	35	32.6	121	28.1	JD	84	04	22	1511	93	1	4
76.7	48.0	35	07.3	120	42.4	JD	84	04	22	0609	109	35	1498
76.7	51.0	35	01.3	120	55.1	JD	84	04	22	0349	87	1	3

TABLE 1. (cont.) CalCOFI Cruise 8404 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
76.7	55.0	34	53.2	121	11.8	JD	84	04	22	0025	81	8	2
76.7	60.0	34	43.4	121	33.0	JD	84	04	21	1924	77	31	7
80.0	51.0	34	27.0	120	33.4	JD	84	04	17	1045	91	0	10
80.0	60.0	34	09.2	121	09.0	JD	84	04	18	1052	86	2	3
80.0	60.0	34	09.2	121	09.0	JD	84	04	18	0108	72	51	2
80.0	70.0	33	49.0	121	50.6	JD	84	04	19	0010	93	3	8
80.0	70.0	33	49.0	121	50.6	JD	84	04	19	1106	94	2	2
80.0	80.0	33	29.0	122	32.0	JD	84	04	19	1937	85	8	34
80.0	90.0	33	09.0	123	13.3	JD	84	04	20	0200	93	0	42
80.0	100.0	32	49.0	123	54.4	JD	84	04	20	0834	90	0	24
82.0	46.0	34	16.3	119	56.5	JD	84	04	17	0600	92	24	5
83.3	40.6	34	13.5	119	24.7	JD	84	04	17	0202	96	93	5029
83.3	42.0	34	12.1	119	30.5	JD	84	04	17	0038	94	1109	376
83.3	55.0	33	44.7	120	24.6	JD	84	04	16	1600	78	10	2
83.3	60.0	33	34.7	120	45.3	JD	84	04	16	1140	80	0	3
83.3	70.0	33	15.1	121	26.4	JD	84	04	16	0543	76	2	8
83.3	80.0	32	54.6	122	07.7	JD	84	04	16	0003	75	4	25
83.3	90.0	32	34.7	122	48.7	JD	84	04	15	1814	93	3	83
83.3	100.0	32	14.8	123	29.3	JD	84	04	15	1327	92	0	499
83.3	100.0	32	14.8	123	29.3	JD	84	04	15	0043	85	3	112
86.7	33.0	33	53.4	118	29.4	JD	84	04	10	0343	112	622	1610
86.7	35.0	33	49.4	118	38.0	JD	84	04	10	0637	109	2005	1004
86.7	40.0	33	39.5	118	58.4	JD	84	04	10	1212	91	1	7
86.7	45.0	33	29.4	119	19.3	JD	84	04	11	1100	93	8	4
86.7	55.0	33	09.5	120	00.5	JD	84	04	13	0640	85	64	3
86.7	60.0	32	59.4	120	21.2	JD	84	04	13	1125	98	4	8
86.7	70.0	32	39.4	121	02.1	JD	84	04	13	1711	97	2	8
86.7	80.0	32	19.5	121	42.9	JD	84	04	13	2309	90	1	8
86.7	90.0	31	59.4	122	23.6	JD	84	04	14	0445	79	7	37
86.7	100.0	31	39.4	123	04.2	JD	84	04	14	1155	98	0	112
90.0	28.0	33	29.0	117	46.9	NH	84	04	09	1630	99	33	1
90.0	30.0	33	24.9	117	54.5	NH	84	04	09	1920	88	203	16
90.0	35.0	33	15.1	118	15.2	NH	84	04	09	2309	94	178	445
90.0	37.0	33	11.1	118	24.3	NH	84	04	10	0236	57	24	649
90.0	45.0	32	55.1	118	56.2	NH	84	04	10	0755	78	1370	915
93.3	26.7	32	57.4	117	18.3	NH	84	04	16	1616	102	4	0
93.3	29.0	32	52.7	117	28.0	NH	84	04	16	1900	73	1487	0
93.3	30.0	32	50.9	117	32.0	NH	84	04	15	1945	72	367	7
93.3	35.0	32	40.9	117	52.6	NH	84	04	15	1320	77	0	1408
93.3	40.0	32	30.8	118	12.9	NH	84	04	15	0910	95	1	1778
93.3	45.0	32	20.8	118	33.4	NH	84	04	15	0508	93	12	2995
93.3	50.0	32	10.6	118	53.5	NH	84	04	15	0055	107	7	1601
93.3	55.0	32	00.9	119	13.5	NH	84	04	14	2040	89	2	26
93.3	60.0	31	50.7	119	34.5	NH	84	04	14	1630	79	6	1125
93.3	70.0	31	31.0	120	19.9	NH	84	04	14	1022	91	0	181
93.3	80.0	31	10.8	120	55.2	NH	84	04	14	0412	85	2	2
93.3	90.0	30	50.8	121	35.5	NH	84	04	13	2204	95	3	0
93.3	100.0	30	30.4	122	15.3	NH	84	04	13	1532	72	10	18
96.7	29.0	32	17.4	117	04.8	NH	84	04	17	0715	81	2	73

TABLE 1. (cont.) CalCOFI Cruise 8404 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
96.7	30.0	32	15.3	117	08.8	NH	84	04	17	0910	107	0	27
96.7	32.0	32	11.4	117	17.0	NH	84	04	17	1147	88	1	65
96.7	35.0	32	05.6	117	29.4	NH	84	04	17	1517	86	2	675
96.7	40.0	31	55.3	117	49.8	NH	84	04	17	1935	91	14	11
96.7	45.0	31	45.3	118	09.8	NH	84	04	17	2337	93	74	1
96.7	50.0	31	35.4	118	30.4	NH	84	04	18	0412	100	45	8
96.7	55.0	31	25.4	118	51.0	NH	84	04	18	0833	74	2	4
96.7	60.0	31	15.8	119	10.5	NH	84	04	18	1259	83	3	17
96.7	70.0	30	55.6	119	50.3	NH	84	04	18	1903	82	6	0
96.7	80.0	30	35.3	120	30.7	NH	84	04	19	0115	85	0	2
96.7	90.0	30	15.4	121	10.8	NH	84	04	19	0724	78	3	34
96.7	100.0	29	56.0	121	50.3	NH	84	04	19	1340	117	6	164
100.0	29.2	31	42.5	116	43.4	NH	84	04	22	1145	89	13	71
100.0	30.0	31	41.1	116	46.6	NH	84	04	22	0935	88	1	4
100.0	35.0	31	31.3	117	07.1	NH	84	04	22	0540	79	0	5
100.0	40.0	31	21.2	117	27.1	NH	84	04	22	0111	85	11	3
100.0	45.0	31	11.4	117	47.0	NH	84	04	21	2050	83	2	12
100.0	50.0	31	01.3	118	07.2	NH	84	04	21	1642	96	1	269
100.0	55.0	30	51.1	118	27.1	NH	84	04	21	1234	95	1	978
103.3	29.0	31	08.8	116	20.5	NH	84	04	22	1936	75	26	12
103.3	30.0	31	06.7	116	24.2	NH	84	04	22	2100	116	206	2
103.3	35.0	30	56.9	116	44.7	NH	84	04	23	0110	82	12	8
103.3	40.0	30	47.0	117	05.0	NH	84	04	23	0535	80	0	2
103.3	45.0	30	36.6	117	24.6	NH	84	04	23	1038	82	3	1
103.3	50.0	30	26.9	117	44.7	NH	84	04	23	1440	57	2	4
103.3	55.0	30	17.0	118	03.9	NH	84	04	23	1907	78	4	211
103.3	60.0	30	06.9	118	24.7	NH	84	04	23	2320	97	10	32
103.3	70.0	29	46.9	119	04.4	NH	84	04	24	0628	76	14	15
106.7	31.0	30	29.6	116	05.8	NH	84	04	27	1355	75	2	1053
106.7	32.0	30	27.5	116	10.5	NH	84	04	27	1205	77	2	22
106.7	35.0	30	21.3	116	21.7	NH	84	04	27	0838	86	2	1
106.7	40.0	30	11.2	116	42.0	NH	84	04	27	0424	74	2	25
106.7	45.0	30	01.0	117	01.8	NH	84	04	27	0001	68	2	12
110.0	32.4	29	52.4	115	49.5	NH	84	04	27	1830	82	138	10
110.0	35.0	29	47.0	115	59.2	NH	84	04	27	2135	92	4	1
110.0	40.0	29	37.5	116	20.0	NH	84	04	28	0205	87	15	11
110.0	45.0	29	27.2	116	39.7	NH	84	04	28	0645	109	9	22
110.0	55.0	29	07.2	117	18.8	NH	84	04	28	1450	87	13	5
110.0	65.0	28	47.5	117	58.6	NH	84	04	28	2236	91	23	6
110.0	70.0	28	37.3	118	18.4	NH	84	04	29	0255	71	30	228
110.0	80.0	28	17.3	118	57.2	NH	84	04	29	0845	89	6	138
110.0	90.0	27	57.1	119	36.4	NH	84	04	29	1450	87	9	252
110.0	100.0	27	37.1	120	14.9	NH	84	04	29	2035	83	19	138

CalCOFI Cruise 8405

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
60.0	50.0	37	56.8	122	52.9	JD	84	05	18	1840	115	0	13

TABLE 1. (cont.) CalCOFI Cruise 8405 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
60.0	52.5	37	51.5	123	04.5	JD	84	05	18	1640	122	0	14
60.0	55.0	37	47.3	123	14.9	JD	84	05	18	1450	76	0	12
60.0	60.0	37	36.8	123	36.4	JD	84	05	18	1015	108	0	66
60.0	70.0	37	16.8	124	20.2	JD	84	05	18	0450	120	0	1
60.0	80.0	36	56.8	125	03.2	JD	84	05	17	2310	103	4	2
60.0	90.0	36	36.8	125	46.2	JD	84	05	17	1750	136	1	0
60.0	100.0	36	17.2	126	29.3	JD	84	05	17	1205	112	0	0
63.3	50.0	37	22.6	122	28.4	JD	84	05	19	0405	126	0	42
63.3	52.0	37	18.6	122	37.1	JD	84	05	19	0535	61	1	0
63.3	55.0	37	12.7	122	50.0	JD	84	05	19	0755	106	4	49
63.3	60.0	37	02.6	123	11.7	JD	84	05	19	1150	105	0	19
63.3	70.0	36	42.5	123	54.7	JD	84	05	19	1825	102	1	13
63.3	80.0	36	22.6	124	37.8	JD	84	05	20	0010	103	0	11
63.3	90.0	36	02.5	125	20.7	JD	84	05	20	0545	103	1	46
63.3	100.0	35	42.6	126	03.1	JD	84	05	20	1055	94	0	3
66.7	49.0	36	49.2	121	59.1	JD	84	05	22	0345	111	1	29
66.7	50.0	36	47.1	122	03.7	JD	84	05	22	0200	103	1	3
66.7	55.0	36	37.2	122	25.0	JD	84	05	21	2205	88	2	13
66.7	60.0	36	27.2	122	46.4	JD	84	05	21	1825	108	0	2
66.7	70.0	36	07.1	123	29.0	JD	84	05	21	1140	94	0	6
66.7	80.0	35	47.2	124	11.7	JD	84	05	21	0500	115	1	139
66.7	90.0	35	27.1	124	54.1	JD	84	05	20	2245	96	9	18
66.7	100.0	35	07.3	125	36.4	JD	84	05	20	1700	119	0	35
70.0	51.0	36	10.7	121	43.8	JD	84	05	22	0930	102	0	4
70.0	53.0	36	06.9	121	51.9	JD	84	05	22	1220	100	0	1
70.0	60.0	35	52.8	122	21.7	JD	84	05	23	0955	101	1	13
70.0	70.0	35	32.9	123	04.5	JD	84	05	23	1620	104	0	115
70.0	80.0	35	12.8	123	46.6	JD	84	05	23	2145	102	1	0
70.0	90.0	34	52.9	124	28.6	JD	84	05	24	0320	57	2	6
70.0	100.0	34	32.8	125	10.6	JD	84	05	24	0855	63	0	0
73.3	50.0	35	38.5	121	15.5	JD	84	05	26	0050	96	53	10
73.3	53.0	35	32.7	121	28.2	JD	84	05	25	2140	76	3	2
73.3	100.0	33	58.8	124	45.5	JD	84	05	24	1525	94	2	7
76.7	48.0	35	07.3	120	42.4	JD	84	05	26	0600	118	4	76
76.7	51.0	35	01.4	120	55.3	JD	84	05	26	0820	87	2	2
76.7	55.0	34	53.4	121	11.7	JD	84	05	26	1215	84	3	0
76.7	60.0	34	43.2	121	32.9	JD	84	05	26	1555	105	0	10
76.7	80.0	34	03.3	122	56.6	JD	84	05	27	0240	88	2	28
76.7	90.0	33	43.3	123	38.1	JD	84	05	27	0740	78	0	725
76.7	100.0	33	23.4	124	19.4	JD	84	05	27	1335	103	0	306
80.0	51.0	34	26.9	120	31.4	JD	84	05	29	0001	104	41	173
80.0	55.0	34	19.0	120	48.1	JD	84	05	28	2050	102	32	22
80.0	60.0	34	09.0	121	09.0	JD	84	05	28	1730	112	12	0
80.0	70.0	33	48.9	121	50.6	JD	84	05	28	1215	118	0	2
80.0	80.0	33	28.9	122	31.9	JD	84	05	28	0635	108	1	86
80.0	90.0	33	08.9	123	13.3	JD	84	05	28	0130	111	5	4
80.0	100.0	32	49.1	123	54.5	JD	84	05	27	1950	98	22	16
82.0	46.0	34	16.1	119	56.3	JD	84	05	29	0430	108	134	144
83.3	40.6	34	13.5	119	24.8	JD	84	05	29	0815	110	5	6036
83.3	42.0	34	10.5	119	30.0	JD	84	05	29	0935	92	0	513

TABLE 1. (cont.) CalCOFI Cruise 8405 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
83.3	55.0	33	44.7	120	24.7	JD	84	05	29	1805	115	1	606
83.3	60.0	33	34.7	120	45.2	JD	84	05	29	2130	93	9	4
83.3	70.0	33	14.7	121	26.5	JD	84	05	30	0310	101	131	23
83.3	80.0	32	54.6	122	07.8	JD	84	05	30	0830	102	0	26
83.3	90.0	32	34.6	122	48.6	JD	84	05	30	1350	91	0	3
83.3	100.0	32	14.7	123	29.5	JD	84	05	30	1850	107	13	10
86.7	33.0	33	53.3	118	29.3	JD	84	06	01	2015	100	74	278
86.7	35.0	33	49.4	118	37.7	JD	84	06	01	1735	107	17	114
86.7	40.0	33	39.4	118	58.5	JD	84	06	01	1415	98	0	3
86.7	45.0	33	29.0	119	19.0	JD	84	06	01	1025	99	1	123
86.7	50.0	33	19.6	119	39.8	JD	84	06	01	0730	99	0	0
86.7	55.0	33	09.6	120	00.4	JD	84	06	01	0355	106	1	2
86.7	60.0	32	59.4	120	21.0	JD	84	06	01	0020	103	28	104
86.7	70.0	32	39.4	121	02.0	JD	84	05	31	1850	66	2	66
86.7	80.0	32	19.4	121	42.9	JD	84	05	31	1315	64	0	3
86.7	90.0	31	59.4	122	23.6	JD	84	05	31	0650	102	0	8
86.7	100.0	31	39.4	123	04.2	JD	84	05	31	0115	85	0	7

CalCOFI Cruise 8406

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
90.0	28.0	33	28.7	117	45.5	NH	84	06	19	1945	70	214	2207
90.0	30.0	33	24.9	117	54.5	NH	84	06	19	2155	64	186	10
90.0	35.0	33	14.8	118	14.7	NH	84	06	20	0145	46	25	11
90.0	37.0	33	11.0	118	23.3	NH	84	06	20	0405	75	0	0
90.0	45.0	32	55.2	118	56.3	NH	84	06	20	1250	60	3	54
90.0	70.0	32	05.0	120	38.5	NH	84	06	22	1250	74	0	67
90.0	80.0	31	44.8	121	19.3	NH	84	06	22	2205	62	2	52
90.0	90.0	31	25.1	121	59.6	NH	84	06	23	0320	80	3	27
90.0	100.0	31	05.3	122	38.8	NH	84	06	23	0820	69	1	133
93.3	26.7	32	57.2	117	18.3	NH	84	06	19	1525	68	2	209
93.3	29.0	32	52.0	117	28.0	NH	84	06	18	1950	89	41	1027
93.3	30.0	32	50.9	117	31.9	NH	84	06	18	1810	87	0	1035
93.3	35.0	32	40.6	117	52.4	NH	84	06	18	1155	84	0	81
93.3	40.0	32	30.7	118	13.0	NH	84	06	18	0745	56	0	0
93.3	45.0	32	20.8	118	33.2	NH	84	06	18	0402	113	0	1
93.3	50.0	32	10.9	118	53.4	NH	84	06	18	0025	68	3	4
93.3	55.0	32	01.0	119	13.9	NH	84	06	17	2050	85	2	9
93.3	60.0	31	50.4	119	34.7	NH	84	06	17	1715	75	3	186
93.3	70.0	31	31.1	120	14.3	NH	84	06	17	1210	67	0	68
93.3	80.0	31	10.9	120	55.2	NH	84	06	17	0620	62	0	338
93.3	90.0	30	50.9	121	35.3	NH	84	06	17	0100	80	1	767
93.3	100.0	30	30.2	122	15.1	NH	84	06	16	1940	81	1	0
96.7	29.0	32	17.4	117	05.1	NH	84	06	14	1735	68	117	264
96.7	30.0	32	15.4	117	18.8	NH	84	06	14	1850	69	35	243
96.7	32.0	32	10.9	117	16.9	NH	84	06	14	2015	91	2	0
96.7	35.0	32	05.1	117	29.5	NH	84	06	14	2255	81	0	5
96.7	40.0	31	55.4	117	49.9	NH	84	06	15	0225	75	5	0

TABLE 1. (cont.) CalCOFI Cruise 8406 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
96.7	45.0	31	45.3	118	10.5	NH	84	06	15	0540	79	0	0
96.7	50.0	31	35.2	118	30.7	NH	84	06	15	0905	80	0	0
96.7	55.0	31	25.2	118	50.4	NH	84	06	15	1240	100	2	10
96.7	60.0	31	15.4	119	10.5	NH	84	06	15	1600	78	0	4
96.7	70.0	30	55.2	119	50.7	NH	84	06	15	2135	93	0	32
96.7	80.0	30	35.2	120	31.2	NH	84	06	16	0320	78	2	67
96.7	90.0	30	15.3	121	11.0	NH	84	06	16	0840	76	1	37
96.7	100.0	29	55.7	121	50.9	NH	84	06	16	1415	68	1	17
100.0	29.2	31	42.5	116	44.0	NH	84	06	14	1240	111	5	24
100.0	30.0	31	41.1	116	46.7	NH	84	06	14	1120	117	11	198
100.0	35.0	31	31.3	117	06.9	NH	84	06	14	0725	78	0	0
100.0	40.0	31	21.3	117	27.1	NH	84	06	14	0340	104	7	10
100.0	45.0	31	11.3	117	47.1	NH	84	06	13	2350	74	1	3
100.0	50.0	31	00.7	118	07.0	NH	84	06	13	2025	83	3	0
100.0	55.0	30	51.2	118	27.2	NH	84	06	13	1700	80	4	5
100.0	60.0	30	41.3	118	47.5	NH	84	06	13	1340	85	4	75
100.0	70.0	30	21.2	119	27.0	NH	84	06	13	0815	86	0	98
100.0	80.0	30	01.2	120	07.4	NH	84	06	13	0247	58	8	638
100.0	90.0	29	41.4	120	47.0	NH	84	06	12	2120	87	28	654
100.0	100.0	29	21.2	121	26.9	NH	84	06	12	1550	75	4	167
103.3	29.0	31	08.8	116	20.5	NH	84	06	10	1240	103	0	113
103.3	30.0	31	06.9	116	24.3	NH	84	06	10	1350	88	0	99
103.3	35.0	30	56.9	116	44.7	NH	84	06	10	1721	87	0	11
103.3	40.0	30	46.8	117	04.9	NH	84	06	10	2102	94	6	3
103.3	45.0	30	36.8	117	24.7	NH	84	06	11	0030	62	3	24
103.3	50.0	30	26.6	117	44.9	NH	84	06	11	0400	92	25	231
103.3	55.0	30	17.0	118	04.8	NH	84	06	11	0725	70	3	70
103.3	60.0	30	07.0	118	24.6	NH	84	06	11	1115	90	0	308
103.3	70.0	29	47.1	119	04.3	NH	84	06	11	1645	83	6	1506
103.3	80.0	29	26.8	119	44.0	NH	84	06	11	2203	74	4	88
103.3	90.0	29	06.9	120	23.7	NH	84	06	12	0414	94	7	487
103.3	100.0	28	46.9	121	03.4	NH	84	06	12	0955	86	3	834
106.7	31.0	30	29.5	116	05.8	NH	84	06	10	0725	86	0	1293
106.7	32.0	30	27.3	116	09.8	NH	84	06	10	0609	88	0	0
106.7	35.0	30	21.7	116	21.9	NH	84	06	10	0236	65	0	0
106.7	40.0	30	11.4	116	41.6	NH	84	06	09	2219	100	5	3
106.7	45.0	30	01.5	117	01.6	NH	84	06	09	1815	77	0	124
106.7	50.0	29	51.7	117	21.6	NH	84	06	09	1355	66	1	321
106.7	55.0	29	41.2	117	42.0	NH	84	06	09	0855	73	4	237
106.7	60.0	29	31.5	118	01.4	NH	84	06	09	0433	87	7	580
106.7	90.0	28	31.4	119	59.8	NH	84	06	08	0957	52	2	88
106.7	100.0	28	11.4	120	38.1	NH	84	06	08	0322	62	2	123
110.0	32.4	29	52.5	115	49.5	NH	84	06	05	1529	104	2	1
110.0	35.0	29	47.2	116	00.0	NH	84	06	05	1915	140	17	8
110.0	40.0	29	37.2	116	19.6	NH	84	06	06	0011	79	10	12
110.0	45.0	29	27.4	116	39.3	NH	84	06	06	0514	84	4	35
110.0	50.0	29	17.2	116	59.2	NH	84	06	06	0915	96	5	32
110.0	55.0	29	07.1	117	19.2	NH	84	06	06	1400	82	0	420
110.0	60.0	28	57.3	117	38.5	NH	84	06	06	1757	105	9	350

TABLE 1. (cont.)

CalCOFI Cruise 8406 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
110.0	65.0	28	47.2	117	59.1	NH	84	06	06	2205	96	0	1654
110.0	70.0	28	37.0	118	17.5	NH	84	06	07	0240	46	6	347
110.0	80.0	28	16.0	118	58.0	NH	84	06	07	0838	90	1	1641
110.0	90.0	27	57.1	119	36.3	NH	84	06	07	1449	61	1	456
110.0	100.0	27	37.2	120	15.6	NH	84	06	07	2043	95	3	2311

CalCOFI Cruise 8407

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
63.3	80.0	36	22.6	124	37.7	JD	84	07	26	2115	97	0	1
63.3	90.0	36	02.6	125	20.5	JD	84	07	26	1530	93	0	1
63.3	100.0	35	42.6	126	03.1	JD	84	07	26	0925	101	0	2
66.7	49.0	36	49.2	121	59.1	JD	84	07	24	2015	95	92	1335
66.7	50.0	36	47.2	122	03.4	JD	84	07	24	2245	100	15	200
66.7	55.0	36	37.2	122	24.9	JD	84	07	25	0225	103	2	13
66.7	60.0	36	27.2	122	46.4	JD	84	07	25	0600	110	0	2
66.7	70.0	36	07.2	123	29.1	JD	84	07	25	1120	105	0	7
66.7	80.0	35	47.1	124	11.8	JD	84	07	25	1625	108	0	1
66.7	90.0	35	27.2	124	54.2	JD	84	07	25	2200	93	0	21
66.7	100.0	35	07.3	125	36.3	JD	84	07	26	0350	100	1	2
70.0	51.0	36	10.6	121	44.3	JD	84	07	24	1500	104	0	43
70.0	53.0	36	06.8	121	52.4	JD	84	07	24	1200	106	0	3
70.0	60.0	35	52.9	122	21.9	JD	84	07	24	0735	117	257	5
70.0	70.0	35	32.9	123	04.5	JD	84	07	24	0130	114	43	20
70.0	80.0	35	12.8	123	46.4	JD	84	07	23	1940	107	1	31
70.0	90.0	34	52.7	124	29.0	JD	84	07	23	1410	107	4	102
70.0	100.0	34	32.8	125	10.9	JD	84	07	23	0805	106	1	38
73.3	50.0	35	38.6	121	15.3	JD	84	07	21	1854	95	0	183
73.3	53.0	35	32.6	121	28.1	JD	84	07	21	2153	76	0	0
73.3	60.0	35	18.6	121	57.7	JD	84	07	22	0340	95	0	4
73.3	70.0	34	58.6	122	39.9	JD	84	07	22	0945	102	1	7
73.3	80.0	34	38.6	123	21.9	JD	84	07	22	1525	112	1	6
73.3	90.0	34	18.6	124	03.7	JD	84	07	22	2030	98	2	3
73.3	100.0	33	58.5	124	45.4	JD	84	07	23	0145	106	1	11
76.7	48.0	35	07.3	120	42.4	JD	84	07	21	1333	95	0	685
76.7	51.0	35	01.3	120	55.1	JD	84	07	21	1105	94	0	0
76.7	55.0	34	53.5	121	11.9	JD	84	07	21	0735	93	2	3
76.7	60.0	34	43.3	121	33.0	JD	84	07	21	0220	99	11	2
76.7	70.0	34	23.4	122	14.8	JD	84	07	20	2005	96	4	10
76.7	80.0	34	03.1	122	56.7	JD	84	07	20	1343	111	0	9
76.7	90.0	33	43.3	123	38.0	JD	84	07	20	0700	104	0	2
76.7	100.0	33	23.1	124	19.4	JD	84	07	20	0125	90	3	15
80.0	51.0	34	27.0	120	31.4	JD	84	07	16	2007	93	238	91
80.0	55.0	34	19.0	120	48.1	JD	84	07	16	2320	92	33	70
80.0	60.0	34	09.1	121	08.9	JD	84	07	17	2235	89	0	1
80.0	60.0	34	09.1	121	08.9	JD	84	07	17	1118	109	0	0
80.0	70.0	33	49.0	121	50.6	JD	84	07	18	1125	102	0	361
80.0	70.0	33	49.0	121	50.6	JD	84	07	18	2255	100	3	205

TABLE 1. (cont.) CalCOFI Cruise 8407 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
80.0	80.0	33	29.0	122	32.0	JD	84	07	19	0720	104	2	121
80.0	90.0	33	09.0	123	13.1	JD	84	07	19	1349	102	3	351
80.0	100.0	32	49.0	123	54.5	JD	84	07	19	1953	86	7	80
82.0	46.0	34	16.2	119	56.3	JD	84	07	15	2210	115	621	20
83.3	40.6	34	13.5	119	24.7	JD	84	07	16	0635	106	4	5407
83.3	42.0	34	10.7	119	30.6	JD	84	07	16	0450	108	2	73
83.3	51.0	33	52.7	120	08.0	JD	84	07	15	1720	108	1	5407
83.3	55.0	33	44.6	120	24.7	JD	84	07	15	1415	92	0	9
83.3	60.0	33	34.7	120	45.3	JD	84	07	15	1020	99	0	4
83.3	70.0	33	15.0	121	26.8	JD	84	07	15	0455	102	16	7
83.3	80.0	32	54.7	122	07.7	JD	84	07	14	2240	106	4	28
83.3	90.0	32	34.7	122	48.7	JD	84	07	14	1720	107	0	51
83.3	100.0	32	14.7	123	29.5	JD	84	07	13	2300	99	9	16
83.3	100.0	32	14.7	123	29.5	JD	84	07	14	1120	103	4	12
86.7	33.0	33	53.4	118	29.8	JD	84	07	11	0735	104	47	4150
86.7	35.0	33	49.4	118	37.7	JD	84	07	11	1015	103	0	1770
86.7	40.0	33	39.6	118	58.3	JD	84	07	11	1600	84	1	340
86.7	45.0	33	29.4	119	19.1	JD	84	07	11	2020	84	12	17
86.7	50.0	33	19.6	119	39.7	JD	84	07	12	0001	77	88	906
86.7	55.0	33	09.5	120	00.5	JD	84	07	12	0505	94	1	12
86.7	60.0	32	59.4	120	21.0	JD	84	07	12	0855	96	0	0
86.7	70.0	32	39.4	121	01.7	JD	84	07	12	1520	98	0	9
86.7	80.0	32	19.4	121	42.9	JD	84	07	12	2119	104	7	3
86.7	90.0	31	59.5	122	23.3	JD	84	07	13	0420	105	1	1
86.7	100.0	31	39.4	123	04.2	JD	84	07	13	1015	95	0	6
90.0	28.0	33	28.7	117	46.7	NH	84	07	12	1500	110	1	50
90.0	30.0	33	25.1	117	54.3	NH	84	07	12	1305	76	1	0
90.0	35.0	33	15.0	118	14.9	NH	84	07	12	0914	134	1	29
90.0	37.0	33	11.1	118	23.2	NH	84	07	12	0505	77	0	772
90.0	45.0	32	55.1	118	56.1	NH	84	07	11	0635	90	1	0
90.0	53.0	32	39.1	119	28.7	NH	84	07	10	2310	85	1	1
90.0	60.0	32	25.6	119	57.6	NH	84	07	10	1826	106	1	4
90.0	70.0	32	05.3	120	38.3	NH	84	07	09	1645	75	1	3
90.0	80.0	31	45.4	121	18.7	NH	84	07	09	1055	81	0	2
90.0	90.0	31	25.0	121	59.7	NH	84	07	09	0408	82	3	0
90.0	100.0	31	05.0	122	39.6	NH	84	07	08	2145	129	0	22
93.3	26.7	32	57.5	117	18.4	NH	84	07	05	1425	95	1	732
93.3	29.0	32	52.7	117	28.1	NH	84	07	05	1830	75	1	4
93.3	30.0	32	50.9	117	32.0	NH	84	07	05	1920	62	15	20
93.3	35.0	32	40.5	117	52.6	NH	84	07	06	2225	65	7	9
93.3	40.0	32	30.6	118	13.0	NH	84	07	07	0250	66	0	0
93.3	45.0	32	21.2	118	33.1	NH	84	07	07	0658	71	0	2
93.3	50.0	32	11.0	118	53.5	NH	84	07	07	1026	94	1	8
93.3	55.0	32	00.8	119	14.2	NH	84	07	07	1410	82	1	1
93.3	60.0	31	50.8	119	34.4	NH	84	07	07	1714	85	0	8
93.3	70.0	31	30.8	120	14.8	NH	84	07	07	2235	79	1	253
93.3	80.0	31	10.8	120	55.2	NH	84	07	08	0355	77	1	116
93.3	90.0	30	50.9	121	35.3	NH	84	07	08	1000	67	1	13
93.3	100.0	30	31.0	122	15.7	NH	84	07	08	1555	66	2	8

TABLE 1. (cont.) CalCOFI Cruise 8407 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
96.7	29.0	32	17.4	117	04.8	NH	84	07	13	0720	68	35	75
96.7	30.0	32	15.2	117	09.1	NH	84	07	13	0904	77	0	182
96.7	32.0	32	11.5	117	17.1	NH	84	07	13	1035	90	4	0
96.7	35.0	32	05.6	117	29.2	NH	84	07	13	1345	97	1	1
96.7	40.0	31	55.5	117	49.4	NH	84	07	13	1715	79	7	0
96.7	45.0	31	45.6	118	09.8	NH	84	07	13	2040	88	29	486
96.7	50.0	31	35.4	118	30.5	NH	84	07	14	0003	86	4	478
96.7	55.0	31	25.2	118	50.5	NH	84	07	14	0416	74	1	262
96.7	60.0	31	15.4	119	10.7	NH	84	07	14	0826	86	1	221
96.7	70.0	30	55.5	119	50.8	NH	84	07	14	1400	52	0	75
96.7	80.0	30	35.4	120	30.8	NH	84	07	14	1935	87	0	73
96.7	90.0	30	15.4	121	11.0	NH	84	07	15	0125	61	2	4210
96.7	100.0	29	55.2	121	50.4	NH	84	07	15	0705	110	3	4857
100.0	29.2	31	42.7	116	43.5	NH	84	07	18	0326	94	28	8
100.0	30.0	31	41.1	116	46.6	NH	84	07	18	0121	86	41	12
100.0	35.0	31	31.2	117	06.8	NH	84	07	17	2155	93	14	10
100.0	40.0	31	21.2	117	27.0	NH	84	07	17	1822	84	10	246
100.0	45.0	31	11.2	117	47.0	NH	84	07	17	1500	79	2	150
100.0	50.0	31	01.4	118	07.2	NH	84	07	17	1136	96	0	215
100.0	55.0	30	51.3	118	27.3	NH	84	07	16	1330	94	0	440
100.0	60.0	30	41.3	118	46.9	NH	84	07	16	1018	102	0	1426
100.0	70.0	30	21.2	119	27.3	NH	84	07	16	0452	80	2	1788
100.0	80.0	30	01.5	120	07.3	NH	84	07	15	2325	85	5	4038
100.0	90.0	29	41.4	120	47.1	NH	84	07	15	1810	87	1	773
100.0	100.0	29	20.5	121	26.2	NH	84	07	15	1245	83	0	4201
103.3	29.0	31	08.7	116	20.6	NH	84	07	18	0834	20	5	245
103.3	30.0	31	07.0	116	24.3	NH	84	07	18	0953	88	2	1139
103.3	35.0	30	57.0	116	44.6	NH	84	07	18	1350	103	1	7
103.3	40.0	30	47.1	117	04.5	NH	84	07	18	1700	107	6	3
103.3	45.0	30	36.6	117	24.5	NH	84	07	18	2015	80	3	28
103.3	50.0	30	26.8	117	44.8	NH	84	07	18	2330	82	5	371
103.3	55.0	30	16.9	118	04.9	NH	84	07	19	0302	101	1	304
103.3	60.0	30	07.0	118	24.6	NH	84	07	19	0629	82	0	145
103.3	70.0	29	47.0	119	04.4	NH	84	07	19	1220	80	0	6672
103.3	80.0	29	26.9	119	44.1	NH	84	07	19	1730	96	1	1927
103.3	90.0	29	06.9	120	23.6	NH	84	07	19	2250	65	5	263
103.3	100.0	28	47.0	121	03.2	NH	84	07	20	0418	78	5	2321
106.7	31.0	30	29.5	116	05.7	NH	84	07	22	1045	78	1	205
106.7	32.0	30	27.0	116	09.7	NH	84	07	22	0857	89	8	18
106.7	35.0	30	21.2	116	22.0	NH	84	07	22	0627	108	16	0
106.7	40.0	30	11.3	116	41.9	NH	84	07	22	0246	92	2	12
106.7	45.0	30	01.1	117	01.6	NH	84	07	21	2250	68	4	449
106.7	50.0	29	51.3	117	21.5	NH	84	07	21	1825	82	7	107
106.7	55.0	29	41.8	117	41.4	NH	84	07	21	1435	93	3	1939
106.7	60.0	29	31.5	118	01.5	NH	84	07	21	0944	76	1	377
106.7	70.0	29	11.0	118	41.1	NH	84	07	21	0306	94	1	257
106.7	80.0	28	50.7	119	20.1	NH	84	07	20	2100	82	1	1065
106.7	90.0	28	32.0	119	59.5	NH	84	07	20	1540	92	2	810
106.7	100.0	28	11.4	120	38.5	NH	84	07	20	1007	94	0	1255
110.0	32.4	29	52.4	115	49.5	NH	84	07	22	1515	73	3	0

TABLE 1. (cont.) CalCOFI Cruise 8407 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
110.0	35.0	29	47.1	115	59.6	NH	84	07	22	1755	91	2	0
110.0	40.0	29	37.3	116	19.7	NH	84	07	23	0702	101	10	3
110.0	45.0	29	27.4	116	39.5	NH	84	07	23	1039	69	3	219
110.0	50.0	29	17.2	116	59.2	NH	84	07	23	1500	80	22	21
110.0	55.0	29	07.3	117	19.0	NH	84	07	23	1920	65	5	13
110.0	60.0	28	57.6	117	38.5	NH	84	07	23	2335	91	3	113
110.0	65.0	28	47.0	117	58.5	NH	84	07	24	0312	65	25	20
110.0	70.0	28	37.2	118	18.0	NH	84	07	24	0649	80	1	18
110.0	80.0	28	17.4	118	57.4	NH	84	07	24	1220	71	6	12
110.0	90.0	27	57.2	119	35.9	NH	84	07	24	1700	76	4	601
110.0	100.0	27	37.2	120	15.2	NH	84	07	24	2200	84	0	127

CalCOFI Cruise 8410

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
60.0	50.0	37	56.8	122	52.9	JD	84	10	18	1915	88	28	2213
60.0	52.5	37	51.8	123	03.8	JD	84	10	18	2110	81	5	208
60.0	55.0	37	46.8	123	14.7	JD	84	10	18	2355	62	7	6
60.0	60.0	37	36.8	123	36.5	JD	84	10	19	0445	81	3	11
60.0	70.0	37	16.9	124	19.9	JD	84	10	19	1130	94	0	5
60.0	80.0	36	56.8	125	03.2	JD	84	10	19	1650	64	0	5
60.0	90.0	36	36.8	125	46.3	JD	84	10	19	2306	69	7	2
60.0	100.0	36	16.9	126	29.0	JD	84	10	20	0525	60	4	3
63.3	50.0	37	22.6	122	28.5	JD	84	10	21	1200	81	0	1032
63.3	52.0	37	18.6	122	37.1	JD	84	10	21	1015	69	1	211
63.3	55.0	37	12.6	122	50.1	JD	84	10	21	0800	67	4	4
63.3	60.0	37	02.6	123	11.7	JD	84	10	21	0410	72	0	0
63.3	70.0	36	42.6	123	54.8	JD	84	10	20	2155	72	0	1
63.3	80.0	36	22.6	124	37.7	JD	84	10	20	1620	66	0	3
66.7	49.0	36	49.2	121	59.1	JD	84	10	18	0950	86	0	894
66.7	50.0	36	47.2	122	03.4	JD	84	10	18	0830	84	0	100
66.7	55.0	36	37.5	122	24.7	JD	84	10	18	0515	77	11	4
66.7	60.0	36	27.2	122	46.4	JD	84	10	18	0105	74	1	1
66.7	70.0	36	07.2	123	29.3	JD	84	10	17	1830	70	0	2
66.7	80.0	35	47.2	124	11.7	JD	84	10	17	1235	63	0	0
70.0	51.0	36	10.7	121	43.9	JD	84	10	16	0445	83	0	28
70.0	53.0	36	06.9	121	52.1	JD	84	10	16	0750	82	1	184
70.0	60.0	35	52.9	122	21.9	JD	84	10	16	1415	75	0	3
73.3	50.0	35	38.6	121	15.3	JD	84	10	15	2115	75	2	14
73.3	50.0	35	38.6	121	15.3	JD	84	10	22	0035	67	2	48
73.3	53.0	35	32.6	121	28.1	JD	84	10	22	0400	81	0	1
73.3	60.0	35	18.9	121	57.5	JD	84	10	22	0830	69	0	15
73.3	70.0	34	58.6	122	39.9	JD	84	10	22	1545	64	0	1
73.3	80.0	34	38.6	123	21.9	JD	84	10	22	2125	68	0	6
73.3	90.0	34	18.6	124	03.7	JD	84	10	23	0310	86	0	6
73.3	100.0	33	58.6	124	45.4	JD	84	10	23	0835	67	0	0
76.7	48.0	35	07.3	120	42.4	JD	84	10	12	2015	87	0	217
76.7	51.0	35	01.3	120	55.1	JD	84	10	12	2305	60	5	165

TABLE 1. (cont.) CalCOFI Cruise 8410 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
76.7	55.0	34	53.3	121	11.9	JD	84	10	13	0255	73	0	0
76.7	60.0	34	43.4	121	32.8	JD	84	10	13	0730	71	0	0
76.7	70.0	34	23.3	122	14.8	JD	84	10	13	1420	66	1	0
80.0	51.0	34	27.0	120	31.4	JD	84	10	12	1440	60	0	57
80.0	55.0	34	19.0	120	48.1	JD	84	10	12	1050	55	0	0
80.0	60.0	34	09.0	121	09.0	JD	84	10	12	0040	62	0	1
80.0	70.0	33	49.0	121	50.6	JD	84	10	11	0045	71	0	1
80.0	80.0	33	29.0	122	32.0	JD	84	10	09	2306	67	1	7
80.0	90.0	33	09.0	123	13.3	JD	84	10	09	1645	56	0	3
80.0	100.0	32	49.3	123	54.4	JD	84	10	09	0955	75	4	42
82.0	46.0	34	16.2	119	56.5	JD	84	10	07	1315	90	1	4
83.3	40.6	34	13.5	119	24.7	JD	84	10	07	1650	69	3	54
83.3	42.0	34	10.7	119	30.5	JD	84	10	07	1925	78	4	3
83.3	51.0	33	52.6	120	08.0	JD	84	10	08	0055	78	10	440
83.3	55.0	33	44.6	120	24.4	JD	84	10	08	0515	61	8	4
83.3	60.0	33	34.7	120	45.3	JD	84	10	08	0900	70	0	7
83.3	70.0	33	14.7	121	26.6	JD	84	10	08	1450	77	0	5
83.3	80.0	32	54.7	122	07.6	JD	84	10	08	2025	78	0	13
83.3	90.0	32	34.7	122	48.7	JD	84	10	09	0200	63	1	37
83.3	100.0	32	14.7	123	29.5	JD	84	10	05	1225	88	0	79
86.7	33.0	33	53.2	118	29.7	JD	84	10	03	0200	99	176	219
86.7	35.0	33	49.5	118	37.6	JD	84	10	03	0550	107	5	6
86.7	40.0	33	39.5	118	58.4	JD	84	10	03	1005	85	0	0
86.7	45.0	33	29.4	119	19.2	JD	84	10	03	1505	80	2	1
86.7	50.0	33	19.2	119	39.6	JD	84	10	03	1835	71	3	8
86.7	55.0	33	09.4	120	00.4	JD	84	10	03	2250	81	2	1
86.7	60.0	32	59.4	120	21.0	JD	84	10	04	0336	76	5	3
86.7	70.0	32	39.4	121	02.0	JD	84	10	04	0930	84	2	27
86.7	80.0	32	19.2	121	42.9	JD	84	10	04	1550	72	4	37
86.7	90.0	31	59.4	122	23.6	JD	84	10	04	2203	86	5	48
86.7	100.0	31	39.3	123	04.1	JD	84	10	05	0430	83	5	106
90.0	28.0	33	29.0	117	46.2	NH	84	10	18	1710	102	42	1
90.0	30.0	33	25.1	117	54.2	NH	84	10	18	2001	91	6	0
90.0	35.0	33	15.0	118	15.0	NH	84	10	18	2345	58	2	0
90.0	37.0	33	11.1	118	23.2	NH	84	10	19	0250	79	14	0
93.3	26.7	32	57.5	117	18.5	NH	84	10	25	1325	86	0	1
93.3	29.0	32	52.4	117	27.9	NH	84	10	25	1045	67	2	0
93.3	30.0	32	50.9	117	31.9	NH	84	10	24	1820	119	2	0
93.3	35.0	32	40.8	117	52.3	NH	84	10	24	0908	67	2	3
93.3	40.0	32	30.9	118	12.8	NH	84	10	24	0635	89	1	0
93.3	45.0	32	20.9	118	33.4	NH	84	10	24	0305	92	4	1
93.3	50.0	32	10.9	118	53.6	NH	84	10	23	2320	74	2	0
93.3	55.0	32	00.5	119	13.9	NH	84	10	23	1935	65	0	0
93.3	60.0	31	50.9	119	34.4	NH	84	10	23	1605	107	1	9
93.3	70.0	31	31.1	120	14.8	NH	84	10	23	1020	59	0	4
96.7	29.0	32	17.6	117	04.7	NH	84	10	26	1145	132	1	111
96.7	30.0	32	15.3	117	08.7	NH	84	10	26	1320	111	1	5
96.7	32.0	32	11.4	117	17.2	NH	84	10	26	1500	58	2	0
96.7	35.0	32	05.3	117	29.2	NH	84	10	26	1830	153	20	0

TABLE 1. (cont.) CalCOFI Cruise 8410 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr.	mo.	day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs
96.7	40.0	31	55.5	117	49.1	NH	84	10	26	2155	79	0	0
96.7	45.0	31	45.3	118	10.0	NH	84	10	27	0110	76	0	1
96.7	50.0	31	35.3	118	30.1	NH	84	10	27	0445	100	0	0
100.0	29.2	31	42.8	116	43.3	NH	84	10	30	1545	102	2	0
100.0	30.0	31	41.1	116	46.5	NH	84	10	30	1415	82	0	2
100.0	35.0	31	31.2	117	06.9	NH	84	10	30	1043	89	1	2
100.0	40.0	31	21.0	117	27.0	NH	84	10	30	0655	73	0	0
100.0	45.0	31	11.1	117	47.0	NH	84	10	30	0305	88	0	1
100.0	70.0	30	21.2	119	27.5	NH	84	10	29	1048	76	28	4
103.3	29.0	31	08.8	116	20.5	NH	84	10	30	2215	86	7	32
103.3	30.0	31	06.7	116	24.3	NH	84	10	30	2300	90	5	4
103.3	80.0	29	26.8	119	44.2	NH	84	11	01	0810	88	5	93
103.3	90.0	29	07.0	120	23.6	NH	84	11	01	1405	90	10	34
103.3	100.0	28	47.0	121	03.1	NH	84	11	01	1935	74	8	56
106.7	80.0	28	50.9	119	21.4	NH	84	11	02	1235	88	9	37
106.7	90.0	28	31.6	119	59.4	NH	84	11	02	0706	77	1	35
106.7	100.0	28	11.6	120	38.6	NH	84	11	02	0135	85	12	50
110.0	32.4	29	52.4	115	49.6	NH	84	11	04	0453	75	0	5
110.0	35.0	29	47.2	115	59.8	NH	84	11	04	0715	100	6	0
110.0	40.0	29	37.2	116	19.8	NH	84	11	04	1130	105	0	0
110.0	45.0	29	27.3	116	39.4	NH	84	11	04	1500	133	0	3
110.0	50.0	29	17.1	116	59.2	NH	84	11	04	1835	87	2	2
110.0	55.0	29	07.3	117	19.2	NH	84	11	04	2205	84	0	3
110.0	60.0	28	57.1	117	38.8	NH	84	11	05	0135	89	0	48
110.0	70.0	28	37.1	118	18.0	NH	84	11	05	0643	88	2	15
110.0	80.0	28	17.6	118	57.0	NH	84	11	05	1155	78	7	25
110.0	90.0	27	57.2	119	36.3	NH	84	11	05	1710	72	11	37
110.0	100.0	27	37.1	120	15.3	NH	84	11	05	2235	82	9	42

TABLE 2. Pooled occurrences of fish larvae taken in Manta tows on the 1984 CalCOFI survey.

Rank	Taxon	Occurrences
1	*Cololabis saira*	263
2	*Engraulis mordax*	204
3	*Sebastes* spp.	94
4	*Scorpaenichthys marmoratus*	61
5	*Hypsoblennius jenkinsi*	52
6	*Vinciguerria lucetia*	44
7	*Cheilopogon* spp.	39
8	*Scomber japonicus*	38
9	*Sebastes diploproa*	36
10	*Atherinopsis californiensis*	32
11	*Trachurus symmetricus*	31
12	*Stenobrachius leucopsarus*	27
13	*Hexagrammos decagrammus*	23
14	*Chromis punctipinnis*	22
15	*Ceratoscopelus townsendi*	21
15	*Sardinops sagax*	21
15	*Tetragonurus cuvieri*	21
18	*Hypsoblennius gilberti*	15
19	*Icichthys lockingtoni*	14
20	*Hemilepidotus spinosus*	13
21	*Leuresthes tenuis*	12
21	*Ophiodon elongatus*	12
23	*Cheilopogon heterurus*	11
23	*Sebastes jordani*	11
25	*Nannobrachium ritteri*	10
26	*Cyclothone signata*	9
26	*Lampanyctus* spp.	9
28	*Triphoturus mexicanus*	8
29	*Oxyjulis californica*	7
29	Disintegrated fish larvae	7
29	Unidentified fish larvae	7
29	*Merluccius productus*	7
29	*Paralabrax* spp.	7
34	*Anoplopoma fimbria*	6
34	*Citharichthys stigmaeus*	6
34	*Cheilopogon pinnatibarbatus*	6
34	*Sphyraena argentea*	6
34	*Hypsoblennius gentilis*	6
34	*Pleuronichthys coenosus*	6
40	*Medialuna californiensis*	5
40	*Sebastes paucispinis*	5
40	*Hypsoblennius* spp.	5
40	*Paralichthys californicus*	5
40	*Hirundichthys marginatus*	5
45	Myctophidae	4
45	*Oxylebius pictus*	4
45	*Macroramphosus gracilis*	4
45	*Symbolophorus californiensis*	4
45	Cottidae	4

TABLE 2. (cont.)

Rank	Taxon	Occurrences
45	*Sebastes aurora*	4
45	*Pleuronichthys decurrens*	4
45	*Leptocottus armatus*	4
45	*Hypsypops rubicundus*	4
45	*Girella nigricans*	4
45	*Semicossyphus pulcher*	4
56	*Diaphus* spp.	3
56	*Lepidogobius lepidus*	3
56	*Bathylagus ochotensis*	3
56	*Peprilus simillimus*	3
56	*Icosteus aenigmaticus*	3
56	*Neoclinus blanchardi*	3
56	*Genyonemus lineatus*	3
56	*Neoclinus stephensae*	3
64	*Chiasmodon niger*	2
64	*Aristostomias scintillans*	2
64	*Atherinops affinis*	2
64	*Citharichthys sordidus*	2
64	*Coryphopterus nicholsii*	2
64	*Protomyctophum crockeri*	2
64	*Diogenichthys atlanticus*	2
64	*Synodus lucioceps*	2
64	*Artedius harringtoni*	2
64	*Stomias atriventer*	2
64	*Seriola lalandi*	2
64	*Seriphus politus*	2
64	*Parophrys vetulus*	2
64	*Sebastes levis*	2
64	*Hirundichthys* spp.	2
64	*Etrumeus teres*	2
64	*Xenistius californiensis*	2
81	*Cyclothone* spp.	1
81	*Pleuronichthys verticalis*	1
81	*Leuroglossus stilbius*	1
81	*Lampadena urophaos*	1
81	Stomiiformes	1
81	Melanostomiinae	1
81	*Lestidiops ringens*	1
81	*Microstomus pacificus*	1
81	*Tactostoma macropus*	1
81	*Bathophilus flemingi*	1
81	*Nannobrachium regale*	1
81	*Lyopsetta exilis*	1
81	Exocoetidae	1
81	*Ruscarius meanyi*	1
81	*Artedius lateralis*	1
81	*Ruscarius creaseri*	1
81	*Anisotremus davidsoni*	1
81	*Scorpaena guttata*	1
81	*Cheilotrema saturnum*	1
81	*Sebastes goodei*	1
81	*Menticirrhus undulatus*	1

TABLE 2. (cont.)

Rank	Taxon	Occurrences
81	*Halichoeres semicinctus*	1
81	Ophidiiformes	1
81	Stichaeidae	1
81	*Typhlogobius californiensis*	1
81	*Neoclinus* spp.	1
81	*Gigantactis* spp.	1
81	*Clinocottus analis*	1
81	*Oneirodes* spp.	1
81	*Hexagrammos lagocephalus*	1
81	*Trachipterus altivelis*	1
81	*Tarletonbeania crenularis*	1
81	*Hygophum* spp.	1
81	*Lythrypnus dalli*	1
81	*Fodiator acutus*	1
	Total	1386

TABLE 3. Pooled raw counts of fish larvae taken in Manta tows on the 1984 CalCOFI survey.

Rank	Taxon	Count
1	*Engraulis mordax*	13810
2	*Cololabis saira*	2041
3	*Sebastes* spp.	1372
4	*Scorpaenichthys marmoratus*	1162
5	*Hypsoblennius jenkinsi*	719
6	*Sardinops sagax*	526
7	*Atherinopsis californiensis*	442
8	*Scomber japonicus*	366
9	*Sebastes diploproa*	343
10	*Sebastes jordani*	302
11	*Leuresthes tenuis*	169
12	*Vinciguerria lucetia*	166
13	*Cheilopogon* spp.	141
14	*Oxyjulis californica*	126
14	*Hexagrammos decagrammus*	126
16	*Chromis punctipinnis*	122
17	*Trachurus symmetricus*	112
18	*Ophiodon elongatus*	81
19	*Stenobrachius leucopsarus*	76
20	*Hemilepidotus spinosus*	67
21	*Ceratoscopelus townsendi*	60
22	*Triphoturus mexicanus*	45
23	*Tetragonurus cuvieri*	40
24	*Hypsypops rubicundus*	35
24	*Paralabrax* spp.	35
24	*Hypsoblennius gilberti*	35
27	*Cheilopogon heterurus*	32
28	*Artedius harringtoni*	31
29	Disintegrated fish larvae	23
30	*Pleuronichthys coenosus*	21
31	*Anisotremus davidsoni*	20
32	*Merluccius productus*	18
32	*Icichthys lockingtoni*	18
34	*Cheilopogon pinnatibarbatus*	17
34	*Macroramphosus gracilis*	17
36	*Sphyraena argentea*	16
36	Cottidae	16
38	*Semicossyphus pulcher*	14
39	*Hypsoblennius* spp.	11
39	*Lampanyctus* spp.	11
41	*Genyonemus lineatus*	10
41	*Hypsoblennius gentilis*	10
41	*Nannobrachium ritteri*	10
44	*Sebastes paucispinis*	9
44	*Neoclinus blanchardi*	9
44	*Etrumeus teres*	9
44	*Citharichthys stigmaeus*	9
44	*Anoplopoma fimbria*	9
44	*Cyclothone signata*	9

TABLE 3. (cont.)

Rank	Taxon	Count
50	*Icosteus aenigmaticus*	7
50	Unidentified fish larvae	7
50	*Oxylebius pictus*	7
50	*Girella nigricans*	7
54	*Parophrys vetulus*	6
54	*Lampadena urophaos*	6
54	*Symbolophorus californiensis*	6
54	*Peprilus simillimus*	6
54	*Hirundichthys marginatus*	6
59	*Pleuronichthys decurrens*	5
59	Myctophidae	5
59	*Medialuna californiensis*	5
59	*Paralichthys californicus*	5
63	*Artedius lateralis*	4
63	*Sebastes goodei*	4
63	*Leptocottus armatus*	4
63	*Sebastes aurora*	4
67	*Protomyctophum crockeri*	3
67	*Sebastes levis*	3
67	*Pleuronichthys verticalis*	3
67	*Diaphus* spp.	3
67	*Bathylagus ochotensis*	3
67	*Synodus lucioceps*	3
67	*Neoclinus stephensae*	3
67	*Lepidogobius lepidus*	3
67	*Hirundichthys* spp.	3
67	*Halichoeres semicinctus*	3
67	*Seriphus politus*	3
78	*Stomias atriventer*	2
78	*Diogenichthys atlanticus*	2
78	*Aristostomias scintillans*	2
78	*Atherinops affinis*	2
78	*Coryphopterus nicholsii*	2
78	*Citharichthys sordidus*	2
78	Stichaeidae	2
78	*Chiasmodon niger*	2
78	*Lythrypnus dalli*	2
78	*Ruscarius creaseri*	2
78	*Ruscarius meanyi*	2
78	*Scorpaena guttata*	2
78	*Cheilotrema saturnum*	2
78	*Seriola lalandi*	2
78	*Xenistius californiensis*	2
93	*Bathophilus flemingi*	1
93	*Gigantactis* spp.	1
93	*Microstomus pacificus*	1
93	*Lyopsetta exilis*	1
93	*Hygophum* spp.	1
93	Ophidiiformes	1
93	*Leuroglossus stilbius*	1
93	*Cyclothone* spp.	1

TABLE 3. (cont.)

Rank	Taxon	Count
93	*Tarletonbeania crenularis*	1
93	*Neoclinus* spp.	1
93	Stomiiformes	1
93	*Typhlogobius californiensis*	1
93	Melanostomiinae	1
93	*Oneirodes* spp.	1
93	*Tactostoma macropus*	1
93	*Menticirrhus undulatus*	1
93	*Trachipterus altivelis*	1
93	*Nannobrachium regale*	1
93	*Clinocottus analis*	1
93	Exocoetidae	1
93	*Hexagrammos lagocephalus*	1
93	*Fodiator acutus*	1
93	*Lestidiops ringens*	1
	Total	23048

TABLE 4. Numbers of fish larvae taken in Manta net tows on the 1984 CalCOFI survey, listed by taxon, station, and month. Numbers of larvae are expressed as larvae per 100 cubic meters of water filtered. Unoccupied stations are indicated by a dash.

Etrumeus teres

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	33.0	0.0	0.0	-	0.0	-	0.0	0.0	-	-	6.9	-	-
103.3	29.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	1.7	-	-

Sardinops sagax

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3	50.0	0.0	0.9	-	-	0.0	-	-	-	-	0.0	-	-
76.7	51.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.6	-	-
76.7	60.0	0.0	0.0	-	0.0	0.0	-	2.0	-	-	0.0	-	-
80.0	51.0	0.0	0.0	-	0.0	1.0	-	63.4	-	-	0.0	-	-
82.0	46.0	0.0	0.0	-	0.0	16.2	-	384.1	-	-	0.0	-	-
83.3	40.6	0.0	0.0	-	0.0	0.0	-	0.0	-	-	1.4	-	-
83.3	51.0	0.0	0.0	-	-	-	-	0.0	-	-	0.8	-	-
83.3	55.0	0.0	0.0	-	0.0	1.1	-	0.0	-	-	2.4	-	-
86.7	33.0	0.0	0.0	-	0.0	-	1.0	0.0	-	-	35.5	-	-
86.7	35.0	0.0	0.0	-	0.0	-	1.1	0.0	-	-	0.0	-	-
90.0	28.0	0.0	-	0.0	0.0	-	14.0	0.0	-	-	6.1	-	-
90.0	30.0	0.0	-	0.0	0.0	-	0.6	0.0	-	-	0.0	-	-
93.3	35.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	1.3	-	-
96.7	30.0	0.0	-	0.0	0.0	-	11.0	0.0	-	-	0.0	-	-
96.7	35.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	15.3	-	-
103.3	29.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	2.6	-	-

Engraulis mordax

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0	50.0	0.0	46.1	-	-	0.0	-	-	-	-	4.4	-	-
60.0	52.5	0.8	42.1	-	-	0.0	-	-	-	-	0.8	-	-
60.0	55.0	0.0	0.0	-	-	0.0	-	-	-	-	0.6	-	-
60.0	60.0	0.0	0.0	-	-	0.0	-	-	-	-	1.6	-	-
63.3	50.0	3.0	75.4	-	-	0.0	-	-	-	-	0.0	-	-
63.3	52.0	1.5	14.1	-	-	0.0	-	-	-	-	0.0	-	-
63.3	55.0	27.8	2.1	-	-	0.0	-	-	-	-	0.7	-	-
63.3	60.0	0.0	4.3	-	-	0.0	-	-	-	-	0.0	-	-

TABLE 4. (cont.)

Station		*Engraulis mordax* (cont.)											
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7	49.0	0.0	5.7	-	-	0.0	-	81.7	-	-	0.0	-	-
66.7	50.0	12.4	4.3	-	-	0.0	-	14.0	-	-	0.0	-	-
66.7	55.0	0.0	10.2	-	-	0.0	-	1.0	-	-	1.5	-	-
70.0	51.0	0.0	0.9	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0	53.0	0.0	4.2	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0	70.0	0.0	0.0	-	-	0.0	-	43.2	-	-	-	-	-
73.3	50.0	0.0	0.7	-	0.0	5.8	-	0.0	-	-	0.0	-	-
73.3	53.0	1.8	68.7	-	0.0	0.8	-	0.0	-	-	0.0	-	-
73.3	100.0	0.0	0.0	-	-	0.0	-	1.1	-	-	0.0	-	-
76.7	48.0	12.5	23.0	-	2.2	4.7	-	0.0	-	-	0.0	-	-
76.7	51.0	0.0	6.4	-	0.0	1.7	-	0.0	-	-	0.0	-	-
76.7	55.0	0.0	0.0	-	5.6	2.5	-	0.0	-	-	0.0	-	-
76.7	60.0	37.3	0.9	-	5.4	0.0	-	0.0	-	-	0.0	-	-
76.7	65.0	-	10.1	-	-	-	-	-	-	-	-	-	-
76.7	70.0	18.4	4.7	-	-	-	-	1.0	-	-	0.0	-	-
80.0	51.0	0.0	155.6	-	0.0	31.1	-	27.1	-	-	0.0	-	-
80.0	55.0	5.6	1.8	-	-	32.7	-	0.0	-	-	0.0	-	-
80.0	60.0	14.1	4.7	-	34.7	3.4	-	0.0	-	-	0.0	-	-
80.0	70.0	0.0	0.0	-	0.0	0.0	-	1.0	-	-	0.0	-	-
80.0	80.0	7.7	0.0	-	0.9	0.0	-	0.0	-	-	0.0	-	-
80.0	90.0	0.0	5.3	-	0.0	0.0	-	0.0	-	-	0.0	-	-
82.0	46.0	4.9	0.0	-	6.5	0.0	-	25.3	-	-	0.0	-	-
83.3	40.6	0.0	0.0	-	89.7	0.0	-	1.1	-	-	0.0	-	-
83.3	42.0	11.3	0.0	-	1033.4	0.0	-	1.1	-	-	0.0	-	-
83.3	51.0	0.0	117.2	-	-	-	-	0.0	-	-	1.6	-	-
83.3	55.0	58.7	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3	60.0	56.1	2.9	-	0.0	0.9	-	0.0	-	-	0.0	-	-
83.3	70.0	0.0	4.0	-	0.0	131.3	-	0.0	-	-	0.0	-	-
83.3	80.0	0.0	1.9	-	0.0	0.0	-	0.0	-	-	0.0	-	-
86.7	33.0	37.2	166.4	-	672.4	-	44.2	0.0	-	-	4.9	-	-
86.7	35.0	9.8	58.4	-	2170.0	-	16.0	0.0	-	-	0.0	-	-
86.7	40.0	43.3	16.1	-	0.9	-	0.0	0.8	-	-	0.0	-	-
86.7	45.0	41.5	47.6	-	7.4	-	0.0	2.5	-	-	0.0	-	-
86.7	50.0	16.1	-	-	-	-	0.0	3.1	-	-	0.7	-	-
86.7	55.0	290.4	125.7	-	51.0	-	0.0	0.9	-	-	0.0	-	-
86.7	60.0	0.9	0.0	-	2.0	-	28.8	0.0	-	-	0.0	-	-

TABLE 4. (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
						Engraulis mordax (cont.)							
86.7	70.0	0.0	0.0	-	0.0	0.7	-	0.0	-	-	0.0	-	-
86.7	80.0	0.0	2.6	-	0.0	0.0	-	1.0	-	-	0.0	-	-
86.7	90.0	0.0	0.0	-	2.4	0.0	-	0.0	-	-	0.0	-	-
90.0	28.0	0.0	-	94.5	32.6	-	0.7	0.0	-	-	21.4	-	-
90.0	30.0	8.1	-	482.1	179.5	-	0.0	0.0	-	-	0.0	-	-
90.0	35.0	6.5	-	-	164.6	-	0.0	0.0	-	-	0.6	-	-
90.0	37.0	1.1	-	0.9	13.1	-	0.0	0.0	-	-	0.0	-	-
90.0	45.0	-	-	36.3	1061.0	-	0.0	0.0	-	-	-	-	-
90.0	53.0	9.3	-	0.0	-	-	-	0.0	-	-	-	-	-
90.0	60.0	2.3	-	22.1	-	-	-	0.0	-	-	-	-	-
90.0	90.0	0.0	0.0	-	-	-	0.8	0.0	-	-	-	-	-
93.3	26.7	1.9	-	0.0	4.1	-	0.0	0.9	-	-	0.0	-	-
93.3	28.0	-	-	387.0	-	-	-	-	-	-	-	-	-
93.3	29.0	0.0	-	20.8	1084.1	-	18.6	0.0	-	-	0.0	-	-
93.3	30.0	0.0	-	37.3	263.5	-	0.0	0.0	-	-	0.0	-	-
93.3	35.0	0.0	-	2.0	0.0	-	0.0	0.0	-	-	0.0	-	-
93.3	40.0	0.0	-	2.0	0.9	-	0.0	0.0	-	-	0.0	-	-
93.3	45.0	0.0	-	9.4	10.3	-	0.0	0.0	-	-	0.0	-	-
93.3	55.0	-	-	0.9	1.8	-	0.0	0.0	-	-	0.0	-	-
93.3	70.0	0.0	-	212.3	0.0	-	0.0	0.0	-	-	0.0	-	-
93.3	80.0	0.0	0.0	-	0.8	-	0.0	0.0	-	-	-	-	-
93.3	90.0	0.0	0.0	-	1.0	-	0.0	0.7	-	-	-	-	-
96.7	29.0	0.0	-	2.4	0.0	-	0.0	0.0	-	-	1.3	-	-
96.7	30.0	0.0	-	36.2	0.0	-	0.0	0.0	-	-	0.0	-	-
96.7	32.0	0.0	-	1.9	0.0	-	0.0	0.0	-	-	0.0	-	-
96.7	35.0	0.0	-	161.8	0.9	-	0.0	0.0	-	-	0.0	-	-
96.7	40.0	-	-	182.5	12.7	-	0.0	0.0	-	-	0.0	-	-
96.7	45.0	0.0	-	10.5	66.3	-	0.0	0.9	-	-	0.0	-	-
96.7	50.0	0.0	-	0.0	44.1	-	0.0	0.0	-	-	0.0	-	-
96.7	55.0	0.0	-	1.7	0.0	-	0.0	0.0	-	-	-	-	-
96.7	60.0	0.0	-	11.7	0.0	-	0.0	0.0	-	-	-	-	-
96.7	65.0	-	-	12.6	-	-	-	-	-	-	-	-	-
96.7	70.0	0.0	-	2.0	4.9	-	0.0	0.0	-	-	-	-	-
96.7	90.0	0.0	0.0	-	0.8	-	0.0	0.0	-	-	-	-	-
100.0	29.2	-	-	0.0	1.8	-	1.1	0.0	-	-	0.0	-	-
100.0	30.0	0.0	-	604.0	0.0	-	9.4	0.9	-	-	0.0	-	-

TABLE 4. (cont.)

Engraulis mordax (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
100.0 35.0	0.0	-	0.9	0.0	-	0.0	0.0	-	-	0.0	-	-
100.0 40.0	0.0	-	1.5	0.0	-	0.0	0.0	-	-	0.0	-	-
100.0 45.0	0.0	-	43.6	0.0	-	0.0	0.0	-	-	0.0	-	-
100.0 50.0	0.0	-	0.0	0.0	-	0.8	0.0	-	-	-	-	-
100.0 55.0	0.0	-	0.9	0.0	-	0.0	0.0	-	-	-	-	-
100.0 65.0	-	23.1	-	-	-	-	-	-	-	-	-	-
100.0 70.0	0.0	0.8	-	-	-	0.0	0.0	-	-	0.0	-	-
103.3 29.0	0.7	-	0.0	18.1	-	0.0	0.0	-	-	0.0	-	-
103.3 30.0	0.0	-	286.4	239.6	-	0.0	0.0	-	-	0.0	-	-
103.3 35.0	0.0	-	0.0	8.2	-	0.0	0.0	-	-	-	-	-
103.3 45.0	0.0	-	0.8	0.8	-	0.0	0.0	-	-	-	-	-
103.3 50.0	0.0	-	2.6	0.0	-	0.0	0.0	-	-	-	-	-
103.3 55.0	0.0	-	22.0	0.0	-	0.0	0.0	-	-	-	-	-
106.7 31.0	26.1	-	36.7	1.5	-	0.0	0.0	-	-	-	-	-
106.7 32.0	0.0	-	137.6	0.0	-	0.0	0.0	-	-	-	-	-
106.7 35.0	0.0	-	13.5	0.0	-	0.0	0.0	-	-	-	-	-
106.7 40.0	0.0	-	0.0	0.7	-	0.0	0.0	-	-	-	-	-
106.7 45.0	0.0	-	0.0	0.7	-	0.0	0.0	-	-	-	-	-
106.7 50.0	0.0	-	0.7	-	-	0.0	0.0	-	-	-	-	-
110.0 32.4	2.1	-	-	28.6	-	0.0	0.0	-	-	-	0.0	-
110.0 32.5	-	-	10.4	-	-	-	-	-	-	-	-	-
110.0 35.0	0.7	-	0.0	2.8	-	0.0	0.0	-	-	-	0.0	-
110.0 40.0	0.0	-	0.0	1.7	-	0.0	0.0	-	-	-	0.0	-
110.0 45.0	0.0	-	0.0	1.1	-	0.0	0.0	-	-	-	0.0	-

Bathylagus ochotensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3 70.0	0.8	0.0	-	-	0.0	-	-	-	-	0.0	-	-
73.3 53.0	0.9	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7 60.0	0.0	0.0	-	0.8	0.0	-	0.0	-	-	0.0	-	-

Leuroglossus stilbius

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 55.0	0.0	0.0	-	0.8	0.0	-	0.0	-	-	0.0	-	-

TABLE 4. (cont.)

Stomiiformes

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 90.0	0.0	0.0	-	-	1.0	-	0.0	-	-	-	-	-

***Cyclothone* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
100.0 90.0	0.9	0.0	-	-	-	0.0	0.0	-	-	-	-	-

Cyclothone signata

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 90.0	0.0	0.0	-	-	1.0	-	0.0	-	-	-	-	-
70.0 90.0	0.0	0.0	-	-	0.6	-	0.0	-	-	-	-	-
90.0 80.0	0.9	0.0	-	-	-	0.0	0.0	-	-	-	-	-
93.3 90.0	0.8	0.0	-	0.0	-	0.0	0.0	-	-	-	-	-
93.3 100.0	1.1	0.0	-	0.0	-	0.0	0.0	-	-	-	-	-
103.3 65.0	-	0.9	-	-	-	-	-	-	-	-	-	-
103.3 80.0	0.7	0.0	-	-	-	0.0	0.0	-	-	-	0.0	-
106.7 100.0	0.0	-	0.0	-	-	0.0	0.0	-	-	-	0.8	-
110.0 60.0	1.0	-	0.0	-	-	0.0	0.0	-	-	-	0.0	-

Vinciguerria lucetia

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
70.0 90.0	0.9	0.0	-	-	0.0	-	0.0	-	-	-	-	-
76.7 70.0	0.0	0.0	-	-	-	-	0.0	-	-	0.7	-	-
80.0 80.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.7	-	-
83.3 55.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	1.2	-	-
86.7 45.0	0.0	0.0	-	0.0	-	0.0	0.0	-	-	0.8	-	-
86.7 55.0	0.0	0.0	-	0.0	-	0.0	0.0	-	-	0.8	-	-
90.0 28.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	8.1	-	-
90.0 80.0	0.9	0.0	-	-	-	0.0	0.0	-	-	-	-	-
93.3 29.0	1.6	-	0.0	0.0	-	0.0	0.0	-	-	0.0	-	-
93.3 40.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	0.9	-	-
93.3 45.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	3.7	-	-
93.3 60.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	1.1	-	-
93.3 80.0	0.7	0.0	-	0.0	-	0.0	0.0	-	-	-	-	-
93.3 90.0	22.6	0.0	-	0.0	-	0.0	0.0	-	-	-	-	-
93.3 100.0	1.1	0.0	-	0.0	-	0.0	0.0	-	-	-	-	-
96.7 80.0	0.7	0.0	-	0.0	-	0.0	0.0	-	-	-	-	-

TABLE 4. (cont.)

Vinciguerria lucetia (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
100.0 70.0	0.0	0.0	-	-	-	0.0	0.0	-	-	2.3	-	-
100.0 90.0	12.9	0.0	-	-	-	0.0	0.9	-	-	-	-	-
100.0 100.0	0.0	0.0	-	-	-	0.7	0.0	-	-	-	-	-
103.3 70.0	0.0	0.0	-	0.0	-	0.8	0.0	-	-	-	-	-
103.3 80.0	0.0	0.9	-	-	-	0.0	0.0	-	-	-	0.0	-
103.3 90.0	4.4	2.0	-	-	-	0.0	0.0	-	-	-	0.0	-
103.3 100.0	4.6	0.0	-	-	-	0.0	0.0	-	-	-	0.0	-
106.7 32.0	0.0	-	2.8	0.0	-	0.0	0.0	-	-	-	-	-
106.7 45.0	0.8	-	0.0	0.0	-	0.0	0.0	-	-	-	-	-
106.7 50.0	0.0	-	0.0	-	-	0.0	0.8	-	-	-	-	-
106.7 60.0	0.0	-	0.0	-	-	0.9	0.0	-	-	-	-	-
106.7 70.0	-	-	1.0	-	-	-	0.0	-	-	-	-	-
106.7 90.0	0.0	-	0.0	-	-	0.0	0.9	-	-	-	0.0	-
106.7 100.0	1.2	-	0.0	-	-	0.0	0.0	-	-	-	3.4	-
110.0 40.0	0.9	-	0.0	2.6	-	0.8	0.0	-	-	-	0.0	-
110.0 55.0	0.0	-	0.0	0.0	-	0.0	0.7	-	-	-	0.0	-
110.0 60.0	6.7	-	0.0	-	-	0.0	0.0	-	-	-	0.0	-
110.0 65.0	-	-	0.0	0.0	-	0.0	5.9	-	-	-	-	-
110.0 70.0	4.9	-	0.0	20.5	-	0.9	0.0	-	-	-	1.8	-
110.0 80.0	-	-	0.0	0.9	-	0.0	0.0	-	-	-	0.0	-

Stomias atriventer

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 70.0	0.0	0.0	-	1.0	0.0	-	0.0	-	-	0.0	-	-
100.0 50.0	0.7	-	0.0	0.0	-	0.0	0.0	-	-	-	-	-

Melanostomiinae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
100.0 90.0	0.9	0.0	-	-	-	0.0	0.0	-	-	-	-	-

Bathophilus flemingi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 100.0	0.0	0.0	-	0.0	1.0	-	0.0	-	-	0.0	-	-

Tactostoma macropus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 100.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.8	-	-

TABLE 4. (cont.)

Aristostomias scintillans

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 90.0	0.0	0.7	-	0.0	0.0	-	0.0	-	-	0.0	-	-
96.7 100.0	0.0	0.8	-	0.0	-	0.0	0.0	-	-	-	-	-

Synodus lucioceps

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	0.0	0.0	-	0.0	0.0	-	0.9	-	-	0.0	-	-
103.3 30.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	1.8	-	-

Lestidiops ringens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 100.0	0.0	0.0	-	-	0.0	-	-	-	-	0.6	-	-

Myctophidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
73.3 70.0	0.0	0.0	-	-	-	-	1.0	-	-	0.0	-	-
83.3 65.0	-	1.5	-	-	-	-	-	-	-	-	-	-
90.0 80.0	0.9	0.0	-	-	-	0.0	0.0	-	-	-	-	-
100.0 50.0	0.0	-	0.0	1.0	-	0.0	0.0	-	-	-	-	-

Ceratoscopelus townsendi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 55.0	0.0	1.0	-	-	0.0	-	-	-	-	0.0	-	-
80.0 100.0	0.0	0.0	-	0.0	3.9	-	0.0	-	-	0.0	-	-
86.7 90.0	1.9	0.0	-	0.0	0.0	-	1.0	-	-	0.0	-	-
90.0 100.0	0.0	5.2	-	-	-	0.0	0.0	-	-	-	-	-
93.3 100.0	3.2	21.0	-	0.0	-	0.0	0.0	-	-	-	-	-
96.7 70.0	0.6	-	0.0	0.0	-	0.0	0.0	-	-	-	-	-
100.0 60.0	0.0	-	0.0	-	-	0.8	0.0	-	-	-	-	-
100.0 70.0	0.6	0.0	-	-	-	0.0	0.0	-	-	0.0	-	-
100.0 80.0	0.0	0.5	-	-	-	0.0	0.0	-	-	-	-	-
100.0 100.0	1.0	0.0	-	-	-	0.0	0.0	-	-	-	-	-
103.3 40.0	0.5	-	0.0	0.0	-	0.0	0.0	-	-	-	-	-
103.3 90.0	0.0	1.0	-	-	-	0.0	0.0	-	-	-	0.0	-
103.3 100.0	1.3	0.0	-	-	-	0.0	0.0	-	-	-	0.0	-
106.7 32.0	0.0	-	2.8	0.0	-	0.0	0.0	-	-	-	-	-
106.7 45.0	0.0	-	0.0	0.0	-	0.0	0.7	-	-	-	-	-

TABLE 4. (cont.)

Ceratoscopelus townsendi (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
106.7 55.0	0.7	-	0.0	-	-	0.0	0.0	-	-	-	-	-
106.7 90.0	0.9	-	0.0	-	-	0.0	0.0	-	-	-	0.0	-
106.7 100.0	0.0	-	0.0	-	-	0.0	0.0	-	-	-	1.7	-
110.0 90.0	-	-	0.0	0.0	-	0.0	0.0	-	-	-	0.7	-

***Diaphus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3 70.0	0.0	0.0	-	-	1.0	-	-	-	-	0.0	-	-
73.3 53.0	0.0	0.0	-	0.0	0.8	-	0.0	-	-	0.0	-	-
83.3 100.0	0.0	0.0	-	0.0	1.1	-	0.0	-	-	0.0	-	-

Lampadena urophaos

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

***Lampanyctus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 100.0	0.0	0.0	-	-	0.0	-	-	-	-	1.2	-	-
63.3 70.0	0.8	0.0	-	-	0.0	-	-	-	-	0.0	-	-
70.0 80.0	0.0	0.0	-	-	1.0	-	0.0	-	-	-	-	-
83.3 60.0	0.8	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3 65.0	-	1.5	-	-	-	-	-	-	-	-	-	-
90.0 80.0	0.9	0.0	-	-	-	0.0	0.0	-	-	-	-	-
90.0 100.0	1.0	0.0	-	-	-	0.0	0.0	-	-	-	-	-
93.3 100.0	1.1	0.0	-	0.0	-	0.0	0.0	-	-	-	-	-
110.0 70.0	1.0	-	0.0	0.0	-	0.0	0.0	-	-	-	0.0	-

Nannobrachium regale

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
70.0 80.0	0.0	0.0	-	-	0.0	-	1.1	-	-	-	-	-

Nannobrachium ritteri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 70.0	0.0	0.4	-	-	0.0	-	-	-	-	0.0	-	-
60.0 90.0	0.0	-	-	-	1.4	-	-	-	-	0.0	-	-
60.0 100.0	0.0	0.0	-	-	0.0	-	-	-	-	0.6	-	-
70.0 70.0	0.0	0.9	-	-	0.0	-	0.0	-	-	-	-	-

TABLE 4. (cont.)

Nannobrachium ritteri (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
73.3 50.0	0.0	0.7	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3 65.0	-	0.8	-	-	-	-	-	-	-	-	-	-
100.0 40.0	0.8	-	0.0	0.0	-	0.0	0.0	-	-	0.0	-	-
100.0 65.0	-	1.1	-	-	-	-	-	-	-	-	-	-
100.0 90.0	0.9	0.0	-	-	-	0.0	0.0	-	-	-	-	-
106.7 32.0	0.0	-	0.9	0.0	-	0.0	0.0	-	-	-	-	-

Stenobrachius leucopsarus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 52.5	0.0	12.0	-	-	0.0	-	-	-	-	0.0	-	-
60.0 60.0	0.7	0.0	-	-	0.0	-	-	-	-	0.0	-	-
60.0 90.0	0.9	-	-	-	0.0	-	-	-	-	0.0	-	-
63.3 50.0	0.0	6.4	-	-	0.0	-	-	-	-	0.0	-	-
63.3 52.0	0.8	0.9	-	-	0.0	-	-	-	-	0.0	-	-
63.3 55.0	0.9	1.0	-	-	0.0	-	-	-	-	0.0	-	-
66.7 49.0	0.0	1.0	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7 55.0	0.0	0.9	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0 51.0	1.0	0.0	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0 53.0	0.0	3.1	-	-	0.0	-	0.0	-	-	0.0	-	-
73.3 50.0	0.0	8.9	-	0.0	0.0	-	0.0	-	-	0.0	-	-
73.3 53.0	0.0	5.2	-	0.9	0.0	-	0.0	-	-	0.0	-	-
76.7 51.0	0.0	0.9	-	0.9	0.0	-	0.0	-	-	0.0	-	-
76.7 55.0	1.3	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7 60.0	1.1	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
80.0 60.0	0.0	0.0	-	1.5	0.0	-	0.0	-	-	0.0	-	-
80.0 70.0	0.9	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3 55.0	0.0	0.0	-	6.2	0.0	-	0.0	-	-	0.0	-	-
86.7 55.0	0.0	2.9	-	0.0	-	0.0	0.0	-	-	0.0	-	-
86.7 70.0	0.0	0.0	-	1.0	0.0	-	0.0	-	-	0.0	-	-
93.3 60.0	0.0	-	0.0	0.8	-	0.0	0.0	-	-	0.0	-	-
96.7 35.0	0.0	-	0.0	0.9	-	0.0	0.0	-	-	0.0	-	-

Triphoturus mexicanus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 35.0	0.0	0.0	-	0.0	-	1.1	0.0	-	-	0.0	-	-
96.7 60.0	0.0	-	0.0	0.8	-	0.0	0.0	-	-	-	-	-

TABLE 4. (cont.)

Triphoturus mexicanus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
100.0 45.0	0.0	-	0.0	0.0	-	0.0	1.6	-	-	0.0	-	-
100.0 100.0	0.0	0.0	-	-	-	0.7	0.0	-	-	-	-	-
103.3 40.0	0.0	-	0.0	0.0	-	0.0	1.1	-	-	-	-	-
103.3 70.0	0.0	0.0	-	0.0	-	1.7	0.0	-	-	-	-	-
106.7 32.0	0.0	-	33.0	0.0	-	0.0	0.0	-	-	-	-	-
110.0 90.0	-	-	0.8	0.0	-	0.0	0.0	-	-	-	0.0	-

Diogenichthys atlanticus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 90.0	0.0	0.0	-	0.9	0.0	-	0.0	-	-	0.0	-	-
83.3 100.0	0.0	0.0	-	0.0	1.1	-	0.0	-	-	0.0	-	-

***Hygophum* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
106.7 50.0	1.1	-	0.0	-	-	0.0	0.0	-	-	-	-	-

Protomyctophum crockeri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3 70.0	1.6	0.0	-	-	0.0	-	-	-	-	0.0	-	-
70.0 90.0	0.9	0.0	-	-	0.0	-	0.0	-	-	-	-	-

Symbolophorus californiensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 80.0	0.0	0.0	-	-	1.1	-	0.0	-	-	0.0	-	-
86.7 90.0	0.0	0.8	-	0.0	0.0	-	0.0	-	-	0.0	-	-
93.3 100.0	2.1	0.0	-	0.0	-	0.0	0.0	-	-	-	-	-
100.0 90.0	1.7	0.0	-	-	-	0.0	0.0	-	-	-	-	-

Tarletonbeania crenularis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
73.3 53.0	0.9	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-

Trachipterus altivelis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
73.3 100.0	0.0	0.0	-	-	0.9	-	0.0	-	-	0.0	-	-

TABLE 4. (cont.)

Merluccius productus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 65.0	-	0.9	-	-	-	-	-	-	-	-	-	-
70.0 60.0	0.0	2.1	-	-	0.0	-	0.0	-	-	0.0	-	-
73.3 53.0	8.1	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7 60.0	0.0	0.0	-	0.8	0.0	-	0.0	-	-	0.0	-	-
80.0 100.0	0.0	1.1	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3 100.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
86.7 55.0	0.0	0.0	-	0.9	-	0.0	0.0	-	-	0.0	-	-

Ophidiiformes

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
106.7 40.0	0.0	-	0.0	0.0	-	0.0	0.9	-	-	-	-	-

***Oneirodes* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
106.7 100.0	0.0	-	0.0	-	-	0.0	0.0	-	-	-	0.8	-

***Gigantactis* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
106.7 100.0	0.0	-	0.0	-	-	0.0	0.0	-	-	-	0.8	-

Atherinops affinis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 60.0	0.0	0.0	-	0.0	1.1	-	0.0	-	-	0.0	-	-
82.0 46.0	0.0	0.0	-	0.0	1.1	-	0.0	-	-	0.0	-	-

Atherinopsis californiensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 50.0	1.6	2.6	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0 53.0	0.0	1.0	-	-	0.0	-	0.0	-	-	0.0	-	-
73.3 50.0	0.0	1.5	-	1.0	0.0	-	0.0	-	-	0.0	-	-
76.7 48.0	125.5	36.8	-	27.3	0.0	-	0.0	-	-	0.0	-	-
80.0 51.0	1.0	3.1	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3 40.6	1.9	1.1	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3 42.0	0.0	0.0	-	0.9	0.0	-	0.0	-	-	0.0	-	-
83.3 51.0	0.0	52.7	-	-	-	-	0.0	-	-	0.0	-	-
83.3 55.0	0.0	2.8	-	0.0	0.0	-	0.0	-	-	0.0	-	-
86.7 33.0	0.0	0.0	-	16.8	-	0.0	0.0	-	-	0.0	-	-

TABLE 4. (cont.)

Atherinopsis californiensis (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 26.7	0.0	-	8.9	0.0	-	0.0	0.0	-	-	0.0	-	-
93.3 30.0	0.0	-	0.0	0.7	-	0.0	0.0	-	-	0.0	-	-
93.3 45.0	0.0	-	0.0	0.9	-	0.0	0.0	-	-	0.0	-	-
96.7 29.0	10.9	-	16.9	0.8	-	0.0	0.0	-	-	0.0	-	-
96.7 30.0	3.0	-	2.3	0.0	-	0.0	0.0	-	-	0.0	-	-
100.0 29.2	-	-	4.9	9.8	-	0.0	0.0	-	-	0.0	-	-
100.0 30.0	0.0	-	0.0	0.9	-	0.0	0.0	-	-	0.0	-	-
103.3 29.0	58.0	-	5.3	0.8	-	0.0	0.0	-	-	0.0	-	-
106.7 31.0	2.4	-	0.0	0.0	-	0.0	0.0	-	-	-	-	-
110.0 32.4	1.4	-	-	0.0	-	0.0	0.0	-	-	-	0.0	-

Leuresthes tenuis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 49.0	0.0	0.0	-	-	1.1	-	0.0	-	-	0.0	-	-
82.0 46.0	0.0	0.0	-	0.0	2.2	-	1.2	-	-	0.0	-	-
86.7 33.0	0.0	0.0	-	0.0	-	1.0	1.0	-	-	0.0	-	-
90.0 30.0	0.0	-	0.0	0.0	-	6.4	0.8	-	-	0.0	-	-
90.0 35.0	0.0	-	-	0.0	-	0.0	1.3	-	-	0.0	-	-
96.7 29.0	0.0	-	0.0	0.0	-	75.9	23.1	-	-	0.0	-	-
96.7 30.0	0.0	-	0.0	0.0	-	2.8	0.0	-	-	0.0	-	-
110.0 32.4	0.0	-	-	0.0	-	0.0	0.7	-	-	-	0.0	-

Cololabis saira

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 55.0	0.0	2.9	-	-	0.0	-	-	-	-	0.0	-	-
60.0 60.0	0.0	2.0	-	-	0.0	-	-	-	-	0.0	-	-
60.0 65.0	-	4.1	-	-	-	-	-	-	-	-	-	-
60.0 70.0	0.0	12.8	-	-	0.0	-	-	-	-	0.0	-	-
60.0 80.0	0.0	-	-	-	4.1	-	-	-	-	0.0	-	-
60.0 90.0	0.0	-	-	-	0.0	-	-	-	-	4.8	-	-
60.0 100.0	0.0	3.5	-	-	0.0	-	-	-	-	0.0	-	-
63.3 65.0	-	24.4	-	-	-	-	-	-	-	-	-	-
63.3 70.0	0.0	25.1	-	-	0.0	-	-	-	-	0.0	-	-
63.3 80.0	2.2	12.4	-	-	0.0	-	0.0	-	-	0.0	-	-
63.3 90.0	2.4	2.4	-	-	1.0	-	0.0	-	-	-	-	-
63.3 100.0	0.0	41.6	-	-	0.0	-	0.0	-	-	-	-	-

TABLE 4. (cont.)

Station		*Cololabis saira* (cont.)											
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7	50.0	0.0	0.9	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7	55.0	0.0	0.9	-	-	0.0	-	1.0	-	-	0.0	-	-
66.7	65.0	-	13.0	-	-	-	-	-	-	-	-	-	-
66.7	70.0	2.8	12.0	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7	80.0	6.0	4.6	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7	90.0	0.0	52.1	-	-	0.0	-	0.0	-	-	-	-	-
66.7	100.0	0.7	35.7	-	-	0.0	-	0.0	-	-	-	-	-
70.0	65.0	-	225.3	-	-	-	-	-	-	-	-	-	-
70.0	70.0	0.0	3.8	-	-	0.0	-	0.0	-	-	-	-	-
70.0	80.0	2.4	51.5	-	-	0.0	-	0.0	-	-	-	-	-
70.0	90.0	16.4	31.7	-	-	0.6	-	4.3	-	-	-	-	-
70.0	100.0	7.5	68.4	-	-	0.0	-	0.0	-	-	-	-	-
73.3	53.0	1.8	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
73.3	60.0	0.9	0.0	-	-	-	-	0.0	-	-	0.0	-	-
73.3	65.0	-	28.4	-	-	-	-	-	-	-	-	-	-
73.3	70.0	0.0	48.2	-	-	-	-	0.0	-	-	0.0	-	-
73.3	80.0	1.6	5.9	-	-	-	-	1.1	-	-	0.0	-	-
73.3	90.0	5.9	17.0	-	-	-	-	0.0	-	-	0.0	-	-
73.3	100.0	2.5	22.7	-	-	0.0	-	0.0	-	-	0.0	-	-
76.7	60.0	0.0	3.5	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7	65.0	-	4.6	-	-	-	-	-	-	-	-	-	-
76.7	70.0	0.9	4.7	-	-	-	-	0.0	-	-	0.0	-	-
76.7	80.0	0.0	3.1	-	-	0.0	-	0.0	-	-	-	-	-
76.7	90.0	0.0	9.1	-	-	0.0	-	0.0	-	-	-	-	-
76.7	100.0	0.9	38.3	-	-	0.0	-	0.9	-	-	-	-	-
80.0	60.0	0.0	0.9	-	0.0	0.0	-	0.0	-	-	0.0	-	-
80.0	70.0	0.0	3.8	-	0.0	0.0	-	2.0	-	-	0.0	-	-
80.0	80.0	0.0	19.1	-	0.9	0.0	-	2.1	-	-	0.0	-	-
80.0	90.0	2.0	48.0	-	0.0	5.6	-	0.0	-	-	0.0	-	-
80.0	100.0	7.8	52.4	-	0.0	0.0	-	0.0	-	-	0.0	-	-
82.0	46.0	0.0	0.0	-	0.0	3.2	-	0.0	-	-	0.0	-	-
83.3	51.0	0.0	0.0	-	-	-	-	1.1	-	-	0.0	-	-
83.3	70.0	0.0	0.0	-	0.0	0.0	-	1.0	-	-	0.0	-	-
83.3	80.0	0.0	70.8	-	0.0	0.0	-	3.2	-	-	0.0	-	-
83.3	90.0	0.9	0.7	-	1.9	0.0	-	0.0	-	-	0.6	-	-

TABLE 4. (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
						Cololabis saira (cont.)							
83.3	100.0	4.0	9.3	-	0.0	0.0	-	4.0	-	-	0.0	-	-
86.7	60.0	0.0	0.0	-	0.0	-	0.0	0.0	-	-	0.8	-	-
86.7	80.0	0.9	18.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
86.7	90.0	0.0	11.6	-	3.2	0.0	-	0.0	-	-	3.4	-	-
86.7	100.0	0.0	9.4	-	0.0	0.0	-	0.0	-	-	0.8	-	-
90.0	30.0	0.0	-	0.0	0.0	-	0.6	0.0	-	-	0.0	-	-
90.0	35.0	0.0	-	-	0.0	-	0.5	0.0	-	-	0.0	-	-
90.0	53.0	0.0	-	0.0	-	-	-	0.9	-	-	-	-	-
90.0	70.0	0.0	0.0	-	-	-	0.0	0.8	-	-	-	-	-
90.0	80.0	7.7	8.8	-	-	-	0.0	0.0	-	-	-	-	-
90.0	90.0	0.9	26.0	-	-	-	0.0	0.0	-	-	-	-	-
90.0	100.0	15.7	4.3	-	-	-	0.0	0.0	-	-	-	-	-
93.3	35.0	1.8	-	0.0	0.0	-	0.0	0.6	-	-	0.0	-	-
93.3	50.0	0.0	-	1.4	1.1	-	1.4	0.0	-	-	0.0	-	-
93.3	55.0	-	-	1.8	0.0	-	0.9	0.8	-	-	0.0	-	-
93.3	60.0	2.4	-	0.0	4.0	-	0.0	0.0	-	-	0.0	-	-
93.3	70.0	6.1	-	1.6	0.0	-	0.0	0.0	-	-	0.0	-	-
93.3	80.0	0.7	17.8	-	0.8	-	0.0	0.0	-	-	-	-	-
93.3	90.0	0.0	9.6	-	1.9	-	0.8	0.0	-	-	-	-	-
93.3	100.0	4.3	0.8	-	6.5	-	0.8	0.7	-	-	-	-	-
96.7	29.0	0.0	-	0.0	0.8	-	0.0	0.0	-	-	0.0	-	-
96.7	32.0	0.0	-	0.0	0.9	-	0.9	0.0	-	-	0.0	-	-
96.7	40.0	-	-	1.8	0.0	-	3.0	0.8	-	-	0.0	-	-
96.7	45.0	0.0	-	0.0	2.8	-	0.0	0.0	-	-	0.0	-	-
96.7	50.0	0.0	-	0.9	1.0	-	0.0	0.0	-	-	0.0	-	-
96.7	55.0	0.0	-	0.0	1.5	-	1.0	0.7	-	-	-	-	-
96.7	60.0	1.9	-	1.7	1.7	-	0.0	0.9	-	-	-	-	-
96.7	65.0	-	-	4.8	-	-	-	-	-	-	-	-	-
96.7	70.0	0.6	-	3.0	0.0	-	0.0	0.0	-	-	-	-	-
96.7	80.0	0.7	4.8	-	0.0	-	0.8	0.0	-	-	-	-	-
96.7	90.0	1.4	6.5	-	1.6	-	0.8	0.6	-	-	-	-	-
96.7	100.0	0.0	10.5	-	7.0	-	0.0	3.3	-	-	-	-	-
100.0	29.2	-	-	0.0	0.0	-	1.1	0.0	-	-	0.0	-	-
100.0	35.0	1.4	-	0.0	0.0	-	0.0	0.9	-	-	0.0	-	-
100.0	40.0	0.0	-	0.0	1.7	-	6.2	0.0	-	-	0.0	-	-
100.0	45.0	0.0	-	1.0	1.7	-	0.0	0.0	-	-	0.0	-	-

TABLE 4. (cont.)

Cololabis saira (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
100.0 50.0	0.0	-	0.0	0.0	-	0.8	0.0	-	-	-	-	-
100.0 55.0	3.3	-	1.7	0.9	-	3.2	0.0	-	-	-	-	-
100.0 60.0	0.0	-	0.0	-	-	2.5	0.0	-	-	-	-	-
100.0 65.0	-	4.4	-	-	-	-	-	-	-	-	-	-
100.0 70.0	0.0	3.2	-	-	-	0.0	1.6	-	-	18.9	-	-
100.0 80.0	0.0	2.1	-	-	-	0.6	3.4	-	-	-	-	-
100.0 90.0	0.0	8.1	-	-	-	3.5	0.0	-	-	-	-	-
100.0 100.0	1.0	14.7	-	-	-	1.5	0.0	-	-	-	-	-
103.3 35.0	0.0	-	0.0	1.6	-	0.0	0.0	-	-	-	-	-
103.3 40.0	0.0	-	0.0	0.0	-	1.9	1.1	-	-	-	-	-
103.3 45.0	1.5	-	0.0	1.6	-	1.2	0.8	-	-	-	-	-
103.3 50.0	3.0	-	0.0	1.1	-	0.0	0.8	-	-	-	-	-
103.3 55.0	1.2	-	1.0	2.3	-	0.7	0.0	-	-	-	-	-
103.3 60.0	1.2	-	0.0	9.7	-	0.0	0.0	-	-	-	-	-
103.3 65.0	-	7.5	-	-	-	-	-	-	-	-	-	-
103.3 70.0	0.0	3.3	-	10.7	-	2.5	0.0	-	-	-	-	-
103.3 80.0	0.0	8.7	-	-	-	3.0	0.0	-	-	-	4.4	-
103.3 90.0	0.7	1.0	-	-	-	4.7	3.2	-	-	-	7.2	-
103.3 100.0	0.0	2.4	-	-	-	2.6	3.1	-	-	-	5.2	-
106.7 32.0	0.0	-	1.8	1.5	-	0.0	0.0	-	-	-	-	-
106.7 35.0	0.0	-	0.0	1.7	-	0.0	0.0	-	-	-	-	-
106.7 40.0	0.0	-	0.0	0.0	-	3.0	0.0	-	-	-	-	-
106.7 45.0	0.0	-	0.0	0.7	-	0.0	0.0	-	-	-	-	-
106.7 50.0	5.6	-	0.0	-	-	0.7	0.0	-	-	-	-	-
106.7 55.0	0.0	-	0.0	-	-	2.2	0.0	-	-	-	-	-
106.7 60.0	0.0	-	0.0	-	-	4.3	0.0	-	-	-	-	-
106.7 65.0	-	-	23.2	-	-	-	-	-	-	-	-	-
106.7 70.0	-	-	7.0	-	-	-	0.0	-	-	-	-	-
106.7 80.0	-	-	3.2	-	-	-	0.0	-	-	-	1.8	-
106.7 90.0	0.0	-	4.0	-	-	1.0	0.0	-	-	-	0.8	-
106.7 100.0	0.0	-	10.1	-	-	1.2	0.0	-	-	-	2.5	-
110.0 35.0	0.0	-	0.0	0.9	-	1.4	0.0	-	-	-	0.0	-
110.0 40.0	0.9	-	0.0	8.7	-	4.0	0.0	-	-	-	0.0	-
110.0 45.0	0.0	-	4.1	8.7	-	2.5	0.0	-	-	-	0.0	-
110.0 50.0	0.0	-	10.2	-	-	4.8	0.8	-	-	-	1.7	-

TABLE 4. (cont.)

Cololabis saira (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
110.0 55.0	0.0	-	37.4	11.3	-	0.0	0.0	-	-	-	0.0	-
110.0 60.0	1.0	-	0.0	-	-	5.2	1.8	-	-	-	0.0	-
110.0 65.0	-	-	10.0	20.8	-	0.0	0.0	-	-	-	-	-
110.0 70.0	0.0	-	0.9	0.7	-	1.8	0.0	-	-	-	0.0	-
110.0 80.0	-	-	12.2	4.4	-	0.9	0.0	-	-	-	0.8	-
110.0 90.0	-	-	6.6	7.8	-	0.6	0.8	-	-	-	2.9	-
110.0 100.0	-	-	3.2	15.8	-	2.9	0.0	-	-	-	7.4	-

Exocoetidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
110.0 60.0	0.0	-	0.0	-	-	1.0	0.0	-	-	-	0.0	-

***Cheilopogon* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 45.0	-	-	0.0	0.0	-	0.0	0.9	-	-	-	-	-
93.3 35.0	0.0	-	0.0	0.0	-	0.0	2.6	-	-	0.0	-	-
93.3 50.0	0.0	-	0.0	0.0	-	0.0	0.9	-	-	0.0	-	-
96.7 29.0	0.0	-	0.0	0.0	-	2.7	0.0	-	-	0.0	-	-
96.7 30.0	0.0	-	0.0	0.0	-	2.1	0.0	-	-	0.0	-	-
96.7 32.0	0.0	-	0.0	0.0	-	0.0	0.9	-	-	0.0	-	-
96.7 35.0	0.0	-	0.0	0.0	-	0.0	1.0	-	-	0.0	-	-
96.7 40.0	-	-	0.0	0.0	-	0.0	4.7	-	-	0.0	-	-
96.7 50.0	0.0	-	0.0	0.0	-	0.0	2.6	-	-	0.0	-	-
100.0 30.0	0.0	-	0.0	0.0	-	1.2	0.0	-	-	0.0	-	-
100.0 35.0	0.0	-	0.0	0.0	-	0.0	0.9	-	-	0.0	-	-
100.0 40.0	0.0	-	0.0	0.0	-	0.0	7.6	-	-	0.0	-	-
100.0 45.0	0.0	-	0.0	0.0	-	0.7	0.0	-	-	0.0	-	-
100.0 50.0	0.0	-	0.0	0.0	-	0.8	0.0	-	-	-	-	-
103.3 29.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	0.9	-	-
103.3 35.0	0.0	-	0.0	0.0	-	0.0	1.0	-	-	-	-	-
103.3 40.0	0.0	-	0.0	0.0	-	1.9	0.0	-	-	-	-	-
106.7 31.0	0.0	-	0.0	0.0	-	0.0	0.8	-	-	-	-	-
106.7 32.0	0.0	-	0.0	0.0	-	0.0	7.1	-	-	-	-	-
106.7 35.0	0.0	-	0.0	0.0	-	0.0	10.8	-	-	-	-	-
106.7 40.0	0.0	-	0.0	0.0	-	2.0	0.0	-	-	-	-	-
106.7 45.0	0.0	-	0.0	0.0	-	0.0	1.4	-	-	-	-	-

TABLE 4. (cont.)

***Cheilopogon* spp.** (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
106.7 50.0	0.0	-	0.0	-	-	0.0	4.1	-	-	-	-	-
106.7 55.0	0.0	-	0.0	-	-	0.0	0.9	-	-	-	-	-
106.7 60.0	0.0	-	0.0	-	-	0.0	0.8	-	-	-	-	-
106.7 80.0	-	-	0.0	-	-	-	0.8	-	-	-	0.0	-
106.7 90.0	0.0	-	0.0	-	-	0.0	0.9	-	-	-	0.0	-
110.0 32.4	0.0	-	-	0.0	-	2.1	1.5	-	-	-	0.0	-
110.0 35.0	0.0	-	0.0	0.0	-	9.8	0.9	-	-	-	0.0	-
110.0 40.0	0.0	-	0.0	0.0	-	0.0	10.1	-	-	-	0.0	-
110.0 45.0	0.0	-	0.0	0.0	-	0.0	1.4	-	-	-	0.0	-
110.0 50.0	0.0	-	0.0	-	-	0.0	16.8	-	-	-	0.0	-
110.0 55.0	0.0	-	0.0	0.0	-	0.0	0.7	-	-	-	0.0	-
110.0 65.0	-	-	0.0	0.0	-	0.0	9.1	-	-	-	-	-
110.0 70.0	0.0	-	0.0	0.0	-	0.0	0.8	-	-	-	0.0	-
110.0 80.0	-	-	0.0	0.0	-	0.0	3.6	-	-	-	0.0	-
110.0 90.0	-	-	0.0	0.0	-	0.0	1.5	-	-	-	0.0	-

Cheilopogon heterurus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 29.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	1.3	-	-
93.3 30.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	1.2	-	-
96.7 30.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	1.1	-	-
96.7 32.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	1.2	-	-
96.7 35.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	3.1	-	-
96.7 45.0	0.0	-	0.0	0.0	-	0.0	14.0	-	-	0.0	-	-
100.0 35.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	0.9	-	-
103.3 40.0	0.0	-	0.0	0.0	-	0.0	4.3	-	-	-	-	-
103.3 45.0	0.0	-	0.0	0.0	-	0.0	0.8	-	-	-	-	-
106.7 40.0	0.0	-	0.0	0.0	-	0.0	0.9	-	-	-	-	-
110.0 60.0	0.0	-	0.0	-	-	0.0	0.9	-	-	-	0.0	-

Cheilopogon pinnatibarbatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 51.0	0.0	0.0	-	-	-	-	0.0	-	-	4.7	-	-
90.0 28.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	2.0	-	-
90.0 37.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	1.6	-	-
93.3 29.0	0.0	-	0.0	0.0	-	0.9	0.0	-	-	0.0	-	-

TABLE 4. (cont.)

Cheilopogon pinnatibarbatus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
96.7 32.0	0.0	-	0.0	0.0	-	0.9	0.0	-	-	0.0	-	-
110.0 35.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	-	5.0	-

Fodiator acutus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
100.0 29.2	-	-	0.0	0.0	-	1.1	0.0	-	-	0.0	-	-

Hirundichthys spp.

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
103.3 90.0	0.0	0.0	-	-	-	0.0	0.0	-	-	-	0.9	-
106.7 55.0	0.0	-	0.0	-	-	0.0	1.9	-	-	-	-	-

Hirundichthys marginatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
103.3 80.0	0.0	0.0	-	-	-	0.0	1.0	-	-	-	0.0	-
103.3 100.0	0.0	0.0	-	-	-	0.0	0.0	-	-	-	0.7	-
110.0 55.0	0.0	-	0.0	0.0	-	0.0	0.7	-	-	-	0.0	-
110.0 65.0	-	-	0.0	0.0	-	0.0	1.3	-	-	-	-	-
110.0 80.0	-	-	0.0	0.0	-	0.0	0.7	-	-	-	0.0	-

Macroramphosus gracilis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
103.3 90.0	0.0	0.0	-	-	-	0.0	0.0	-	-	-	0.9	-
106.7 80.0	-	-	0.0	-	-	-	0.0	-	-	-	6.2	-
110.0 80.0	-	-	0.0	0.0	-	0.0	0.0	-	-	-	4.7	-
110.0 90.0	-	-	2.5	0.0	-	0.0	0.0	-	-	-	0.0	-

Sebastes spp.

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 50.0	0.0	22.7	-	-	0.0	-	-	-	-	0.0	-	-
60.0 52.5	18.9	331.1	-	-	0.0	-	-	-	-	0.0	-	-
60.0 55.0	78.1	98.1	-	-	0.0	-	-	-	-	0.0	-	-
60.0 60.0	0.7	13.1	-	-	0.0	-	-	-	-	0.8	-	-
60.0 65.0	-	0.7	-	-	-	-	-	-	-	-	-	-
63.3 50.0	1.5	2.8	-	-	0.0	-	-	-	-	0.0	-	-
63.3 52.0	5.4	2.6	-	-	0.6	-	-	-	-	0.0	-	-
63.3 55.0	3.5	62.1	-	-	4.2	-	-	-	-	2.0	-	-
63.3 60.0	0.0	14.0	-	-	0.0	-	-	-	-	0.0	-	-

TABLE 4. (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
						***Sebastes* spp.** (cont.)							
63.3	70.0	0.0	0.8	-	-	0.0	-	-	-	-	0.0	-	-
66.7	49.0	4.2	11.4	-	-	0.0	-	1.0	-	-	0.0	-	-
66.7	50.0	2.5	11.3	-	-	1.0	-	0.0	-	-	0.0	-	-
66.7	55.0	0.0	0.0	-	-	0.9	-	0.0	-	-	0.0	-	-
66.7	60.0	0.0	1.0	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0	51.0	3.0	0.0	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0	53.0	0.0	1.0	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0	60.0	0.0	0.0	-	-	1.0	-	0.0	-	-	0.0	-	-
70.0	65.0	-	9.0	-	-	-	-	-	-	-	-	-	-
73.3	50.0	0.0	17.7	-	0.0	1.9	-	0.0	-	-	1.3	-	-
73.3	53.0	0.0	0.9	-	0.0	0.0	-	0.0	-	-	0.0	-	-
73.3	60.0	0.0	5.0	-	-	-	-	0.0	-	-	0.0	-	-
73.3	70.0	0.0	0.9	-	-	-	-	0.0	-	-	0.0	-	-
73.3	90.0	0.0	0.8	-	-	-	-	0.0	-	-	0.0	-	-
73.3	100.0	0.0	0.0	-	-	0.9	-	0.0	-	-	0.0	-	-
76.7	48.0	0.0	0.9	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7	51.0	0.0	27.5	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7	55.0	0.0	2.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7	60.0	3.2	0.9	-	8.5	0.0	-	0.0	-	-	0.0	-	-
76.7	65.0	-	0.9	-	-	-	-	-	-	-	-	-	-
76.7	70.0	0.9	4.7	-	-	-	-	0.0	-	-	0.0	-	-
76.7	80.0	0.0	1.0	-	-	0.9	-	0.0	-	-	-	-	-
80.0	51.0	0.0	2.1	-	0.0	0.0	-	0.0	-	-	0.0	-	-
80.0	55.0	0.0	5.5	-	-	0.0	-	0.0	-	-	0.0	-	-
80.0	60.0	0.0	0.0	-	0.9	0.0	-	0.0	-	-	0.0	-	-
80.0	70.0	0.0	0.8	-	0.0	0.0	-	0.0	-	-	0.0	-	-
80.0	80.0	7.7	3.7	-	0.0	1.1	-	0.0	-	-	0.0	-	-
80.0	90.0	0.0	2.7	-	0.0	0.0	-	0.0	-	-	0.0	-	-
82.0	46.0	0.8	4.3	-	12.0	0.0	-	0.0	-	-	0.0	-	-
83.3	42.0	0.0	0.0	-	0.9	0.0	-	0.0	-	-	0.0	-	-
83.3	51.0	0.0	8.2	-	-	-	-	0.0	-	-	0.8	-	-
83.3	55.0	9.2	0.0	-	1.6	0.0	-	0.0	-	-	0.0	-	-
83.3	60.0	0.0	0.0	-	0.0	7.4	-	0.0	-	-	0.0	-	-
86.7	35.0	0.0	0.0	-	3.3	-	0.0	0.0	-	-	0.0	-	-
86.7	40.0	0.0	0.9	-	0.0	-	0.0	0.0	-	-	0.0	-	-
86.7	55.0	0.0	1.9	-	2.6	-	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.
86.7	60.0	0.0	0.0	-	2.0	-	0.0	0.0	-	-	0.0	-	-
90.0	45.0	-	-	0.0	0.8	-	0.0	0.0	-	-	-	-	-
90.0	60.0	0.0	-	3.2	-	-	-	0.0	-	-	-	-	-
93.3	26.7	0.0	-	1.1	0.0	-	0.0	0.0	-	-	0.0	-	-
93.3	28.0	-	-	1.1	-	-	-	-	-	-	-	-	-
93.3	35.0	0.0	-	1.0	0.0	-	0.0	0.0	-	-	0.0	-	-
93.3	40.0	9.0	-	0.0	0.0	-	0.0	0.0	-	-	0.0	-	-
93.3	70.0	0.0	-	2.4	0.0	-	0.0	0.0	-	-	0.0	-	-
96.7	29.0	0.0	-	9.7	0.0	-	0.0	0.0	-	-	0.0	-	-
96.7	30.0	0.0	-	0.0	0.0	-	0.7	0.0	-	-	0.0	-	-
100.0	30.0	0.0	-	23.2	0.0	-	0.0	0.0	-	-	0.0	-	-
103.3	29.0	0.0	-	7.5	0.0	-	0.0	0.0	-	-	0.0	-	-
103.3	30.0	0.9	-	95.5	0.0	-	0.0	0.0	-	-	0.0	-	-
103.3	55.0	0.0	-	1.0	0.8	-	0.0	0.0	-	-	-	-	-
106.7	31.0	0.0	-	5.6	0.0	-	0.0	0.0	-	-	-	-	-
106.7	32.0	0.0	-	9.2	0.0	-	0.0	0.0	-	-	-	-	-
110.0	32.4	0.0	-	-	81.0	-	0.0	0.0	-	-	-	0.0	-
110.0	32.5	-	-	13.8	-	-	-	-	-	-	-	-	-
110.0	35.0	0.0	-	46.5	0.0	-	0.0	0.0	-	-	-	0.0	-
110.0	70.0	0.0	-	0.9	0.0	-	0.0	0.0	-	-	-	0.0	-

Sebastes aurora

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	65.0	-	0.9	-	-	-	-	-	-	-	-	-	-
80.0	60.0	1.0	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
86.7	35.0	0.0	0.0	-	1.1	-	0.0	0.0	-	-	0.0	-	-
90.0	60.0	0.0	-	0.8	-	-	-	0.0	-	-	-	-	-

Sebastes diploproa

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0	50.0	0.0	0.0	-	-	0.0	-	-	-	-	0.9	-	-
60.0	55.0	0.7	0.0	-	-	0.0	-	-	-	-	3.7	-	-
63.3	60.0	0.0	2.2	-	-	0.0	-	-	-	-	0.0	-	-
66.7	55.0	0.0	0.0	-	-	0.0	-	0.0	-	-	3.9	-	-
70.0	53.0	0.0	1.0	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0	60.0	0.0	0.0	-	-	0.0	-	301.5	-	-	0.0	-	-

TABLE 4. (cont.)

Sebastes diploproa (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
70.0 100.0	0.0	0.0	-	-	0.0	-	1.1	-	-	-	-	-
73.3 53.0	0.9	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
73.3 70.0	0.0	0.9	-	-	-	-	0.0	-	-	0.0	-	-
73.3 90.0	0.0	0.0	-	-	-	-	2.0	-	-	0.0	-	-
76.7 51.0	0.0	0.9	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7 55.0	0.0	0.0	-	0.0	0.0	-	0.9	-	-	0.0	-	-
76.7 60.0	0.0	0.0	-	4.6	0.0	-	0.0	-	-	0.0	-	-
76.7 65.0	-	3.7	-	-	-	-	-	-	-	-	-	-
76.7 70.0	6.4	5.9	-	-	-	-	1.9	-	-	0.0	-	-
80.0 51.0	0.0	0.0	-	0.0	0.0	-	1.9	-	-	0.0	-	-
80.0 70.0	0.9	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
80.0 80.0	1.7	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
80.0 90.0	0.0	0.0	-	0.0	0.0	-	3.1	-	-	0.0	-	-
80.0 100.0	0.0	0.0	-	0.0	0.0	-	6.0	-	-	0.0	-	-
83.3 42.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	1.6	-	-
83.3 55.0	0.8	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3 60.0	0.8	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3 70.0	0.0	0.0	-	0.0	0.0	-	8.1	-	-	0.0	-	-
86.7 60.0	0.0	0.8	-	0.0	-	0.0	0.0	-	-	0.0	-	-
86.7 80.0	0.0	0.0	-	0.0	0.0	-	3.1	-	-	0.0	-	-
90.0 53.0	1.0	-	0.0	-	-	-	0.0	-	-	-	-	-
90.0 60.0	0.0	-	0.0	-	-	-	1.1	-	-	-	-	-
90.0 90.0	0.0	0.0	-	-	-	0.0	0.8	-	-	-	-	-
93.3 60.0	0.0	-	0.0	0.0	-	0.7	0.0	-	-	0.0	-	-
93.3 80.0	0.0	0.0	-	0.0	-	0.0	0.8	-	-	-	-	-
93.3 100.0	0.0	0.0	-	0.0	-	0.0	0.7	-	-	-	-	-
103.3 30.0	0.0	-	1.7	0.0	-	0.0	0.0	-	-	0.0	-	-

Sebastes goodei

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 55.0	0.0	3.8	-	-	0.0	-	-	-	-	0.0	-	-

Sebastes jordani

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 50.0	0.0	8.8	-	-	0.0	-	-	-	-	0.0	-	-
60.0 52.5	0.8	229.6	-	-	0.0	-	-	-	-	0.0	-	-

TABLE 4. (cont.)

Sebastes jordani (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 55.0	0.0	4.8	-	-	0.0	-	-	-	-	0.0	-	-
63.3 50.0	0.0	0.9	-	-	0.0	-	-	-	-	0.0	-	-
63.3 60.0	0.0	5.4	-	-	0.0	-	-	-	-	0.0	-	-
73.3 50.0	0.0	3.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
73.3 53.0	0.0	1.7	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7 60.0	0.0	0.0	-	0.8	0.0	-	0.0	-	-	0.0	-	-
82.0 46.0	0.0	0.0	-	2.8	0.0	-	0.0	-	-	0.0	-	-
103.3 30.0	0.0	-	0.9	0.0	-	0.0	0.0	-	-	0.0	-	-

Sebastes levis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 60.0	0.0	2.0	-	-	0.0	-	-	-	-	0.0	-	-
83.3 55.0	0.8	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-

Sebastes paucispinis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 55.0	0.0	1.0	-	-	0.0	-	-	-	-	0.0	-	-
60.0 60.0	0.0	4.0	-	-	0.0	-	-	-	-	0.0	-	-
60.0 70.0	0.9	0.0	-	-	0.0	-	-	-	-	0.0	-	-
63.3 60.0	0.0	1.1	-	-	0.0	-	-	-	-	0.0	-	-
83.3 55.0	1.7	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-

Scorpaena guttata

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
103.3 30.0	0.0	-	0.0	0.0	-	0.0	1.8	-	-	0.0	-	-

Anoplopoma fimbria

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 52.5	0.0	0.9	-	-	0.0	-	-	-	-	0.0	-	-
63.3 60.0	0.0	1.1	-	-	0.0	-	-	-	-	0.0	-	-
66.7 55.0	0.0	0.9	-	-	0.0	-	0.0	-	-	0.0	-	-
76.7 60.0	0.0	0.0	-	2.3	0.0	-	0.0	-	-	0.0	-	-
76.7 65.0	-	1.8	-	-	-	-	-	-	-	-	-	-
80.0 90.0	0.0	1.3	-	0.0	0.0	-	0.0	-	-	0.0	-	-

TABLE 4. (cont.)

Oxylebius pictus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 55.0	0.0	2.8	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7 70.0	0.0	0.9	-	-	0.0	-	0.0	-	-	0.0	-	-
76.7 60.0	1.1	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
90.0 90.0	0.0	0.0	-	-	-	1.6	0.0	-	-	-	-	-

Hexagrammos decagrammus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 50.0	0.0	5.9	-	-	0.0	-	-	-	-	0.0	-	-
60.0 52.5	5.7	2.6	-	-	0.0	-	-	-	-	0.0	-	-
60.0 55.0	0.0	5.7	-	-	0.0	-	-	-	-	0.0	-	-
60.0 65.0	-	0.7	-	-	-	-	-	-	-	-	-	-
63.3 50.0	8.9	11.0	-	-	0.0	-	-	-	-	0.0	-	-
63.3 52.0	0.0	1.8	-	-	0.0	-	-	-	-	0.0	-	-
63.3 55.0	0.0	1.0	-	-	0.0	-	-	-	-	0.0	-	-
66.7 49.0	0.0	1.0	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7 50.0	0.0	13.9	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7 60.0	0.0	2.0	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0 51.0	3.9	0.9	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0 53.0	0.0	7.3	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0 65.0	-	3.4	-	-	-	-	-	-	-	-	-	-
73.3 50.0	0.0	24.4	-	0.0	0.0	-	0.0	-	-	0.0	-	-
73.3 53.0	0.0	0.9	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7 48.0	0.0	0.9	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7 55.0	0.0	1.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7 60.0	0.0	1.8	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3 60.0	0.0	1.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3 65.0	-	0.8	-	-	-	-	-	-	-	-	-	-

Hexagrammos lagocephalus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 49.0	0.0	1.0	-	-	0.0	-	0.0	-	-	0.0	-	-

Ophiodon elongatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 50.0	0.0	2.2	-	-	0.0	-	-	-	-	0.0	-	-
60.0 52.5	0.0	0.9	-	-	0.0	-	-	-	-	0.0	-	-

TABLE 4. (cont.)

Ophiodon elongatus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3 50.0	13.4	1.8	-	-	0.0	-	-	-	-	0.0	-	-
63.3 52.0	2.3	0.0	-	-	0.0	-	-	-	-	0.0	-	-
66.7 49.0	0.0	1.0	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7 50.0	0.0	0.9	-	-	0.0	-	0.0	-	-	0.0	-	-
73.3 50.0	0.0	5.2	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3 51.0	0.0	17.6	-	-	-	-	0.0	-	-	0.0	-	-
83.3 55.0	0.8	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
100.0 30.0	0.0	-	21.5	0.0	-	0.0	0.0	-	-	0.0	-	-
103.3 30.0	0.0	-	3.5	0.0	-	0.0	0.0	-	-	0.0	-	-

Cottidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
70.0 53.0	0.0	0.0	-	-	0.0	-	0.0	-	-	0.8	-	-
73.3 50.0	0.0	0.0	-	0.0	9.6	-	0.0	-	-	1.5	-	-
76.7 48.0	0.0	0.0	-	3.3	0.0	-	0.0	-	-	0.0	-	-

Artedius harringtoni

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
73.3 50.0	0.0	0.0	-	0.0	27.8	-	0.0	-	-	0.0	-	-
80.0 55.0	0.0	0.0	-	-	0.0	-	1.8	-	-	0.0	-	-

Artedius lateralis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 48.0	0.0	0.0	-	4.4	0.0	-	0.0	-	-	0.0	-	-

Clinocottus analis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
96.7 29.0	0.0	-	0.8	0.0	-	0.0	0.0	-	-	0.0	-	-

Hemilepidotus spinosus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 50.0	0.0	2.2	-	-	0.0	-	-	-	-	0.0	-	-
60.0 52.5	4.1	0.0	-	-	0.0	-	-	-	-	0.0	-	-
60.0 55.0	0.0	27.6	-	-	0.0	-	-	-	-	0.0	-	-
60.0 60.0	0.0	2.0	-	-	0.0	-	-	-	-	0.0	-	-
63.3 50.0	3.0	7.4	-	-	0.0	-	-	-	-	0.0	-	-
63.3 52.0	0.0	0.9	-	-	0.0	-	-	-	-	0.0	-	-

TABLE 4. (cont.)

Hemilepidotus spinosus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3 60.0	0.0	4.3	-	-	0.0	-	-	-	-	0.0	-	-
66.7 55.0	0.0	2.8	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7 70.0	0.0	0.9	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0 51.0	0.0	0.9	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0 53.0	0.0	1.0	-	-	0.0	-	0.0	-	-	0.0	-	-
73.3 50.0	0.0	3.7	-	0.0	0.0	-	0.0	-	-	0.0	-	-

Leptocottus armatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 50.0	0.8	0.7	-	-	0.0	-	-	-	-	0.0	-	-
76.7 48.0	1.0	0.0	-	1.1	0.0	-	0.0	-	-	0.0	-	-

Ruscarius creaseri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
73.3 50.0	0.0	0.0	-	0.0	1.9	-	0.0	-	-	0.0	-	-

Ruscarius meanyi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
73.3 50.0	0.0	0.0	-	0.0	1.9	-	0.0	-	-	0.0	-	-

Scorpaenichthys marmoratus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 50.0	0.0	0.0	-	-	0.0	-	-	-	-	18.5	-	-
60.0 52.5	0.8	0.9	-	-	0.0	-	-	-	-	3.2	-	-
60.0 55.0	0.0	8.6	-	-	0.0	-	-	-	-	0.0	-	-
60.0 60.0	0.0	3.0	-	-	0.0	-	-	-	-	0.0	-	-
63.3 50.0	17.9	0.0	-	-	0.0	-	-	-	-	0.0	-	-
63.3 55.0	0.0	3.1	-	-	0.0	-	-	-	-	0.0	-	-
63.3 60.0	0.0	4.3	-	-	0.0	-	-	-	-	0.0	-	-
66.7 49.0	0.0	1.0	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7 50.0	0.0	1.7	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7 55.0	0.0	116.3	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7 60.0	7.3	3.0	-	-	0.0	-	0.0	-	-	0.0	-	-
66.7 65.0	-	0.9	-	-	-	-	-	-	-	0.7	-	-
66.7 70.0	0.0	1.8	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0 51.0	21.7	4.5	-	-	0.0	-	0.0	-	-	0.0	-	-

TABLE 4. (cont.)

Station		*Scorpaenichthys marmoratus* (cont.)											
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
70.0	53.0	0.0	173.8	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0	60.0	0.0	1.1	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0	65.0	-	16.8	-	-	-	-	-	-	-	-	-	-
73.3	50.0	291.4	149.1	-	0.0	0.0	-	0.0	-	-	0.0	-	-
73.3	53.0	36.9	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
73.3	60.0	0.0	2.0	-	-	-	-	0.0	-	-	0.0	-	-
73.3	65.0	-	0.9	-	-	-	-	-	-	-	-	-	-
76.7	48.0	1.9	5.5	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7	51.0	0.7	0.9	-	0.0	0.0	-	0.0	-	-	1.2	-	-
76.7	55.0	0.0	2.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7	60.0	12.8	0.9	-	0.8	0.0	-	0.0	-	-	0.0	-	-
76.7	65.0	-	0.9	-	-	-	-	-	-	-	-	-	-
76.7	70.0	0.0	1.2	-	-	-	-	0.0	-	-	0.0	-	-
80.0	51.0	28.2	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
80.0	55.0	16.1	0.0	-	-	0.0	-	0.0	-	-	0.0	-	-
80.0	60.0	2.0	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
80.0	65.0	-	0.9	-	-	-	-	-	-	-	-	-	-
80.0	70.0	0.9	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
82.0	46.0	0.0	0.0	-	0.9	0.0	-	0.0	-	-	0.0	-	-
83.3	42.0	0.0	0.0	-	5.7	0.0	-	0.0	-	-	0.0	-	-
83.3	51.0	0.0	10.5	-	-	-	-	0.0	-	-	0.0	-	-
83.3	55.0	25.1	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3	70.0	0.0	0.0	-	0.0	1.0	-	0.0	-	-	0.0	-	-
86.7	33.0	0.0	1.5	-	0.0	-	0.0	0.0	-	-	0.0	-	-
86.7	35.0	0.0	0.8	-	0.0	-	0.0	0.0	-	-	0.0	-	-
86.7	40.0	0.0	0.9	-	0.0	-	0.0	0.0	-	-	0.0	-	-
90.0	30.0	0.0	-	2.9	0.0	-	0.0	0.0	-	-	0.0	-	-
90.0	37.0	0.0	-	0.0	0.6	-	0.0	0.0	-	-	0.0	-	-
93.3	30.0	0.0	-	1.0	0.0	-	0.0	0.0	-	-	0.0	-	-
93.3	50.0	0.0	-	0.0	4.3	-	0.0	0.0	-	-	0.0	-	-
96.7	35.0	0.0	-	0.9	0.0	-	0.0	0.0	-	-	0.0	-	-
96.7	40.0	-	-	0.9	0.0	-	0.0	0.0	-	-	0.0	-	-
96.7	65.0	-	-	1.0	-	-	-	-	-	-	-	-	-
100.0	30.0	1.2	-	2.6	0.0	-	0.0	0.0	-	-	0.0	-	-
103.3	29.0	0.0	-	1.1	0.0	-	0.0	0.0	-	-	0.0	-	-

TABLE 4. (cont.)

***Paralabrax* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	0.0	0.0	-	0.0	0.0	-	14.0	-	-	0.0	-	-
80.0 55.0	0.0	0.0	-	-	0.0	-	4.6	-	-	0.0	-	-
82.0 46.0	0.0	0.0	-	0.0	0.0	-	5.8	-	-	0.0	-	-
83.3 40.6	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.7	-	-
86.7 50.0	0.0	-	-	-	-	0.0	0.8	-	-	0.0	-	-
90.0 28.0	0.0	-	0.0	0.0	-	4.9	0.0	-	-	0.0	-	-
90.0 30.0	0.0	-	0.0	0.0	-	0.6	0.0	-	-	0.0	-	-

Seriola lalandi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
96.7 45.0	0.0	-	0.0	0.0	-	0.0	0.9	-	-	0.0	-	-
110.0 90.0	-	-	0.0	0.0	-	0.0	0.8	-	-	-	0.0	-

Trachurus symmetricus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 70.0	0.0	0.0	-	1.9	0.0	-	0.0	-	-	0.0	-	-
80.0 80.0	0.0	0.0	-	3.4	0.0	-	0.0	-	-	0.0	-	-
80.0 100.0	0.0	0.0	-	0.0	16.6	-	0.0	-	-	0.8	-	-
83.3 70.0	0.0	0.0	-	0.8	0.0	-	0.0	-	-	0.0	-	-
83.3 80.0	0.0	0.0	-	2.3	0.0	-	0.0	-	-	0.0	-	-
83.3 100.0	0.0	0.0	-	2.6	11.8	-	1.0	-	-	0.0	-	-
90.0 45.0	-	-	0.0	0.0	-	1.2	0.0	-	-	-	-	-
90.0 80.0	0.0	0.0	-	-	-	1.2	0.0	-	-	-	-	-
90.0 100.0	0.0	0.0	-	-	-	0.7	0.0	-	-	-	-	-
93.3 26.7	0.0	-	0.0	0.0	-	1.4	0.0	-	-	0.0	-	-
93.3 29.0	0.0	-	0.0	0.7	-	0.0	0.0	-	-	0.0	-	-
93.3 50.0	0.0	-	0.0	2.1	-	0.0	0.0	-	-	0.0	-	-
93.3 55.0	-	-	0.0	0.0	-	0.9	0.0	-	-	0.0	-	-
93.3 70.0	0.0	-	0.0	0.0	-	0.0	0.8	-	-	0.0	-	-
96.7 100.0	0.0	0.0	-	0.0	-	0.7	0.0	-	-	-	-	-
100.0 40.0	0.0	-	0.0	7.7	-	0.0	0.8	-	-	0.0	-	-
100.0 80.0	0.0	0.0	-	-	-	4.1	0.0	-	-	-	-	-
100.0 90.0	0.0	0.0	-	-	-	18.2	0.0	-	-	-	-	-
103.3 50.0	0.0	-	0.0	0.0	-	2.7	0.0	-	-	-	-	-
103.3 55.0	0.0	-	0.0	0.0	-	1.4	0.0	-	-	-	-	-
103.3 90.0	0.0	0.0	-	-	-	1.9	0.0	-	-	-	0.0	-

TABLE 4. (cont.)

Trachurus symmetricus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
106.7 40.0	0.0	-	0.0	0.7	-	0.0	0.0	-	-	-	-	-
106.7 70.0	-	-	0.0	-	-	-	0.9	-	-	-	-	-
110.0 40.0	0.0	-	0.0	0.0	-	3.2	0.0	-	-	-	0.0	-
110.0 45.0	0.0	-	0.0	0.0	-	0.8	0.0	-	-	-	0.0	-
110.0 55.0	0.0	-	0.0	0.0	-	0.0	0.7	-	-	-	0.0	-
110.0 60.0	0.0	-	0.0	-	-	3.1	0.0	-	-	-	0.0	-

Anisotremus davidsoni

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	0.0	-	0.0	0.0	-	14.0	0.0	-	-	0.0	-	-

Xenistius californiensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	0.0	-	0.0	0.0	-	0.7	0.0	-	-	0.0	-	-
100.0 29.2	-	-	0.0	0.0	-	0.0	0.9	-	-	0.0	-	-

Cheilotrema saturnum

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	0.0	-	0.0	0.0	-	1.4	0.0	-	-	0.0	-	-

Genyonemus lineatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 50.0	0.0	0.7	-	-	0.0	-	-	-	-	0.0	-	-
63.3 50.0	0.0	7.4	-	-	0.0	-	-	-	-	0.0	-	-
63.3 52.0	0.0	0.9	-	-	0.0	-	-	-	-	0.0	-	-

Menticirrhus undulatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	0.0	-	0.0	0.0	-	0.7	0.0	-	-	0.0	-	-

Seriphus politus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 33.0	0.0	0.0	-	2.2	-	0.0	0.0	-	-	0.0	-	-
90.0 28.0	0.0	-	0.0	0.0	-	0.7	0.0	-	-	0.0	-	-

Girella nigricans

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	0.0	0.0	-	0.0	0.0	-	2.3	-	-	0.0	-	-

TABLE 4. (cont.)

Girella nigricans (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 50.0	0.0	-	-	-	-	0.0	2.3	-	-	0.0	-	-
96.7 45.0	0.0	-	0.0	0.0	-	0.0	0.9	-	-	0.0	-	-
96.7 55.0	0.0	-	0.0	0.0	-	1.0	0.0	-	-	-	-	-

Medialuna californiensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 55.0	0.0	0.0	-	-	0.0	-	0.9	-	-	0.0	-	-
86.7 50.0	0.0	-	-	-	-	0.0	0.8	-	-	0.0	-	-
96.7 40.0	-	-	0.0	0.0	-	0.7	0.0	-	-	0.0	-	-
106.7 50.0	0.0	-	0.0	-	-	0.0	0.8	-	-	-	-	-
110.0 35.0	0.0	-	0.0	0.0	-	1.4	0.0	-	-	-	0.0	-

Chromis punctipinnis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	0.0	0.0	-	0.0	0.0	-	17.7	-	-	0.0	-	-
80.0 55.0	0.0	0.0	-	-	0.0	-	5.5	-	-	0.0	-	-
82.0 46.0	0.0	0.0	-	0.0	1.1	-	18.4	-	-	0.0	-	-
86.7 33.0	0.0	0.0	-	0.0	-	0.0	0.0	-	-	3.9	-	-
86.7 45.0	0.0	0.0	-	0.0	-	1.0	6.7	-	-	0.0	-	-
86.7 50.0	0.0	-	-	-	-	0.0	3.9	-	-	1.4	-	-
90.0 28.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	1.0	-	-
96.7 29.0	0.0	-	0.0	0.0	-	0.0	0.7	-	-	0.0	-	-
96.7 32.0	0.0	-	0.0	0.0	-	0.0	2.7	-	-	0.0	-	-
96.7 35.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	1.5	-	-
96.7 45.0	0.0	-	0.0	0.0	-	0.0	6.1	-	-	0.0	-	-
96.7 50.0	0.0	-	0.0	0.0	-	0.0	0.9	-	-	0.0	-	-
100.0 29.2	-	-	0.0	0.0	-	2.2	22.5	-	-	0.0	-	-
100.0 30.0	0.0	-	0.0	0.0	-	1.2	10.3	-	-	0.0	-	-
103.3 45.0	0.0	-	0.0	0.0	-	0.0	0.8	-	-	-	-	-
106.7 35.0	0.0	-	0.0	0.0	-	0.0	5.4	-	-	-	-	-
110.0 35.0	0.0	-	0.0	0.0	-	0.0	0.9	-	-	-	0.0	-

Hypsypops rubicundus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	0.0	-	0.0	0.0	-	7.0	0.0	-	-	0.0	-	-
90.0 30.0	0.0	-	0.0	0.0	-	0.6	0.0	-	-	0.0	-	-

TABLE 4. (cont.)

Hypsypops rubicundus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
100.0 30.0	0.0	-	0.0	0.0	-	0.0	19.8	-	-	0.0	-	-
106.7 35.0	0.0	-	0.0	0.0	-	0.0	1.1	-	-	-	-	-

Halichoeres semicinctus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	0.0	0.0	-	0.0	0.0	-	3.5	-	-	0.0	-	-

Oxyjulis californica

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 55.0	0.0	0.0	-	0.0	0.0	-	0.9	-	-	0.0	-	-
76.7 60.0	0.0	0.0	-	0.0	0.0	-	8.9	-	-	0.0	-	-
80.0 51.0	0.0	0.0	-	0.0	0.0	-	63.4	-	-	0.0	-	-
80.0 55.0	0.0	0.0	-	-	0.0	-	4.6	-	-	0.0	-	-
82.0 46.0	0.0	0.0	-	0.0	0.0	-	8.1	-	-	0.0	-	-
86.7 45.0	0.0	0.0	-	0.0	-	0.0	0.8	-	-	0.0	-	-
86.7 50.0	0.0	-	-	-	-	0.0	27.0	-	-	0.0	-	-

Semicossyphus pulcher

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	0.0	0.0	-	0.0	0.0	-	1.9	-	-	0.0	-	-
80.0 55.0	0.0	0.0	-	-	0.0	-	0.9	-	-	0.0	-	-
82.0 46.0	0.0	0.0	-	0.0	0.0	-	1.2	-	-	0.0	-	-
86.7 50.0	0.0	-	-	-	-	0.0	7.7	-	-	0.0	-	-

Stichaeidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
73.3 50.0	0.0	0.0	-	0.0	1.9	-	0.0	-	-	0.0	-	-

Chiasmodon niger

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 80.0	0.9	0.0	-	-	-	0.0	0.0	-	-	-	-	-
100.0 90.0	0.9	0.0	-	-	-	0.0	0.0	-	-	-	-	-

***Neoclinus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 55.0	0.0	0.0	-	-	0.0	-	0.9	-	-	0.0	-	-

TABLE 4. (cont.)

Neoclinus blanchardi

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	51.0	0.0	0.0	-	0.0	0.0	-	0.9	-	-	0.0	-	-
80.0	55.0	0.0	0.0	-	-	0.0	-	3.7	-	-	0.0	-	-
82.0	46.0	0.0	0.0	-	0.0	0.0	-	4.6	-	-	0.0	-	-

Neoclinus stephensae

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	51.0	0.0	0.0	-	0.0	0.0	-	0.9	-	-	0.0	-	-
86.7	33.0	0.0	0.0	-	1.1	-	0.0	0.0	-	-	0.0	-	-
96.7	30.0	0.0	-	0.6	0.0	-	0.0	0.0	-	-	0.0	-	-

Hypsoblennius **spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	55.0	0.0	0.0	-	-	0.0	-	1.8	-	-	0.0	-	-
83.3	40.6	0.0	0.0	-	0.0	3.3	-	0.0	-	-	0.0	-	-
86.7	33.0	0.0	0.0	-	0.0	-	0.0	0.0	-	-	1.0	-	-
90.0	28.0	0.0	-	1.1	0.0	-	0.0	0.0	-	-	0.0	-	-
110.0	32.4	0.0	-	-	3.3	-	0.0	0.0	-	-	-	0.0	-

Hypsoblennius gentilis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	42.0	0.9	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
86.7	33.0	0.0	0.0	-	0.0	-	0.0	1.0	-	-	4.9	-	-
93.3	30.0	0.0	-	0.0	0.0	-	0.0	0.6	-	-	0.0	-	-
100.0	29.2	-	-	0.0	0.0	-	0.0	0.0	-	-	1.0	-	-
103.3	29.0	0.0	-	0.0	0.0	-	0.0	0.2	-	-	0.0	-	-

Hypsoblennius gilberti

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7	49.0	0.0	0.0	-	-	0.0	-	1.0	-	-	0.0	-	-
66.7	55.0	0.0	0.0	-	-	0.0	-	0.0	-	-	0.8	-	-
80.0	51.0	0.0	0.0	-	0.0	0.0	-	0.9	-	-	0.0	-	-
80.0	60.0	0.0	0.0	-	0.0	3.4	-	0.0	-	-	0.0	-	-
82.0	46.0	0.0	0.0	-	0.0	2.2	-	13.8	-	-	0.0	-	-
83.3	40.6	0.0	0.0	-	0.0	2.2	-	0.0	-	-	0.0	-	-
83.3	42.0	0.0	0.0	-	0.9	0.0	-	0.0	-	-	0.8	-	-
90.0	28.0	0.0	-	0.0	0.0	-	0.0	1.1	-	-	0.0	-	-

TABLE 4. (cont.)

Hypsoblennius gilberti (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	30.0	0.0	-	0.0	0.0	-	1.3	0.0	-	-	0.0	-	-
90.0	37.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	1.6	-	-
96.7	35.0	0.7	-	0.0	0.0	-	0.0	0.0	-	-	0.0	-	-
103.3	29.0	0.0	-	0.0	0.0	-	0.0	0.6	-	-	0.0	-	-
110.0	35.0	0.0	-	0.0	0.0	-	2.8	0.0	-	-	-	0.0	-

Hypsoblennius jenkinsi

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7	55.0	0.0	0.0	-	-	0.0	-	0.0	-	-	0.8	-	-
76.7	51.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	1.2	-	-
80.0	51.0	0.0	0.0	-	0.0	1.0	-	3.7	-	-	0.0	-	-
80.0	60.0	0.0	0.0	-	0.0	5.6	-	0.0	-	-	0.0	-	-
82.0	46.0	0.0	0.0	-	0.0	4.3	-	134.6	-	-	0.0	-	-
83.3	42.0	0.0	0.0	-	0.9	0.0	-	0.0	-	-	0.8	-	-
83.3	55.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.6	-	-
83.3	80.0	0.0	0.0	-	0.0	0.0	-	1.1	-	-	0.0	-	-
86.7	33.0	0.0	0.0	-	0.0	-	23.1	37.4	-	-	90.7	-	-
86.7	35.0	0.0	0.0	-	0.0	-	0.0	0.0	-	-	4.3	-	-
86.7	45.0	0.0	0.0	-	0.0	-	0.0	0.0	-	-	0.8	-	-
86.7	55.0	0.0	0.0	-	0.0	-	1.1	0.0	-	-	0.8	-	-
90.0	28.0	0.0	-	0.0	0.0	-	99.3	0.0	-	-	4.1	-	-
90.0	30.0	1.0	-	0.0	0.0	-	102.2	0.0	-	-	5.4	-	-
90.0	35.0	0.0	-	-	0.0	-	10.6	0.0	-	-	0.6	-	-
90.0	37.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	7.9	-	-
93.3	29.0	0.0	-	0.0	0.7	-	10.6	0.7	-	-	0.0	-	-
93.3	30.0	0.0	-	0.0	0.0	-	0.0	8.7	-	-	1.2	-	-
93.3	35.0	0.0	-	0.0	0.0	-	0.0	1.3	-	-	0.0	-	-
93.3	50.0	0.0	-	0.0	0.0	-	0.7	0.0	-	-	1.5	-	-
96.7	30.0	0.0	-	0.0	0.0	-	2.1	0.0	-	-	0.0	-	-
96.7	35.0	0.0	-	0.9	0.0	-	0.0	0.0	-	-	10.7	-	-
96.7	45.0	0.0	-	0.0	0.0	-	0.0	2.6	-	-	0.0	-	-
100.0	29.2	-	-	0.0	0.0	-	0.0	2.8	-	-	1.0	-	-
100.0	30.0	1.8	-	0.0	0.0	-	1.2	3.4	-	-	0.0	-	-
100.0	40.0	0.0	-	0.0	0.0	-	1.0	0.0	-	-	0.0	-	-
100.0	80.0	0.0	0.0	-	-	-	0.0	0.8	-	-	-	-	-

TABLE 4. (cont.)

Hypsoblennius jenkinsi (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
103.3 29.0	0.0	-	0.0	0.0	-	0.0	0.2	-	-	0.9	-	-
103.3 30.0	0.0	-	0.0	0.0	-	0.0	0.0	-	-	2.7	-	-
103.3 40.0	0.0	-	0.0	0.0	-	1.9	0.0	-	-	-	-	-
106.7 45.0	0.0	-	0.0	0.0	-	0.0	0.7	-	-	-	-	-
110.0 35.0	0.0	-	0.0	0.0	-	8.4	0.0	-	-	-	1.0	-

Icosteus aenigmaticus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 55.0	0.0	2.8	-	-	0.0	-	0.0	-	-	0.0	-	-
76.7 55.0	0.7	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
76.7 60.0	0.0	2.6	-	0.0	0.0	-	0.0	-	-	0.0	-	-

Coryphopterus nicholsii

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3 52.0	0.0	0.0	-	-	0.0	-	-	-	-	0.7	-	-
86.7 55.0	0.0	1.0	-	0.0	-	0.0	0.0	-	-	0.0	-	-

Lepidogobius lepidus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 50.0	0.0	0.0	-	-	0.0	-	-	-	-	0.9	-	-
63.3 50.0	0.7	0.0	-	-	0.0	-	-	-	-	0.0	-	-
86.7 33.0	1.2	0.0	-	0.0	-	0.0	0.0	-	-	0.0	-	-

Lythrypnus dalli

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 55.0	0.0	0.0	-	-	0.0	-	1.8	-	-	0.0	-	-

Typhlogobius californiensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 42.0	0.0	0.0	-	0.9	0.0	-	0.0	-	-	0.0	-	-

Sphyraena argentea

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	0.0	0.0	-	0.0	1.1	-	2.3	-	-	0.0	-	-
86.7 33.0	0.0	0.0	-	0.0	-	0.0	1.0	-	-	3.9	-	-
90.0 28.0	0.0	-	0.0	0.0	-	4.9	0.0	-	-	0.0	-	-
96.7 30.0	0.0	-	0.0	0.0	-	0.7	0.0	-	-	0.0	-	-

TABLE 4. (cont.)

Scomber japonicus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
70.0	70.0	0.0	0.0	-	-	0.0	-	5.7	-	-	-	-	-
76.7	100.0	0.0	0.0	-	-	0.0	-	1.8	-	-	-	-	-
80.0	51.0	0.0	0.0	-	0.0	9.3	-	16.8	-	-	0.0	-	-
80.0	55.0	0.0	0.0	-	-	0.0	-	0.9	-	-	0.0	-	-
80.0	70.0	0.0	0.0	-	2.8	0.0	-	0.0	-	-	0.0	-	-
80.0	80.0	0.0	0.0	-	0.9	0.0	-	0.0	-	-	0.0	-	-
82.0	46.0	0.0	0.0	-	0.0	113.1	-	97.8	-	-	0.9	-	-
83.3	40.6	0.0	0.0	-	0.0	0.0	-	2.1	-	-	0.0	-	-
83.3	42.0	0.0	0.0	-	0.0	0.0	-	1.1	-	-	0.0	-	-
83.3	55.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.6	-	-
83.3	70.0	0.0	0.0	-	0.8	0.0	-	7.1	-	-	0.0	-	-
83.3	100.0	0.0	0.0	-	0.0	0.0	-	1.0	-	-	0.0	-	-
86.7	33.0	0.0	0.0	-	0.0	-	5.0	8.3	-	-	21.7	-	-
86.7	35.0	0.0	0.0	-	1.1	-	0.0	0.0	-	-	1.1	-	-
86.7	50.0	0.0	-	-	-	-	0.0	8.5	-	-	0.0	-	-
86.7	80.0	0.0	0.0	-	0.9	0.0	-	1.0	-	-	0.0	-	-
90.0	28.0	0.0	-	0.0	0.0	-	1.4	0.0	-	-	0.0	-	-
90.0	30.0	0.0	-	0.0	0.0	-	6.4	0.0	-	-	0.0	-	-
90.0	35.0	0.0	-	-	0.0	-	0.5	0.0	-	-	0.0	-	-
90.0	90.0	0.0	0.0	-	-	-	0.0	1.6	-	-	-	-	-
93.3	29.0	0.0	-	0.0	1.5	-	6.2	0.0	-	-	0.0	-	-
93.3	60.0	0.0	-	0.0	0.0	-	1.5	0.0	-	-	0.0	-	-
96.7	30.0	0.0	-	0.0	0.0	-	4.8	0.0	-	-	0.0	-	-
96.7	80.0	0.0	0.0	-	0.0	-	0.8	0.0	-	-	-	-	-
100.0	30.0	0.0	-	0.0	0.0	-	0.0	0.9	-	-	0.0	-	-
100.0	35.0	0.0	-	0.0	0.0	-	0.0	11.2	-	-	0.0	-	-
103.3	45.0	0.0	-	0.0	0.0	-	0.6	0.0	-	-	-	-	-
103.3	50.0	0.0	-	0.0	0.0	-	20.1	2.4	-	-	-	-	-

Icichthys lockingtoni

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0	70.0	1.7	0.0	-	-	0.0	-	-	-	-	0.0	-	-
63.3	70.0	0.0	0.8	-	-	0.0	-	-	-	-	0.0	-	-
66.7	65.0	-	0.9	-	-	-	-	-	-	-	-	-	-
70.0	60.0	0.0	1.1	-	-	0.0	-	0.0	-	-	0.0	-	-
70.0	65.0	-	1.1	-	-	-	-	-	-	-	-	-	-

TABLE 4. (cont.)

Icichthys lockingtoni (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
70.0	70.0	0.0	1.9	-	-	0.0	-	0.0	-	-	-	-	-
73.3	70.0	0.8	1.8	-	-	-	-	0.0	-	-	0.0	-	-
76.7	70.0	0.0	0.0	-	-	-	-	1.0	-	-	0.0	-	-
76.7	80.0	0.0	0.0	-	-	0.9	-	0.0	-	-	-	-	-
80.0	80.0	0.0	0.0	-	0.9	0.0	-	0.0	-	-	0.0	-	-
83.3	70.0	1.0	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3	80.0	0.0	0.0	-	0.8	0.0	-	0.0	-	-	0.0	-	-
86.7	80.0	0.0	0.0	-	0.0	0.0	-	2.1	-	-	0.0	-	-

Tetragonurus cuvieri

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7	90.0	0.0	0.0	-	-	6.7	-	0.0	-	-	-	-	-
66.7	100.0	0.0	0.0	-	-	0.0	-	1.0	-	-	-	-	-
80.0	100.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	2.3	-	-
86.7	60.0	0.0	0.0	-	0.0	-	0.0	0.0	-	-	3.0	-	-
86.7	70.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	1.7	-	-
86.7	80.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	2.9	-	-
86.7	90.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.9	-	-
86.7	100.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	2.5	-	-
93.3	35.0	0.9	-	0.0	0.0	-	0.0	0.0	-	-	0.0	-	-
93.3	40.0	1.3	-	0.0	0.0	-	0.0	0.0	-	-	0.0	-	-
93.3	100.0	0.0	0.0	-	0.7	-	0.0	0.0	-	-	-	-	-
96.7	90.0	0.0	0.0	-	0.0	-	0.0	0.6	-	-	-	-	-
100.0	40.0	0.8	-	0.0	0.0	-	0.0	0.0	-	-	0.0	-	-
100.0	90.0	0.0	0.0	-	-	-	2.6	0.0	-	-	-	-	-
103.3	50.0	0.0	-	0.0	0.0	-	0.0	0.8	-	-	-	-	-
103.3	55.0	0.0	-	1.0	0.0	-	0.0	1.0	-	-	-	-	-
103.3	65.0	-	0.9	-	-	-	-	-	-	-	-	-	-
103.3	100.0	0.0	0.0	-	-	-	0.0	0.8	-	-	-	0.0	-
106.7	55.0	0.0	-	0.0	-	-	0.7	0.0	-	-	-	-	-
106.7	60.0	0.0	-	0.0	-	-	0.9	0.0	-	-	-	-	-

Peprilus simillimus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7	49.0	0.0	0.0	-	-	0.0	-	3.8	-	-	0.0	-	-
86.7	33.0	0.0	0.0	-	1.1	-	0.0	0.0	-	-	0.0	-	-

TABLE 4. (cont.)

Peprilus simillimus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 29.0	0.0	-	0.0	0.7	-	0.0	0.0	-	-	0.0	-	-

Citharichthys sordidus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 55.0	0.0	0.0	-	-	0.0	-	0.0	-	-	0.8	-	-
73.3 50.0	0.0	0.7	-	0.0	0.0	-	0.0	-	-	0.0	-	-

Citharichthys stigmaeus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 50.0	0.0	0.0	-	-	0.0	-	1.0	-	-	0.0	-	-
66.7 55.0	0.0	0.0	-	-	0.0	-	0.0	-	-	0.8	-	-
70.0 65.0	-	4.5	-	-	-	-	-	-	-	-	-	-
73.3 53.0	0.0	0.0	-	0.0	0.8	-	0.0	-	-	0.0	-	-
73.3 65.0	-	0.9	-	-	-	-	-	-	-	-	-	-
76.7 70.0	0.0	1.2	-	-	-	-	0.0	-	-	0.0	-	-

Paralichthys californicus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3 50.0	0.0	0.9	-	-	0.0	-	-	-	-	0.0	-	-
80.0 51.0	0.0	0.0	-	0.0	0.0	-	0.9	-	-	0.0	-	-
82.0 46.0	0.0	0.0	-	0.0	0.0	-	1.2	-	-	0.0	-	-
86.7 33.0	0.0	0.0	-	1.1	-	0.0	0.0	-	-	0.0	-	-
93.3 29.0	0.0	-	0.0	0.7	-	0.0	0.0	-	-	0.0	-	-

Lyopsetta exilis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 55.0	0.0	0.0	-	-	0.9	-	0.0	-	-	0.0	-	-

Microstomus pacificus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 70.0	0.0	0.0	-	0.0	0.7	-	0.0	-	-	0.0	-	-

Parophrys vetulus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 50.0	0.0	2.2	-	-	0.0	-	-	-	-	0.0	-	-
60.0 52.5	0.0	2.6	-	-	0.0	-	-	-	-	0.0	-	-

TABLE 4. (cont.)

Pleuronichthys coenosus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	0.0	0.0	-	0.0	0.0	-	7.5	-	-	0.0	-	-
80.0 55.0	0.0	0.0	-	-	0.0	-	2.8	-	-	0.0	-	-
82.0 46.0	0.0	0.0	-	0.0	0.0	-	6.9	-	-	0.0	-	-
83.3 42.0	0.0	0.0	-	0.9	0.0	-	0.0	-	-	0.0	-	-
90.0 35.0	0.0	-	-	1.9	-	0.0	0.0	-	-	0.0	-	-
103.3 29.0	0.0	-	0.0	0.8	-	0.0	0.0	-	-	0.0	-	-

Pleuronichthys decurrens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3 60.0	0.0	2.2	-	-	0.0	-	-	-	-	0.0	-	-
66.7 60.0	0.0	1.0	-	-	0.0	-	0.0	-	-	0.0	-	-
76.7 60.0	0.0	0.9	-	0.0	0.0	-	0.0	-	-	0.0	-	-
82.0 46.0	0.8	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-

Pleuronichthys verticalis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
82.0 46.0	0.0	0.0	-	0.0	0.0	-	3.5	-	-	0.0	-	-

Disintegrated fish larvae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3 52.0	0.0	0.9	-	-	0.0	-	-	-	-	0.0	-	-
76.7 48.0	0.0	0.9	-	0.0	0.0	-	0.0	-	-	0.0	-	-
83.3 55.0	0.8	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	-
86.7 50.0	0.0	-	-	-	-	0.0	13.1	-	-	0.0	-	-
106.7 50.0	1.1	-	0.0	-	-	0.0	0.0	-	-	-	-	-
110.0 45.0	0.0	-	0.0	0.0	-	0.0	0.7	-	-	-	0.0	-
110.0 55.0	0.0	-	0.0	0.0	-	0.0	0.7	-	-	-	0.0	-

Unidentified fish larvae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
73.3 80.0	0.8	0.0	-	-	-	-	0.0	-	-	0.0	-	-
83.3 40.6	0.0	0.0	-	0.0	0.0	-	1.1	-	-	0.0	-	-
86.7 50.0	0.0	-	-	-	-	0.0	0.8	-	-	0.0	-	-
90.0 30.0	0.0	-	0.0	0.0	-	0.6	0.0	-	-	0.0	-	-
90.0 45.0	-	-	0.0	0.0	-	0.6	0.0	-	-	-	-	-
96.7 29.0	0.7	-	0.0	0.0	-	0.7	0.0	-	-	0.0	-	-

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ALPHABETICAL INDEX TO TABLE 4

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