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ICHTHYOPLANKTON, PARALARVAL CEPHALOPOD, AND STATION DATA FOR SURFACE (MANTA) AND OBLIQUE (BONGO) PLANKTON TOWS FOR CALIFORNIA COOPERATIVE OCEANIC FISHERIES INVESTIGATIONS SURVEY CALIFORNIA CURRENT ECOSYSTEM SURVEY CRUISES IN 2008

William Watson, and Susan M. Manion

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

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ABSTRACT

This report provides ichthyoplankton data from Manta net (surface) tows and Bongo net (oblique) tows and associated station and tow data from California Cooperative Oceanic Fisheries Investigations (CalCOFI) and California Current Ecosystem Survey (CCES) cruises during 2008. It is the 67th report in a series that presents these data for all biological-oceanographic CalCOFI surveys from 1951 to the present and CCES cruises from 2006 to the present. For the first time, occurrence and abundance data for "larval" cephalopods collected in the plankton tows are included as well in this report. In total, 491 stations (471 net-tow stations) were occupied during the CalCOFI and CCES cruises: 283 net-tow stations were occupied during the quarterly CalCOFI cruises and 188 during the two CCES cruises. The CalCOFI survey area extended from Monterey Bay (winter, spring), and Avila Beach (summer, fall) to San Diego, California, with transects extending seaward in a southwesterly direction to a maximum of approximately 330 n mi. The most seaward station, 90.0 120.0, was approximately 400 n mi west of Punta Baja, Baja California, Mexico. The CCES area, surveyed in spring and summer, extended from the northwestern tip of Washington State to San Diego, California and seaward to approximately 120—350 n mi. The data are listed in a series of twenty tables; the background, methodology, and information necessary for interpretation of the data are presented in the accompanying text. All pertinent station and tow data, including volumes of water strained and standard haul factors, are listed in the first and eleventh tables. Other tables list, by station and month, standardized counts (number per 100 cubic meters of water filtered) of each of the 12 cephalopod and 85 larval fish categories identified in Manta net tows and standardized counts (number under 10 square meters of sea surface) of each of the 24 cephalopod and 161 larval fish categories identified in Bongo net tows. This series of reports makes the CalCOFI and CCES ichthyoplankton and station data available to all investigators and serves as a guide to the computer data base.

INTRODUCTION

This report, the 67th in the series, provides paralarval[1] cephalopod, ichthyoplankton, and associated station and tow data from California Cooperative Oceanic Fisheries Investigations (CalCOFI) joint biological-oceanographic survey cruises conducted in 2008. 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 affect these dynamics. CalCOFI is a partnership among the Southwest Fisheries Science Center of the National Marine Fisheries Service (NMFS), the Scripps Institution of Oceanography (SIO), and the California Department of Fish and Game (CDFG). NMFS and SIO supply ships and personnel to conduct the sea surveys. NMFS processes the plankton samples and analyzes the ichthyoplankton and cephalopods from them. SIO processes and analyzes hydrographic and biological samples and analyzes other invertebrate groups from the plankton samples.

The boundaries, station placement, and sampling frequency for the CalCOFI surveys were based on the results of joint biological-oceanographic cruises conducted by NMFS and SIO during 1939–41. Originally, CalCOFI cruises were designed to collect sardine eggs and larvae and associated hydrographic data over the entire areal and seasonal spawning range of the species. From 1951 to 1960 the surveys were annual with cruises conducted monthly. The survey area was occupied quarterly during 1961–1965, and in 1966 the surveys became triennial with monthly cruises. Beginning in 1985 annual surveys were resumed, with quarterly cruises occupying only the Southern California Bight region (see Hewitt 1988, and Moser et al. 1993, 1994, 2001a, 2002 for summaries of CalCOFI historical sampling effort). Beginning in 2003 the region surveyed was expanded northward to the Monterey or Point Reyes vicinity

[1] "Paralarva", a term coined by Young and Harman (1988) to describe the early developmental stage of cephalopods from hatching to subadult, includes both morphological and ecological components. The morphological distinction between paralarval and juvenile stages has been defined for some families but not for all; we made no attempt to distinguish between these stages.

during the winter and spring cruises. Neuston[2] sampling with the Manta net (Figure 1) was initiated in 1977–78. Alhstrom 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. Moser et al. (2002) summarized the spatial and temporal distribution and abundance of ichthyoplankton collected in Manta net tows on CalCOFI survey cruises from 1977–2000.

This report also includes paralarval cephalopod, ichthyoplankton, and associated station and tow data from the 2008 California Current Ecosystem Survey (CCES) cruises, conducted in conjunction with the Spring and summer CalCOFI cruises. The CCES is intended to obtain an approximately synoptic view of the segment of the California Current Large Marine Ecosystem along the U.S. west coast. Timing of the CCES cruises in 2008 was largely determined by the spawning and migration patterns of Pacific Sardine, as the ichthyoplankton catch data were intended to contribute to the annual estimate of coast-wide spawning biomass of Pacific Sardine.

CalCOFI hydrographic and biological data are published by SIO and can be obtained on line at the CalCOFI web site <http://www.calcofi.org/newhome/publications/Data_Reports/data_reports.htm>. All available records for all four CalCOFI cruises and both CCES cruises in 2008 were verified and edited to produce this data report. These reports make the CalCOFI and CCES ichthyoplankton and station data, and beginning with this report the paralarval cephalopod data, available to all investigators and serve as guides to the computer data base. The reports 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. This report includes both Manta net tow data and Bongo net tow data. Prior to the 2001 survey these data were reported separately. Citations for other reports in this series are:

Survey	Manta Tow Report	Survey	Manta Tow Report
1977–78	Moser et al. 2001b	1992	Watson et al. 2002b
1980–81	Ambrose et al. 2002a	1993	Ambrose et al. 2002d
1984	Charter et al. 2002a	1994	Charter et al. 2002d
1985	Ambrose et al. 2002b	1995	Sandknop et al. 2002c
1986	Charter et al. 2002b	1996	Watson et al. 2002c
1987	Sandknop et al. 2002a	1997	Ambrose et al. 2002e
1988	Watson et al. 2002a	1998	Ambrose et al. 2002f
1989	Ambrose et al. 2002c	1999	Ambrose et al. 2002g
1990	Charter et al. 2002c	2000	Watson et al. 2002d
1991	Sandknop et al. 2002b		

[2]The term “neuston” was applied originally to organisms associated with the surface film in freshwater habitats (Naumann 1917). Banse (1975) reviewed in detail the evolution 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 of facultatively (Zaitsev 1970; Hemple 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).

Survey	Oblique Tow Report
1951	Ambrose et al. 1987a
1952	Sandknop et al. 1987a
1953	Stevens et al. 1987a
1954	Sumida et al. 1987a
1955	Ambrose et al. 1987b
1956	Stevens et al. 1987b
1957	Sumida et al. 1987b
1958	Sandknop et al. 1987b
1959	Stevens et al. 1987c
1960	Ambrose et al. 1987c
1961	Sandknop et al. 1988a
1962	Sumida et al. 1988a
1963	Ambrose et al. 1988a
1964	Sandknop et al. 1988b
1965	Stevens et al. 1988a
1966	Sumida et al. 1988b
1967	Ambrose et al. 1988b
1968	Sandknop et al. 1988c
1969	Stevens et al. 1988b
1972	Sumida et al. 1988c
1975	Ambrose et al. 1988c
1978	Sandknop et al. 1988d
1981	Ambrose et al. 1988d
1984	Stevens et al. 1990
1985	Ambrose et al. 1999a
1986	Charter et al. 1999a
1987	Sandknop et al. 1999a
1988	Watson et al. 1999a
1989	Ambrose et al. 1999b
1990	Charter et al. 1999b
1991	Sandknop et al. 1999b
1992	Watson et al. 1999b
1993	Ambrose et al. 1999c
1994	Charter et al. 1999c
1995	Sandknop et al. 1999c
1996	Watson et al. 1999c
1997	Ambrose et al. 1999d
1998	Charter et al. 1999d
1999	Ambrose et al. 2001
2000	Watson et al. 2001

Survey	Manta and Oblique Tows Report
2001	Ambrose et al. 2003a
2002	Charter et al. 2003
2003	Acuña et al. 2005
2004	Watson et al. 2005
2005	Ambrose et al. 2006
2006	Bowlin et al 2009

Survey	Special cruises
1997–98	Ambrose et al. 2003b

SAMPLING AREA AND PATTERN

In total, 283 standard CalCOFI survey stations (including 17 nearshore [SCCOOS] stations) were occupied on four cruises in 2008, employing two research vessels:

0801, RV *David Starr Jordan,* 70 stations, January 4 – 30;

0804, RV *David Starr Jordan,* 71 stations, March 24 – May 1;

0808, RV *New Horizon*, 69 stations, August 14 – 29;

0810, RV *New Horizon*, 73 stations, October 14 – 29.

A total of 188 CCES net-tow stations was occupied in 2008, employing two research vessels:

0804, RV *Miller Freeman*, 89 stations, April 1 – 30

0807, RV *David Starr Jordan*, 99 stations, June 30 – August 20.

The core CalCOFI survey area extended from Avila Beach to San Diego, California and seaward on six survey lines to approximately 120–330 n mi (Figures 2 and 5).[3] During the winter (January) CalCOFI cruise an additional short survey line was sampled at Monterey Bay, California, and during the spring (March—May) cruise three additional survey lines were sampled up to Monterey Bay (Figure 2). The most seaward station, 90.0 120.0, was approximately 400 n mi west of Punta Baja, Baja California, Mexico. Nominally, CalCOFI lines 60.0 through 80.0 extend seaward to station 100, lines 83.3 and 86.7 to station 110, and lines 90.0 and 93.3 to station 120. On cruise 0801 line 66.7 at Monterey Bay extended seaward only to station 55, and on cruise 0804 it extended seaward to station 80. Also on cruise 0804, line 70.0 extended seaward only to station 60, line 73.3 to station 90, and line 80.0 to station 80 (Figure 2). All standard stations were occupied on the summer (August) and autumn (October) cruises (Figure 5). On all CalCOFI cruises, up to seven nearshore (SCCOOS) stations were added between lines 80.0 and 93.3 (Figures 2, 5).

The CCES survey area is the segment of the California Current Large Marine Ecosystem along the U.S. west coast, from Cape Flattery, Washington, to San Diego. During the spring CCES cruise three northern CalCOFI survey lines (56.7–63.3) were occupied out to station 90.0, and during summer four (56.7–73.3) were occupied out to station 90.0. Northward from Point Arena, the CCES survey lines were reoriented to a more westerly direction perpendicular to the coast. Although nominal CalCOFI line and station spacing criteria were maintained north of Point Arena, station coordinates in the north differed from the customary CalCOFI station designations owing to the changed orientation of the survey lines. Generally, five survey lines off northern California extended seaward approximately 160 n mi, and ten off Oregon and Washington extended seaward approximately 120 n mi (Figures 3 and 4). All plankton sampling north of Point Reyes, California (line 60.0) was during the CCES cruises, and most plankton sampling southward from Point Reyes was during the CalCOFI cruises.

SAMPLING GEAR AND METHODS

Surface plankton tows for both CalCOFI and CCES cruises were made with a modified version of the Manta net originally described 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 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 net 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 for 15

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

minutes. Samples were preserved in 5% formalin buffered with sodium borate and returned to the plankton sorting laboratory at the SWFSC at the end of the cruise.

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

The standard bongo tow on both CalCOFI and CCES cruises was a double oblique haul to 212 m depth (to 15 m from the bottom in shallow areas) designed to filter a constant amount of water per depth interval (~ 2 m^3/m of depth) over the vertical range of most ichthyoplankters. Hauls were made at a ship speed of 1.5–2.0 knots and initiated by clamping the net to the towing cable above a 34 kg weight suspended below the surface. The net was lowered to ~ 212 m depth by paying out 300 m of wire at 50 m/minute (35 m of depth/minute). After fishing at depth for 30 seconds, the net was retrieved at 20 m/minute (14 m of depth/minute). The angle of stray was recorded every 30 seconds and maintained at 45º (± 3º) by adjusting ship speed and course. After reaching the surface, the nets were washed down and the samples from the starboard net preserved in 5% formalin buffered with sodium borate; samples from the port net were preserved in 95% ethanol buffered with tris. At the beginning and end of each tow, readings were made from a flow meter suspended in the mouth of the starboard net. Detailed descriptions of gear and methods are given by Kramer et al. (1972) and Smith and Richardson (1977); Ohman and Smith (1995) provided summaries of historical CalCOFI zooplankton methods and calibration factors for the various gear types.

LABORATORY PROCEDURES

The ichthyoplankton and cephalopods were removed from each formalin-preserved sample and bottled separately in 3% buffered formalin. In addition to fish eggs and larvae, some samples contained juvenile, and occasionally adult, stages of fishes; these were removed and bottled separately in 3% formalin. Ethanol-preserved samples were archived for future analysis. 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 individuals of a taxon per unit surface area (Kramer et al. 1972; Smith and Richardson 1977; Moser et al. 1993). A requirement for this is that 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 and cephalopod 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 Manta net. We determined a zooplankton displacement volume for each Bongo net sample (methods described in Staff, SPFI 1953 and Kramer et al. 1972). Samples containing > 25 ml of plankton were fractioned to ~50% of their original volume (Manta net samples are not fractioned). Aliquot percentages for fractioned samples are listed in Table 11 under the "Percent Sorted" column. The sorting process included the removal of all ichthyoplankton and cephalopods from the samples and identification and separation of: eggs and larvae of Pacific Sardine, Northern Anchovy, and Pacific Saury and larvae of Pacific Hake. Body lengths of sardine, anchovy, and hake larvae were measured to the nearest 0.5 mm,

and mantle length of paralarval Market Squid (*Doryteuthis opalescens*) was measured to the nearest 0.1mm.

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

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

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

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

$$V = R \cong a \cong p$$

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

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

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

Station and tow data for Manta net tows are presented in Table 1; station data, tow depth, volume of water strained, and standard haul factor are listed in Table 11 for each Bongo tow taken during 2008. Detailed descriptions of factors involved in calculating these values are presented in Ahlstrom (1948), Kramer et al. (1972), and Smith and Richardson (1977).

IDENTIFICATION

Identification of cephalopod and ichthyoplankton species beyond those separated during the sorting process was done by a separate group of specialists. Early ontogenetic stages of cephalopods and fishes are inherently difficult to identify and this is further complicated by the large number and diversity of species in the California Current region. The guide to early life history stages of cephalopods by Sweeney et al. (1992), and papers of Okutani and McGowan (1969) and Young (1972) were instrumental in the cephalopod identifications. The majority of the cephalopod paralarvae could be identified to at least genus; many of the abundant taxa could be identified to species. Most ichthyoplankton identifications were accomplished by establishing ontogenetic series on the basis of morphology, meristics, and pigmentation, and then linking these series through overlapping features to known metamorphic, juvenile, or adult stages (Powles and Markle 1984). Our ability to identify fish larvae in the California Current region improved greatly during 1988–1995 as a result of an intensive research project aimed at producing a taxonomic monograph on the ontogenetic stages of fishes of this region (Moser 1996). Except for damaged specimens, most fish larvae in the 2008 surveys could be identified to species.

In total, 12 cephalopod taxa were identified in Manta net tows for 2008: 6 to species (77.3% of the total paralarvae collected in Manta net tows), 3 to genus (18.7%), and 3 to family (4.0%). A total of 24 cephalopod taxa was identified in Bongo net tows for 2008: 15 to species (69.7% of the total paralarvae collected in Bongo net tows), 3 to genus (16.6%), 1 to subfamily (0.3%), 4 to family (12.5%), and 1 to order (0.9%).

A total of 85 larval fish categories (including unidentified) occurred in Manta net tows for 2008: 71 were identified to species (88% of the total fish larvae collected in the Manta net tows), 10 to genus (11.3%), and 3 to family (0.4%). A total of 161 larval fish categories (including unidentified and disintegrated) occurred in the Bongo net tows: 132 were identified to species (84.5% of the total larvae collected in the Bongo net tows), 21 to genus (15.1%), 5 to family (0.3%), and 1 to order (<0.1%).

Identifications were done in the Ichthyoplankton Ecology Laboratory of the Fisheries Resources Division by Elaine M. Acuña, Sharon R. Charter, and the senior author.

With few exceptions, taxonomic categories above species represent small specimens which were damaged and partly disintegrated during capture. The following taxonomic categories in Tables 2–10 and 12–20 require explanation:

Berryteuthis spp. – small or damaged specimens lacking diagnostic characters; most or all probably are *B. anonychus*.

Doryteuthis opalescens – Market Squid, commonly known as *Loligo opalescens*, was placed in *Doryteuthis* by Vecchione et al. (2005).

Enoploteuthidae – small specimens having tentacle and sucker characteristics perhaps more consistent with *Enoploteuthis* than with *Abraliopsis*.

Galiteuthis spp. – small or damaged specimens of *G. phyllura* and/or *G. pacifica* lacking diagnostic characters.

Gonatus spp. – small or damaged specimens lacking diagnostic characters; most probably are *G. onyx* or *G. pyros*.

Histioteuthis spp. – small or damaged specimens lacking diagnostic characters, most likely *H. heteropsis*, but could include *Stigmatoteuthis dofleini*.

Octopodidae – most likely *Octopus* spp., although no attempt was made to identify specimens below the level of family.

Pyroteuthidae – small or damaged *Pterygioteuthis* and/or *Pyroteuthis* paralarvae in which diagnostic visceral photophores are not yet developed or are damaged.

Bathylagidae – in a revision of the family, Kobylyanskiy (1986) placed *Bathylagus milleri* in *Pseudobathylagus*, *B. ochotensis* in *Lipolagus*, *B. wesethi* in *Bathylagoides*, and *Leuroglossus stilbius* in *Bathylagus.* Currently, *Leuroglossus stilbius* is considered valid (Eschmeyer 2010).

Bathylagoides wesethi – see comment for Bathylagidae.

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

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

Isopsetta isolepis – see comment for Pleuronectidae.

Leuroglossus stilbius – see comment for Bathylagidae.

Lipolagus ochotensis – see comment for Bathylagidae.

Lyopsetta exilis – see comment for Pleuronectidae.

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

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

Nannobrachium – Zahuranec (2000) moved the subgroup of *Lampanyctus* characterized by small or absent pectoral fins in adults to the genus *Nannobrachium*; two species, *N. ritteri* (formerly *L. ritteri*) and *N. regale* (formerly *L. regalis*), occur commonly in the present CalCOFI survey pattern and their larvae > ~ 5 mm have been identified in oblique tow samples since 1954; larvae of two other species, *N. bristori* and *N. hawaiiensis*, have been identified and included in the CalCOFI data base from 1967 to the present; in data reports prior to 1985 these were referred to as *Lampanyctus* "niger" and *Lampanyctus* "no pectorals", respectively (see Moser 1996).

Parophrys vetulus – see comment for Pleuronectidae.

Pleuronectidae – Sakamoto (1984) changed pleuronectid generic designations for species in the CalCOFI area as follows: 1) *Glyptocephalus zachirus* was changed to *Errex zachirus*; 2) *Isopsetta isolepis*, *Lepidopsetta bilineata*, and *Parophrys vetulus* were transferred into *Pleuronectes* and 3) *Lyopsetta exilis* was changed to *Eopsetta exilis*; although these changes were incorporated in the lists of Robins et al. (1991) and Eschmeyer (1998), the older nomenclature currently is considered valid and Sakamoto's (1984) changes are treated as synonyms.

Protomyctophum spp. – damaged specimens of *P. crockeri* and/or *P. thompsoni* lacking diagnostic characters.

Pseudobathylagus milleri – see comment for Bathylagidae.

Rhinogobiops nicholsii – *Coryphopterus nicholsii* was placed in *Rhinogobiops* by Thacker and Cole (2002); in CalCOFI ichthyoplankton data reports through the 2003 report *R. nicholsii* was reported as *C. nicholsii*.

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

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

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

Vinciguerria lucetia – *V. lucetia*, an eastern tropical Pacific species, is more common in the CalCOFI region than the central water mass species *V. poweriae*, which is encountered rarely, usually at the most seaward stations; some *V. poweriae* larvae may be included in the *V. lucetia* category because of the difficulty in separating early larvae which often are virtually identical.

SPECIES SUMMARY

Manta Net

Six cephalopod taxa were collected at the surface north of Point Reyes, California, during 2008, and eight taxa were collected to the south (Tables 2–5). The most abundant and frequently occurring taxa

were armhook squids (*Gonatus* spp.) in the north (58.6% of the total paralarvae, occurring in 8.3% of the Manta samples north of line 60.0), and Market Squid (*Doryteuthis opalescens*) to the south (90.6% of the total paralarvae, occurring in 6.3% of the Manta samples from line 60.0 and southward). In the north another armhook squid genus, *Berryteuthis* spp., was second most abundant (22.7% of the total) but occurred in only a single sample. Paralarvae of the Boreal Clubhook Squid (*Onychoteuthis borealijaponicus*) were third most abundant (7.8%) and second most frequently occurring (3.2% of the samples) in the north. *Abraliopsis felis* ranked fourth in abundance (4.7%) and tied with Boreal Clubhook Squid in frequency of occurrence (3.2%) in the north, while the Clawed Armhook Squid (*Gonatus onyx*) was fifth in abundance (4.7%) and fourth in frequency of occurrence (1.3%). To the south, unidentified octopuses were the second most abundant taxon (4.7% of the total) and third most frequently occurring (1.4% of the samples). *Abraliopsis felis* was the third most abundant cephalopod taxon (3.1%) and second most frequently occurring (3.1%) in the south, while unidentified armhook squids (*Gonatus* spp.) ranked fourth in abundance and frequency of occurrence (0.7% and 0.9%, respectively). The remaining taxa in the south each had a single occurrence of one individual.

Among the five most abundant fish taxa collected in Manta net tows north of Point Reyes, California, during 2008, Brown Irish Lord (*Hemilepidotus spinosus*) ranked first with 43.2% of the total larvae, and fourth in frequency of occurrence with larvae collected in 15.4% of the Manta samples north of line 60.0 (Tables 6–7). Unidentified rockfishes (*Sebastes* spp.) were second most abundant (12.5% of the total) and third most frequently occurring (16.7%), while Sablefish (*Anoplopoma fimbria*) were third most abundant (10.4%) and second most frequently occurring (24.4%). Dwarf Wrymouth (*Cryptacanthodes aleutensis*) ranked fourth in abundance and fifth in frequency of occurrence (7.8% and 8.3%, respectively), while Pacific Sandlance (*Ammodytes hexapterus*) was fifth most abundant and eighth most frequently occurring (6.5% and 5.8%, respectively). The next five taxa in order of abundance were Northern Anchovy (*Engraulis mordax*) (4.7% of the northern fish larvae), Kelp Greenling (*Hexagrammos decagrammus*; 4.5%), Cabezon (*Scorpaenichthys marmoratus*; 3.1%), Lingcod (*Ophiodon elongatus*; 2.8%), and English sole (*Parophrys vetulus*; 1.7%). Kelp Greenling was the most frequently occurring larval fish taxon in the north (28.2% of the samples). These ten taxa accounted for 97.3% of the fish larvae collected in Manta samples north of Point Reyes during 2008; the remaining 2.7% was distributed among 26 other categories. The ten most abundant taxa include eight benthic taxa, a coastal pelagic species, and an inshore schooling species.

In the south (line 60.0 and southward), Pacific Sardine (*Sardinops sagax*) dominated the Manta net catches, as it has each year since 1997, with 39.8% of the total fish larvae, and it was third most frequently occurring with larvae collected in 8.5% of the total samples (Tables 8–9). However, the total number of Pacific sardine larvae in the 2008 southern Manta net tows was about 62% of the 2007 total, and the larvae occurred about half as frequently, despite the similar areal coverage in both years and a larger number of samples collected during 2008. The second most abundant species in the south during 2008, Northern Anchovy, accounted for 11.9% of the total larvae and it was fifth in occurrence with 5.4% positive samples. As with Pacific Sardine, both abundance and frequency of occurrence of Northern Anchovy were reduced in 2008 compared with the previous year (to about 75% and 40%, respectively, of 2007 values). Unidentified rockfishes (*Sebastes* spp.) was the third most abundant taxon, with 7.8% of the total larvae, and it was second in total occurrence (11.4% of the samples). In contrast to the clupeoid species, *Sebastes* spp. larvae were about equally abundant in 2007 and 2008, although their frequency of occurrence decreased (to about 75% of the 2007 value). Blacksmith (*Chromis punctipinnis*) was fourth most abundant in 2008, accounting for 7.6% of the larvae, and it was collected in 3.7% of the southern Manta samples to rank seventh in frequency of occurrence. Both abundance and frequency of occurrence of larval Blacksmith were higher in 2008 compared with 2007 (nearly 24 times more larvae and about 1.6 times higher frequency of occurrence). Cabezon was fifth most abundant (6.5% of the fish larvae) and fourth most frequently occurring (7.4% of the samples) in the south. Cabezon were about twice as abundant but occurred slightly less frequently in 2008 compared with 2007. The next five most abundant taxa were Pacific Saury (*Cololabis saira*) (4.5% of the total larvae), Mussel Blenny (*Hypsoblennius jenkinsi*; 3.8%), Jacksmelt (*Atherinopsis californiensis*; 3.5%), Rockpool Blenny (*Hypsoblennius gilberti*; 1.5%), and Splitnose Rockfish (*Sebastes diploproa*; 1.4%). Pacific Saury was the most frequently

occurring larval fish taxon in the south (12.8% of the samples). The ten most abundant taxa comprised 88.3% of all the larvae collected in Manta net tows from line 60.0 and farther south during 2008. The remaining 11.7% was distributed among 52 other categories. Of the ten most abundant taxa, two are coastal pelagic taxa, six are coastal demersal species, one is a nearshore schooling species, and one is an epipelagic species.

Bongo Net

Fifteen cephalopod taxa were collected in oblique plankton tows north of Point Reyes, California, during 2008, and twenty taxa were collected to the south (Tables 12–15). The most abundant and frequently occurring species in both areas was *Abraliopsis felis* (55.2% of the total paralarvae in the north and 44.1% in the south, occurring at 19.4% of the Bongo tow stations north of line 60.0 and at 21.3% to the south). In the north unidentified armhook squids, *Gonatus* spp., were second both in abundance and frequency of occurrence (23.9% of the paralarvae, 17.6% positive stations), while paralarval Boreal Clubhook Squid were third most abundant (5.1%) and fourth most frequently occurring (5.3% of the samples). *Chiroteuthis calyx* ranked fourth in abundance (4.5%) and tied with Boreal Clubhook Squid in frequency of occurrence in the north, while unidentified octopuses ranked fifth in abundance (3.6%) and frequency of occurrence (2.9%). The five most abundant taxa thus accounted for 92.3% of the total paralarvae collected in oblique plankton tows taken north of Point Reyes. To the south, unidentified octopuses ranked second both in abundance (14.8% of the total) and frequency of occurrence (10.6% of the samples). Market Squid was the third most abundant cephalopod taxon (11.1%) and fourth most frequently occurring (6.0%) in the south, while unidentified armhook squids (*Gonatus* spp.) ranked fourth in abundance and third in frequency of occurrence (9.3% and 8.6%, respectively). Unidentified paralarvae of the family Pyroteuthidae were fifth most abundant (2.9%) and tied with three other taxa for ninth most frequently occurring (1.7%) in the south. The five most abundant taxa accounted for 82.1% of the total paralarvae collected in Bongo net tows taken from Point Reyes and southward.

Of the five most abundant larval fish taxa collected in the Bongo net tows north of Point Reyes during 2008, Northern Lampfish (*Stenobrachius leucopsarus*) ranked first in both abundance (58.1% of the total larvae) and occurrence (60.0% positive tows; Tables 17–18). The second most abundant taxon, unidentified rockfishes, accounted for 11.4% of the total larvae and was third in frequency of occurrence (37.6% of the samples). Northern Anchovy ranked third in abundance in the north, with 7.7% of the larvae, but was only sixteenth in occurrence (4.7% of the samples). Blue Lanternfish ranked fourth in abundance with 6.2% of the total larvae, and second in frequency of occurrence with 36.8% positive tows. Another lanternfish, California Flashlightfish (*Protomyctophum crockeri*) ranked fifth in abundance (2.6% of the total larvae) and fourth in frequency of occurrence (25.9% of the samples). The next five most abundant taxa in the north were Popeye Blacksmelt (*Lipolagus ochotensis*) (2.3% of the total northern larvae), unidentified lanternfishes of the genus *Nannobrachium* (1.3%), Slender Sole (*Lyopsetta exilis*; 0.7%), Pacific Viperfish (*Chauliodus macouni*; 0.7%), and Slimy Snailfish (*Liparis mucosus*; 0.7%). The ten most abundant taxa comprised 91.8% of all the larvae collected in Bongo net tows on CalCOFI cruises in 2008. The remaining 8.2% was distributed among 51 other categories (including the "Disintegrated" category). Of the ten most abundant taxa, three were coastal demersal taxa, one was a coastal pelagic species, and six were mesopelagic taxa that migrate to the epipelagic zone at night.

In the south (line 60.0 and southward), Pacific Sardine was the most abundant taxon in Bongo net catches during 2008, as it has been in most years since 1999, contributing 28.2% of the total fish larvae, but it ranked only eleventh in frequency of occurrence, with larvae collected in 10.6% of the samples (Tables 18–19). Compared with 2007, larval abundance of Pacific Sardine was slightly higher, but frequency of occurrence was slightly lower in 2008. Northern Lampfish was second most abundant in the south during 2008 (14.0% of the total fish larvae), and tied with larval California Flashlightfish in frequency of occurrence (35.9% positive stations). Compared with the previous year, Northern Lampfish was nearly 3.5 times more abundant and occurred about 1.4 times more frequently in 2008. Unidentified rockfish larvae ranked third both in abundance and frequency of occurrence in 2008 (10.6% of the fish

larvae, 28.6% positive stations); both were about 90% of the respective values in 2007. The fourth most abundant taxon, Panama Lightfish (*Vinciguerria lucetia*), accounted for 5.4% of the fish larvae, and tied with Pacific Hake (*Merluccius productus*) as seventeenth most frequently occurring (8.6% positive stations). Panama Lightfish was slightly more abundant but occurred about 80% as frequently in 2008 compared with 2007. California Smoothtongue (*Leuroglossus stilbius*) was fifth most abundant in 2008 with 4.1% of the fish larvae, and fourth most frequently occurring with 19.6% positive stations. Both were near 80% of the respective 2007 values. The next five most abundant taxa in the south during 2008 were lanternfishes of the genus *Diaphus* (3.9% of the total fish larvae), Northern anchovy (2.8%), California Flashlightfish (2.5%), California Lanternfish (*Symbolophorus californiensis*; 2.4%), and Mexican Lampfish (*Triphoturus mexicanus*; 2.4%). Together, these ten taxa accounted for 76.3% of the fish larvae collected from Point Reyes and southward during 2008. The remaining 23.7% was distributed among 125 other categories (including "Unidentified" and "Disintegrated" categories). Of the ten most abundant taxa, one was a coastal demersal taxon, two were coastal pelagic species, and seven were mesopelagic taxa that migrate to the epipelagic zone at night.

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, fish larvae, and cephalopod paralarvae for Manta net tow stations occupied during the 2008 CalCOFI and CCES cruises. Cruises are designated by four digits; the first two indicate the year and the second two the month. Within each cruise the data are listed in order of increasing line and station number (southerly and seaward directions); the order of station occupancy is shown on the station charts (Figures 2–5). 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. Ship codes are: JD, *David Starr Jordan*; MF, *Miller Freeman*; and NH, *New Horizon*. Time is listed as Pacific Standard Time (PST) at the start of each tow in 24-hour designation. The values for total fish eggs, fish larvae, and cephalopod paralarvae 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 paralarval cephalopods taken north of line 60.0 in Manta nets on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order.

Table 3. Pooled counts (unadjusted for volume of water filtered) of paralarval cephalopods taken north of line 60.0 in Manta nets on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order.

Table 4. Pooled occurrences of paralarval cephalopods taken south of and including line 60.0 in Manta nets on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order.

Table 5. Pooled counts (unadjusted for volume of water filtered) of paralarval cephalopods taken south of and including line 60.0 in Manta nets on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order.

Table 6. Pooled occurrences of fish larvae taken north of line 60.0 in Manta nets on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order.

Table 7. Pooled counts (unadjusted for volume of water filtered) of fish larvae taken north of line 60.0 in Manta nets on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order.

Table 8. Pooled occurrences of fish larvae taken south of and including line 60.0 in Manta net tows on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order.

Table 9. Pooled counts (unadjusted for volume of water filtered) of fish larvae taken south of and including line 60.0 in Manta net tows on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order.

Table 10. Numbers of paralarval cephalopods and fish larvae for each taxon taken in Manta net tows on CalCOFI and CCES cruises in 2008. Numbers of larvae are listed as number per 100 m^3 of water filtered. Taxa are listed in phylogenetic sequence (Eschmeyer 1998; Sweeney and Roper 1998); genera are listed alphabetically.

Table 11. This table lists for each Bongo net tow the pertinent station and tow data, the volume of water filtered, the standard haul factor, the plankton volume, the percentage of sample sorted, and the total number of fish eggs and larvae during the 2008 CalCOFI and CCES cruises. Cruises are designated by four digits; the first two indicate the year and the second two the month. Within each cruise the data are listed in order of increasing line and station number (southerly and seaward directions); the order of station occupancy is shown on the station charts (Figures 2-5). 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. Ship codes are JD, *David Starr Jordan*; MF, *Miller Freeman*; and NH, *New Horizon.* Plankton displacement volumes were determined after removal of large organisms (those with individual displacement volumes > 5 ml) and expressed as ml per 1000 m^3 of water filtered. Time is listed as Pacific Standard Time (PST) at the start of each tow in 24-hour designation. The values for total fish eggs, fish larvae, and cephalopod paralarvae are raw counts (unadjusted for percent of sample sorted or standard haul factor). The listings for station latitude and longitude in this table may differ from values given for the same station in the SIO data reports, reflecting the slight difference in position of the net tow and hydrocast. Dates given here and in Figures 2–5 for the beginning and end of each cruise are based on PST at the first and last Bongo net tow station of the cruise and do not include transit time from port to the first station and to port after the last station. Thus, our cruise dates may differ slightly from those in SIO reports which are based on GMT prior to 1990 and include transit time to the first station and from the last station.

Table 12. Pooled occurrences of paralarval cephalopods taken north of line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order.

Table 13. Pooled counts of paralarval cephalopods taken north of line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order. Numbers are adjusted for percent sorted and standard haul factors.

Table 14. Pooled occurrences of paralarval cephalopods taken south of and including line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order.

Table 15. Pooled counts of paralarval cephalopods taken south of and including line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order. Numbers are adjusted for percent sorted and standard haul factors.

Table 16. Pooled occurrences of fish larvae taken north of line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008. Tax are listed in rank order.

Table 17. Pooled counts of fish larvae taken north of line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order. Numbers are adjusted for percent sorted and standard haul factors.

Table 18. Pooled occurrences of fish larvae taken south of and including line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order.

Table 19. Pooled counts of fish larvae taken south of and including line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008. Taxa are listed in rank order. Numbers are adjusted for percent sorted and standard haul factors.

Table 20. Numbers of paralarval cephalopods and fish larvae for each taxon taken in Bongo net tows on CalCOFI and CCES cruises in 2008, listed by station and calendar month of the Bongo net tow. Counts are adjusted for percentage of sample sorted and standard haul factor. Taxa are listed in phylogenetic sequence (Eschmeyer 1998; Sweeney and Roper 1998); genera are listed alphabetically.

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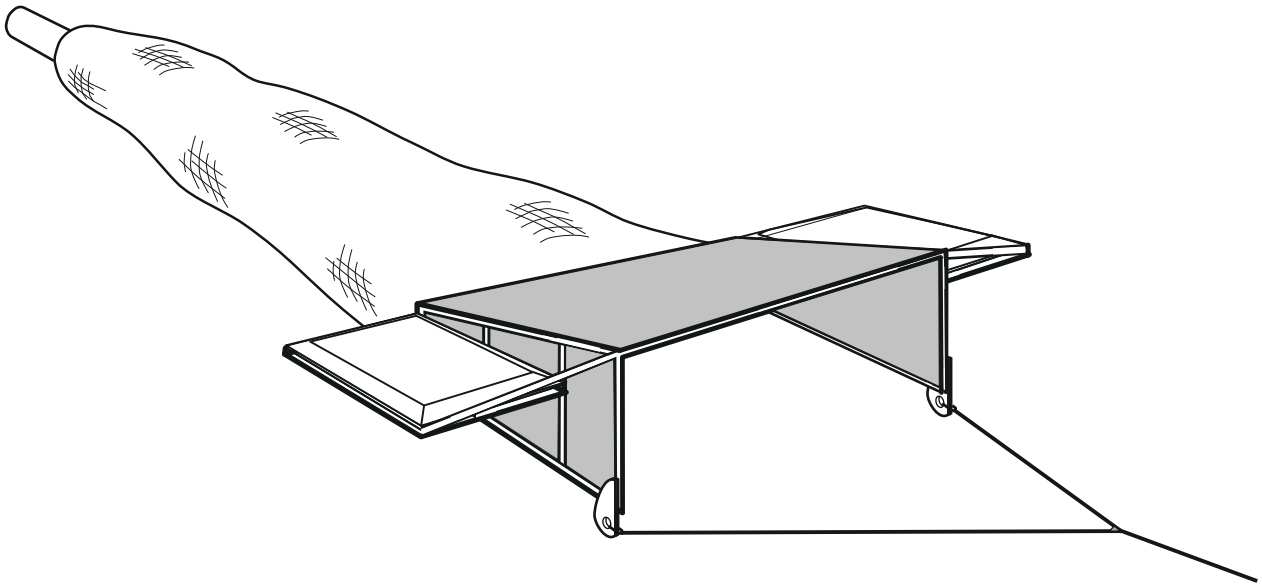

Figure 1. Diagram of the Manta net used on CalCOFI cruises and the CCES cruise.

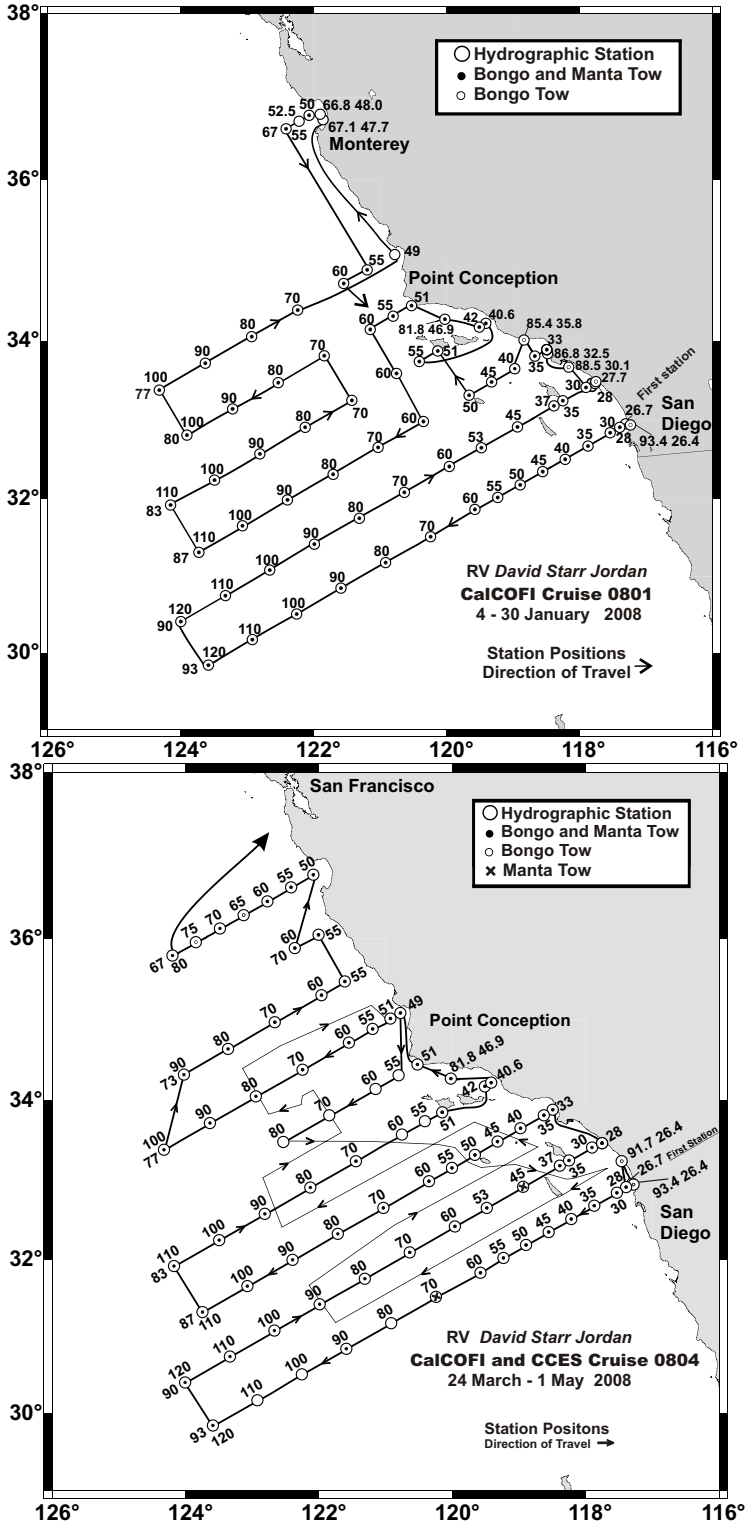

Figure 2. Stations and cruise tracks for CalCOFI cruise 0801JD (above) and CalCOFI/CCES cruise 0804JD (below). Circles indicate hydrographic stations; dots indicate net tow stations. On cruise 0801JD, a Bongo tow was taken unaccompanied by a Manta tow at stations: 85.4 35.8, 86.8 32.5, 88.5 30.1, and 93.4 26.4. On cruise 0804JD, a Bongo tow was taken unaccompanied by a Manta tow at stations: 91.7 26.4, 93.4 26.4, 66.7 65.0, and 66.7 75.0. A Manta tow was taken unaccompanied by a Bongo tow at stations 90.0 45.0 and 93.3 70.0.

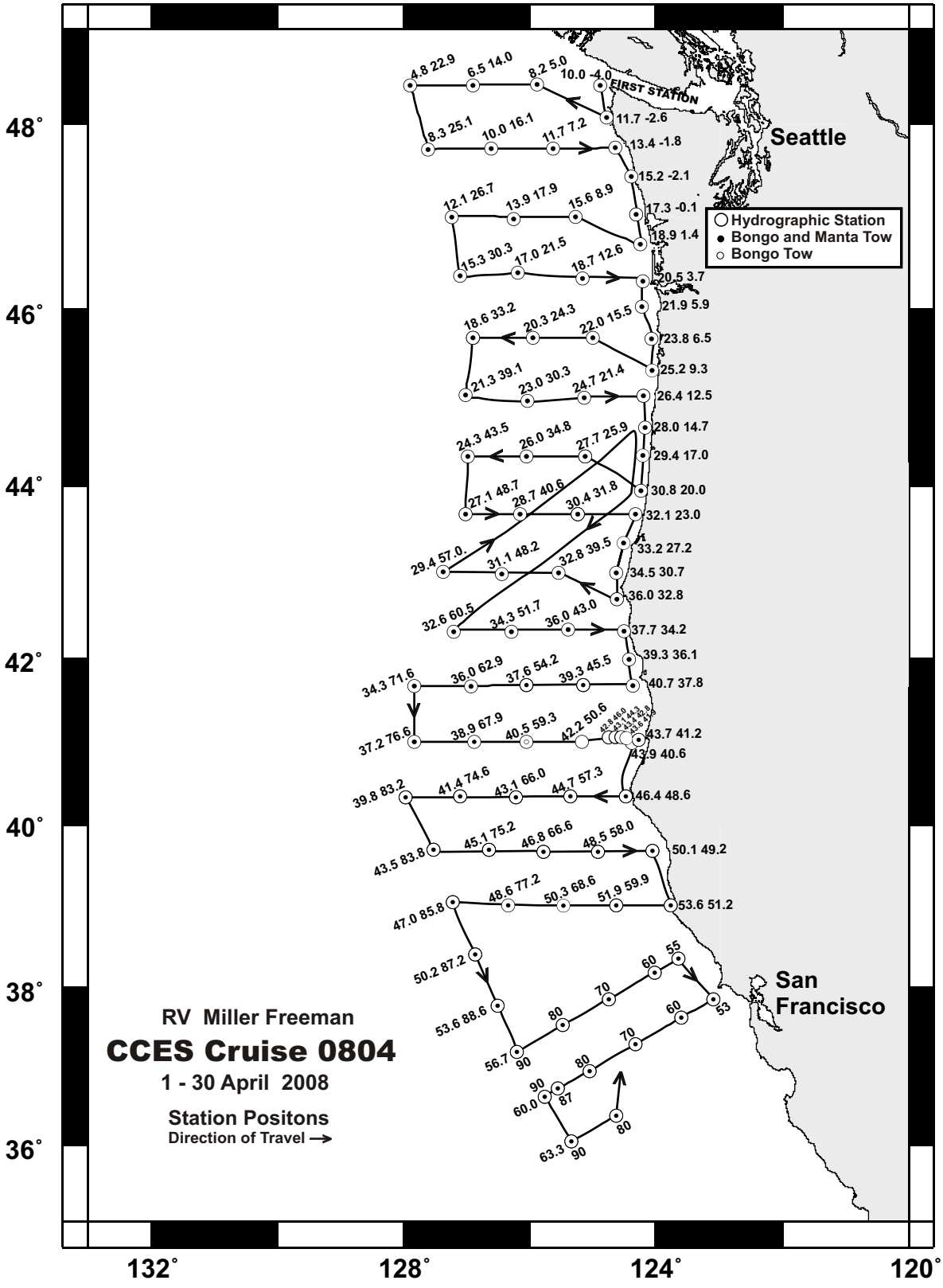

Figure 3. Stations and cruise track for CCES cruise 0804MF. A Bongo tow unaccompanied by a Manta tow was taken at station 40.5 59.3.

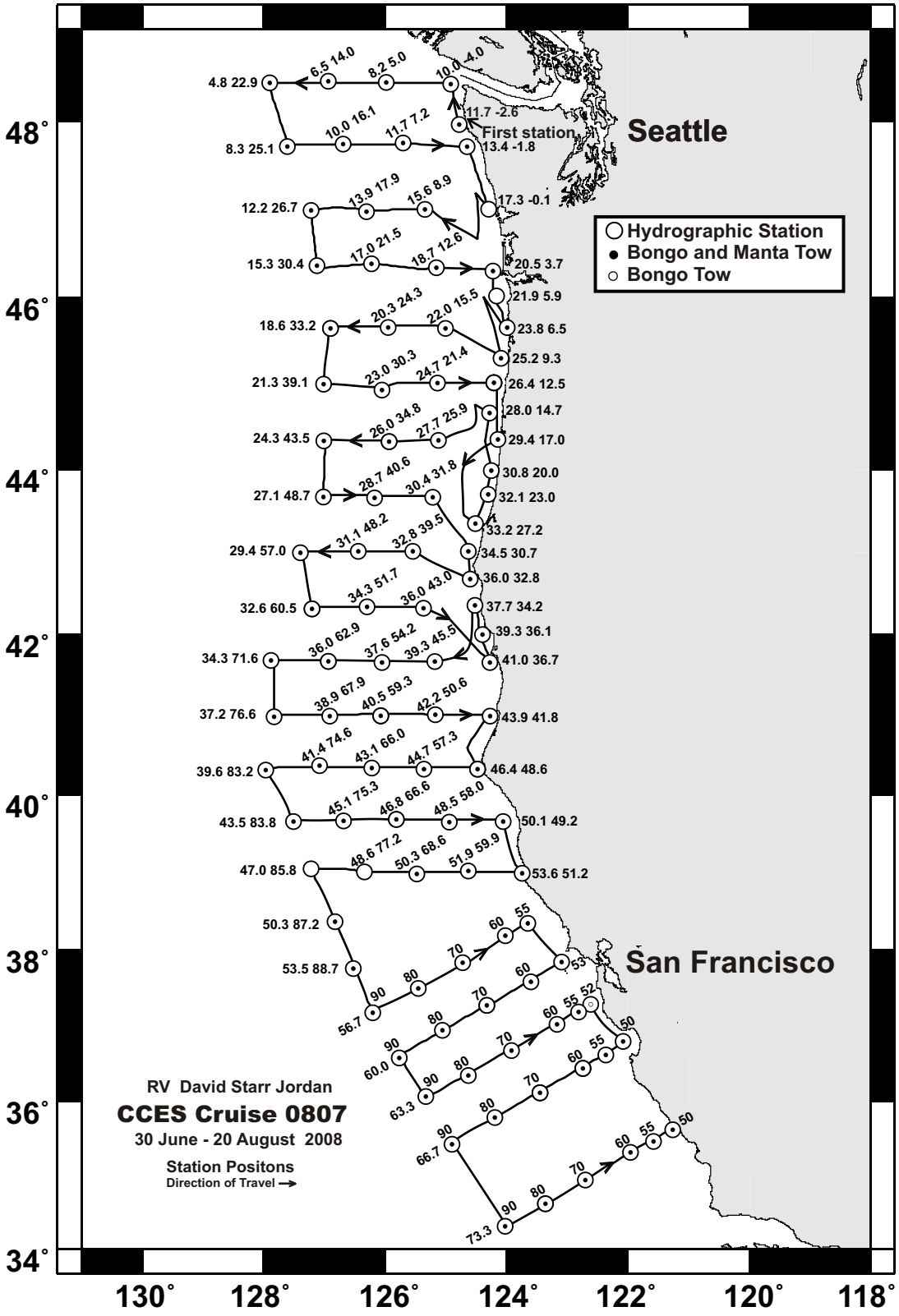

Figure 4. Stations and cruise tracks for CCES cruise 0807JD. A Bongo tow was taken unaccompanied by a Manta tow at stations 63.3 52.0.

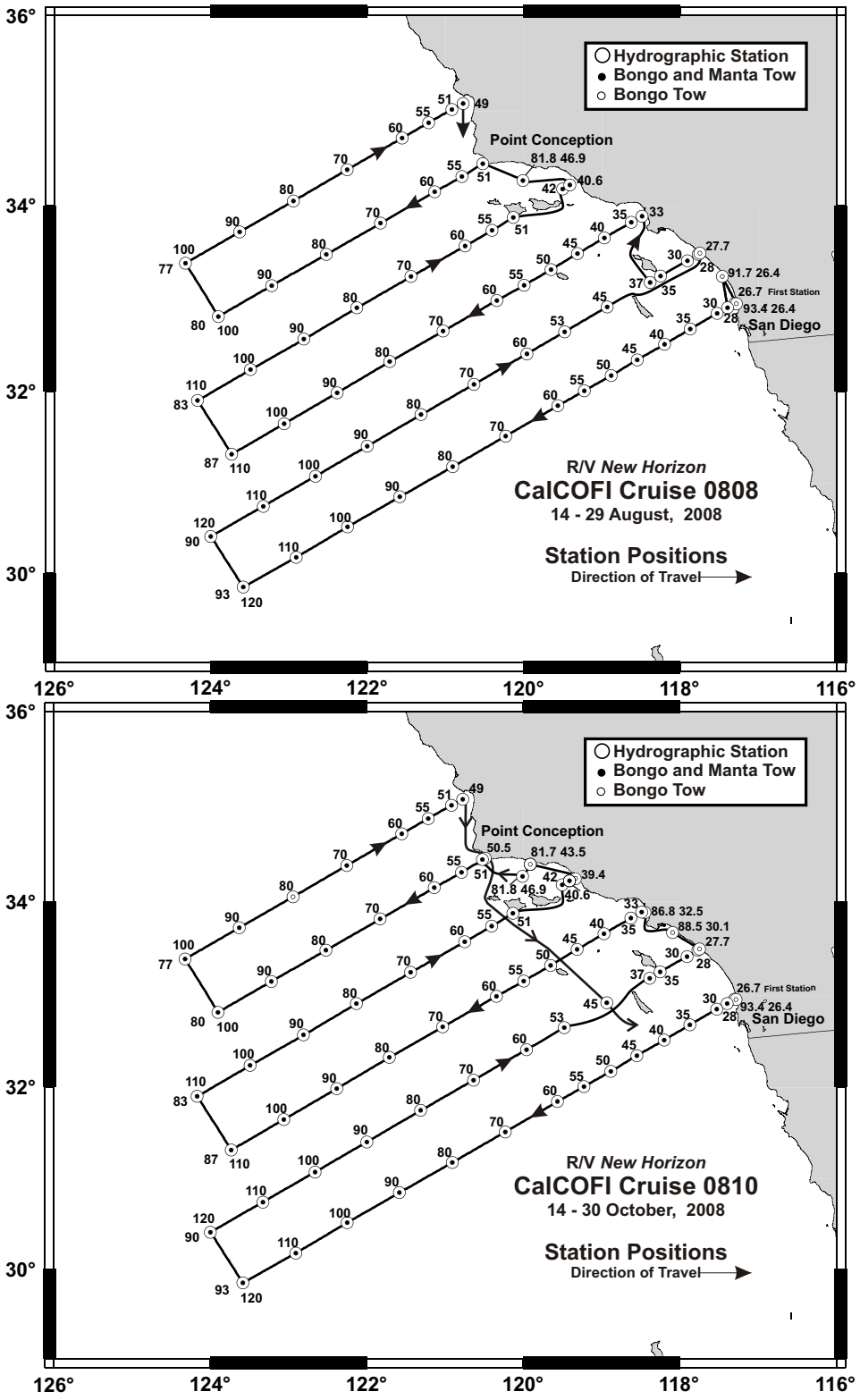

Figure 5. Stations and cruise tracks for CalCOFI cruises 0808NH (above) and 0810NH (below). On cruise 0808NH, a Bongo tow was taken unaccompanied by a Manta tow stations: 93.4 26.4, 91.7 26.4, and 90.0 27.7. On cruise 0810NH, a Bongo tow was taken unaccompanied by a Manta tow at stations: 93.4 26.4, 90.0 27.7, 88.5 30.1, 86.8 32.5, 83.3 39.4, 81.7 43.5, 76.7 80.0 and 80.0 50.5.

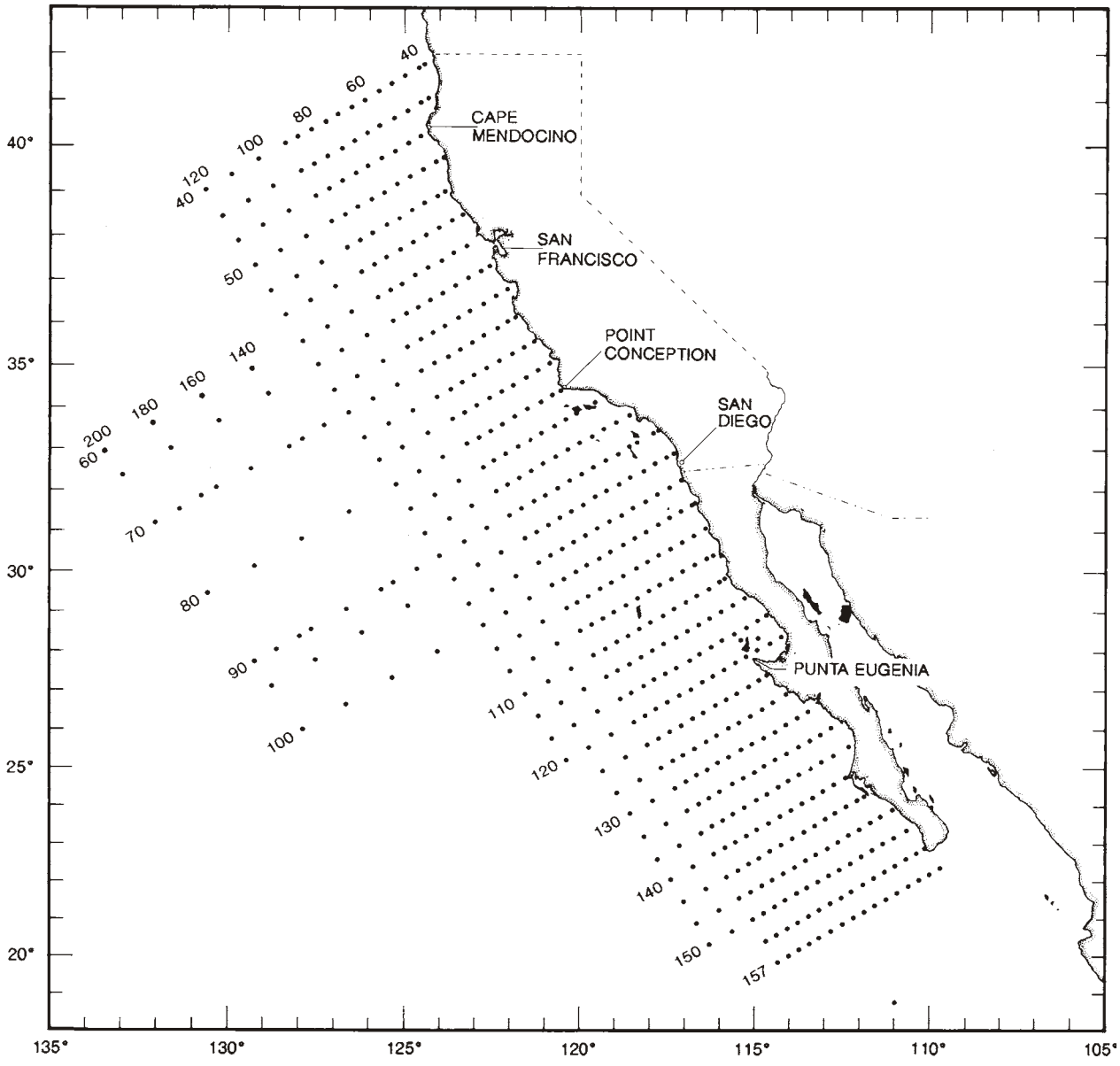

Figure 6. The basic CalCOFI station pattern occupied, in part, by cruises during 1951-1984.

Table 1. Station and Manta net tow data for CalCOFI and CCES cruises in 2008. Numbers of eggs and larvae are raw counts, unadjusted for volume (cubic meters) of water filtered.

CalCOFI Cruise 0801

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr.	Tow Date mo	Tow Date day	Time (PST)	Volume Water Strained	Total Larvae	Total Eggs	Total Para-Larvae
66.7	50.0	36	44.9	122	01.4	JD	08	01	26	1603	76	15	176	0
66.7	55.0	36	37.2	122	24.8	JD	08	01	26	2213	70	1	10	0
76.7	55.0	34	53.4	121	11.9	JD	08	01	29	0113	74	0	0	0
76.7	60.0	34	43.4	121	32.8	JD	08	01	29	0524	67	0	2	0
76.7	70.0	34	23.2	122	14.8	JD	08	01	24	2335	75	0	1	0
76.7	80.0	34	03.3	122	56.4	JD	08	01	24	1705	72	0	1	0
76.7	90.0	33	43.3	123	38.1	JD	08	01	24	1101	74	0	0	0
76.7	100.0	33	23.1	124	19.2	JD	08	01	24	0434	69	0	0	0
80.0	51.0	34	26.8	120	31.4	JD	08	01	19	0438	91	2	258	2
80.0	55.0	34	19.1	120	48.0	JD	08	01	19	0818	67	75	0	0
80.0	60.0	34	09.0	121	08.9	JD	08	01	19	1259	94	0	2	0
80.0	70.0	33	49.0	121	50.7	JD	08	01	23	0047	79	2	1	0
80.0	80.0	33	29.1	122	31.9	JD	08	01	23	0611	78	1	2	0
80.0	90.0	33	09.0	123	13.2	JD	08	01	23	1538	74	0	0	0
80.0	100.0	32	49.1	123	54.3	JD	08	01	23	2210	70	1	0	0
81.8	46.9	34	16.6	120	01.6	JD	08	01	18	2331	97	15	1172	21
83.3	40.6	34	13.4	119	24.5	JD	08	01	18	1615	93	76	3752	0
83.3	42.0	34	10.7	119	30.5	JD	08	01	18	1834	91	8	5000	0
83.3	51.0	33	52.7	120	07.9	JD	08	01	16	0948	80	16	3	0
83.3	55.0	33	44.8	120	24.5	JD	08	01	16	1503	64	0	2	0
83.3	60.0	33	34.7	120	45.3	JD	08	01	19	1914	79	10	13	3
83.3	70.0	33	14.7	121	26.6	JD	08	01	22	1745	72	1	0	0
83.3	80.0	32	54.6	122	07.7	JD	08	01	22	1125	71	0	0	0
83.3	90.0	32	34.6	122	48.8	JD	08	01	22	0525	79	0	0	0
83.3	100.0	32	14.7	123	29.6	JD	08	01	21	2308	69	0	2	0
83.3	110.0	31	54.6	124	10.2	JD	08	01	21	1652	78	0	0	0
86.7	33.0	33	53.4	118	29.3	JD	08	01	14	1755	84	1	180	46
86.7	35.0	33	49.4	118	37.7	JD	08	01	14	2042	79	6	22	4
86.7	40.0	33	39.4	118	58.4	JD	08	01	15	0357	84	28	8	18
86.7	45.0	33	29.4	119	19.0	JD	08	01	15	0814	70	1	0	0
86.7	50.0	33	19.4	119	39.8	JD	08	01	15	1433	70	5	2	0
86.7	60.0	32	59.4	120	21.0	JD	08	01	20	0206	69	0	9	0
86.7	70.0	32	39.4	121	02.0	JD	08	01	20	0739	64	0	0	0
86.7	80.0	32	19.4	121	42.9	JD	08	01	20	1532	74	0	0	0
86.7	90.0	31	59.4	122	23.6	JD	08	01	20	2116	66	1	0	0
86.7	100.0	31	39.4	123	04.2	JD	08	01	21	0332	76	2	1	0
86.7	110.0	31	19.4	123	44.6	JD	08	01	21	0838	79	0	0	0
90.0	28.0	33	29.1	117	46.1	JD	08	01	14	0516	87	7	226	1
90.0	30.0	33	25.1	117	54.4	JD	08	01	14	0046	88	0	0	0
90.0	35.0	33	15.1	118	15.0	JD	08	01	13	1946	93	5	243	243
90.0	37.0	33	11.1	118	23.2	JD	08	01	13	1647	83	2	0	0
90.0	45.0	32	55.1	118	56.2	JD	08	01	13	1058	90	0	95	0
90.0	53.0	32	39.1	119	29.0	JD	08	01	13	0504	79	0	7	0
90.0	60.0	32	25.0	119	57.6	JD	08	01	12	2340	67	1	66	0

Table 1. (cont.)

CalCOFI Cruise 0801 (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	Total Para-Larvae
90.0	70.0	32	05.1	120	38.4	JD	08	01	12	1641	82	0	2	0
90.0	80.0	31	45.0	121	19.0	JD	08	01	12	0754	76	0	0	0
90.0	90.0	31	25.0	121	59.4	JD	08	01	12	0159	112	2	0	0
90.0	100.0	31	05.0	122	39.7	JD	08	01	11	1907	74	0	0	0
90.0	110.0	30	45.0	123	20.0	JD	08	01	11	1218	85	0	0	0
90.0	120.0	30	25.0	123	59.9	JD	08	01	11	0508	78	0	1	0
93.3	26.7	32	57.4	117	18.4	JD	08	01	07	1245	68	0	27	0
93.3	28.0	32	55.1	117	23.7	JD	08	01	07	2339	79	8	1	7
93.3	30.0	32	50.8	117	31.9	JD	08	01	08	0259	87	1	0	28
93.3	35.0	32	40.8	117	52.4	JD	08	01	08	0740	92	0	5	1
93.3	40.0	32	30.9	118	12.6	JD	08	01	08	1209	77	1	0	0
93.3	45.0	32	20.8	118	33.3	JD	08	01	08	1636	72	4	0	0
93.3	50.0	32	10.9	118	53.5	JD	08	01	08	2058	70	1	1	1
93.3	55.0	32	00.8	119	13.9	JD	08	01	09	0133	73	4	7	0
93.3	60.0	31	50.8	119	34.2	JD	08	01	09	0554	76	1	0	0
93.3	70.0	31	30.9	120	14.6	JD	08	01	09	1232	75	0	3	0
93.3	80.0	31	10.8	120	55.2	JD	08	01	09	1852	75	0	1	0
93.3	90.0	30	50.8	121	35.3	JD	08	01	10	0127	76	0	0	0
93.3	100.0	30	30.8	122	15.4	JD	08	01	10	0635	78	6	8	1
93.3	110.0	30	10.8	122	55.3	JD	08	01	10	1508	79	2	4	0
93.3	120.0	29	50.9	123	35.0	JD	08	01	10	2157	79	0	2	0

CalCOFI and CCES Cruise 0804

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	Total Para-Larvae
4.8	22.9	48	24.5	127	53.7	MF	08	04	04	1102	134	0	6	0
6.5	14.0	48	24.5	126	53.6	MF	08	04	03	1141	150	14	26	0
8.2	5.0	48	24.6	125	53.1	MF	08	04	03	0550	113	550	4	0
8.3	25.1	47	44.3	127	37.2	MF	08	04	04	1646	185	5	38	0
10.0	-4.0	48	24.6	124	53.3	MF	08	04	02	1808	73	8	0	0
10.0	16.1	47	44.5	126	37.2	MF	08	04	04	2227	92	150	11	1
11.7	-2.6	48	04.1	124	47.7	MF	08	04	02	2118	104	211	0	0
11.7	7.2	47	44.3	125	36.5	MF	08	04	05	0709	127	21	22	0
12.1	26.7	47	00.6	127	13.6	MF	08	04	06	1718	120	5	6	0
13.4	-1.8	47	44.4	124	38.4	MF	08	04	05	1144	122	10	1	0
13.9	17.9	47	00.6	126	15.6	MF	08	04	06	1101	93	4	15	0
15.2	-2.1	47	25.9	124	25.6	MF	08	04	05	1445	187	6	108	0
15.3	30.3	46	20.7	127	06.8	MF	08	04	06	2254	98	15	4	3
15.6	8.9	47	00.4	125	16.6	MF	08	04	06	0513	116	794	4	0
17.0	21.5	46	20.4	126	08.8	MF	08	04	07	0654	98	4	5	0
17.3	-.1	47	00.8	124	20.0	MF	08	04	05	1832	143	33	6	0
18.6	33.2	45	40.7	126	54.2	MF	08	04	09	0344	134	68	12	7
18.7	12.6	46	20.5	125	11.2	MF	08	04	07	1221	95	7	21	0
18.9	1.4	46	40.7	124	13.5	MF	08	04	05	2209	110	335	2	0

Table 1. (cont.)

CalCOFI and CCES Cruise 0804 (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	Total Para-Larvae
20.3	24.3	45	40.8	125	56.7	MF	08	04	08	1809	131	8	125	0
20.5	3.7	46	20.4	124	13.0	MF	08	04	07	1717	153	2	5	0
21.3	39.1	45	00.9	127	00.7	MF	08	04	09	0843	95	1	9	0
21.9	5.9	46	00.3	124	13.3	MF	08	04	08	0127	97	216	1	0
22.0	15.5	45	40.5	124	59.9	MF	08	04	08	1247	100	1	15	0
23.0	30.3	45	00.9	126	05.4	MF	08	04	09	1403	123	1	22	0
23.8	6.5	45	40.5	124	02.6	MF	08	04	08	0425	148	48	2	0
24.3	43.5	44	20.9	126	59.1	MF	08	04	11	0851	88	4	18	0
24.7	21.4	45	00.8	125	08.5	MF	08	04	09	1929	135	1463	22	3
25.2	9.3	45	20.3	124	05.8	MF	08	04	08	0726	140	8	5	0
26.0	34.8	44	20.9	126	03.6	MF	08	04	11	0336	119	178	30	12
26.4	12.5	45	00.9	124	12.4	MF	08	04	10	0404	88	45	6	0
27.1	48.7	43	40.9	127	01.2	MF	08	04	11	1408	87	0	22	0
27.7	25.9	44	20.8	125	07.2	MF	08	04	10	1830	144	57	305	0
28.0	14.7	44	40.5	124	10.8	MF	08	04	10	0700	90	2	5	0
28.7	40.6	43	40.8	126	10.3	MF	08	04	11	1852	117	51	15	0
29.4	17.0	44	20.9	124	11.8	MF	08	04	10	0951	106	3	24	0
29.4	57.0	43	00.6	127	21.5	MF	08	04	13	1849	136	10	7	2
30.4	31.8	43	41.1	125	14.8	MF	08	04	12	0333	101	68	24	19
30.8	20.0	44	00.2	124	15.0	MF	08	04	10	1304	107	2	8	0
31.1	48.2	43	00.7	126	27.0	MF	08	04	13	1336	90	0	9	0
32.1	23.0	43	40.7	124	19.7	MF	08	04	12	0801	105	1	6	0
32.6	60.5	42	20.6	127	12.1	MF	08	04	18	2018	119	72	2	29
32.8	39.5	43	00.8	125	32.7	MF	08	04	13	0820	66	1	62	0
33.2	27.2	43	20.5	124	30.9	MF	08	04	12	1053	114	0	22	0
34.3	51.7	42	20.5	126	18.5	MF	08	04	19	0459	108	227	2	0
34.3	71.6	41	40.8	127	50.4	MF	08	04	21	0321	62	12	2	12
34.5	30.7	43	00.6	124	38.1	MF	08	04	12	1354	130	0	15	0
36.0	32.8	42	40.6	124	36.0	MF	08	04	12	1726	135	1	1	0
36.0	43.0	42	20.4	125	24.3	MF	08	04	19	1026	106	0	27	0
36.0	62.9	41	40.9	126	56.5	MF	08	04	20	1834	103	3	10	0
37.2	76.6	41	00.8	127	49.5	MF	08	04	21	0842	128	2	2	1
37.6	54.2	41	40.6	126	03.1	MF	08	04	20	1329	91	1	14	0
37.7	34.2	42	20.6	124	30.5	MF	08	04	19	1527	119	0	18	0
38.9	67.9	41	00.7	126	56.6	MF	08	04	21	1356	76	1	1	0
39.3	36.1	42	00.2	124	27.1	MF	08	04	19	1819	103	0	14	0
39.3	45.5	41	40.8	125	09.3	MF	08	04	20	0749	104	6	12	0
39.8	83.2	40	20.8	127	58.0	MF	08	04	24	0558	99	2	4	0
40.7	37.8	41	41.4	124	23.0	MF	08	04	20	0216	132	15	0	0
41.4	74.6	40	20.6	127	05.9	MF	08	04	23	2206	100	55	10	9
43.1	66.0	40	20.7	126	13.3	MF	08	04	23	1653	66	0	7	0
43.5	83.8	39	40.8	127	31.1	MF	08	04	24	1156	85	1	38	0
43.7	41.2	41	03.7	124	16.2	MF	08	04	22	1952	98	55	12	0
44.7	57.3	40	20.7	125	21.5	MF	08	04	23	1140	101	1	10	0
45.1	75.2	39	40.8	126	39.4	MF	08	04	24	1715	93	1	106	0

Table 1. (cont.)

CalCOFI and CCES Cruise 0804 (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	Total Para-Larvae
46.4	48.6	40	20.4	124	29.0	MF	08	04	23	0615	108	0	450	0
46.8	66.6	39	40.8	125	47.4	MF	08	04	25	0314	107	17	5	4
47.0	85.8	39	00.7	127	11.7	MF	08	04	26	1458	96	5	365	0
48.5	58.0	39	40.7	124	55.4	MF	08	04	25	0836	88	1	4	0
48.6	77.2	39	00.8	126	19.7	MF	08	04	26	0949	93	2	27	0
50.1	49.2	39	40.7	124	03.7	MF	08	04	25	1311	85	0	6	0
50.2	87.2	38	23.9	126	51.6	MF	08	04	26	2003	131	34	1	0
50.3	68.6	39	00.9	125	29.0	MF	08	04	26	0458	102	624	6	0
51.9	59.9	39	00.6	124	37.0	MF	08	04	25	2237	135	38	3	2
53.6	51.2	39	01.0	123	46.4	MF	08	04	25	1736	103	1	5	0
53.6	88.6	37	46.3	126	31.1	MF	08	04	27	0239	97	3	1	0
56.7	55.0	38	21.2	123	39.7	MF	08	04	28	0305	114	152	4	0
56.7	60.0	38	10.9	124	01.5	MF	08	04	27	2331	76	5	0	3
56.7	70.0	37	51.3	124	45.4	MF	08	04	27	1811	105	38	9	0
56.7	80.0	37	31.1	125	29.0	MF	08	04	27	1307	88	0	2	0
56.7	90.0	37	11.2	126	12.3	MF	08	04	27	0745	72	2	2	0
60.0	53.0	37	50.7	123	00.1	MF	08	04	28	0754	101	1	8	0
60.0	60.0	37	36.7	123	36.5	MF	08	04	28	1237	118	3	11	0
60.0	70.0	37	17.0	124	20.0	MF	08	04	28	1744	77	4	4	0
60.0	80.0	36	57.0	125	03.5	MF	08	04	29	0030	117	10	0	0
60.0	90.0	36	36.9	125	46.3	MF	08	04	29	0650	119	1	2	0
63.3	80.0	36	22.6	124	38.0	MF	08	04	29	1813	105	6	1	0
63.3	90.0	36	02.7	125	20.5	MF	08	04	29	1233	93	0	0	0
66.7	50.0	36	45.0	122	07.9	JD	08	04	28	2103	95	1	2	0
66.7	55.0	36	37.0	122	25.3	JD	08	04	29	0112	84	1	10	0
66.7	60.0	36	27.3	122	46.2	JD	08	04	29	0601	66	0	3	0
66.7	70.0	36	07.2	123	29.1	JD	08	04	29	1322	69	0	1	0
66.7	80.0	35	47.3	124	11.6	JD	08	04	29	2255	93	0	4	0
70.0	55.0	36	02.9	122	00.6	JD	08	04	27	1137	74	0	5	0
70.0	60.0	35	53.0	122	21.9	JD	08	04	27	1549	81	0	3	0
73.3	55.0	35	28.6	121	36.6	JD	08	04	27	0209	75	0	0	0
73.3	60.0	35	18.5	121	57.9	JD	08	04	26	1956	80	1	0	1
73.3	70.0	34	58.6	122	39.9	JD	08	04	26	1304	82	0	4	0
73.3	80.0	34	38.5	123	22.0	JD	08	04	26	0626	73	40	96	0
73.3	90.0	34	18.4	124	03.7	JD	08	04	25	1847	71	19	144	0
76.7	49.0	35	05.3	120	46.6	JD	08	04	06	1803	89	6	22	0
76.7	51.0	35	01.3	120	55.1	JD	08	04	23	1320	76	0	13	0
76.7	55.0	34	53.1	121	11.6	JD	08	04	23	1702	69	1	13	0
76.7	60.0	34	43.3	121	32.8	JD	08	04	23	2124	75	4	10	0
76.7	70.0	34	23.3	122	14.6	JD	08	04	24	0807	87	0	1	0
76.7	80.0	34	03.3	122	56.4	JD	08	04	24	1555	77	56	231	0
76.7	90.0	33	43.4	123	38.0	JD	08	04	25	0145	81	31	7	0
76.7	100.0	33	23.4	124	19.3	JD	08	04	25	0928	85	5	16	0
80.0	51.0	34	26.8	120	31.6	JD	08	04	06	0621	85	0	26	0
81.8	46.9	34	16.5	120	01.5	JD	08	04	06	0132	74	21	0	10

Table 1. (cont.)

CalCOFI and CCES Cruise 0804 (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	Total Para-Larvae
83.3	40.6	34	13.5	119	24.8	JD	08	04	05	1953	72	1	462	0
83.3	42.0	34	10.7	119	30.4	JD	08	04	05	1748	77	34	0	0
83.3	51.0	33	52.5	120	08.5	JD	08	04	05	1059	85	0	18	0
83.3	70.0	33	14.6	121	26.7	JD	08	04	04	1926	83	3	0	0
83.3	80.0	32	54.6	122	07.9	JD	08	04	04	1121	74	1	10	0
83.3	90.0	32	34.6	122	48.4	JD	08	04	04	0426	81	213	73	0
83.3	100.0	32	14.6	123	29.7	JD	08	04	03	2225	85	15	194	0
83.3	110.0	31	54.5	124	10.1	JD	08	04	03	1607	96	5	35	0
86.7	33.0	33	53.3	118	29.5	JD	08	04	01	0042	84	1	238	0
86.7	35.0	33	49.5	118	37.8	JD	08	04	01	0318	71	8	91	1
86.7	40.0	33	39.5	118	58.5	JD	08	04	01	0753	83	1	21	0
86.7	45.0	33	29.3	119	19.1	JD	08	04	01	1215	82	0	2335	0
86.7	50.0	33	19.4	119	39.7	JD	08	04	01	1552	78	3	74	0
86.7	55.0	33	09.4	120	00.4	JD	08	04	01	1953	80	60	4	3
86.7	60.0	32	59.4	120	20.9	JD	08	04	02	0008	81	5	12	1
86.7	70.0	32	39.3	121	02.0	JD	08	04	02	0614	79	7	128	0
86.7	80.0	32	19.9	121	41.6	JD	08	04	02	1224	73	0	52	0
86.7	90.0	31	59.4	122	23.5	JD	08	04	02	1938	78	93	528	0
86.7	100.0	31	39.4	123	04.2	JD	08	04	03	0209	74	111	18	0
86.7	110.0	31	19.4	123	44.5	JD	08	04	03	0727	82	1	147	0
90.0	28.0	33	29.0	117	46.1	JD	08	03	31	1747	82	0	13	0
90.0	30.0	33	25.0	117	54.4	JD	08	03	31	1444	82	1	68	0
90.0	35.0	33	15.1	118	14.9	JD	08	03	31	0845	83	11	161	0
90.0	37.0	33	11.2	118	23.3	JD	08	03	31	0616	91	7	95	0
90.0	45.0	32	55.0	118	56.4	JD	08	03	31	0031	79	6	75	0
90.0	53.0	32	39.0	119	29.0	JD	08	03	30	1759	83	4	222	0
90.0	60.0	32	25.1	119	57.7	JD	08	03	30	1238	74	13	127	0
90.0	70.0	32	05.1	120	38.5	JD	08	03	30	0521	85	44	23	0
90.0	80.0	31	44.9	121	19.1	JD	08	03	29	2218	74	23	107	1
90.0	90.0	31	25.0	121	59.5	JD	08	03	29	1505	78	13	276	0
90.0	100.0	31	05.0	122	39.3	JD	08	03	29	0616	84	52	87	0
90.0	110.0	30	44.9	123	20.1	JD	08	03	29	0027	74	1	2	0
90.0	120.0	30	25.0	123	59.9	JD	08	03	28	1716	84	6	4	0
93.3	26.7	32	57.3	117	18.3	JD	08	03	24	1930	90	0	2560	0
93.3	28.0	32	54.7	117	23.7	JD	08	03	25	0429	89	1	173	2
93.3	30.0	32	50.8	117	31.9	JD	08	03	25	0732	93	4	305	0
93.3	35.0	32	40.9	117	52.3	JD	08	03	25	1203	100	0	7588	0
93.3	40.0	32	30.8	118	12.7	JD	08	03	25	1629	78	0	373	0
93.3	45.0	32	20.7	118	33.2	JD	08	03	25	2210	84	32	151	0
93.3	50.0	32	10.8	118	53.6	JD	08	03	26	0239	78	20	194	0
93.3	55.0	32	00.9	119	13.9	JD	08	03	26	0720	77	81	365	0
93.3	60.0	31	50.8	119	34.4	JD	08	03	26	1212	75	39	87	0
93.3	70.0	31	30.8	120	14.8	JD	08	03	26	1924	80	30	61	0
93.3	90.0	30	50.7	121	35.5	JD	08	03	27	0756	86	54	171	1
93.3	120.0	29	50.9	123	35.7	JD	08	03	28	0603	81	5	0	0

Table 1. (cont.)

CCES Cruise 0807

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	Total Para-Larvae
4.8	22.9	48	24.6	127	53.9	JD	08	07	06	2020	71	3	2	0
6.5	14.0	48	24.8	126	53.8	JD	08	07	06	1356	73	0	7	0
8.2	5.0	48	24.6	125	53.4	JD	08	07	06	0730	73	0	4	0
8.3	25.1	47	44.5	127	37.0	JD	08	07	07	0605	66	1	18	0
10.0	-4.0	48	24.2	124	54.1	JD	08	07	06	0019	81	0	628	0
10.0	16.1	47	44.5	126	37.3	JD	08	07	07	1219	80	0	50	0
11.7	-2.6	48	04.6	124	47.9	JD	08	07	05	1914	79	0	1760	0
11.7	7.2	47	44.4	125	37.8	JD	08	07	07	1839	72	1	4	0
12.2	26.7	47	00.6	127	14.0	JD	08	07	10	0231	82	4	5	1
13.4	-1.8	47	44.5	124	38.3	JD	08	07	08	0629	70	0	19	0
13.9	17.9	47	00.5	126	15.4	JD	08	07	09	1728	93	0	2	0
15.3	30.4	46	20.5	127	06.9	JD	08	07	10	0936	83	0	32	0
15.6	8.9	47	00.6	125	16.7	JD	08	07	09	1055	85	0	2	0
17.0	21.5	46	20.4	126	09.1	JD	08	07	10	1601	83	0	40	0
18.6	33.2	45	40.7	126	54.5	JD	08	07	13	0523	79	258	76	3
18.7	12.6	46	20.8	125	11.3	JD	08	07	11	0004	79	1	816	0
20.3	24.3	45	40.6	125	56.7	JD	08	07	12	1914	81	18	13	0
20.5	3.7	46	20.5	124	13.3	JD	08	07	11	0803	92	1	239	0
21.3	39.1	45	00.9	127	01.6	JD	08	07	13	1117	84	9	22	0
21.9	5.9	46	00.4	124	13.3	JD	08	07	11	1150	93	0	18	0
22.0	15.5	45	40.5	124	59.7	JD	08	07	12	1247	85	0	106	0
23.0	30.3	45	00.9	126	05.1	JD	08	07	13	1740	80	6	7	0
24.3	43.5	44	21.9	126	58.5	JD	08	07	19	1403	80	0	0	0
24.7	21.4	45	00.9	125	08.6	JD	08	07	14	0206	84	2	1739	0
25.2	9.3	45	20.2	124	06.1	JD	08	07	12	0600	82	0	351	0
26.0	34.8	44	20.8	126	03.7	JD	08	07	19	0659	77	9	12	1
26.4	12.5	45	00.9	124	12.2	JD	08	07	14	1046	88	0	380	0
27.1	48.7	43	38.0	127	00.0	JD	08	07	19	2026	79	1	1	1
27.7	25.9	44	20.9	125	07.5	JD	08	07	18	2011	84	29	0	0
28.0	14.7	44	40.9	124	11.4	JD	08	07	15	1949	84	0	2321	0
28.7	40.6	43	40.9	126	10.4	JD	08	07	20	0637	77	0	2	0
29.4	17.0	44	20.9	124	11.4	JD	08	07	14	1604	75	0	173	0
29.4	57.0	43	00.7	127	22.1	JD	08	07	22	0638	73	0	19	0
30.4	31.8	43	41.0	125	15.1	JD	08	07	20	1441	85	0	0	0
30.8	20.0	44	00.1	124	14.8	JD	08	07	15	1336	90	0	4639	0
31.1	48.2	43	00.7	126	27.2	JD	08	07	21	1945	79	0	0	0
32.1	23.0	43	40.8	124	19.6	JD	08	07	15	1009	104	0	2397	0
32.6	60.5	42	20.7	127	12.4	JD	08	07	22	1259	77	0	16	0
32.8	39.5	43	00.7	125	32.6	JD	08	07	21	1300	78	0	0	0
33.2	27.2	43	20.5	124	30.9	JD	08	07	15	0619	86	0	23	0
34.3	51.7	42	20.7	126	18.3	JD	08	07	22	1953	72	0	2	0
34.3	71.6	41	40.6	127	50.3	JD	08	07	26	0731	92	0	36	0
34.5	30.7	43	00.8	124	38.2	JD	08	07	20	2257	91	1	20	4
36.0	32.8	42	38.8	124	40.0	JD	08	07	21	0606	91	0	0	0
36.0	43.0	42	20.5	125	24.3	JD	08	07	23	0529	87	0	6	0

Table 1. (cont.)

CCES Cruise 0807 (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	Total Para-Larvae
36.0	62.9	41	40.6	126	56.6	JD	08	07	25	2248	90	5	20	0
37.2	76.6	41	00.7	127	49.6	JD	08	07	26	1337	89	0	15	0
37.6	54.2	41	40.8	126	03.1	JD	08	07	25	1517	91	1	71	0
37.7	34.2	42	20.6	124	30.4	JD	08	07	24	0745	95	0	6	0
38.9	67.9	41	00.6	126	56.7	JD	08	07	26	2002	86	0	8	0
39.3	36.1	42	00.3	124	26.8	JD	08	07	24	0331	82	1	9	0
39.3	45.5	41	40.7	125	09.4	JD	08	07	25	0840	89	1	7	0
39.8	83.2	40	20.7	127	58.7	JD	08	07	29	1020	89	0	1	0
40.5	59.3	41	00.6	126	03.8	JD	08	07	27	0532	80	0	34	0
41.0	36.7	41	40.7	124	16.1	JD	08	07	23	1357	71	2	367	0
41.4	74.6	40	20.7	127	06.4	JD	08	07	29	0426	94	2	60	0
42.2	50.6	41	00.8	125	10.9	JD	08	07	27	1155	78	0	2	0
43.1	66.0	40	20.7	126	13.8	JD	08	07	28	1917	86	2	92	1
43.5	83.8	39	40.6	127	31.2	JD	08	07	29	1721	89	0	18	0
43.9	41.8	41	00.7	124	17.9	JD	08	07	27	1817	87	0	527	0
44.7	57.3	40	20.8	125	21.7	JD	08	07	28	1231	71	0	61	0
45.1	75.3	39	40.8	126	39.1	JD	08	07	30	0059	95	5	9	0
46.4	48.6	40	20.6	124	29.3	JD	08	07	28	0603	78	1	66	0
46.8	66.6	39	40.7	125	47.4	JD	08	07	30	0805	83	0	54	0
48.5	58.0	39	40.8	124	55.5	JD	08	07	30	1442	79	0	0	3
50.1	49.2	39	40.9	124	03.6	JD	08	07	30	2054	81	3	194	0
50.3	68.6	39	00.8	125	28.6	JD	08	07	31	1706	77	0	5	0
50.3	87.2	38	23.6	126	51.0	JD	08	08	01	1434	85	0	1	4
51.9	59.9	39	00.8	124	37.4	JD	08	07	31	1107	77	0	0	0
53.5	88.7	37	46.7	126	32.0	JD	08	08	01	2354	78	0	0	0
53.6	51.2	39	00.7	123	45.9	JD	08	07	31	0455	81	0	21	0
56.7	55.0	38	24.5	123	39.5	JD	08	08	03	1548	79	0	304	0
56.7	60.0	38	11.2	124	01.6	JD	08	08	03	1054	82	0	0	0
56.7	70.0	37	51.0	124	45.4	JD	08	08	02	2018	78	0	0	1
56.7	80.0	37	31.1	125	28.9	JD	08	08	02	1315	73	1	0	2
56.7	90.0	37	11.2	126	12.2	JD	08	08	02	0640	75	0	3	0
60.0	53.0	37	50.8	123	05.8	JD	08	08	03	2205	73	0	0	0
60.0	60.0	37	36.8	123	36.6	JD	08	08	06	1824	80	0	0	0
60.0	70.0	37	17.0	124	06.8	JD	08	08	07	0305	79	0	0	0
60.0	80.0	36	56.8	125	03.1	JD	08	08	07	1103	87	0	8	0
60.0	90.0	36	36.7	125	46.2	JD	08	08	07	1805	75	0	4	0
63.3	55.0	37	12.6	122	50.1	JD	08	08	09	0749	77	1	0	0
63.3	60.0	37	02.6	123	11.5	JD	08	08	09	0147	86	0	0	0
63.3	70.0	36	42.6	123	54.6	JD	08	08	08	1618	83	0	4	0
63.3	80.0	36	22.5	124	37.8	JD	08	08	08	1005	79	0	2	0
63.3	90.0	36	07.5	125	24.2	JD	08	08	08	0213	81	0	0	0

Table 1. (cont.)

CalCOFI Cruise 0808

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	Total Para-Larvae
76.7	49.0	35	05.1	120	46.5	NH	08	08	29	1552	81	0	327	0
76.7	51.0	35	01.4	120	55.1	NH	08	08	29	1343	76	0	2	0
76.7	55.0	34	53.2	121	11.3	NH	08	08	29	1023	76	0	0	0
76.7	60.0	34	43.7	121	33.2	NH	08	08	29	0557	76	0	0	0
76.7	70.0	34	23.3	122	14.9	NH	08	08	28	2310	74	0	0	0
76.7	80.0	34	03.3	122	56.4	NH	08	08	28	1646	78	0	38	0
76.7	90.0	33	43.6	123	37.9	NH	08	08	28	1037	84	0	175	0
76.7	100.0	33	23.5	124	19.4	NH	08	08	28	0423	74	1	1	0
80.0	51.0	34	27.2	120	32.0	NH	08	08	26	1138	77	0	5	0
80.0	55.0	34	19.1	120	48.4	NH	08	08	26	1529	74	1	0	0
80.0	60.0	34	09.1	121	09.2	NH	08	08	26	1945	80	0	0	0
80.0	70.0	33	49.1	121	50.5	NH	08	08	27	0209	56	0	6	0
80.0	80.0	33	29.8	122	33.9	NH	08	08	27	0739	58	0	0	0
80.0	90.0	33	08.9	123	13.2	NH	08	08	27	1527	70	0	10	0
80.0	100.0	32	49.0	123	54.4	NH	08	08	27	2155	67	2	2	0
81.8	46.9	34	16.5	120	01.9	NH	08	08	26	0713	77	0	0	0
83.3	40.6	34	13.4	119	25.1	NH	08	08	26	0159	81	24	74	0
83.3	42.0	34	10.6	119	30.5	NH	08	08	25	2321	80	24	27	1
83.3	51.0	33	52.8	120	08.4	NH	08	08	25	1633	79	4	265	0
83.3	55.0	33	44.6	120	24.7	NH	08	08	25	1240	67	0	0	0
83.3	60.0	33	34.9	120	45.3	NH	08	08	25	0742	76	0	5	0
83.3	70.0	33	14.6	121	26.8	NH	08	08	25	0029	63	1	15	1
83.3	80.0	32	54.8	122	07.6	NH	08	08	24	1753	66	0	48	1
83.3	90.0	32	34.7	122	48.7	NH	08	08	24	1149	67	0	5	0
83.3	100.0	32	14.7	123	29.5	NH	08	08	24	0521	68	0	2	1
83.3	110.0	31	54.6	124	10.1	NH	08	08	23	2253	75	2	48	0
86.7	33.0	33	53.4	118	29.3	NH	08	08	21	0811	90	2	8941	0
86.7	35.0	33	49.5	118	37.7	NH	08	08	21	1131	91	0	1875	0
86.7	40.0	33	39.4	118	58.6	NH	08	08	21	1623	92	3	5	0
86.7	45.0	33	29.5	119	19.0	NH	08	08	21	2041	81	16	1	0
86.7	50.0	33	19.3	119	39.8	NH	08	08	22	0018	64	1	8	0
86.7	55.0	33	09.4	120	00.5	NH	08	08	22	0451	70	2	0	0
86.7	60.0	32	59.9	120	23.1	NH	08	08	22	0820	60	0	0	2
86.7	70.0	32	39.8	121	01.3	NH	08	08	22	1606	81	0	0	0
86.7	80.0	32	19.6	121	43.0	NH	08	08	22	2214	80	0	0	0
86.7	90.0	31	59.6	122	23.4	NH	08	08	23	0347	62	0	5	0
86.7	100.0	31	39.3	123	03.9	NH	08	08	23	1017	74	0	4	0
86.7	110.0	31	19.7	123	44.2	NH	08	08	23	1615	73	6	2	0
90.0	28.0	33	28.8	117	46.0	NH	08	08	20	1309	97	84	2475	0
90.0	30.0	33	25.1	117	54.3	NH	08	08	20	1743	92	9	568	0
90.0	35.0	33	15.2	118	14.9	NH	08	08	20	2150	78	1	308	6
90.0	37.0	33	11.3	118	23.2	NH	08	08	21	0121	92	5	6	6
90.0	45.0	32	54.9	118	56.4	NH	08	08	20	0403	56	14	0	0
90.0	53.0	32	39.1	119	29.1	NH	08	08	19	2205	77	5	0	0
90.0	60.0	32	25.0	119	57.9	NH	08	08	19	1648	94	0	7	0
90.0	70.0	32	04.9	120	40.9	NH	08	08	19	0842	73	0	4	0

Table 1. (cont.)

CalCOFI Cruise 0808 (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	Total Para-Larvae
90.0	80.0	31	44.9	121	19.3	NH	08	08	19	0248	76	1	1	0
90.0	90.0	31	25.0	121	59.5	NH	08	08	18	2011	68	3	3	0
90.0	100.0	31	05.3	122	40.0	NH	08	08	18	1354	76	0	5	0
90.0	110.0	30	45.2	123	19.9	NH	08	08	18	0717	83	0	36	0
90.0	120.0	30	25.1	123	59.9	NH	08	08	18	0026	81	11	63	0
93.3	26.7	32	57.4	117	17.8	NH	08	08	14	1244	92	89	50	0
93.3	28.0	32	54.8	117	23.7	NH	08	08	14	2128	86	55	25	1
93.3	30.0	32	50.9	117	31.8	NH	08	08	15	0038	74	22	14	0
93.3	35.0	32	40.8	117	51.8	NH	08	08	15	0505	85	23	2	16
93.3	40.0	32	31.7	118	11.9	NH	08	08	15	0830	94	1	0	0
93.3	45.0	32	21.0	118	33.0	NH	08	08	15	1442	84	8	50	0
93.3	50.0	32	11.0	118	53.1	NH	08	08	15	1902	78	20	0	0
93.3	55.0	32	00.9	119	13.9	NH	08	08	15	2302	73	1	60	0
93.3	60.0	31	50.8	119	33.9	NH	08	08	16	0310	78	11	36	0
93.3	70.0	31	30.4	120	15.3	NH	08	08	16	0827	73	0	3	0
93.3	80.0	31	11.0	120	54.8	NH	08	08	16	1617	88	11	231	0
93.3	90.0	30	50.9	121	35.3	NH	08	08	16	2301	67	2	5	0
93.3	100.0	30	30.8	122	15.4	NH	08	08	17	0520	88	5	5	1
93.3	110.0	30	10.9	122	55.4	NH	08	08	17	1140	85	0	433	0
93.3	120.0	29	50.9	123	34.9	NH	08	08	17	1754	87	6	118	1

CalCOFI Cruise 0810

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	Total Para-Larvae
76.7	49.0	35	05.3	120	46.6	NH	08	10	29	0504	58	53	61	0
76.7	51.0	35	01.3	120	55.3	NH	08	10	29	0235	59	2	85	0
76.7	55.0	34	53.3	121	11.9	NH	08	10	28	2244	69	0	0	0
76.7	60.0	34	43.3	121	32.9	NH	08	10	28	1827	68	6	0	2
76.7	70.0	34	23.3	122	14.8	NH	08	10	28	1202	71	1	0	0
76.7	90.0	33	43.3	123	38.0	NH	08	10	27	2319	80	2	4	0
76.7	100.0	33	23.1	124	19.2	NH	08	10	27	1721	78	0	0	0
80.0	51.0	34	27.0	120	31.3	NH	08	10	26	0018	71	37	183	2
80.0	55.0	34	19.0	120	48.2	NH	08	10	26	0402	73	1	8	0
80.0	60.0	34	09.1	121	09.1	NH	08	10	26	0755	73	2	2	0
80.0	70.0	33	49.0	121	50.5	NH	08	10	26	1617	70	0	0	0
80.0	80.0	33	29.0	122	32.0	NH	08	10	26	2234	75	0	1	1
80.0	90.0	33	09.1	123	13.4	NH	08	10	27	0437	74	2	0	0
80.0	100.0	32	49.0	123	54.5	NH	08	10	27	1110	77	1	1	0
81.8	46.9	34	16.6	120	01.2	NH	08	10	25	1958	89	161	1	0
83.3	40.6	34	13.5	119	24.7	NH	08	10	25	1209	79	0	179	0
83.3	42.0	34	11.2	119	30.4	NH	08	10	25	0928	91	1	22	0
83.3	51.0	33	52.7	120	08.2	NH	08	10	25	0339	68	5	224	0
83.3	55.0	33	44.7	120	24.5	NH	08	10	25	0001	60	65	0	1
83.3	60.0	33	34.5	120	46.1	NH	08	10	24	1905	74	0	0	2

Table 1. (cont.)

CalCOFI Cruise 0810 (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	Total Para-Larvae
83.3	70.0	33	14.7	121	26.5	NH	08	10	24	1228	75	0	1	1
83.3	80.0	32	54.7	122	07.7	NH	08	10	24	0606	88	2	0	0
83.3	90.0	32	34.7	122	48.7	NH	08	10	24	0014	71	0	0	0
83.3	100.0	32	14.6	123	29.5	NH	08	10	23	1756	85	1	41	1
83.3	110.0	31	54.7	124	10.2	NH	08	10	23	1135	89	0	10	0
86.7	33.0	33	53.4	118	29.4	NH	08	10	20	2045	92	1	868	0
86.7	35.0	33	49.4	118	37.6	NH	08	10	20	2342	85	0	0	0
86.7	40.0	33	39.4	118	58.6	NH	08	10	21	0434	89	3	353	1
86.7	45.0	33	29.5	119	18.3	NH	08	10	21	0810	107	0	7	0
86.7	50.0	33	19.5	119	39.7	NH	08	10	21	1324	63	2	186	0
86.7	55.0	33	09.3	120	00.3	NH	08	10	21	1748	63	33	3	1
86.7	60.0	32	59.3	120	20.9	NH	08	10	21	2221	83	0	1	0
86.7	70.0	32	39.4	121	01.9	NH	08	10	22	0501	76	0	2	0
86.7	80.0	32	19.3	121	42.9	NH	08	10	22	1117	71	0	6	0
86.7	90.0	31	59.3	122	23.5	NH	08	10	22	1716	80	1	2	1
86.7	100.0	31	39.4	123	04.1	NH	08	10	22	2319	89	2	2	0
86.7	110.0	31	19.5	123	44.4	NH	08	10	23	0519	74	1	0	0
90.0	28.0	33	29.1	117	46.1	NH	08	10	20	1142	87	3	1	0
90.0	30.0	33	25.1	117	54.3	NH	08	10	20	0813	96	0	1	0
90.0	35.0	33	15.1	118	15.1	NH	08	10	20	0456	86	14	14	1
90.0	37.0	33	11.1	118	23.4	NH	08	10	20	0149	70	1	0	0
90.0	45.0	32	55.2	118	56.1	NH	08	10	30	0134	70	0	5	0
90.0	53.0	32	39.0	119	29.0	NH	08	10	19	1610	73	0	0	0
90.0	60.0	32	25.1	119	57.6	NH	08	10	19	1044	84	1	3	0
90.0	70.0	32	05.1	120	38.3	NH	08	10	19	0429	68	5	2	0
90.0	80.0	31	45.1	121	18.9	NH	08	10	18	2200	74	0	0	1
90.0	90.0	31	25.0	121	59.4	NH	08	10	18	1526	82	0	2	0
90.0	100.0	31	05.0	122	40.1	NH	08	10	18	0753	76	1	2	0
90.0	110.0	30	45.2	123	19.9	NH	08	10	18	0123	84	5	1	0
90.0	120.0	30	25.0	123	59.8	NH	08	10	17	1838	84	4	4	0
93.3	26.7	32	57.3	117	17.7	NH	08	10	14	1155	89	14	51	0
93.3	28.0	32	54.7	117	23.7	NH	08	10	14	1606	76	0	0	0
93.3	30.0	32	51.5	117	31.1	NH	08	10	14	1928	59	0	0	0
93.3	35.0	32	40.8	117	52.4	NH	08	10	14	2340	93	3	10	0
93.3	40.0	32	30.8	118	13.0	NH	08	10	15	0342	81	0	1	0
93.3	45.0	32	21.0	118	33.3	NH	08	10	15	0748	107	2	2	0
93.3	50.0	32	10.9	118	53.5	NH	08	10	15	1226	86	1	12	0
93.3	55.0	32	00.7	119	13.9	NH	08	10	15	1706	82	0	6	0
93.3	60.0	31	50.8	119	34.3	NH	08	10	15	2123	91	1	6	1
93.3	70.0	31	30.8	120	14.8	NH	08	10	16	0333	77	0	13	0
93.3	80.0	31	11.0	120	55.2	NH	08	10	16	0854	83	0	3	0
93.3	90.0	30	50.8	121	35.3	NH	08	10	16	1647	86	0	183	0
93.3	100.0	30	30.7	122	15.5	NH	08	10	16	2306	84	5	40	1
93.3	110.0	30	10.9	122	55.3	NH	08	10	17	0453	80	5	33	0
93.3	120.0	29	51.2	123	35.1	NH	08	10	17	1128	81	3	4	0

Table 2. Pooled occurrences of paralarval cephalopods taken north of line 60.0 in Manta net tows on CalCOFI and CCES cruises in 2008.

Rank	Taxon	Occurrences
1	*Gonatus* spp.	13
2	*Onychoteuthis borealijaponica*	5
2	*Abraliopsis felis*	5
4	*Gonatus onyx*	2
5	*Gonatus pyros*	1
5	*Berryteuthis* spp.	1
	Total	27

Table 3. Pooled raw counts of paralarval cephalopods taken north of line 60.0 in Manta net tows on CalCOFI and CCES cruises in 2008.

Rank	Taxon	Count
1	*Gonatus* spp.	75
2	*Berryteuthis* spp.	29
3	*Onychoteuthis borealijaponica*	10
4	*Abraliopsis felis*	7
5	*Gonatus onyx*	6
6	*Gonatus pyros*	1
	Total	128

Table 4. Pooled occurrences of paralarval cephalopods taken south of and including line 60.0 in Manta net tows on CalCOFI and CCES cruises in 2008.

Rank	Taxon	Occurrences
1	*Doryteuthis opalescens*	22
2	*Abraliopsis felis*	11
3	Octopodidae	5
4	*Gonatus* spp.	3
5	*Histioteuthis* spp.	1
5	*Octopoteuthis deletron*	1
5	Pyroteuthidae	1
5	Enoploteuthidae	1
	Total	45

Table 5. Pooled raw counts of paralarval cephalopods taken south of and including line 60.0 in Manta net tows on CalCOFI and CCES cruises in 2008.

Rank	Taxon	Count
1	*Doryteuthis opalescens*	407
2	Octopodidae	21
3	*Abraliopsis felis*	14
4	*Gonatus* spp.	3
5	*Histioteuthis* spp.	1
5	*Octopoteuthis deletron*	1
5	Pyroteuthidae	1
5	Enoploteuthidae	1
	Total	449

Table 6. Pooled occurrences of fish larvae taken north of line 60.0 in Manta net tows on CalCOFI and CCES cruises in 2008.

Rank	Taxon	Occurrences
1	*Hexagrammos decagrammus*	44
2	*Anoplopoma fimbria*	38
3	*Sebastes* spp.	26
4	*Hemilepidotus spinosus*	24
5	*Cryptacanthodes aleutensis*	13
6	*Scorpaenichthys marmoratus*	12
7	*Ophiodon elongatus*	11
8	*Ammodytes hexapturus*	9
9	*Stenobrachius leucopsarus*	8
9	*Engraulis mordax*	8
11	*Parophrys vetulus*	6
12	*Sebastes diploproa*	5
13	Osmeridae	4
14	*Leptocottus armatus*	3
14	Stichaeidae	3
16	Unidentified fish larvae	2
16	*Sardinops sagax*	2
16	*Hemilepidotus hemilepidotus*	2
16	*Liparis* spp.	2
16	*Tactostoma macropus*	2
16	*Tarletonbeania crenularis*	2
22	*Trachipterus altivelis*	1
22	*Cololabis saira*	1
22	*Nannobrachium ritteri*	1
22	*Lipolagus ochotensis*	1
22	*Sebastes jordani*	1
22	*Hexagrammos lagocephalus*	1
22	*Artedius fenestralis*	1
22	*Oligocottus* spp.	1
22	*Ronquilus jordani*	1
22	Pleuronectidae	1
22	*Eopsetta jordani*	1
22	*Glyptocephalus zachirus*	1
22	*Isopsetta isolepis*	1
22	*Microstomus pacificus*	1
22	*Hexagrammos stelleri*	1
	Total	241

Table 7. Pooled raw counts of fish larvae taken north of line 60.0 in Manta net tows on CalCOFI and CCES cruises in 2008.

Rank	Taxon	Count
1	*Hemilepidotus spinosus*	2666
2	*Sebastes* spp.	772
3	*Anoplopoma fimbria*	644
4	*Cryptacanthodes aleutensis*	484
5	*Ammodytes hexapturus*	404
6	*Engraulis mordax*	293
7	*Hexagrammos decagrammus*	280
8	*Scorpaenichthys marmoratus*	192
9	*Ophiodon elongatus*	171
10	*Parophrys vetulus*	106
11	Stichaeidae	29
11	*Sardinops sagax*	29
13	Unidentified fish larvae	24
14	*Hemilepidotus hemilepidotus*	16
14	*Stenobrachius leucopsarus*	16
16	*Sebastes diploproa*	13
17	Osmeridae	7
18	*Cololabis saira*	5
19	*Tactostoma macropus*	4
20	*Liparis* spp.	3
20	*Leptocottus armatus*	3
22	*Tarletonbeania crenularis*	2
22	*Eopsetta jordani*	2
24	*Hexagrammos lagocephalus*	1
24	*Isopsetta isolepis*	1
24	*Trachipterus altivelis*	1
24	*Ronquilus jordani*	1
24	*Microstomus pacificus*	1
24	*Nannobrachium ritteri*	1
24	*Glyptocephalus zachirus*	1
24	Pleuronectidae	1
24	*Lipolagus ochotensis*	1
24	*Artedius fenestralis*	1
24	*Hexagrammos stelleri*	1
24	*Oligocottus* spp.	1
24	*Sebastes jordani*	1
	Total	6178

Table 8. Pooled occurrences of fish larvae taken south of and including line 60.0 in Manta net tows on CalCOFI and CCES cruises in 2008.

Rank	Taxon	Occurrences
1	*Cololabis saira*	45
2	*Sebastes* spp.	40
3	*Sardinops sagax*	30
4	*Scorpaenichthys marmoratus*	26
5	*Engraulis mordax*	19
6	*Hypsoblennius jenkinsi*	15
7	*Chromis punctipinnis*	13
8	*Medialuna californiensis*	11
9	*Hypsoblennius gilberti*	10
10	*Atherinopsis californiensis*	7
10	*Anoplopoma fimbria*	7
12	*Sebastes jordani*	6
12	*Triphoturus mexicanus*	6
12	*Sebastes diploproa*	6
15	*Hermosilla azurea*	5
16	*Leuresthes tenuis*	4
16	*Cyclothone signata*	4
16	*Tetragonurus cuvieri*	4
16	*Ceratoscopelus townsendi*	4
16	*Stenobrachius leucopsarus*	4
16	*Cheilopogon pinnatibarbatus*	4
22	*Hexagrammos decagrammus*	3
22	*Ophiodon elongatus*	3
22	*Citharichthys stigmaeus*	3
25	*Symphurus atricaudus*	2
25	*Poromitra crassiceps*	2
25	*Citharichthys sordidus*	2
25	*Diaphus* spp.	2
25	*Vinciguerria lucetia*	2
25	*Cheilopogon heterurus*	2
25	*Ruscarius creaseri*	2
25	*Oxylebius pictus*	2
25	*Xenistius californiensis*	2
25	*Trachurus symmetricus*	2
25	*Neoclinus blanchardi*	2
36	*Lampadena urophaos*	1
36	*Genyonemus lineatus*	1
36	*Synodus lucioceps*	1
36	*Aristostomias scintillans*	1
36	*Nannobrachium* spp.	1
36	*Stomias atriventer*	1
36	*Hygophum reinhardtii*	1
36	*Sternoptyx* spp.	1
36	*Neoclinus* spp.	1
36	*Cyclothone* spp.	1
36	*Pleuronichthys verticalis*	1

Table 8. (cont.)

Rank	Taxon	Occurrences
36	*Tactostoma macropus*	1
36	*Hirundichthys* spp.	1
36	*Parophrys vetulus*	1
36	*Icosteus aenigmaticus*	1
36	*Protomyctophum crockeri*	1
36	*Lyopsetta exilis*	1
36	*Paralabrax* spp.	1
36	*Hypsoblennius gentilis*	1
36	*Sebastes goodei*	1
36	*Oxyjulis californica*	1
36	*Scopelogadus mizolepis bispinosus*	1
36	*Macroramphosus gracilis*	1
36	*Leptocottus armatus*	1
36	*Sebastes aurora*	1
36	*Sphyraena argentea*	1
36	*Anisotremus davidsoni*	1
	Total	328

Table 9. Pooled raw counts of fish larvae taken south of and including line 60.0 in Manta net tows on CalCOFI and CCES cruises in 2008.

Rank	Taxon	Count
1	*Sardinops sagax*	981
2	*Engraulis mordax*	294
3	*Sebastes* spp.	191
4	*Chromis punctipinnis*	188
5	*Scorpaenichthys marmoratus*	160
6	*Cololabis saira*	112
7	*Hypsoblennius jenkinsi*	94
8	*Atherinopsis californiensis*	85
9	*Hypsoblennius gilberti*	36
10	*Sebastes diploproa*	34
11	*Leptocottus armatus*	32
12	*Sebastes jordani*	28
13	*Medialuna californiensis*	27
14	*Anoplopoma fimbria*	21
15	*Ophiodon elongatus*	17
15	*Leuresthes tenuis*	17
17	*Cheilopogon heterurus*	16
17	*Triphoturus mexicanus*	16
19	*Cheilopogon pinnatibarbatus*	11
20	*Hermosilla azurea*	10
21	*Neoclinus blanchardi*	9
22	*Ceratoscopelus townsendi*	7
23	*Hexagrammos decagrammus*	5
23	*Sphyraena argentea*	5
25	*Stenobrachius leucopsarus*	4
25	*Tetragonurus cuvieri*	4
25	*Citharichthys stigmaeus*	4
25	*Cyclothone signata*	4
25	*Hypsoblennius gentilis*	4
30	*Trachurus symmetricus*	3
30	*Xenistius californiensis*	3
30	*Citharichthys sordidus*	3
33	*Anisotremus davidsoni*	2
33	*Symphurus atricaudus*	2
33	*Vinciguerria lucetia*	2
33	*Poromitra crassiceps*	2
33	*Diaphus* spp.	2
33	*Oxylebius pictus*	2
33	*Hygophum reinhardtii*	2
33	*Ruscarius creaseri*	2
41	*Stomias atriventer*	1
41	*Neoclinus* spp.	1
41	*Lyopsetta exilis*	1
41	*Tactostoma macropus*	1
41	*Sternoptyx* spp.	1
41	*Parophrys vetulus*	1
41	*Cyclothone* spp.	1

Table 9. (cont.)

Rank	Taxon	Count
41	*Pleuronichthys verticalis*	1
41	*Aristostomias scintillans*	1
41	*Macroramphosus gracilis*	1
41	*Icosteus aenigmaticus*	1
41	*Synodus lucioceps*	1
41	*Lampadena urophaos*	1
41	*Nannobrachium* spp.	1
41	*Protomyctophum crockeri*	1
41	*Sebastes goodei*	1
41	*Sebastes aurora*	1
41	*Scopelogadus mizolepis bispinosus*	1
41	*Paralabrax* spp.	1
41	*Oxyjulis californica*	1
41	*Genyonemus lineatus*	1
41	*Hirundichthys* spp.	1
	Total	2463

Table 10. Numbers of paralarval cephalopods and fish larvae taken in Manta net tows on the CalCOFI and CCES cruises in 2008, 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.

Doryteuthis opalescens

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	51.0	1.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
81.8	46.9	20.3	-	-	7.4	-	-	-	0.0	-	0.0	-	-
83.3	42.0	0.0	-	-	0.0	-	-	-	0.8	-	0.0	-	-
83.3	60.0	2.4	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7	33.0	38.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	35.0	3.2	-	-	0.7	-	-	-	0.0	-	0.0	-	-
86.7	40.0	15.1	-	-	0.0	-	-	-	0.0	-	0.9	-	-
86.7	55.0	-	-	-	2.4	-	-	-	0.0	-	0.6	-	-
90.0	28.0	0.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0	35.0	225.5	-	0.0	-	-	-	-	4.7	-	0.0	-	-
90.0	37.0	0.0	-	0.0	-	-	-	-	5.5	-	0.0	-	-
93.3	28.0	5.5	-	1.8	-	-	-	-	0.9	-	0.0	-	-
93.3	30.0	24.3	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	35.0	0.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	50.0	0.7	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Enoploteuthidae

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	100.0	0.8	-	-	-	-	-	-	0.0	-	0.0	-	-

Abraliopsis felis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
18.6	33.2	-	-	-	0.0	-	-	2.4	-	-	-	-	-
26.0	34.8	-	-	-	0.0	-	-	0.8	-	-	-	-	-
34.3	71.6	-	-	-	0.6	-	-	0.0	-	-	-	-	-
43.1	66.0	-	-	-	0.0	-	-	0.9	-	-	-	-	-
56.7	70.0	-	-	-	0.0	-	-	-	0.8	-	-	-	-

Table 10. (cont.)

Abraliopsis felis (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 60.0	0.0	-	-	0.0	-	-	-	0.0	-	1.4	-	-
83.3 60.0	0.0	-	-	-	-	-	-	0.0	-	1.5	-	-
83.3 70.0	0.0	-	-	0.0	-	-	-	0.6	-	0.8	-	-
83.3 80.0	0.0	-	-	0.0	-	-	-	0.7	-	0.0	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	0.7	-	0.0	-	-
86.7 60.0	0.0	-	-	0.0	-	-	-	1.2	-	0.0	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	0.0	-	0.8	-	-
90.0 80.0	0.0	-	0.7	-	-	-	-	0.0	-	0.7	-	-
93.3 100.0	0.0	-	-	-	-	-	-	0.0	-	0.8	-	-

Pyroteuthidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 120.0	0.0	-	0.0	-	-	-	-	0.9	-	0.0	-	-

Octopoteuthis deletron

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

Onychoteuthis borealijaponica

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
12.2 26.7	-	-	-	-	-	-	0.8	-	-	-	-	-
24.7 21.4	-	-	-	2.7	-	-	0.0	-	-	-	-	-
27.1 48.7	-	-	-	0.0	-	-	0.8	-	-	-	-	-
29.4 57.0	-	-	-	2.7	-	-	0.0	-	-	-	-	-
50.3 87.2	-	-	-	-	-	-	-	3.4	-	-	-	-

***Berryteuthis* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
32.6 60.5	-	-	-	34.6	-	-	0.0	-	-	-	-	-

***Gonatus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
10.0 16.1	-	-	-	0.9	-	-	0.0	-	-	-	-	-
15.3 30.3	-	-	-	2.9	-	-	-	-	-	-	-	-

Table 10. (cont.)

***Gonatus* spp.** (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
18.6	33.2	-	-	-	9.4	-	-	0.0	-	-	-	-	-
24.7	21.4	-	-	-	1.3	-	-	0.0	-	-	-	-	-
26.0	34.8	-	-	-	14.3	-	-	0.0	-	-	-	-	-
30.4	31.8	-	-	-	19.1	-	-	0.0	-	-	-	-	-
34.3	71.6	-	-	-	6.2	-	-	0.0	-	-	-	-	-
37.2	76.6	-	-	-	1.3	-	-	0.0	-	-	-	-	-
41.4	74.6	-	-	-	9.0	-	-	0.0	-	-	-	-	-
46.8	66.6	-	-	-	4.3	-	-	0.0	-	-	-	-	-
48.5	58.0	-	-	-	0.0	-	-	2.4	-	-	-	-	-
56.7	60.0	-	-	-	2.3	-	-	-	0.0	-	-	-	-
56.7	80.0	-	-	-	0.0	-	-	-	1.5	-	-	-	-
73.3	60.0	-	-	-	0.8	-	-	-	-	-	-	-	-
86.7	60.0	0.0	-	-	0.8	-	-	-	0.0	-	0.0	-	-
93.3	90.0	0.0	-	0.9	-	-	-	-	0.0	-	0.0	-	-

Gonatus onyx

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
34.5	30.7	-	-	-	0.0	-	-	3.6	-	-	-	-	-
51.9	59.9	-	-	-	2.7	-	-	0.0	-	-	-	-	-

Gonatus pyros

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
34.3	71.6	-	-	-	0.6	-	-	0.0	-	-	-	-	-

***Histioteuthis* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	80.0	0.0	-	-	-	-	-	-	0.0	-	0.8	-	-

Octopodidae

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	51.0	0.0	-	-	0.0	-	-	-	0.0	-	1.4	-	-
83.3	55.0	0.0	-	-	-	-	-	-	0.0	-	0.6	-	-
90.0	35.0	0.0	-	0.0	-	-	-	-	0.0	-	0.9	-	-

Table 10. (cont.)

Octopodidae (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 35.0	0.0	-	0.0	-	-	-	-	13.6	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	0.9	-	0.0	-	-

Sardinops sagax

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
50.2 87.2	-	-	-	36.7	-	-	-	-	-	-	-	-
53.6 88.6	-	-	-	1.0	-	-	-	-	-	-	-	-
73.3 80.0	-	-	-	29.0	-	-	-	-	-	-	-	-
73.3 90.0	-	-	-	13.5	-	-	-	-	-	-	-	-
76.7 80.0	0.0	-	-	43.0	-	-	-	0.0	-	-	-	-
76.7 90.0	0.0	-	-	25.0	-	-	-	0.0	-	0.0	-	-
76.7 100.0	0.0	-	-	4.3	-	-	-	0.0	-	0.0	-	-
83.3 80.0	0.0	-	-	0.7	-	-	-	0.0	-	0.0	-	-
83.3 90.0	0.0	-	-	171.5	-	-	-	0.0	-	0.0	-	-
83.3 100.0	0.0	-	-	11.1	-	-	-	0.0	-	0.0	-	-
83.3 110.0	0.0	-	-	1.9	-	-	-	0.0	-	0.0	-	-
86.7 45.0	0.0	-	-	0.0	-	-	-	0.8	-	0.0	-	-
86.7 60.0	0.0	-	-	0.8	-	-	-	0.0	-	0.0	-	-
86.7 70.0	0.0	-	-	5.5	-	-	-	0.0	-	0.0	-	-
86.7 90.0	0.0	-	-	70.7	-	-	-	0.0	-	0.0	-	-
86.7 100.0	0.0	-	-	81.6	-	-	-	0.0	-	0.0	-	-
90.0 28.0	0.0	-	0.0	-	-	-	-	0.0	-	0.9	-	-
90.0 37.0	0.0	-	0.9	-	-	-	-	0.0	-	0.0	-	-
90.0 45.0	0.0	-	1.6	-	-	-	-	0.6	-	0.0	-	-
90.0 60.0	0.0	-	9.6	-	-	-	-	0.0	-	0.0	-	-
90.0 70.0	0.0	-	35.7	-	-	-	-	0.0	-	0.0	-	-
90.0 80.0	0.0	-	15.5	-	-	-	-	0.0	-	0.0	-	-
90.0 90.0	0.0	-	10.1	-	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	42.1	-	-	-	-	0.0	-	0.0	-	-
90.0 120.0	0.0	-	4.2	-	-	-	-	0.0	-	0.0	-	-
93.3 45.0	0.0	-	18.4	-	-	-	-	0.0	-	0.0	-	-
93.3 50.0	0.0	-	14.8	-	-	-	-	0.0	-	0.0	-	-

Table 10. (cont.)

Sardinops sagax (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	55.0	0.0	-	61.6	-	-	-	-	0.0	-	0.0	-	-
93.3	60.0	0.0	-	29.4	-	-	-	-	0.0	-	0.0	-	-
93.3	70.0	0.0	-	23.9	-	-	-	-	0.0	-	0.0	-	-
93.3	90.0	0.0	-	44.9	-	-	-	-	0.0	-	0.0	-	-

Engraulis mordax

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
18.6	33.2	-	-	-	0.0	-	-	203.3	-	-	-	-	-
20.3	24.3	-	-	-	0.0	-	-	12.1	-	-	-	-	-
21.3	39.1	-	-	-	0.0	-	-	5.0	-	-	-	-	-
23.0	30.3	-	-	-	0.0	-	-	4.0	-	-	-	-	-
26.0	34.8	-	-	-	0.0	-	-	4.6	-	-	-	-	-
27.1	48.7	-	-	-	0.0	-	-	0.8	-	-	-	-	-
39.3	45.5	-	-	-	0.0	-	-	0.9	-	-	-	-	-
41.4	74.6	-	-	-	0.0	-	-	1.9	-	-	-	-	-
76.7	49.0	-	-	-	0.0	-	-	-	0.0	-	10.9	-	-
76.7	51.0	-	-	-	0.0	-	-	-	0.0	-	0.6	-	-
76.7	60.0	0.0	-	-	0.0	-	-	-	0.0	-	2.7	-	-
80.0	51.0	0.0	-	-	0.0	-	-	-	0.0	-	16.4	-	-
81.8	46.9	0.0	-	-	0.0	-	-	-	0.0	-	134.7	-	-
83.3	40.6	0.0	-	-	0.0	-	-	-	0.8	-	0.0	-	-
83.3	42.0	0.0	-	-	3.8	-	-	-	0.0	-	0.0	-	-
83.3	51.0	0.0	-	-	0.0	-	-	-	0.0	-	1.4	-	-
83.3	55.0	0.0	-	-	-	-	-	-	0.0	-	37.3	-	-
86.7	35.0	0.0	-	-	0.7	-	-	-	0.0	-	0.0	-	-
86.7	40.0	0.0	-	-	0.8	-	-	-	0.0	-	0.0	-	-
86.7	45.0	0.0	-	-	0.0	-	-	-	4.9	-	0.0	-	-
90.0	28.0	0.0	-	0.0	-	-	-	-	0.0	-	1.7	-	-
90.0	35.0	0.0	-	0.0	-	-	-	-	0.0	-	0.9	-	-
90.0	37.0	0.0	-	0.9	-	-	-	-	0.0	-	0.0	-	-
90.0	53.0	0.0	-	1.7	-	-	-	-	0.0	-	0.0	-	-
90.0	80.0	0.0	-	1.5	-	-	-	-	0.0	-	0.0	-	-

Table 10. (cont.)

Engraulis mordax (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	28.0	0.0	-	0.0	-	-	-	-	6.8	-	0.0	-	-
93.3	50.0	0.0	-	0.0	-	-	-	-	0.8	-	0.0	-	-

Lipolagus ochotensis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
32.6	60.5	-	-	-	1.2	-	-	0.0	-	-	-	-	-

Osmeridae

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
10.0	-4.0	-	-	-	2.9	-	-	0.0	-	-	-	-	-
20.5	3.7	-	-	-	0.0	-	-	0.9	-	-	-	-	-
40.7	37.8	-	-	-	1.3	-	-	-	-	-	-	-	-
41.0	36.7	-	-	-	-	-	-	0.7	-	-	-	-	-

***Cyclothone* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	100.0	0.0	-	-	-	-	-	-	0.9	-	0.0	-	-

Cyclothone signata

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	110.0	0.0	-	0.7	-	-	-	-	0.0	-	0.0	-	-
93.3	100.0	0.8	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3	110.0	0.8	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3	120.0	0.0	-	0.8	-	-	-	-	0.0	-	0.0	-	-

***Sternoptyx* spp.**

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

Vinciguerria lucetia

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	70.0	0.0	-	0.0	-	-	-	-	0.0	-	0.7	-	-
93.3	120.0	0.0	-	0.8	-	-	-	-	0.0	-	0.0	-	-

Table 10. (cont.)

Stomias atriventer

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 110.0	0.0	-	-	0.8	-	-	-	0.0	-	0.0	-	-

Tactostoma macropus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
18.6 33.2	-	-	-	0.0	-	-	0.8	-	-	-	-	-
21.3 39.1	-	-	-	0.0	-	-	2.5	-	-	-	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	0.8	-	0.0	-	-

Aristostomias scintillans

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 110.0	0.0	-	-	0.0	-	-	-	0.7	-	0.0	-	-

Synodus lucioceps

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
81.8 46.9	0.0	-	-	0.0	-	-	-	0.0	-	0.9	-	-

Ceratoscopelus townsendi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 80.0	0.0	-	-	0.0	-	-	-	0.0	-	0.9	-	-
93.3 100.0	2.3	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3 110.0	0.8	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3 120.0	0.0	-	1.6	-	-	-	-	0.0	-	0.0	-	-

***Diaphus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 70.0	0.0	-	-	0.0	-	-	-	0.6	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	0.7	-	0.0	-	-

Lampadena urophaos

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 100.0	0.0	-	-	-	-	-	-	0.9	-	0.0	-	-

Table 10. (cont.)

***Nannobrachium* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	120.0	0.0	-	0.8	-	-	-	-	0.0	-	0.0	-	-

Nannobrachium ritteri

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
18.7	12.6	-	-	-	0.0	-	-	0.8	-	-	-	-	-

Stenobrachius leucopsarus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
4.8	22.9	-	-	-	0.0	-	-	2.1	-	-	-	-	-
8.3	25.1	-	-	-	1.9	-	-	0.0	-	-	-	-	-
12.2	26.7	-	-	-	-	-	-	3.3	-	-	-	-	-
20.3	24.3	-	-	-	0.0	-	-	0.8	-	-	-	-	-
27.7	25.9	-	-	-	0.0	-	-	2.5	-	-	-	-	-
43.1	66.0	-	-	-	0.0	-	-	1.7	-	-	-	-	-
45.1	75.2	-	-	-	0.9	-	-	-	-	-	-	-	-
48.5	58.0	-	-	-	0.9	-	-	0.0	-	-	-	-	-
76.7	55.0	0.0	-	-	0.7	-	-	-	0.0	-	0.0	-	-
83.3	42.0	0.0	-	-	0.8	-	-	-	0.0	-	0.0	-	-
86.7	50.0	0.0	-	-	0.8	-	-	-	0.0	-	0.0	-	-
90.0	53.0	0.0	-	0.8	-	-	-	-	0.0	-	0.0	-	-

Triphoturus mexicanus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	51.0	0.0	-	-	0.0	-	-	-	2.4	-	0.0	-	-
86.7	33.0	0.0	-	-	0.0	-	-	-	0.9	-	0.0	-	-
90.0	70.0	0.0	-	0.8	-	-	-	-	0.0	-	0.0	-	-
93.3	35.0	0.0	-	0.0	-	-	-	-	7.7	-	0.0	-	-
93.3	45.0	0.0	-	0.0	-	-	-	-	0.0	-	1.1	-	-
93.3	55.0	0.0	-	0.8	-	-	-	-	0.0	-	0.0	-	-

Hygophum reinhardtii

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

Table 10. (cont.)

Protomyctophum crockeri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 100.0	0.8	-	-	-	-	-	-	0.0	-	0.0	-	-

Tarletonbeania crenularis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
34.3 51.7	-	-	-	1.1	-	-	0.0	-	-	-	-	-
56.7 55.0	-	-	-	1.1	-	-	-	0.0	-	-	-	-

Trachipterus altivelis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
23.0 30.3	-	-	-	0.0	-	-	0.8	-	-	-	-	-

Atherinopsis californiensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 51.0	0.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 40.6	67.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 42.0	1.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 28.0	5.2	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 35.0	0.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 37.0	0.0	-	0.9	-	-	-	-	0.0	-	0.0	-	-
93.3 28.0	0.0	-	0.9	-	-	-	-	0.0	-	0.0	-	-

Leuresthes tenuis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	0.0	-	0.0	-	-	-	-	1.0	-	0.0	-	-
93.3 26.7	0.0	-	0.0	-	-	-	-	0.9	-	12.5	-	-
93.3 28.0	0.0	-	0.0	-	-	-	-	0.9	-	0.0	-	-

Cololabis saira

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
45.1 75.3	-	-	-	-	-	-	4.8	-	-	-	-	-
76.7 70.0	0.0	-	-	0.0	-	-	-	0.0	-	0.7	-	-
76.7 90.0	0.0	-	-	0.0	-	-	-	0.0	-	1.6	-	-
76.7 100.0	0.0	-	-	0.0	-	-	-	0.7	-	0.0	-	-

Table 10. (cont.)

Cololabis saira (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	70.0	1.6	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0	80.0	0.8	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0	90.0	0.0	-	-	-	-	-	-	0.0	-	1.5	-	-
80.0	100.0	0.7	-	-	-	-	-	-	1.3	-	0.8	-	-
83.3	80.0	0.0	-	-	0.0	-	-	-	0.0	-	0.9	-	-
83.3	100.0	0.0	-	-	0.9	-	-	-	0.0	-	0.8	-	-
83.3	110.0	0.0	-	-	2.9	-	-	-	0.8	-	0.0	-	-
86.7	40.0	0.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	90.0	0.0	-	-	0.0	-	-	-	0.0	-	0.8	-	-
86.7	100.0	1.5	-	-	0.7	-	-	-	0.0	-	1.8	-	-
86.7	110.0	0.0	-	-	0.0	-	-	-	2.2	-	0.7	-	-
90.0	35.0	0.0	-	0.0	-	-	-	-	0.0	-	0.9	-	-
90.0	45.0	0.0	-	0.0	-	-	-	-	1.1	-	0.0	-	-
90.0	53.0	0.0	-	0.0	-	-	-	-	1.5	-	0.0	-	-
90.0	60.0	0.0	-	0.0	-	-	-	-	0.0	-	0.8	-	-
90.0	70.0	0.0	-	0.0	-	-	-	-	0.0	-	2.7	-	-
90.0	80.0	0.0	-	0.0	-	-	-	-	0.8	-	0.0	-	-
90.0	90.0	0.0	-	0.0	-	-	-	-	2.0	-	0.0	-	-
90.0	100.0	0.0	-	0.0	-	-	-	-	0.0	-	0.8	-	-
90.0	110.0	0.0	-	0.0	-	-	-	-	0.0	-	3.4	-	-
90.0	120.0	0.0	-	0.0	-	-	-	-	8.9	-	3.3	-	-
93.3	40.0	0.0	-	0.0	-	-	-	-	0.9	-	0.0	-	-
93.3	45.0	0.0	-	0.0	-	-	-	-	0.8	-	0.0	-	-
93.3	50.0	0.7	-	0.0	-	-	-	-	3.9	-	0.0	-	-
93.3	55.0	0.7	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	60.0	0.0	-	0.0	-	-	-	-	4.7	-	0.0	-	-
93.3	80.0	0.0	-	-	-	-	-	-	8.8	-	0.0	-	-
93.3	90.0	0.0	-	0.0	-	-	-	-	1.3	-	0.0	-	-
93.3	100.0	0.0	-	-	-	-	-	-	1.8	-	4.2	-	-
93.3	110.0	0.0	-	-	-	-	-	-	0.0	-	4.0	-	-
93.3	120.0	0.0	-	0.0	-	-	-	-	4.4	-	2.4	-	-

Table 10. (cont.)

Cheilopogon heterurus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 35.0	0.0	-	0.0	-	-	-	-	11.1	-	0.0	-	-
93.3 50.0	0.0	-	0.0	-	-	-	-	2.3	-	0.0	-	-

Cheilopogon pinnatibarbatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 30.0	0.0	-	0.0	-	-	-	-	0.9	-	0.0	-	-
93.3 30.0	0.0	-	0.0	-	-	-	-	1.5	-	0.0	-	-
93.3 45.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
93.3 50.0	0.0	-	0.0	-	-	-	-	1.6	-	0.0	-	-

***Hirundichthys* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 45.0	0.0	-	0.0	-	-	-	-	0.0	-	1.1	-	-

Poromitra crassiceps

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 100.0	0.0	-	-	0.9	-	-	-	0.0	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	0.9	-	0.0	-	-

Scopelogadus mizolepis bispinosus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 100.0	0.8	-	-	-	-	-	-	0.0	-	0.0	-	-

Macroramphosus gracilis

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

***Sebastes* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
11.7 7.2	-	-	-	0.0	-	-	0.7	-	-	-	-	-
13.4 -1.8	-	-	-	1.2	-	-	0.0	-	-	-	-	-
20.3 24.3	-	-	-	0.0	-	-	1.6	-	-	-	-	-
24.7 21.4	-	-	-	2.7	-	-	1.7	-	-	-	-	-
26.0 34.8	-	-	-	0.0	-	-	1.5	-	-	-	-	-

Table 10. (cont.)

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

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
27.7	25.9	-	-	-	0.0	-	-	18.4	-	-	-	-	-
29.4	57.0	-	-	-	1.4	-	-	0.0	-	-	-	-	-
32.6	60.5	-	-	-	46.5	-	-	0.0	-	-	-	-	-
34.3	51.7	-	-	-	36.8	-	-	0.0	-	-	-	-	-
34.5	30.7	-	-	-	0.0	-	-	0.9	-	-	-	-	-
37.2	76.6	-	-	-	1.3	-	-	0.0	-	-	-	-	-
39.8	83.2	-	-	-	2.0	-	-	0.0	-	-	-	-	-
41.0	36.7	-	-	-	-	-	-	0.7	-	-	-	-	-
41.4	74.6	-	-	-	15.0	-	-	0.0	-	-	-	-	-
43.7	41.2	-	-	-	1.0	-	-	-	-	-	-	-	-
46.4	48.6	-	-	-	0.0	-	-	0.8	-	-	-	-	-
46.8	66.6	-	-	-	9.6	-	-	0.0	-	-	-	-	-
47.0	85.8	-	-	-	1.9	-	-	-	-	-	-	-	-
50.2	87.2	-	-	-	6.6	-	-	-	-	-	-	-	-
50.3	68.6	-	-	-	627.5	-	-	0.0	-	-	-	-	-
53.6	88.6	-	-	-	1.9	-	-	-	-	-	-	-	-
56.7	55.0	-	-	-	9.1	-	-	-	0.0	-	-	-	-
56.7	70.0	-	-	-	2.1	-	-	-	0.0	-	-	-	-
56.7	80.0	-	-	-	0.0	-	-	-	0.7	-	-	-	-
56.7	90.0	-	-	-	0.7	-	-	-	0.0	-	-	-	-
60.0	70.0	-	-	-	3.1	-	-	-	0.0	-	-	-	-
63.3	80.0	-	-	-	2.1	-	-	-	0.0	-	-	-	-
66.7	50.0	6.9	-	-	0.9	-	-	-	-	-	-	-	-
76.7	49.0	-	-	-	2.7	-	-	-	0.0	-	0.0	-	-
76.7	60.0	0.0	-	-	0.7	-	-	-	0.0	-	0.0	-	-
80.0	55.0	42.6	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0	60.0	0.0	-	-	-	-	-	-	0.0	-	0.7	-	-
81.8	46.9	0.0	-	-	2.2	-	-	-	0.0	-	0.0	-	-
83.3	40.6	1.9	-	-	0.0	-	-	-	1.6	-	0.0	-	-
83.3	42.0	0.9	-	-	20.7	-	-	-	0.0	-	0.0	-	-
83.3	51.0	8.8	-	-	0.0	-	-	-	0.0	-	0.7	-	-
83.3	60.0	0.8	-	-	-	-	-	-	0.0	-	0.0	-	-

Table 10. (cont.)

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

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	70.0	0.7	-	-	0.8	-	-	-	0.0	-	0.0	-	-
86.7	33.0	0.0	-	-	0.8	-	-	-	0.0	-	0.0	-	-
86.7	35.0	2.4	-	-	3.6	-	-	-	0.0	-	0.0	-	-
86.7	50.0	2.8	-	-	1.6	-	-	-	0.0	-	0.0	-	-
86.7	55.0	-	-	-	0.8	-	-	-	0.0	-	0.6	-	-
90.0	30.0	0.0	-	0.8	-	-	-	-	0.0	-	0.0	-	-
90.0	35.0	1.9	-	9.2	-	-	-	-	0.0	-	0.0	-	-
90.0	37.0	1.7	-	3.6	-	-	-	-	0.0	-	0.0	-	-
90.0	45.0	0.0	-	2.4	-	-	-	-	0.0	-	0.0	-	-
90.0	53.0	0.0	-	0.8	-	-	-	-	0.0	-	0.0	-	-
90.0	70.0	0.0	-	0.8	-	-	-	-	0.0	-	0.0	-	-
93.3	30.0	0.0	-	3.7	-	-	-	-	0.0	-	0.0	-	-
93.3	45.0	2.9	-	0.8	-	-	-	-	0.0	-	0.0	-	-
93.3	50.0	0.0	-	0.8	-	-	-	-	0.0	-	0.0	-	-
93.3	55.0	1.5	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	60.0	0.8	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	90.0	0.0	-	0.9	-	-	-	-	0.0	-	0.0	-	-

Sebastes aurora

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	70.0	0.0	-	-	0.8	-	-	-	0.0	-	0.0	-	-

Sebastes diploproa

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
26.0	34.8	-	-	-	0.0	-	-	0.8	-	-	-	-	-
27.7	25.9	-	-	-	0.0	-	-	2.5	-	-	-	-	-
36.0	62.9	-	-	-	0.0	-	-	4.5	-	-	-	-	-
37.6	54.2	-	-	-	0.0	-	-	0.9	-	-	-	-	-
50.1	49.2	-	-	-	0.0	-	-	2.4	-	-	-	-	-
63.3	55.0	-	-	-	-	-	-	-	0.8	-	-	-	-
66.7	50.0	0.8	-	-	0.0	-	-	-	-	-	-	-	-
86.7	55.0	-	-	-	0.0	-	-	-	0.0	-	18.2	-	-
86.7	90.0	0.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Table 10. (cont.)

Sebastes diploproa (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	35.0	0.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	40.0	0.8	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Sebastes goodei

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	70.0	0.0	-	-	0.8	-	-	-	0.0	-	0.0	-	-

Sebastes jordani

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
50.3	68.6	-	-	-	1.0	-	-	0.0	-	-	-	-	-
66.7	50.0	3.0	-	-	0.0	-	-	-	-	-	-	-	-
76.7	60.0	0.0	-	-	2.2	-	-	-	0.0	-	0.0	-	-
80.0	55.0	7.3	-	-	-	-	-	-	0.0	-	0.0	-	-
83.3	51.0	4.0	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	35.0	2.4	-	-	1.4	-	-	-	0.0	-	0.0	-	-

Anoplopoma fimbria

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
11.7	-2.6	-	-	-	1.0	-	-	0.0	-	-	-	-	-
12.1	26.7	-	-	-	2.4	-	-	-	-	-	-	-	-
15.3	30.3	-	-	-	10.8	-	-	-	-	-	-	-	-
15.6	8.9	-	-	-	8.1	-	-	0.0	-	-	-	-	-
18.6	33.2	-	-	-	90.0	-	-	0.0	-	-	-	-	-
18.7	12.6	-	-	-	1.9	-	-	0.0	-	-	-	-	-
20.3	24.3	-	-	-	1.3	-	-	0.0	-	-	-	-	-
21.3	39.1	-	-	-	1.0	-	-	0.0	-	-	-	-	-
21.9	5.9	-	-	-	6.8	-	-	0.0	-	-	-	-	-
23.0	30.3	-	-	-	1.2	-	-	0.0	-	-	-	-	-
23.8	6.5	-	-	-	3.0	-	-	-	-	-	-	-	-
24.7	21.4	-	-	-	156.4	-	-	0.0	-	-	-	-	-
26.0	34.8	-	-	-	37.0	-	-	0.0	-	-	-	-	-
26.4	12.5	-	-	-	5.3	-	-	0.0	-	-	-	-	-
27.7	25.9	-	-	-	30.2	-	-	0.0	-	-	-	-	-

Table 10. (cont.)

Anoplopoma fimbria (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
28.0	14.7	-	-	-	0.9	-	-	0.0	-	-	-	-	-
28.7	40.6	-	-	-	57.3	-	-	0.0	-	-	-	-	-
29.4	57.0	-	-	-	12.2	-	-	0.0	-	-	-	-	-
30.4	31.8	-	-	-	27.2	-	-	0.0	-	-	-	-	-
32.6	60.5	-	-	-	35.8	-	-	0.0	-	-	-	-	-
34.3	51.7	-	-	-	16.2	-	-	0.0	-	-	-	-	-
34.3	71.6	-	-	-	5.6	-	-	0.0	-	-	-	-	-
36.0	62.9	-	-	-	3.1	-	-	0.0	-	-	-	-	-
38.9	67.9	-	-	-	0.8	-	-	0.0	-	-	-	-	-
39.3	45.5	-	-	-	4.2	-	-	0.0	-	-	-	-	-
41.4	74.6	-	-	-	39.9	-	-	0.0	-	-	-	-	-
43.7	41.2	-	-	-	5.9	-	-	-	-	-	-	-	-
44.7	57.3	-	-	-	1.0	-	-	0.0	-	-	-	-	-
46.8	66.6	-	-	-	8.5	-	-	0.0	-	-	-	-	-
47.0	85.8	-	-	-	1.9	-	-	-	-	-	-	-	-
48.6	77.2	-	-	-	0.9	-	-	-	-	-	-	-	-
50.2	87.2	-	-	-	1.3	-	-	-	-	-	-	-	-
50.3	68.6	-	-	-	9.2	-	-	0.0	-	-	-	-	-
51.9	59.9	-	-	-	41.8	-	-	0.0	-	-	-	-	-
56.7	55.0	-	-	-	98.7	-	-	-	0.0	-	-	-	-
56.7	60.0	-	-	-	1.5	-	-	-	0.0	-	-	-	-
56.7	70.0	-	-	-	32.6	-	-	-	0.0	-	-	-	-
56.7	90.0	-	-	-	0.7	-	-	-	0.0	-	-	-	-
60.0	60.0	-	-	-	3.5	-	-	-	0.0	-	-	-	-
60.0	80.0	-	-	-	11.7	-	-	-	0.0	-	-	-	-
60.0	90.0	-	-	-	1.2	-	-	-	0.0	-	-	-	-
63.3	80.0	-	-	-	2.1	-	-	-	0.0	-	-	-	-
73.3	60.0	-	-	-	0.8	-	-	-	-	-	-	-	-
86.7	55.0	-	-	-	2.4	-	-	-	0.0	-	0.0	-	-
86.7	90.0	0.0	-	-	0.8	-	-	-	0.0	-	0.0	-	-

Table 10. (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
						Hexagrammos decagrammus							
6.5	14.0	-	-	-	19.5	-	-	0.0	-	-	-	-	-
8.2	5.0	-	-	-	17.0	-	-	0.0	-	-	-	-	-
8.3	25.1	-	-	-	7.4	-	-	0.0	-	-	-	-	-
10.0	-4.0	-	-	-	2.2	-	-	0.0	-	-	-	-	-
10.0	16.1	-	-	-	5.5	-	-	0.0	-	-	-	-	-
11.7	-2.6	-	-	-	10.4	-	-	0.0	-	-	-	-	-
11.7	7.2	-	-	-	24.2	-	-	0.0	-	-	-	-	-
12.1	26.7	-	-	-	2.4	-	-	-	-	-	-	-	-
13.4	-1.8	-	-	-	9.7	-	-	0.0	-	-	-	-	-
13.9	17.9	-	-	-	2.8	-	-	0.0	-	-	-	-	-
15.2	-2.1	-	-	-	3.7	-	-	-	-	-	-	-	-
15.6	8.9	-	-	-	41.8	-	-	0.0	-	-	-	-	-
17.0	21.5	-	-	-	3.9	-	-	0.0	-	-	-	-	-
17.3	-.1	-	-	-	2.9	-	-	-	-	-	-	-	-
18.6	33.2	-	-	-	1.3	-	-	0.0	-	-	-	-	-
18.7	12.6	-	-	-	4.7	-	-	0.0	-	-	-	-	-
18.9	1.4	-	-	-	19.7	-	-	-	-	-	-	-	-
20.3	24.3	-	-	-	7.9	-	-	0.0	-	-	-	-	-
20.5	3.7	-	-	-	1.5	-	-	0.0	-	-	-	-	-
21.9	5.9	-	-	-	1.0	-	-	0.0	-	-	-	-	-
22.0	15.5	-	-	-	1.0	-	-	0.0	-	-	-	-	-
23.8	6.5	-	-	-	13.3	-	-	-	-	-	-	-	-
24.3	43.5	-	-	-	0.9	-	-	0.0	-	-	-	-	-
24.7	21.4	-	-	-	17.5	-	-	0.0	-	-	-	-	-
25.2	9.3	-	-	-	7.0	-	-	0.0	-	-	-	-	-
26.0	34.8	-	-	-	14.3	-	-	0.0	-	-	-	-	-
26.4	12.5	-	-	-	8.8	-	-	0.0	-	-	-	-	-
27.7	25.9	-	-	-	50.4	-	-	0.0	-	-	-	-	-
28.0	14.7	-	-	-	0.9	-	-	0.0	-	-	-	-	-
28.7	40.6	-	-	-	2.3	-	-	0.0	-	-	-	-	-
29.4	17.0	-	-	-	3.2	-	-	0.0	-	-	-	-	-

Table 10. (cont.)

Hexagrammos decagrammus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
30.4	31.8	-	-	-	2.0	-	-	0.0	-	-	-	-	-
30.8	20.0	-	-	-	2.1	-	-	0.0	-	-	-	-	-
32.6	60.5	-	-	-	1.2	-	-	0.0	-	-	-	-	-
32.8	39.5	-	-	-	0.7	-	-	0.0	-	-	-	-	-
34.3	51.7	-	-	-	11.9	-	-	0.0	-	-	-	-	-
37.2	76.6	-	-	-	1.3	-	-	0.0	-	-	-	-	-
37.6	54.2	-	-	-	0.9	-	-	0.0	-	-	-	-	-
39.3	45.5	-	-	-	1.0	-	-	0.0	-	-	-	-	-
43.7	41.2	-	-	-	2.9	-	-	-	-	-	-	-	-
48.6	77.2	-	-	-	0.9	-	-	-	-	-	-	-	-
51.9	59.9	-	-	-	4.0	-	-	0.0	-	-	-	-	-
56.7	60.0	-	-	-	0.8	-	-	-	0.0	-	-	-	-
56.7	70.0	-	-	-	1.1	-	-	-	0.0	-	-	-	-
60.0	53.0	-	-	-	1.0	-	-	-	0.0	-	-	-	-
81.8	46.9	0.0	-	-	2.2	-	-	-	0.0	-	0.0	-	-
86.7	55.0	-	-	-	0.8	-	-	-	0.0	-	0.0	-	-

Hexagrammos lagocephalus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
15.2	-2.1	-	-	-	1.9	-	-	-	-	-	-	-	-

Hexagrammos stelleri

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
10.0	16.1	-	-	-	0.9	-	-	0.0	-	-	-	-	-

Ophiodon elongatus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
8.2	5.0	-	-	-	92.7	-	-	0.0	-	-	-	-	-
10.0	16.1	-	-	-	1.8	-	-	0.0	-	-	-	-	-
11.7	-2.6	-	-	-	15.6	-	-	0.0	-	-	-	-	-
17.3	-.1	-	-	-	20.0	-	-	-	-	-	-	-	-
18.9	1.4	-	-	-	48.2	-	-	-	-	-	-	-	-

Table 10. (cont.)

Ophiodon elongates (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
20.3	24.3	-	-	-	1.3	-	-	0.0	-	-	-	-	-
20.5	3.7	-	-	-	1.5	-	-	0.0	-	-	-	-	-
21.9	5.9	-	-	-	1.9	-	-	0.0	-	-	-	-	-
23.8	6.5	-	-	-	1.5	-	-	-	-	-	-	-	-
26.4	12.5	-	-	-	1.8	-	-	0.0	-	-	-	-	-
43.7	41.2	-	-	-	6.9	-	-	-	-	-	-	-	-
66.7	55.0	0.0	-	-	0.8	-	-	-	-	-	-	-	-
81.8	46.9	0.0	-	-	11.1	-	-	-	0.0	-	0.0	-	-
83.3	42.0	0.0	-	-	0.8	-	-	-	0.0	-	0.0	-	-

Oxylebius pictus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	55.0	-	-	-	0.8	-	-	-	0.0	-	0.0	-	-
86.7	90.0	0.0	-	-	0.8	-	-	-	0.0	-	0.0	-	-

Artedius fenestralis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
18.9	1.4	-	-	-	1.1	-	-	-	-	-	-	-	-

Hemilepidotus hemilepidotus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
15.6	8.9	-	-	-	7.0	-	-	0.0	-	-	-	-	-
24.7	21.4	-	-	-	13.5	-	-	0.0	-	-	-	-	-

Hemilepidotus spinosus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
8.2	5.0	-	-	-	1.1	-	-	0.0	-	-	-	-	-
10.0	16.1	-	-	-	126.6	-	-	0.0	-	-	-	-	-
11.7	-2.6	-	-	-	2.1	-	-	0.0	-	-	-	-	-
11.7	7.2	-	-	-	2.5	-	-	0.0	-	-	-	-	-
12.1	26.7	-	-	-	1.2	-	-	-	-	-	-	-	-
13.9	17.9	-	-	-	0.9	-	-	0.0	-	-	-	-	-
15.2	-2.1	-	-	-	3.7	-	-	-	-	-	-	-	-

Table 10. (cont.)

Hemilepidotus spinosus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
15.3	30.3	-	-	-	3.9	-	-	-	-	-	-	-	-
15.6	8.9	-	-	-	856.1	-	-	0.0	-	-	-	-	-
18.9	1.4	-	-	-	14.2	-	-	-	-	-	-	-	-
21.9	5.9	-	-	-	1.9	-	-	0.0	-	-	-	-	-
24.3	43.5	-	-	-	2.6	-	-	0.0	-	-	-	-	-
24.7	21.4	-	-	-	1778.0	-	-	0.0	-	-	-	-	-
26.0	34.8	-	-	-	159.9	-	-	0.0	-	-	-	-	-
26.4	12.5	-	-	-	7.0	-	-	0.0	-	-	-	-	-
30.4	31.8	-	-	-	39.3	-	-	0.0	-	-	-	-	-
32.1	23.0	-	-	-	1.1	-	-	0.0	-	-	-	-	-
32.6	60.5	-	-	-	1.2	-	-	0.0	-	-	-	-	-
34.3	51.7	-	-	-	178.4	-	-	0.0	-	-	-	-	-
34.3	71.6	-	-	-	1.9	-	-	0.0	-	-	-	-	-
43.7	41.2	-	-	-	27.4	-	-	-	-	-	-	-	-
51.9	59.9	-	-	-	5.4	-	-	0.0	-	-	-	-	-
56.7	55.0	-	-	-	63.6	-	-	-	0.0	-	-	-	-
56.7	60.0	-	-	-	1.5	-	-	-	0.0	-	-	-	-

Leptocottus armatus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
17.3	-.1	-	-	-	1.4	-	-	-	-	-	-	-	-
36.0	32.8	-	-	-	1.4	-	-	0.0	-	-	-	-	-
43.7	41.2	-	-	-	1.0	-	-	-	-	-	-	-	-
76.7	49.0	-	-	-	0.0	-	-	-	0.0	-	18.4	-	-

***Oligocottus* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
18.9	1.4	-	-	-	1.1	-	-	-	-	-	-	-	-

Ruscarius creaseri

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7	50.0	0.8	-	-	0.0	-	-	-	-	-	-	-	-
83.3	40.6	0.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Table 10. (cont.)

Station		*Scorpaenichthys marmoratus*											
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
8.2	5.0	-	-	-	5.7	-	-	0.0	-	-	-	-	-
8.3	25.1	-	-	-	0.0	-	-	0.7	-	-	-	-	-
11.7	-2.6	-	-	-	165.4	-	-	0.0	-	-	-	-	-
21.9	5.9	-	-	-	1.0	-	-	0.0	-	-	-	-	-
23.8	6.5	-	-	-	20.7	-	-	-	-	-	-	-	-
25.2	9.3	-	-	-	2.8	-	-	0.0	-	-	-	-	-
26.0	34.8	-	-	-	1.2	-	-	0.0	-	-	-	-	-
27.7	25.9	-	-	-	1.4	-	-	0.0	-	-	-	-	-
39.3	36.1	-	-	-	0.0	-	-	0.8	-	-	-	-	-
40.7	37.8	-	-	-	2.6	-	-	-	-	-	-	-	-
43.7	41.2	-	-	-	1.0	-	-	-	-	-	-	-	-
56.7	70.0	-	-	-	4.2	-	-	-	0.0	-	-	-	-
63.3	80.0	-	-	-	2.1	-	-	-	0.0	-	-	-	-
66.7	55.0	0.7	-	-	0.0	-	-	-	-	-	-	-	-
76.7	49.0	-	-	-	1.8	-	-	-	0.0	-	0.6	-	-
80.0	51.0	0.9	-	-	0.0	-	-	-	0.0	-	6.4	-	-
80.0	55.0	0.0	-	-	-	-	-	-	0.0	-	0.7	-	-
81.8	46.9	14.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	40.6	0.0	-	-	0.7	-	-	-	0.0	-	0.0	-	-
83.3	42.0	4.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	51.0	0.0	-	-	0.0	-	-	-	0.0	-	1.4	-	-
83.3	60.0	6.3	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7	33.0	0.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	40.0	23.5	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	45.0	0.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	50.0	0.7	-	-	0.0	-	-	-	0.0	-	0.6	-	-
86.7	55.0	-	-	-	43.1	-	-	-	0.0	-	0.0	-	-
86.7	60.0	0.0	-	-	3.2	-	-	-	0.0	-	0.0	-	-
90.0	28.0	0.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0	35.0	0.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0	60.0	0.7	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Table 10. (cont.)

Scorpaenichthys marmoratus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	28.0	6.3	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	30.0	0.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	45.0	0.0	-	7.5	-	-	-	-	0.0	-	0.0	-	-
93.3	90.0	0.0	-	0.9	-	-	-	-	0.0	-	0.0	-	-

***Liparis* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
18.9	1.4	-	-	-	1.1	-	-	-	-	-	-	-	-
24.7	21.4	-	-	-	2.7	-	-	0.0	-	-	-	-	-

***Paralabrax* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	53.0	0.0	-	0.0	-	-	-	-	0.8	-	0.0	-	-

Trachurus symmetricus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	100.0	0.0	-	1.7	-	-	-	-	0.0	-	0.0	-	-
90.0	120.0	0.0	-	0.8	-	-	-	-	0.0	-	0.0	-	-

Anisotremus davidsoni

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	28.0	0.0	-	0.0	-	-	-	-	1.7	-	0.0	-	-

Xenistius californiensis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	40.0	0.0	-	-	0.0	-	-	-	0.9	-	0.0	-	-
93.3	28.0	0.0	-	0.0	-	-	-	-	1.7	-	0.0	-	-

Genyonemus lineatus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
81.8	46.9	0.0	-	-	0.0	-	-	-	0.0	-	0.9	-	-

Hermosilla azurea

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	40.0	0.0	-	-	0.0	-	-	-	0.9	-	0.0	-	-

Table 10. (cont.)

Hermosilla azurea (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	28.0	0.0	-	0.0	-	-	-	-	1.9	-	0.0	-	-
90.0	30.0	0.0	-	0.0	-	-	-	-	4.6	-	0.0	-	-
93.3	26.7	0.0	-	0.0	-	-	-	-	0.9	-	0.0	-	-
93.3	28.0	0.0	-	0.0	-	-	-	-	0.9	-	0.0	-	-

Medialuna californiensis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	40.0	0.0	-	-	0.0	-	-	-	0.9	-	0.9	-	-
86.7	50.0	0.0	-	-	0.0	-	-	-	0.0	-	0.6	-	-
90.0	35.0	0.0	-	0.0	-	-	-	-	0.0	-	3.5	-	-
90.0	37.0	0.0	-	0.0	-	-	-	-	0.0	-	0.7	-	-
90.0	53.0	0.0	-	0.0	-	-	-	-	0.8	-	0.0	-	-
93.3	35.0	0.0	-	0.0	-	-	-	-	0.0	-	2.8	-	-
93.3	50.0	0.0	-	0.0	-	-	-	-	7.0	-	0.9	-	-
93.3	60.0	0.0	-	0.0	-	-	-	-	3.1	-	0.0	-	-
93.3	120.0	0.0	-	0.0	-	-	-	-	0.9	-	0.0	-	-

Chromis punctipinnis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	51.0	0.0	-	-	0.0	-	-	-	0.8	-	0.0	-	-
86.7	33.0	0.0	-	-	0.0	-	-	-	0.0	-	0.9	-	-
86.7	40.0	0.0	-	-	0.0	-	-	-	0.0	-	0.9	-	-
86.7	45.0	0.0	-	-	0.0	-	-	-	5.7	-	0.0	-	-
90.0	28.0	0.0	-	0.0	-	-	-	-	69.6	-	0.0	-	-
90.0	30.0	0.0	-	0.0	-	-	-	-	0.9	-	0.0	-	-
90.0	35.0	0.0	-	0.0	-	-	-	-	0.0	-	5.2	-	-
90.0	37.0	0.0	-	0.0	-	-	-	-	0.9	-	0.0	-	-
90.0	45.0	0.0	-	0.0	-	-	-	-	0.6	-	0.0	-	-
93.3	26.7	0.0	-	0.0	-	-	-	-	74.4	-	0.0	-	-
93.3	28.0	0.0	-	0.0	-	-	-	-	10.3	-	0.0	-	-
93.3	30.0	0.0	-	0.0	-	-	-	-	2.2	-	0.0	-	-
93.3	55.0	0.0	-	0.0	-	-	-	-	0.7	-	0.0	-	-

Table 10. (cont.)

Oxyjulis californica

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	53.0	0.0	-	0.0	-	-	-	-	0.8	-	0.0	-	-

Ronquilus jordani

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
47.0	85.8	-	-	-	1.0	-	-	-	-	-	-	-	-

Stichaeidae

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
15.6	8.9	-	-	-	1.2	-	-	0.0	-	-	-	-	-
18.9	1.4	-	-	-	29.6	-	-	-	-	-	-	-	-
34.3	51.7	-	-	-	1.1	-	-	0.0	-	-	-	-	-

Cryptacanthodes aleutensis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
8.2	5.0	-	-	-	90.5	-	-	0.0	-	-	-	-	-
10.0	16.1	-	-	-	3.7	-	-	0.0	-	-	-	-	-
11.7	-2.6	-	-	-	21.8	-	-	0.0	-	-	-	-	-
15.2	-2.1	-	-	-	1.9	-	-	-	-	-	-	-	-
15.6	8.9	-	-	-	5.8	-	-	0.0	-	-	-	-	-
18.9	1.4	-	-	-	132.6	-	-	-	-	-	-	-	-
21.9	5.9	-	-	-	196.7	-	-	0.0	-	-	-	-	-
23.8	6.5	-	-	-	31.0	-	-	-	-	-	-	-	-
24.7	21.4	-	-	-	1.3	-	-	0.0	-	-	-	-	-
25.2	9.3	-	-	-	1.4	-	-	0.0	-	-	-	-	-
26.4	12.5	-	-	-	16.7	-	-	0.0	-	-	-	-	-
40.7	37.8	-	-	-	5.3	-	-	-	-	-	-	-	-
43.7	41.2	-	-	-	2.9	-	-	-	-	-	-	-	-

Ammodytes hexapturus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
6.5	14.0	-	-	-	1.5	-	-	0.0	-	-	-	-	-
8.2	5.0	-	-	-	415.1	-	-	0.0	-	-	-	-	-
11.7	-2.6	-	-	-	2.1	-	-	0.0	-	-	-	-	-
15.6	8.9	-	-	-	1.2	-	-	0.0	-	-	-	-	-

Table 10. (cont.)

Ammodytes hexapturus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
17.3	-.1	-	-	-	1.4	-	-	-	-	-	-	-	-
18.9	1.4	-	-	-	26.3	-	-	-	-	-	-	-	-
23.8	6.5	-	-	-	1.5	-	-	-	-	-	-	-	-
40.7	37.8	-	-	-	7.9	-	-	-	-	-	-	-	-
43.7	41.2	-	-	-	1.0	-	-	-	-	-	-	-	-

***Neoclinus* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	49.0	-	-	-	0.0	-	-	-	0.0	-	0.6	-	-

Neoclinus blanchardi

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
81.8	46.9	0.0	-	-	0.0	-	-	-	0.0	-	6.2	-	-
83.3	55.0	0.0	-	-	-	-	-	-	0.0	-	1.2	-	-

Hypsoblennius gentilis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	51.0	0.0	-	-	0.0	-	-	-	0.0	-	2.9	-	-

Hypsoblennius gilberti

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	55.0	0.0	-	-	-	-	-	-	0.7	-	0.0	-	-
83.3	40.6	0.0	-	-	0.0	-	-	-	8.9	-	0.0	-	-
83.3	42.0	0.0	-	-	0.0	-	-	-	8.8	-	0.0	-	-
86.7	40.0	0.0	-	-	0.0	-	-	-	0.0	-	0.9	-	-
86.7	55.0	-	-	-	0.0	-	-	-	0.7	-	0.6	-	-
90.0	28.0	0.0	-	0.0	-	-	-	-	1.9	-	0.0	-	-
90.0	30.0	0.0	-	0.0	-	-	-	-	0.9	-	0.0	-	-
90.0	35.0	0.0	-	0.0	-	-	-	-	0.0	-	1.7	-	-
93.3	28.0	0.0	-	0.0	-	-	-	-	4.3	-	0.0	-	-

Hypsoblennius jenkinsi

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	40.6	0.0	-	-	0.0	-	-	-	8.1	-	0.0	-	-

Table 10. (cont.)

Hypsoblennius jenkinsi (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 42.0	0.0	-	-	0.0	-	-	-	10.4	-	0.0	-	-
86.7 33.0	0.0	-	-	0.0	-	-	-	0.9	-	0.0	-	-
86.7 45.0	0.0	-	-	0.0	-	-	-	1.6	-	0.0	-	-
90.0 28.0	0.0	-	0.0	-	-	-	-	1.9	-	0.0	-	-
90.0 30.0	0.0	-	0.0	-	-	-	-	0.9	-	0.0	-	-
90.0 35.0	0.0	-	0.0	-	-	-	-	0.8	-	0.0	-	-
90.0 37.0	0.0	-	0.0	-	-	-	-	3.7	-	0.0	-	-
90.0 45.0	0.0	-	0.0	-	-	-	-	5.6	-	0.0	-	-
93.3 26.7	0.0	-	0.0	-	-	-	-	5.5	-	0.0	-	-
93.3 28.0	0.0	-	0.0	-	-	-	-	20.5	-	0.0	-	-
93.3 30.0	0.0	-	0.0	-	-	-	-	12.6	-	0.0	-	-
93.3 35.0	0.0	-	0.0	-	-	-	-	0.9	-	0.0	-	-
93.3 45.0	0.0	-	0.0	-	-	-	-	0.8	-	0.0	-	-
93.3 60.0	0.0	-	0.0	-	-	-	-	0.8	-	0.0	-	-

Icosteus aenigmaticus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 55.0	0.7	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Sphyraena argentea

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	0.0	-	0.0	-	-	-	-	4.8	-	0.0	-	-

Tetragonurus cuvieri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 110.0	0.0	-	-	0.0	-	-	-	0.7	-	0.0	-	-
90.0 110.0	0.0	-	0.0	-	-	-	-	0.0	-	0.8	-	-
93.3 60.0	0.0	-	0.0	-	-	-	-	0.0	-	0.9	-	-
93.3 80.0	0.0	-	-	-	-	-	-	0.9	-	0.0	-	-

Citharichthys sordidus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 55.0	-	-	-	0.0	-	-	-	0.0	-	1.3	-	-
90.0 45.0	0.0	-	0.8	-	-	-	-	0.0	-	0.0	-	-

Table 10. (cont.)

Citharichthys stigmaeus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	-	0.0	-	-	-	0.0	-	0.6	-	-
76.7 60.0	0.0	-	-	0.0	-	-	-	0.0	-	1.4	-	-
83.3 55.0	0.0	-	-	-	-	-	-	0.0	-	0.6	-	-

Pleuronectidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
11.7 -2.6	-	-	-	1.0	-	-	0.0	-	-	-	-	-

Eopsetta jordani

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
43.7 41.2	-	-	-	2.0	-	-	-	-	-	-	-	-

Glyptocephalus zachirus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
27.7 25.9	-	-	-	0.0	-	-	0.8	-	-	-	-	-

Isopsetta isolepis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
10.0 -4.0	-	-	-	0.7	-	-	0.0	-	-	-	-	-

Lyopsetta exilis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 60.0	0.0	-	-	-	-	-	-	0.0	-	0.7	-	-

Microstomus pacificus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
39.3 45.5	-	-	-	1.0	-	-	0.0	-	-	-	-	-

Parophrys vetulus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
13.4 -1.8	-	-	-	1.2	-	-	0.0	-	-	-	-	-
17.3 -.1	-	-	-	21.4	-	-	-	-	-	-	-	-
18.9 1.4	-	-	-	93.2	-	-	-	-	-	-	-	-
40.7 37.8	-	-	-	2.6	-	-	-	-	-	-	-	-

Table 10. (cont.)

Parophrys vetulus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
43.7	41.2	-	-	-	2.0	-	-	-	-	-	-	-	-
53.6	51.2	-	-	-	1.0	-	-	0.0	-	-	-	-	-
76.7	49.0	-	-	-	0.9	-	-	-	0.0	-	0.0	-	-

Pleuronichthys verticalis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	51.0	0.0	-	-	0.0	-	-	-	0.0	-	0.7	-	-

Symphurus atricaudus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	50.0	0.0	-	-	0.0	-	-	-	0.6	-	0.0	-	-
86.7	55.0	-	-	-	0.0	-	-	-	0.7	-	0.0	-	-

Unidentified fish larvae

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
33.2	27.2	-	-	-	0.0	-	-	19.8	-	-	-	-	-
43.5	83.8	-	-	-	0.8	-	-	0.0	-	-	-	-	-

Table 11. Station and Bongo net tow data for CalCOFI and CCES cruises in 2008. Counts for fish larvae, fish eggs and paralarval cephalopods are not adjusted for standard haul factor or percent of sample sorted. Plankton volume given as milliliters per 1000 cubic meters of water strained.

CalCOFI Cruise 0801

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
66.7	50.0	36	44.9	122	01.4	JD	08	01	26	1622	213	389	5.47	57	100.0	163	119	0
66.7	55.0	36	37.2	122	24.8	JD	08	01	26	2235	209	500	4.18	156	48.7	3	2	1
76.7	55.0	34	53.4	121	11.9	JD	08	01	29	0132	216	436	4.94	179	52.5	12	0	1
76.7	60.0	34	43.4	121	32.8	JD	08	01	29	0544	210	482	4.35	52	100.0	15	0	0
76.7	70.0	34	23.2	122	14.8	JD	08	01	24	2355	208	454	4.58	82	45.9	4	3	1
76.7	80.0	34	03.3	122	56.4	JD	08	01	24	1725	212	448	4.72	16	100.0	0	1	0
76.7	90.0	33	43.3	123	38.1	JD	08	01	24	1121	217	430	5.03	28	100.0	2	11	0
76.7	100.0	33	23.1	124	19.2	JD	08	01	24	0453	214	447	4.79	103	100.0	5	8	1
80.0	51.0	34	26.8	120	31.4	JD	08	01	19	0457	55	131	4.21	30	100.0	197	52	0
80.0	55.0	34	19.1	120	48.0	JD	08	01	19	0837	213	439	4.85	32	100.0	42	12	2
80.0	60.0	34	09.0	121	08.9	JD	08	01	19	1318	215	426	5.03	38	100.0	64	1	1
80.0	70.0	33	49.0	121	50.7	JD	08	01	23	0106	212	449	4.72	25	100.0	8	0	0
80.0	80.0	33	29.1	122	31.9	JD	08	01	23	0630	216	451	4.78	33	100.0	4	4	1
80.0	90.0	33	09.0	123	13.2	JD	08	01	23	1558	215	435	4.94	44	100.0	3	5	0
80.0	100.0	32	49.1	123	54.3	JD	08	01	23	2230	215	430	5.01	65	100.0	3	3	2
81.8	46.9	34	16.6	120	01.6	JD	08	01	18	2351	214	415	5.15	46	100.0	33	228	6
83.3	40.6	34	13.4	119	24.5	JD	08	01	18	1655	21	54	3.88	56	100.0	22	130	0
83.3	42.0	34	10.7	119	30.5	JD	08	01	18	1854	85	183	4.66	55	100.0	17	298	0
83.3	51.0	33	52.7	120	07.9	JD	08	01	16	1009	76	180	4.20	39	100.0	10	57	0
83.3	55.0	33	44.8	120	24.5	JD	08	01	16	1523	215	446	4.81	22	100.0	36	27	2
83.3	60.0	33	34.7	120	45.3	JD	08	01	19	1934	209	439	4.76	82	50.0	12	14	2
83.3	70.0	33	14.7	121	26.6	JD	08	01	22	1806	212	446	4.75	34	100.0	106	1	0
83.3	80.0	32	54.6	122	07.7	JD	08	01	22	1145	213	437	4.87	14	100.0	5	5	0
83.3	90.0	32	34.6	122	48.8	JD	08	01	22	0543	215	433	4.97	32	100.0	4	4	0
83.3	100.0	32	14.7	123	29.6	JD	08	01	21	2329	214	435	4.92	83	100.0	9	7	2
83.3	110.0	31	54.6	124	10.2	JD	08	01	21	1712	213	450	4.73	18	100.0	5	1	1
85.4	35.8	34	00.5	118	50.0	JD	08	01	14	2348	28	71	3.89	56	100.0	9	56	2
86.7	33.0	33	53.4	118	29.3	JD	08	01	14	1814	42	99	4.24	61	100.0	2	58	0

Table 11. (cont.)

CalCOFI Cruise 0801 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
86.7	35.0	33	49.4	118	37.7	JD	08	01	14	2102	216	446	4.83	76	47.0	16	9	0
86.7	40.0	33	39.4	118	58.4	JD	08	01	15	0416	213	434	4.91	150	46.1	15	77	1
86.7	45.0	33	29.4	119	19.0	JD	08	01	15	0834	215	424	5.07	47	50.0	7	32	1
86.7	50.0	33	19.4	119	39.8	JD	08	01	15	1453	56	127	4.42	63	100.0	157	5	0
86.7	60.0	32	59.4	120	21.0	JD	08	01	20	0225	211	442	4.76	63	57.1	18	45	0
86.7	70.0	32	39.4	121	02.0	JD	08	01	20	0800	216	406	5.31	39	100.0	4	0	0
86.7	80.0	32	19.4	121	42.9	JD	08	01	20	1551	213	426	5.00	47	100.0	30	16	2
86.7	90.0	31	59.4	122	23.6	JD	08	01	20	2137	217	410	5.28	46	100.0	18	6	2
86.7	100.0	31	39.4	123	04.2	JD	08	01	21	0351	215	423	5.08	47	100.0	15	5	1
86.7	110.0	31	19.4	123	44.6	JD	08	01	21	0857	213	436	4.87	202	100.0	2	1	1
86.8	32.5	33	53.3	118	26.7	JD	08	01	14	1637	13	47	2.75	21	100.0	1	12	0
88.5	30.1	33	40.5	118	05.1	JD	08	01	14	1236	13	42	3.07	24	100.0	1	29	1
90.0	27.7	33	29.6	117	44.8	JD	08	01	14	0641	19	59	3.17	34	100.0	1	20	0
90.0	28.0	33	29.1	117	46.1	JD	08	01	14	0535	56	126	4.41	32	100.0	3	22	0
90.0	30.0	33	25.1	117	54.4	JD	08	01	14	0105	213	414	5.14	70	55.1	2	11	0
90.0	35.0	33	15.1	118	15.0	JD	08	01	13	2006	208	430	4.83	58	52.0	23	187	3
90.0	37.0	33	11.1	118	23.2	JD	08	01	13	1706	210	441	4.77	61	51.8	6	14	3
90.0	45.0	32	55.1	118	56.2	JD	08	01	13	1118	210	442	4.74	27	100.0	9	8	1
90.0	53.0	32	39.1	119	29.0	JD	08	01	13	0522	213	444	4.80	34	100.0	18	10	0
90.0	60.0	32	25.0	119	57.6	JD	08	01	13	0003	213	457	4.66	77	51.4	2	5	0
90.0	70.0	32	05.1	120	38.4	JD	08	01	12	1702	214	467	4.57	26	100.0	5	1	0
90.0	80.0	31	45.0	121	19.0	JD	08	01	12	0813	210	453	4.62	38	100.0	3	8	1
90.0	90.0	31	25.0	121	59.4	JD	08	01	12	0219	205	491	4.16	39	100.0	1	2	1
90.0	100.0	31	05.0	122	39.7	JD	08	01	11	1925	215	444	4.84	437	100.0	9	15	1
90.0	110.0	30	45.0	123	20.0	JD	08	01	11	1238	212	449	4.72	27	100.0	6	6	0
90.0	120.0	30	25.0	123	59.9	JD	08	01	11	0528	214	440	4.86	39	100.0	35	20	0
93.3	26.7	32	57.4	117	18.4	JD	08	01	07	1306	56	137	4.11	37	100.0	15	36	0
93.3	28.0	32	55.1	117	23.7	JD	08	01	08	0001	215	429	5.00	121	46.1	3	1	2
93.3	30.0	32	50.8	117	31.9	JD	08	01	08	0321	211	442	4.77	86	47.3	2	0	0
93.3	35.0	32	40.8	117	52.4	JD	08	01	08	0800	222	444	5.00	45	100.0	2	1	0

Table 11. (cont.)

CalCOFI Cruise 0801 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
93.3	40.0	32	30.9	118	12.6	JD	08	01	08	1229	214	454	4.71	31	100.0	2	5	0
93.3	45.0	32	20.8	118	33.3	JD	08	01	08	1655	211	439	4.80	41	100.0	6	12	1
93.3	50.0	32	10.9	118	53.5	JD	08	01	08	2118	217	430	5.04	65	100.0	4	20	2
93.3	55.0	32	00.8	119	13.9	JD	08	01	09	0152	214	423	5.06	47	100.0	39	18	0
93.3	60.0	31	50.8	119	34.2	JD	08	01	09	0613	214	428	4.99	61	100.0	5	5	1
93.3	70.0	31	30.9	120	14.6	JD	08	01	09	1252	215	429	5.01	61	53.8	2	8	1
93.3	80.0	31	10.8	120	55.2	JD	08	01	09	1912	214	463	4.62	56	100.0	7	6	0
93.3	90.0	30	50.8	121	35.3	JD	08	01	10	0146	211	464	4.55	43	100.0	11	5	1
93.3	100.0	30	30.8	122	15.4	JD	08	01	10	0654	213	435	4.90	83	100.0	27	49	4
93.3	110.0	30	10.8	122	55.3	JD	08	01	10	1527	214	461	4.64	39	100.0	16	24	2
93.3	120.0	29	50.9	123	35.0	JD	08	01	10	2217	215	464	4.63	43	100.0	10	9	0
93.4	26.4	32	57.1	117	17.2	JD	08	01	07	1413	20	56	3.59	72	100.0	0	2	1

CalCOFI and CCES Cruise 0804

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
4.8	22.9	48	24.5	127	53.7	MF	08	04	04	1021	206	463	4.44	147	52.9	1	1	0
6.5	14.0	48	24.5	126	53.6	MF	08	04	03	1058	210	419	5.01	45	100.0	0	2	0
8.2	5.0	48	24.6	125	53.1	MF	08	04	03	0514	204	421	4.84	86	52.7	5	13	0
8.3	25.1	47	44.3	127	37.2	MF	08	04	04	1604	213	463	4.61	58	48.1	3	4	2
10.0	-4.0	48	24.6	124	53.3	MF	08	04	02	1712	193	516	3.74	194	53.0	1	1	0
10.0	16.1	47	44.5	126	37.2	MF	08	04	04	2141	206	482	4.27	75	52.7	3	1	0
11.7	-2.6	48	04.1	124	47.7	MF	08	04	02	2059	27	73	3.68	289	100.0	4	26	0
11.7	7.2	47	44.3	125	36.5	MF	08	04	05	0634	205	396	5.17	43	100.0	3	3	0
12.1	26.7	47	00.6	127	13.6	MF	08	04	06	1644	208	462	4.50	100	52.1	1	0	0
13.4	-1.8	47	44.4	124	38.4	MF	08	04	05	1130	34	97	3.49	236	100.0	4	31	0
13.9	17.9	47	00.6	126	15.6	MF	08	04	06	1030	210	400	5.24	35	100.0	7	8	2

Table 11. (cont.)

CalCOFI and CCES Cruise 0804 (cont.)

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
15.2	-2.1	47	25.9	124	25.6	MF	08	04	05	1433	13	77	1.67	443	47.0	9	52	0
15.3	30.3	46	20.7	127	06.8	MF	08	04	06	2215	209	454	4.60	101	47.8	5	1	1
15.6	8.9	47	00.4	125	16.6	MF	08	04	06	0436	212	426	4.99	80	52.9	5	3	0
17.0	21.5	46	20.4	126	08.8	MF	08	04	07	0619	207	447	4.64	202	52.2	2	3	0
17.3	-.1	47	00.8	124	20.0	MF	08	04	05	1816	28	98	2.85	920	46.6	3	74	0
18.6	33.2	45	40.7	126	54.2	MF	08	04	09	0312	211	429	4.91	310	52.6	38	3	0
18.7	12.6	46	20.5	125	11.2	MF	08	04	07	1144	214	507	4.21	71	52.7	0	6	0
18.9	1.4	46	40.7	124	13.5	MF	08	04	05	2156	31	89	3.42	179	100.0	2	80	0
20.3	24.3	45	40.8	125	56.7	MF	08	04	08	1736	207	430	4.82	184	49.3	5	20	0
20.5	3.7	46	20.4	124	13.0	MF	08	04	07	1700	30	101	2.99	89	100.0	2	61	0
21.3	39.1	45	00.9	127	00.7	MF	08	04	09	0813	211	395	5.32	124	51.0	13	2	1
21.9	5.9	46	00.3	124	13.3	MF	08	04	08	0105	82	233	3.53	103	100.0	6	9	0
22.0	15.5	45	40.5	124	59.9	MF	08	04	08	1215	204	449	4.53	31	100.0	24	22	1
23.0	30.3	45	00.9	126	05.4	MF	08	04	09	1328	209	387	5.39	160	46.7	5	2	0
23.8	6.5	45	40.5	124	02.6	MF	08	04	08	0407	52	137	3.78	358	53.0	1	11	0
24.3	43.5	44	20.9	126	59.1	MF	08	04	11	0819	213	431	4.93	116	48.0	15	2	0
24.7	21.4	45	00.8	125	08.5	MF	08	04	09	1857	208	412	5.04	153	52.3	6	13	1
25.2	9.3	45	20.3	124	05.8	MF	08	04	08	0707	65	158	4.09	70	100.0	0	30	0
26.0	34.8	44	20.9	126	03.6	MF	08	04	11	0305	209	357	5.85	182	52.3	22	3	0
26.4	12.5	45	00.9	124	12.4	MF	08	04	10	0339	113	232	4.86	82	100.0	4	47	0
27.1	48.7	43	40.9	127	01.2	MF	08	04	11	1337	211	399	5.29	145	46.5	19	1	0
27.7	25.9	44	20.8	125	07.2	MF	08	04	10	1759	210	416	5.04	65	51.8	9	65	0
28.0	14.7	44	40.5	124	10.8	MF	08	04	10	0641	43	105	4.08	400	50.0	6	18	0
28.7	40.6	43	40.8	126	10.3	MF	08	04	11	1823	211	413	5.11	150	51.6	21	5	0
29.4	17.0	44	20.9	124	11.8	MF	08	04	10	0935	42	98	4.34	154	100.0	2	26	0
29.4	57.0	43	00.6	127	21.5	MF	08	04	13	1822	210	377	5.56	178	52.2	19	0	0
30.4	31.8	43	41.1	125	14.8	MF	08	04	12	0300	207	405	5.10	170	53.6	30	13	0
30.8	20.0	44	00.2	124	15.0	MF	08	04	10	1246	58	121	4.80	100	100.0	3	22	0
31.1	48.2	43	00.7	126	27.0	MF	08	04	13	1302	209	385	5.43	161	53.2	51	10	0
32.1	23.0	43	40.7	124	19.7	MF	08	04	12	0742	85	163	5.23	67	100.0	7	50	0

Table 11. (cont.)

CalCOFI and CCES Cruise 0804 (cont.)

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
32.6	60.5	42	20.6	127	12.1	MF	08	04	18	1941	209	499	4.17	266	50.3	61	8	3
32.8	39.5	43	00.8	125	32.7	MF	08	04	13	0748	207	469	4.40	166	52.5	15	15	1
33.2	27.2	43	20.5	124	30.9	MF	08	04	12	1033	76	169	4.53	136	100.0	2	36	0
34.3	51.7	42	20.5	126	18.5	MF	08	04	19	0429	215	427	5.03	84	52.7	21	5	0
34.3	71.6	41	40.8	127	50.4	MF	08	04	21	0252	207	400	5.17	128	52.9	32	9	2
34.5	30.7	43	00.6	124	38.1	MF	08	04	12	1331	99	180	5.53	284	52.9	1	14	0
36.0	32.8	42	40.6	124	36.0	MF	08	04	12	1706	87	163	5.32	153	100.0	2	0	0
36.0	43.0	42	20.4	125	24.3	MF	08	04	19	0955	218	411	5.30	173	47.8	21	6	4
36.0	62.9	41	40.9	126	56.5	MF	08	04	20	1806	208	405	5.14	82	51.5	27	4	1
37.2	76.6	41	00.8	127	49.5	MF	08	04	21	0814	209	393	5.31	132	51.9	33	0	1
37.6	54.2	41	40.6	126	03.1	MF	08	04	20	1258	206	443	4.64	68	50.0	40	7	0
37.7	34.2	42	20.6	124	30.5	MF	08	04	19	1509	62	158	3.95	311	53.0	0	0	0
38.9	67.9	41	00.7	126	56.6	MF	08	04	21	1327	208	426	4.89	129	52.7	5	0	1
39.3	36.1	42	00.2	124	27.1	MF	08	04	19	1801	85	194	4.37	88	100.0	0	11	1
39.3	45.5	41	40.8	125	09.3	MF	08	04	20	0716	211	454	4.65	57	53.8	30	10	0
39.8	83.2	40	20.8	127	58.0	MF	08	04	24	0527	210	422	4.97	194	51.2	11	0	0
40.5	59.3	41	00.6	126	03.9	MF	08	04	21	1830	217	437	4.96	130	54.3	15	3	1
40.7	37.8	41	41.4	124	23.0	MF	08	04	20	0155	90	208	4.33	48	100.0	3	0	0
41.4	74.6	40	20.6	127	05.9	MF	08	04	23	2135	206	419	4.90	193	50.6	29	2	1
43.1	66.0	40	20.7	126	13.3	MF	08	04	23	1625	213	412	5.16	100	48.7	42	5	2
43.5	83.8	39	40.8	127	31.1	MF	08	04	24	1126	209	374	5.59	72	100.0	73	14	4
43.7	41.2	41	03.7	124	16.2	MF	08	04	22	1914	79	187	4.22	59	100.0	4	20	0
44.7	57.3	40	20.7	125	21.5	MF	08	04	23	1111	207	478	4.32	57	55.5	137	10	0
45.1	75.2	39	40.8	126	39.4	MF	08	04	24	1647	208	432	4.81	83	58.3	15	1	5
46.4	48.6	40	20.4	124	29.0	MF	08	04	23	0552	117	254	4.58	55	100.0	1	13	0
46.8	66.6	39	40.8	125	47.4	MF	08	04	25	0244	206	417	4.93	173	51.3	7	0	1
47.0	85.8	39	00.7	127	11.7	MF	08	04	26	1425	213	424	5.01	47	100.0	118	2	3
48.5	58.0	39	40.7	124	55.4	MF	08	04	25	0754	209	377	5.53	122	43.4	27	0	0
48.6	77.2	39	00.8	126	19.7	MF	08	04	26	0915	205	374	5.46	267	49.0	14	6	1
50.1	49.2	39	40.7	124	03.7	MF	08	04	25	1241	201	414	4.85	75	51.6	47	2	0

Table 11. (cont.)

CalCOFI and CCES Cruise 0804 (cont.)

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
50.2	87.2	38	23.9	126	51.6	MF	08	04	26	1931	199	441	4.50	43	100.0	78	1	5
50.3	68.6	39	00.9	125	29.0	MF	08	04	26	0429	208	402	5.17	137	47.2	16	3	1
51.9	59.9	39	00.6	124	37.0	MF	08	04	25	2205	212	403	5.25	226	51.6	18	4	3
53.6	51.2	39	01.0	123	46.4	MF	08	04	25	1723	56	113	4.91	35	100.0	1	2	0
53.6	88.6	37	46.3	126	31.1	MF	08	04	27	0207	210	404	5.20	59	100.0	52	2	6
56.7	55.0	38	21.2	123	39.7	MF	08	04	28	0237	210	428	4.89	142	50.8	30	6	2
56.7	60.0	38	10.9	124	01.5	MF	08	04	27	2302	196	485	4.04	177	53.4	28	1	0
56.7	70.0	37	51.3	124	45.4	MF	08	04	27	1742	206	401	5.14	80	50.0	5	1	1
56.7	80.0	37	31.1	125	29.0	MF	08	04	27	1236	201	436	4.61	60	46.1	48	3	1
56.7	90.0	37	11.2	126	12.3	MF	08	04	27	0712	213	427	4.99	77	60.6	4	2	3
60.0	53.0	37	50.7	123	00.1	MF	08	04	28	0735	69	142	4.83	28	100.0	0	0	0
60.0	60.0	37	36.7	123	36.5	MF	08	04	28	1210	202	390	5.19	44	100.0	9	3	1
60.0	70.0	37	17.0	124	20.0	MF	08	04	28	1719	211	401	5.24	65	100.0	16	2	1
60.0	80.0	36	57.0	125	03.5	MF	08	04	28	2353	204	439	4.66	93	48.7	13	0	0
60.0	90.0	36	36.9	125	46.3	MF	08	04	29	0620	207	432	4.78	42	100.0	19	1	0
63.3	80.0	36	22.6	124	38.0	MF	08	04	29	1743	209	465	4.49	52	50.0	10	0	2
63.3	90.0	36	02.7	125	20.5	MF	08	04	29	1205	201	448	4.49	20	100.0	15	1	5
66.7	50.0	36	45.0	122	07.9	JD	08	04	28	2123	205	420	4.88	238	52.0	1	4	0
66.7	55.0	36	37.0	122	25.3	JD	08	04	29	0132	214	417	5.11	486	51.2	7	5	0
66.7	60.0	36	27.3	122	46.2	JD	08	04	29	0621	217	382	5.69	65	48.0	18	0	0
66.7	70.0	36	07.2	123	29.1	JD	08	04	29	1438	223	413	5.40	31	100.0	16	0	2
70.0	55.0	36	02.9	122	00.6	JD	08	04	27	1157	216	399	5.40	43	100.0	17	4	0
70.0	60.0	35	53.0	122	21.9	JD	08	04	27	1609	162	498	3.25	30	100.0	9	27	0
73.3	55.0	35	28.6	121	36.6	JD	08	04	27	0230	206	410	5.02	161	51.5	4	1	0
73.3	60.0	35	18.5	121	57.9	JD	08	04	26	2015	215	399	5.38	95	47.3	4	0	0
73.3	70.0	34	58.6	122	39.9	JD	08	04	26	1322	213	401	5.32	17	100.0	7	8	1
73.3	80.0	34	38.5	123	22.0	JD	08	04	26	0648	211	385	5.47	55	100.0	11	19	0
73.3	90.0	34	18.4	124	03.7	JD	08	04	25	1907	218	399	5.45	38	100.0	5	5	0
76.7	49.0	35	05.3	120	46.6	JD	08	04	06	1823	70	169	4.11	71	100.0	10	21	2
76.7	51.0	35	01.3	120	55.1	JD	08	04	23	1339	212	406	5.21	39	100.0	23	15	0

Table 11. (cont.)

CalCOFI and CCES Cruise 0804 (cont.)

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
76.7	55.0	34	53.1	121	11.6	JD	08	04	23	1721	212	393	5.41	69	100.0	75	12	0
76.7	60.0	34	43.3	121	32.8	JD	08	04	23	2143	204	451	4.52	231	50.9	19	7	2
76.7	70.0	34	23.3	122	14.6	JD	08	04	24	0829	202	461	4.37	37	100.0	12	2	1
76.7	80.0	34	03.3	122	56.4	JD	08	04	24	1615	214	397	5.40	50	100.0	245	11	1
76.7	90.0	33	43.4	123	38.0	JD	08	04	25	0210	211	420	5.02	60	100.0	4	2	0
76.7	100.0	33	23.4	124	19.3	JD	08	04	25	0951	204	425	4.81	12	100.0	1	1	0
80.0	51.0	34	26.8	120	31.6	JD	08	04	06	0641	62	135	4.58	1190	50.3	10	5	4
81.8	46.9	34	16.5	120	01.5	JD	08	04	06	0152	213	437	4.89	170	50.0	20	143	0
83.3	40.6	34	13.5	119	24.8	JD	08	04	05	2013	26	67	3.91	225	100.0	10	1232	0
83.3	42.0	34	10.7	119	30.4	JD	08	04	05	1810	168	405	4.14	215	49.4	10	49	1
83.3	51.0	33	52.5	120	08.5	JD	08	04	05	1120	219	433	5.04	83	47.2	4	19	0
83.3	70.0	33	14.6	121	26.7	JD	08	04	04	1947	180	509	3.54	126	53.1	15	7	1
83.3	80.0	32	54.6	122	07.9	JD	08	04	04	1139	212	409	5.17	46	100.0	8	9	0
83.3	90.0	32	34.6	122	48.4	JD	08	04	04	0446	208	405	5.13	44	100.0	180	134	1
83.3	100.0	32	14.6	123	29.7	JD	08	04	03	2245	211	422	5.00	64	100.0	167	100	1
83.3	110.0	31	54.5	124	10.1	JD	08	04	03	1626	213	428	4.97	47	100.0	20	33	3
86.7	33.0	33	53.3	118	29.5	JD	08	04	01	0102	34	95	3.61	169	100.0	80	136	0
86.7	35.0	33	49.5	118	37.8	JD	08	04	01	0339	209	374	5.58	232	50.5	57	80	1
86.7	40.0	33	39.5	118	58.5	JD	08	04	01	0814	208	430	4.83	46	100.0	20	135	0
86.7	45.0	33	29.3	119	19.1	JD	08	04	01	1233	215	400	5.37	68	100.0	33	966	0
86.7	50.0	33	19.4	119	39.7	JD	08	04	01	1614	64	113	5.70	566	53.1	34	28	1
86.7	55.0	33	09.4	120	00.4	JD	08	04	01	2014	217	416	5.22	101	52.3	28	125	0
86.7	60.0	32	59.4	120	20.9	JD	08	04	02	0029	217	370	5.87	157	51.7	7	18	1
86.7	70.0	32	39.3	121	02.0	JD	08	04	02	0634	209	407	5.14	54	100.0	57	70	1
86.7	80.0	32	19.9	121	41.6	JD	08	04	02	1245	211	427	4.95	45	100.0	11	19	0
86.7	90.0	31	59.4	122	23.5	JD	08	04	02	1957	212	407	5.19	106	100.0	36	774	0
86.7	100.0	31	39.4	123	04.2	JD	08	04	03	0228	215	390	5.52	69	100.0	170	56	0
86.7	110.0	31	19.4	123	44.5	JD	08	04	03	0747	210	430	4.89	46	100.0	19	14	2
90.0	28.0	33	29.0	117	46.1	JD	08	03	31	1812	129	258	5.01	198	50.9	10	37	0
90.0	30.0	33	25.0	117	54.4	JD	08	03	31	1505	210	405	5.16	138	46.4	30	51	0

Table 11. (cont.)

CalCOFI and CCES Cruise 0804 (cont.)

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
90.0	35.0	33	15.1	118	14.9	JD	08	03	31	0905	215	417	5.15	72	46.6	49	241	0
90.0	37.0	33	11.2	118	23.3	JD	08	03	31	0637	213	414	5.15	68	57.1	34	48	5
90.0	53.0	32	39.0	119	29.0	JD	08	03	30	1821	206	478	4.31	100	54.1	31	99	1
90.0	60.0	32	25.1	119	57.7	JD	08	03	30	1256	216	408	5.30	39	100.0	92	70	4
90.0	70.0	32	05.1	120	38.5	JD	08	03	30	0541	216	438	4.94	46	100.0	78	29	2
90.0	80.0	31	44.9	121	19.1	JD	08	03	29	2237	215	415	5.16	91	100.0	100	56	0
90.0	90.0	31	25.0	121	59.5	JD	08	03	29	1525	214	397	5.38	43	100.0	192	134	4
90.0	100.0	31	05.0	122	39.3	JD	08	03	29	0636	197	438	4.50	78	100.0	434	125	7
90.0	110.0	30	44.9	123	20.1	JD	08	03	29	0047	213	441	4.83	45	100.0	79	16	6
90.0	120.0	30	25.0	123	59.9	JD	08	03	28	1736	211	437	4.83	46	100.0	213	32	13
91.7	26.4	33	14.5	117	27.9	JD	08	03	25	0037	10	55	1.83	90	100.0	4	217	0
93.3	26.7	32	57.3	117	18.3	JD	08	03	24	1953	81	215	3.77	121	53.8	7	216	0
93.3	28.0	32	54.7	117	23.7	JD	08	03	25	0450	205	441	4.64	68	100.0	72	89	1
93.3	30.0	32	50.8	117	31.9	JD	08	03	25	0752	208	412	5.04	44	100.0	91	18	0
93.3	35.0	32	40.9	117	52.3	JD	08	03	25	1222	209	420	4.97	29	100.0	26	1051	0
93.3	40.0	32	30.8	118	12.7	JD	08	03	25	1649	223	391	5.69	51	100.0	24	59	1
93.3	45.0	32	20.7	118	33.2	JD	08	03	25	2230	208	415	5.00	70	51.7	83	74	2
93.3	50.0	32	10.8	118	53.6	JD	08	03	26	0300	215	403	5.33	70	50.0	18	15	2
93.3	55.0	32	00.9	119	13.9	JD	08	03	26	0741	202	451	4.48	22	100.0	113	65	2
93.3	60.0	31	50.8	119	34.4	JD	08	03	26	1231	218	434	5.01	18	100.0	24	14	2
93.3	90.0	30	50.7	121	35.5	JD	08	03	27	0817	200	471	4.24	19	100.0	124	18	0
93.3	120.0	29	50.9	123	35.7	JD	08	03	28	0625	206	473	4.35	27	100.0	39	25	1
93.4	26.4	32	56.9	117	16.6	JD	08	03	24	2130	15	68	2.29	89	100.0	4	335	0

Table 11. (cont.)

CCES Cruise 0807

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
4.8	22.9	48	24.6	127	53.9	JD	08	07	06	2040	202	411	4.92	102	52.3	44	0	2
6.5	14.0	48	24.8	126	53.8	JD	08	07	06	1417	221	394	5.60	190	52.0	15	4	1
8.2	5.0	48	24.6	125	53.4	JD	08	07	06	0753	199	370	5.38	260	52.0	34	0	1
8.3	25.1	47	44.5	127	37.0	JD	08	07	07	0625	215	403	5.34	104	50.0	22	4	1
10.0	-4.0	48	24.2	124	54.1	JD	08	07	06	0040	211	356	5.93	123	52.2	6	7	0
10.0	16.1	47	44.5	126	37.3	JD	08	07	07	1239	210	400	5.23	145	48.2	36	1	0
11.7	-2.6	48	04.6	124	47.9	JD	08	07	05	1936	23	76	3.01	53	100.0	4	316	0
11.7	7.2	47	44.4	125	37.8	JD	08	07	07	1902	210	388	5.41	186	50.0	60	4	1
12.2	26.7	47	00.6	127	14.0	JD	08	07	10	0251	213	401	5.31	127	100.0	51	2	1
13.4	-1.8	47	44.5	124	38.3	JD	08	07	08	0651	24	68	3.61	89	100.0	2	13	0
13.9	17.9	47	00.5	126	15.4	JD	08	07	09	1751	201	444	4.53	189	48.8	3	1	0
15.3	30.4	46	20.5	127	06.9	JD	08	07	10	0958	217	417	5.19	106	100.0	43	6	1
15.6	8.9	47	00.6	125	16.7	JD	08	07	09	1116	213	375	5.67	11	100.0	50	5	4
17.0	21.5	46	20.4	126	09.1	JD	08	07	10	1622	215	413	5.22	213	52.2	10	2	2
18.6	33.2	45	40.7	126	54.5	JD	08	07	13	0545	211	393	5.38	364	50.3	47	20	2
18.7	12.6	46	20.8	125	11.3	JD	08	07	11	0024	213	397	5.37	171	48.5	19	37	1
20.3	24.3	45	40.6	125	56.7	JD	08	07	12	1934	204	411	4.96	363	49.6	9	0	0
20.5	3.7	46	20.5	124	13.3	JD	08	07	11	0825	35	64	5.40	1059	100.0	1	124	0
21.3	39.1	45	00.9	127	01.6	JD	08	07	13	1138	214	386	5.53	259	52.0	68	6	1
21.9	5.9	46	00.4	124	13.3	JD	08	07	11	1254	75	125	6.00	176	100.0	0	1	0
22.0	15.5	45	40.5	124	59.7	JD	08	07	12	1308	221	394	5.62	53	100.0	51	170	0
23.0	30.3	45	00.9	126	05.1	JD	08	07	13	1800	209	405	5.16	101	48.7	63	8	1
24.3	43.5	44	21.9	126	58.5	JD	08	07	19	1425	198	430	4.61	911	49.4	8	0	0
24.7	21.4	45	00.9	125	08.6	JD	08	07	14	0228	214	399	5.36	125	48.0	12	497	0
25.2	9.3	45	20.2	124	06.1	JD	08	07	12	0620	68	148	4.62	270	100.0	1	87	0
26.0	34.8	44	20.8	126	03.7	JD	08	07	19	0717	187	444	4.21	137	52.4	42	4	3
26.4	12.5	45	00.9	124	12.2	JD	08	07	14	1108	96	196	4.87	82	100.0	2	240	0
27.1	48.7	43	38.0	127	00.0	JD	08	07	19	2048	211	402	5.25	65	50.0	51	1	0
27.7	25.9	44	20.9	125	07.5	JD	08	07	18	2035	216	399	5.41	43	100.0	25	2	2
28.0	14.7	44	40.9	124	11.4	JD	08	07	15	2010	53	124	4.25	210	46.1	0	67	0

Table 11. (cont.)

CCES Cruise 0807 (cont.)

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
28.7	40.6	43	40.9	126	10.4	JD	08	07	20	0656	214	393	5.45	87	50.0	19	4	0
29.4	17.0	44	20.9	124	11.4	JD	08	07	14	1626	42	87	4.90	92	100.0	3	189	0
29.4	57.0	43	00.7	127	22.1	JD	08	07	22	0657	214	400	5.35	60	100.0	18	4	2
30.4	31.8	43	41.0	125	15.1	JD	08	07	20	1504	207	412	5.01	75	51.6	18	2	1
30.8	20.0	44	00.1	124	14.8	JD	08	07	15	1357	52	119	4.38	278	51.5	1	268	0
31.1	48.2	43	00.7	126	27.2	JD	08	07	21	2007	218	376	5.80	261	47.0	8	3	0
32.1	23.0	43	40.8	124	19.6	JD	08	07	15	1029	67	170	3.96	112	100.0	0	27	0
32.6	60.5	42	20.7	127	12.4	JD	08	07	22	1320	214	406	5.26	34	100.0	20	7	3
32.8	39.5	43	00.7	125	32.6	JD	08	07	21	1322	209	407	5.12	29	100.0	11	3	2
33.2	27.2	43	20.5	124	30.9	JD	08	07	15	0642	69	142	4.83	134	100.0	4	8	0
34.3	51.7	42	20.7	126	18.3	JD	08	07	22	2016	216	372	5.81	67	100.0	19	2	2
34.3	71.6	41	40.6	127	50.3	JD	08	07	26	0752	209	362	5.78	318	48.6	5	6	3
34.5	30.7	43	00.8	124	38.2	JD	08	07	20	2322	106	198	5.34	403	48.7	8	5	0
36.0	32.8	42	38.8	124	40.0	JD	08	07	21	0625	133	271	4.92	103	50.0	1	0	0
36.0	43.0	42	20.5	125	24.3	JD	08	07	23	0546	200	414	4.82	39	100.0	16	1	7
36.0	62.9	41	40.6	126	56.6	JD	08	07	25	2310	207	377	5.49	430	49.3	33	18	7
37.2	76.6	41	00.7	127	49.6	JD	08	07	26	1358	205	414	4.94	65	100.0	6	2	0
37.6	54.2	41	40.8	126	03.1	JD	08	07	25	1539	215	379	5.67	37	100.0	18	8	2
37.7	34.2	42	20.6	124	30.4	JD	08	07	24	0804	77	154	4.97	98	100.0	1	2	1
38.9	67.9	41	00.6	126	56.7	JD	08	07	26	2025	215	367	5.87	371	50.0	37	21	17
39.3	36.1	42	00.3	124	26.8	JD	08	07	24	0350	84	169	4.95	95	100.0	4	2	0
39.3	45.5	41	40.7	125	09.4	JD	08	07	25	0858	183	455	4.02	35	100.0	35	4	17
39.8	83.2	40	20.7	127	58.7	JD	08	07	29	1038	212	405	5.24	10	100.0	4	3	0
40.5	59.3	41	00.6	126	03.8	JD	08	07	27	0552	212	400	5.29	148	49.1	2	2	1
41.0	36.7	41	40.7	124	16.1	JD	08	07	23	1420	44	128	3.46	16	100.0	4	124	0
41.4	74.6	40	20.7	127	06.4	JD	08	07	29	0445	211	386	5.45	171	46.9	24	10	13
42.2	50.6	41	00.8	125	10.9	JD	08	07	27	1217	206	406	5.06	79	100.0	10	5	0
43.1	66.0	40	20.7	126	13.8	JD	08	07	28	1938	210	401	5.22	90	50.0	8	6	0
43.5	83.8	39	40.6	127	31.2	JD	08	07	29	1742	214	412	5.19	15	100.0	7	1	0
43.9	41.8	41	00.7	124	17.9	JD	08	07	27	1838	82	170	4.84	47	100.0	0	5	0

Table 11. (cont.)

CCES Cruise 0807 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
44.7	57.3	40	20.8	125	21.7	JD	08	07	28	1252	211	401	5.26	80	53.1	3	8	1
45.1	75.3	39	40.8	126	39.1	JD	08	07	30	0118	219	377	5.81	101	52.6	5	0	1
46.4	48.6	40	20.6	124	29.3	JD	08	07	28	0623	155	532	2.91	122	47.6	5	3	1
46.8	66.6	39	40.7	125	47.4	JD	08	07	30	0824	206	429	4.79	30	100.0	10	6	0
48.5	58.0	39	40.8	124	55.5	JD	08	07	30	1504	216	421	5.12	24	100.0	16	4	2
50.1	49.2	39	40.9	124	03.6	JD	08	07	30	2117	217	361	6.00	177	46.8	7	1	0
50.3	68.6	39	00.8	125	28.6	JD	08	07	31	1726	211	399	5.28	45	100.0	3	0	0
50.3	87.2	38	23.6	126	51.0	JD	08	08	01	1454	213	391	5.43	67	50.0	4	3	0
51.9	59.9	39	00.8	124	37.4	JD	08	07	31	1126	210	421	4.98	21	100.0	8	4	2
53.5	88.7	37	46.7	126	32.0	JD	08	08	02	0012	214	391	5.47	64	52.0	5	1	1
53.6	51.2	39	00.7	123	45.9	JD	08	07	31	0515	48	101	4.77	59	100.0	3	12	0
56.7	55.0	38	24.5	123	39.5	JD	08	08	03	1610	214	433	4.93	12	100.0	0	1	0
56.7	60.0	38	11.2	124	01.6	JD	08	08	03	1112	214	410	5.21	29	100.0	1	1	0
56.7	70.0	37	51.0	124	45.4	JD	08	08	02	2040	210	405	5.17	141	47.3	8	0	1
56.7	80.0	37	31.1	125	28.9	JD	08	08	02	1335	213	407	5.22	74	53.3	0	0	0
56.7	90.0	37	11.2	126	12.2	JD	08	08	02	0700	211	389	5.40	69	48.1	1	0	1
60.0	53.0	37	50.8	123	05.8	JD	08	08	03	2227	72	134	5.35	30	100.0	4	241	0
60.0	60.0	37	36.8	123	36.6	JD	08	08	06	1846	209	402	5.19	47	100.0	1	0	0
60.0	70.0	37	17.0	124	06.8	JD	08	08	07	0326	214	382	5.62	262	51.0	1	0	2
60.0	80.0	36	56.8	125	03.1	JD	08	08	07	1122	213	331	6.42	223	52.7	2	2	0
60.0	90.0	36	36.7	125	46.2	JD	08	08	07	1827	206	412	5.01	34	100.0	12	7	4
63.3	52.0	37	18.6	122	37.1	JD	08	08	13	1701	81	174	4.64	133	100.0	6	136	1
63.3	55.0	37	12.6	122	50.1	JD	08	08	09	0807	219	382	5.71	68	50.0	9	0	0
63.3	60.0	37	02.6	123	11.5	JD	08	08	09	0206	213	391	5.45	179	51.4	2	0	1
63.3	70.0	36	42.6	123	54.6	JD	08	08	08	1640	212	380	5.58	134	50.9	1	0	1
63.3	80.0	36	22.5	124	37.8	JD	08	08	08	1026	215	359	5.98	22	100.0	7	5	1
63.3	90.0	36	07.5	125	24.2	JD	08	08	08	0237	207	405	5.10	32	100.0	8	4	0
66.7	50.0	36	47.2	122	03.4	JD	08	08	14	0208	167	347	4.83	58	100.0	9	11	1
66.7	55.0	36	37.2	122	25.0	JD	08	08	14	0518	209	377	5.53	143	53.7	1	0	0
66.7	60.0	36	27.7	122	46.0	JD	08	08	14	0903	203	397	5.10	63	100.0	2	0	0

Table 11. (cont.)

CCES Cruise 0807 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
66.7	70.0	36	07.3	123	29.2	JD	08	08	14	1457	205	422	4.85	45	100.0	4	0	0
66.7	80.0	35	47.6	124	11.6	JD	08	08	14	2039	198	434	4.56	46	100.0	4	0	0
66.7	90.0	35	27.3	124	54.2	JD	08	08	15	0229	207	413	4.99	22	100.0	6	0	0
73.3	50.0	35	38.1	121	16.8	JD	08	08	16	1237	40	95	4.16	73	100.0	5	303	0
73.3	55.0	35	28.8	121	36.8	JD	08	08	16	0903	205	408	5.03	47	100.0	1	0	0
73.3	60.0	35	18.6	121	57.8	JD	08	08	16	0455	209	391	5.35	125	46.9	0	0	2
73.3	70.0	34	59.1	122	39.8	JD	08	08	15	2327	207	399	5.19	125	52.0	1	0	0
73.3	80.0	34	38.7	123	22.0	JD	08	08	15	1742	212	393	5.40	41	100.0	4	0	0
73.3	90.0	34	18.7	124	03.6	JD	08	08	15	1201	211	383	5.49	44	100.0	1	0	2

CalCOFI Cruise 0808

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
76.7	49.0	35	05.1	120	46.5	NH	08	08	29	1611	57	136	4.22	15	100.0	1	87	0
76.7	51.0	35	01.4	120	55.1	NH	08	08	29	1402	183	421	4.35	17	100.0	3	74	0
76.7	55.0	34	53.2	121	11.3	NH	08	08	29	1044	209	464	4.50	24	100.0	2	0	3
76.7	60.0	34	43.7	121	33.2	NH	08	08	29	0621	212	432	4.90	58	52.0	1	0	0
76.7	70.0	34	23.3	122	14.9	NH	08	08	28	2331	207	519	3.98	79	46.3	1	0	2
76.7	80.0	34	03.3	122	56.4	NH	08	08	28	1705	212	431	4.93	67	51.7	2	0	2
76.7	90.0	33	43.6	123	37.9	NH	08	08	28	1054	209	454	4.59	57	46.1	3	24	3
76.7	100.0	33	23.5	124	19.4	NH	08	08	28	0442	213	410	5.18	134	100.0	10	1	0
80.0	51.0	34	27.2	120	32.0	NH	08	08	26	1158	66	176	3.75	11	100.0	3	20	3
80.0	55.0	34	19.1	120	48.4	NH	08	08	26	1549	223	422	5.28	78	48.4	3	0	0
80.0	60.0	34	09.1	121	09.2	NH	08	08	26	2004	209	469	4.45	111	48.0	0	1	0
80.0	70.0	33	49.1	121	50.5	NH	08	08	27	0231	219	458	4.78	72	51.5	4	0	1
80.0	80.0	33	29.8	122	33.9	NH	08	08	27	0757	210	501	4.17	46	100.0	1	9	1
80.0	90.0	33	08.9	123	13.2	NH	08	08	27	1546	214	406	5.27	76	51.6	7	5	2

Table 11. (cont.)

CalCOFI Cruise 0808 (cont.)

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
80.0	100.0	32	49.0	123	54.4	NH	08	08	27	2214	212	472	4.50	49	100.0	11	28	0
81.8	46.9	34	16.5	120	01.9	NH	08	08	26	0738	220	461	4.77	22	100.0	19	7	0
83.3	40.6	34	13.4	119	25.1	NH	08	08	26	0220	29	86	3.39	12	100.0	2	498	0
83.3	42.0	34	10.6	119	30.5	NH	08	08	25	2346	217	440	4.93	186	48.7	1	42	0
83.3	51.0	33	52.8	120	08.4	NH	08	08	25	1652	73	181	4.04	22	100.0	7	88	2
83.3	55.0	33	44.6	120	24.7	NH	08	08	25	1301	217	436	4.98	37	100.0	2	0	1
83.3	60.0	33	34.9	120	45.3	NH	08	08	25	0806	209	447	4.67	36	100.0	1	0	1
83.3	70.0	33	14.6	121	26.8	NH	08	08	25	0050	192	497	3.86	109	51.8	2	2	3
83.3	80.0	32	54.8	122	07.6	NH	08	08	24	1813	217	396	5.47	73	48.2	0	13	3
83.3	90.0	32	34.7	122	48.7	NH	08	08	24	1207	215	432	4.98	46	100.0	1	5	3
83.3	100.0	32	14.7	123	29.5	NH	08	08	24	0546	205	429	4.78	89	100.0	26	91	3
83.3	110.0	31	54.6	124	10.1	NH	08	08	23	2312	211	453	4.66	18	100.0	202	76	3
86.7	33.0	33	53.4	118	29.3	NH	08	08	21	0833	33	107	3.10	19	100.0	6	552	0
86.7	35.0	33	49.5	118	37.7	NH	08	08	21	1150	203	429	4.72	19	100.0	7	21	2
86.7	40.0	33	39.4	118	58.6	NH	08	08	21	1642	212	413	5.12	34	100.0	13	5	0
86.7	45.0	33	29.5	119	19.0	NH	08	08	21	2101	205	440	4.66	43	100.0	13	1	1
86.7	50.0	33	19.3	119	39.8	NH	08	08	22	0041	44	123	3.59	186	100.0	12	10	1
86.7	55.0	33	09.4	120	00.5	NH	08	08	22	0511	210	446	4.71	49	100.0	3	1	1
86.7	60.0	32	59.9	120	23.1	NH	08	08	22	0901	208	449	4.64	36	100.0	2	1	3
86.7	70.0	32	39.8	121	01.3	NH	08	08	22	1625	214	421	5.09	28	100.0	8	0	4
86.7	80.0	32	19.6	121	43.0	NH	08	08	22	2234	213	466	4.56	52	100.0	5	4	2
86.7	90.0	31	59.6	122	23.4	NH	08	08	23	0509	205	456	4.49	44	100.0	14	18	5
86.7	100.0	31	39.3	123	03.9	NH	08	08	23	1037	212	474	4.46	63	100.0	15	21	20
86.7	110.0	31	19.7	123	44.2	NH	08	08	23	1635	217	406	5.34	25	100.0	238	38	3
90.0	27.7	33	29.5	117	45.1	NH	08	08	20	1443	23	79	2.93	76	100.0	110	80	0
90.0	28.0	33	28.8	117	46.0	NH	08	08	20	1332	198	436	4.55	37	100.0	39	103	2
90.0	30.0	33	25.1	117	54.3	NH	08	08	20	1801	218	426	5.12	42	100.0	13	7	1
90.0	35.0	33	15.2	118	14.9	NH	08	08	20	2210	216	411	5.25	58	100.0	11	62	2
90.0	37.0	33	11.3	118	23.2	NH	08	08	21	0143	210	442	4.74	41	100.0	8	2	1

Table 11. (cont.)

CalCOFI Cruise 0808 (cont.)

Line	Station	Latitude (N) deg.	min.	Longitude (W) deg.	min.	Ship Code	Tow Date yr	mo.	day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
90.0	45.0	32	54.9	118	56.4	NH	08	08	20	0426	215	455	4.71	51	100.0	18	1	0
90.0	53.0	32	39.1	119	29.1	NH	08	08	19	2226	213	452	4.70	49	100.0	4	1	0
90.0	60.0	32	25.0	119	57.9	NH	08	08	19	1707	196	461	4.25	30	100.0	6	0	1
90.0	70.0	32	04.9	120	40.9	NH	08	08	19	0906	219	430	5.10	40	100.0	3	1	0
90.0	80.0	31	44.9	121	19.3	NH	08	08	19	0310	212	433	4.89	51	100.0	1	2	0
90.0	90.0	31	25.0	121	59.5	NH	08	08	18	2032	211	423	4.98	118	100.0	13	5	2
90.0	100.0	31	05.3	122	40.0	NH	08	08	18	1413	213	425	5.01	33	100.0	49	32	5
90.0	110.0	30	45.2	123	19.9	NH	08	08	18	0734	206	458	4.49	9	100.0	34	74	0
90.0	120.0	30	25.1	123	59.9	NH	08	08	18	0049	211	451	4.68	47	100.0	3	61	5
91.7	26.4	33	14.3	117	27.9	NH	08	08	14	1710	16	41	3.79	49	100.0	8	340	0
93.3	26.7	32	57.4	117	17.8	NH	08	08	14	1305	210	429	4.90	14	100.0	9	10	1
93.3	28.0	32	54.8	117	23.7	NH	08	08	14	2150	211	430	4.91	28	100.0	14	31	1
93.3	30.0	32	50.9	117	31.8	NH	08	08	15	0102	216	433	4.99	58	100.0	40	2	1
93.3	35.0	32	40.8	117	51.8	NH	08	08	15	0526	213	415	5.13	58	100.0	14	4	0
93.3	40.0	32	31.7	118	11.9	NH	08	08	15	0850	214	425	5.02	21	100.0	6	0	0
93.3	45.0	32	21.0	118	33.0	NH	08	08	15	1504	221	419	5.27	26	100.0	3	8	0
93.3	50.0	32	11.0	118	53.1	NH	08	08	15	1923	215	445	4.82	70	54.8	1	0	2
93.3	55.0	32	00.9	119	13.9	NH	08	08	15	2323	219	470	4.66	66	51.6	1	7	1
93.3	60.0	31	50.8	119	33.9	NH	08	08	16	0335	215	472	4.56	55	53.8	3	6	0
93.3	70.0	31	30.4	120	15.3	NH	08	08	16	0849	215	448	4.79	56	100.0	0	0	3
93.3	80.0	31	11.0	120	54.8	NH	08	08	16	1637	211	441	4.78	57	100.0	27	44	1
93.3	90.0	30	50.9	121	35.3	NH	08	08	16	2323	212	460	4.61	44	100.0	35	104	6
93.3	100.0	30	30.8	122	15.4	NH	08	08	17	0540	214	460	4.64	22	100.0	184	53	5
93.3	110.0	30	10.9	122	55.4	NH	08	08	17	1159	213	441	4.83	18	100.0	151	132	3
93.3	120.0	29	50.9	123	34.9	NH	08	08	17	1815	215	416	5.16	31	100.0	152	37	0
93.4	26.4	32	57.2	117	17.0	NH	08	08	14	1450	16	41	3.91	25	100.0	15	39	0

Table 11. (cont.)

CalCOFI Cruise 0810

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
76.7	49.0	35	05.3	120	46.6	NH	08	10	29	0524	45	100	4.49	160	100.0	3	67	1
76.7	51.0	35	01.3	120	55.3	NH	08	10	29	0254	215	413	5.20	68	100.0	6	0	0
76.7	55.0	34	53.3	121	11.9	NH	08	10	28	2305	205	414	4.95	63	100.0	6	0	0
76.7	60.0	34	43.3	121	32.9	NH	08	10	28	1849	206	419	4.92	72	100.0	6	0	3
76.7	70.0	34	23.3	122	14.8	NH	08	10	28	1222	202	419	4.81	33	100.0	0	0	0
76.7	80.0	34	03.4	122	56.6	NH	08	10	28	0548	204	431	4.72	56	100.0	8	0	0
76.7	90.0	33	43.3	123	38.0	NH	08	10	27	2339	210	431	4.88	46	100.0	3	2	2
76.7	100.0	33	23.1	124	19.2	NH	08	10	27	1743	217	406	5.34	34	100.0	7	4	3
80.0	50.5	34	27.7	120	29.1	NH	08	10	29	1122	12	56	2.22	107	100.0	1	128	0
80.0	51.0	34	27.0	120	31.3	NH	08	10	26	0039	66	169	3.91	53	100.0	2	122	0
80.0	55.0	34	19.0	120	48.2	NH	08	10	26	0422	200	453	4.41	57	46.1	1	1	0
80.0	60.0	34	09.1	121	09.1	NH	08	10	26	0815	208	421	4.94	83	51.4	0	0	0
80.0	70.0	33	49.0	121	50.5	NH	08	10	26	1638	210	460	4.55	61	50.0	0	0	0
80.0	80.0	33	29.0	122	32.0	NH	08	10	26	2253	212	434	4.88	124	53.7	0	0	0
80.0	90.0	33	09.1	123	13.4	NH	08	10	27	0456	213	456	4.68	40	100.0	6	0	0
80.0	100.0	32	49.0	123	54.5	NH	08	10	27	1128	211	428	4.93	23	100.0	12	20	1
81.7	43.5	34	24.3	119	47.7	NH	08	10	25	1652	14	49	2.80	21	100.0	0	3	0
81.8	46.9	34	16.6	120	01.2	NH	08	10	25	2019	211	415	5.07	58	100.0	70	12	0
83.3	39.4	34	15.5	119	19.5	NH	08	10	25	1337	13	47	2.77	64	100.0	0	22	0
83.3	40.6	34	13.5	119	24.7	NH	08	10	25	1230	19	63	2.96	16	100.0	0	152	0
83.3	42.0	34	11.2	119	30.4	NH	08	10	25	0947	75	170	4.39	29	100.0	5	4	0
83.3	51.0	33	52.7	120	08.2	NH	08	10	25	0359	88	175	5.04	29	100.0	1	0	0
83.3	55.0	33	44.7	120	24.5	NH	08	10	25	0020	217	434	4.99	58	100.0	4	0	0
83.3	60.0	33	34.5	120	46.1	NH	08	10	24	1928	206	435	4.73	55	100.0	2	0	1
83.3	70.0	33	14.7	121	26.5	NH	08	10	24	1250	208	430	4.83	40	100.0	2	0	0
83.3	80.0	32	54.7	122	07.7	NH	08	10	24	0625	201	437	4.59	27	100.0	7	0	1
83.3	90.0	32	34.7	122	48.7	NH	08	10	24	0033	216	431	5.00	37	100.0	4	0	1
83.3	100.0	32	14.6	123	29.5	NH	08	10	23	1818	216	419	5.15	53	100.0	4	4	0
83.3	110.0	31	54.7	124	10.2	NH	08	10	23	1156	211	481	4.39	29	100.0	11	5	1

Table 11. (cont.)

CalCOFI Cruise 0810 (cont.)

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
86.7	33.0	33	53.4	118	29.4	NH	08	10	20	2105	34	113	2.98	35	100.0	4	113	1
86.7	35.0	33	49.4	118	37.6	NH	08	10	21	0002	218	442	4.93	57	100.0	3	0	0
86.7	40.0	33	39.4	118	58.6	NH	08	10	21	0453	215	432	4.97	58	100.0	10	4	1
86.7	45.0	33	29.5	119	18.3	NH	08	10	21	0828	217	420	5.16	43	100.0	4	0	1
86.7	50.0	33	19.5	119	39.7	NH	08	10	21	1346	52	136	3.81	133	100.0	3	14	0
86.7	55.0	33	09.3	120	00.3	NH	08	10	21	1810	210	460	4.57	111	52.9	2	0	1
86.7	60.0	32	59.3	120	20.9	NH	08	10	21	2243	216	457	4.72	98	48.8	1	0	0
86.7	70.0	32	39.4	121	01.9	NH	08	10	22	0521	206	442	4.66	61	48.1	1	2	0
86.7	80.0	32	19.3	121	42.9	NH	08	10	22	1139	216	448	4.81	56	100.0	0	1	0
86.7	90.0	31	59.3	122	23.5	NH	08	10	22	1739	211	444	4.76	36	100.0	3	0	1
86.7	100.0	31	39.4	123	04.1	NH	08	10	22	2339	210	447	4.69	29	100.0	7	7	1
86.7	110.0	31	19.5	123	44.4	NH	08	10	23	0538	207	447	4.63	36	100.0	3	3	0
86.8	32.5	33	53.2	118	26.7	NH	08	10	20	1928	13	49	2.61	41	100.0	2	108	0
88.5	30.1	33	40.4	118	05.0	NH	08	10	20	1540	14	44	3.23	45	100.0	1	18	0
90.0	27.7	33	29.7	117	44.9	NH	08	10	20	1255	13	44	3.06	23	100.0	0	4	0
90.0	28.0	33	29.1	117	46.1	NH	08	10	20	1205	39	108	3.62	19	100.0	1	0	0
90.0	30.0	33	25.1	117	54.3	NH	08	10	20	0832	215	406	5.29	15	100.0	2	0	1
90.0	35.0	33	15.1	118	15.1	NH	08	10	20	0515	211	419	5.03	38	100.0	6	99	1
90.0	37.0	33	11.1	118	23.4	NH	08	10	20	0208	212	438	4.83	41	100.0	4	0	0
90.0	45.0	32	55.2	118	56.1	NH	08	10	30	0153	214	403	5.30	64	100.0	2	0	0
90.0	53.0	32	39.0	119	29.0	NH	08	10	19	1632	209	431	4.83	44	100.0	0	0	0
90.0	60.0	32	25.1	119	57.6	NH	08	10	19	1103	217	415	5.23	29	100.0	3	2	3
90.0	70.0	32	05.1	120	38.3	NH	08	10	19	0448	206	434	4.74	44	100.0	15	2	3
90.0	80.0	31	45.1	121	18.9	NH	08	10	18	2223	203	430	4.71	93	100.0	4	0	4
90.0	90.0	31	25.0	121	59.4	NH	08	10	18	1547	216	410	5.27	54	100.0	3	2	2
90.0	100.0	31	05.0	122	40.1	NH	08	10	18	0813	212	461	4.59	13	100.0	7	1	0
90.0	110.0	30	45.2	123	19.9	NH	08	10	18	0143	212	446	4.75	25	100.0	19	2	0
90.0	120.0	30	25.0	123	59.8	NH	08	10	17	1905	215	423	5.07	40	100.0	29	0	0
93.3	26.7	32	57.3	117	17.7	NH	08	10	14	1220	146	297	4.93	34	100.0	0	0	0

Table 11. (cont.)

CalCOFI Cruise 0810 (cont.)

Line	Station	Latitude (N) deg.	Latitude (N) min.	Longitude (W) deg.	Longitude (W) min.	Ship Code	Tow Date yr	Tow Date mo.	Tow Date day	Time (PST)	Tow Depth (m)	Volume Water Strained	Standard Haul Factor	Plankton Volume	Percent Sorted	Total Fish Larvae	Total Fish Eggs	Total Para-Larval
93.3	28.0	32	54.7	117	23.7	NH	08	10	14	1645	208	396	5.26	35	100.0	5	0	1
93.3	30.0	32	51.5	117	31.1	NH	08	10	14	1952	214	440	4.85	52	100.0	7	0	0
93.3	35.0	32	40.8	117	52.4	NH	08	10	15	0001	207	464	4.45	30	100.0	11	0	1
93.3	40.0	32	30.8	118	13.0	NH	08	10	15	0404	198	455	4.35	15	100.0	6	1	1
93.3	45.0	32	21.0	118	33.3	NH	08	10	15	0808	216	341	6.32	15	100.0	2	1	0
93.3	50.0	32	10.9	118	53.5	NH	08	10	15	1248	205	465	4.41	39	100.0	8	0	2
93.3	55.0	32	00.7	119	13.9	NH	08	10	15	1729	214	451	4.74	49	100.0	2	1	1
93.3	60.0	31	50.8	119	34.3	NH	08	10	15	2145	205	462	4.44	54	100.0	10	2	1
93.3	70.0	31	30.8	120	14.8	NH	08	10	16	0354	205	456	4.49	55	100.0	21	6	0
93.3	80.0	31	11.0	120	55.2	NH	08	10	16	0913	213	443	4.81	34	100.0	4	2	2
93.3	90.0	30	50.8	121	35.3	NH	08	10	16	1706	203	484	4.18	39	100.0	8	3	0
93.3	100.0	30	30.7	122	15.5	NH	08	10	16	2328	211	435	4.85	23	100.0	50	3	1
93.3	110.0	30	10.9	122	55.3	NH	08	10	17	0513	201	490	4.09	29	100.0	35	0	1
93.3	120.0	29	51.2	123	35.1	NH	08	10	17	1149	210	463	4.54	15	100.0	7	0	0
93.4	26.4	32	57.0	117	16.3	NH	08	10	14	1343	22	80	2.72	63	100.0	2	2	0

Table 12. Pooled occurrences of paralarval cephalopods taken north of line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008.

Rank	Taxon	Occurrences
1	*Abraliopsis felis*	33
2	*Gonatus* spp.	30
3	*Chiroteuthis calyx*	9
3	*Onychoteuthis borealijaponica*	9
5	Octopodidae	5
6	*Octopoteuthis deletron*	3
7	*Galiteuthis pacifica*	2
8	*Japetella diaphana*	1
8	*Galiteuthis phyllura*	1
8	*Galiteuthis* spp.	1
8	Cranchiinae	1
8	*Gonatus pyros*	1
8	*Gonatopsis borealis*	1
8	Gonatidae	1
8	Pyroteuthidae	1
	Total	99

Table 13. Pooled counts of paralarval cephalopods taken north of line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008. Counts are adjusted for percent of sample sorted and standard haul factor (see text).

Rank	Taxon	Count
1	*Abraliopsis felis*	790
2	*Gonatus* spp.	342
3	*Onychoteuthis borealijaponica*	73
4	*Chiroteuthis calyx*	65
5	Octopodidae	52
6	*Galiteuthis pacifica*	22
7	*Octopoteuthis deletron*	20
8	*Galiteuthis* spp.	11
8	*Gonatopsis borealis*	11
10	Gonatidae	10
10	Pyroteuthidae	10
12	Cranchiinae	9
13	*Japetella diaphana*	5
13	*Galiteuthis phyllura*	5
13	*Gonatus pyros*	5
	Total	1430

Table 14. Pooled occurrences of paralarval cephalopods taken south of and including line 60.0 in Bongo tows on CalCOFI and CCES cruises in 2008.

Rank	Taxon	Occurrences
1	*Abraliopsis felis*	64
2	Octopodidae	32
3	*Gonatus* spp.	26
4	*Doryteuthis opalescens*	18
5	*Onychoteuthis borealijaponica*	9
5	*Leachia pacifica*	9
7	*Octopoteuthis deletron*	8
8	*Chiroteuthis calyx*	6
9	Teuthida	5
9	*Pyroteuthis addolux*	5
9	Pyroteuthidae	5
9	*Gonatopsis borealis*	5
13	*Galiteuthis* spp.	2
14	*Gonatus onyx*	1
14	Ommastrephidae	1
14	*Octopoteuthis* spp.	1
14	*Pterygioteuthis giardi*	1
14	*Pterygioteuthis gemmata*	1
14	*Galiteuthis phyllura*	1
14	*Japetella diaphana*	1
	Total	201

Table 15. Pooled counts of paralarval cephalopods taken south of and including line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008. Counts are adjusted for percent of sample sorted and standard haul factor (see text).

Rank	Taxon	Count
1	*Abraliopsis felis*	829
2	Octopodidae	278
3	*Doryteuthis opalescens*	208
4	*Gonatus* spp.	175
5	Pyroteuthidae	54
6	*Onychoteuthis borealijaponica*	49
6	*Octopoteuthis deletron*	49
8	*Leachia pacifica*	47
9	*Chiroteuthis calyx*	42
10	*Pyroteuthis addolux*	38
11	Teuthida	31
12	*Gonatopsis borealis*	22
13	*Galiteuthis* spp.	15
14	*Gonatus onyx*	9
14	Ommastrephidae	9
16	*Octopoteuthis* spp.	6
17	*Pterygioteuthis giardi*	5
17	*Pterygioteuthis gemmata*	5
17	*Japetella diaphana*	5
20	*Galiteuthis phyllura*	4
	Total	1880

Table 16. Pooled occurrences of fish larvae taken north of line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008.

Rank	Taxon	Occurrences
1	*Stenobrachius leucopsarus*	102
2	*Tarletonbeania crenularis*	66
3	*Sebastes* spp.	64
4	*Protomyctophum crockeri*	44
5	*Lipolagus ochotensis*	28
6	*Nannobrachium* spp.	22
7	*Lyopsetta exilis*	16
8	*Glyptocephalus zachirus*	14
8	*Liparis fucensis*	14
10	*Protomyctophum thompsoni*	13
10	*Bathylagus pacificus*	13
10	*Chauliodus macouni*	13
13	*Parophrys vetulus*	11
14	*Nannobrachium regale*	10
15	*Nannobrachium ritteri*	9
16	*Engraulis mordax*	8
17	*Icichthys lockingtoni*	7
17	*Merluccius productus*	7
19	*Diaphus* spp.	6
19	*Artedius harringtoni*	6
19	*Sebastolobus* spp.	6
22	*Isopsetta isolepis*	5
23	*Anoplopoma fimbria*	4
23	*Melamphaes parvus*	4
23	*Microstomus pacificus*	4
23	*Icosteus aenigmaticus*	4
27	*Tactostoma macropus*	3
27	*Cryptacanthodes aleutensis*	3
27	*Hemilepidotus spinosus*	3
27	Stichaeidae	3
31	*Scorpaenichthys marmoratus*	2
31	*Nansenia candida*	2
31	*Citharichthys sordidus*	2
31	*Lestidiops ringens*	2
31	Myctophidae	2
31	*Protomyctophum* spp.	2
31	*Hexagrammos decagrammus*	2
31	*Trachipterus altivelis*	2
31	*Artedius fenestralis*	2
31	*Ophiodon elongatus*	2
31	*Artedius* spp.	2
31	*Sebastes aurora*	2
43	*Pleuronichthys decurrens*	1
43	*Pseudobathylagus milleri*	1
43	*Sebastes paucispinis*	1
43	*Leuroglossus schmidti*	1
43	*Argyropelecus sladeni*	1

Table16. (cont.)

Rank	Taxon	Occurrences
43	Disintegrated fish larvae	1
43	*Liparis mucosus*	1
43	*Ceratoscopelus townsendi*	1
43	*Coryphaenoides acrolepis*	1
43	*Pholis* spp.	1
43	*Melamphaes* spp.	1
43	*Theragra chalcogramma*	1
43	*Liparis pulchellus*	1
43	*Melamphaes lugubris*	1
43	*Microgadus proximus*	1
43	*Coryphaenoides leptolepis*	1
43	*Ruscarius meanyi*	1
43	*Radulinus asprellus*	1
43	Clupeiformes	1
	Total	555

Table 17. Pooled counts of fish larvae taken north of line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008. Counts are adjusted for percent of sample sorted and standard haul factor (see text).

Rank	Taxon	Count
1	*Stenobrachius leucopsarus*	13016
2	*Sebastes* spp.	2567
3	*Engraulis mordax*	1715
4	*Tarletonbeania crenularis*	1399
5	*Protomyctophum crockeri*	591
6	*Lipolagus ochotensis*	513
7	*Nannobrachium* spp.	302
8	*Lyopsetta exilis*	160
9	*Chauliodus macouni*	157
10	*Liparis fucensis*	149
11	*Glyptocephalus zachirus*	135
12	*Bathylagus pacificus*	134
13	*Protomyctophum thompsoni*	124
14	*Icichthys lockingtoni*	116
15	*Nannobrachium ritteri*	106
15	*Sebastolobus* spp.	106
17	*Tactostoma macropus*	103
18	*Microstomus pacificus*	76
19	*Nannobrachium regale*	74
20	*Icosteus aenigmaticus*	71
21	*Parophrys vetulus*	67
22	*Diaphus* spp.	64
23	*Merluccius productus*	59
24	*Anoplopoma fimbria*	49
25	*Melamphaes parvus*	44
26	*Artedius harringtoni*	39
27	*Hemilepidotus spinosus*	37
28	*Isopsetta isolepis*	33
29	*Artedius* spp.	28
30	Stichaeidae	23
30	Myctophidae	23
32	*Citharichthys sordidus*	22
33	*Cryptacanthodes aleutensis*	21
33	*Hexagrammos decagrammus*	21
35	*Lestidiops ringens*	19
35	*Sebastes aurora*	19
37	*Protomyctophum* spp.	18
38	*Scorpaenichthys marmoratus*	16
38	*Trachipterus altivelis*	16
40	*Nansenia candida*	13
41	*Pleuronichthys decurrens*	11
41	*Melamphaes lugubris*	11
41	*Coryphaenoides leptolepis*	11
41	*Argyropelecus sladeni*	11
45	*Ceratoscopelus townsendi*	10

Table 17. (cont.)

Rank	Taxon	Count
45	*Radulinus asprellus*	10
45	*Melamphaes* spp.	10
45	*Pseudobathylagus milleri*	10
45	*Sebastes paucispinis*	10
45	*Coryphaenoides acrolepis*	10
45	*Artedius fenestralis*	10
52	*Microgadus proximus*	8
53	Clupeiformes	7
53	*Ophiodon elongatus*	7
55	*Leuroglossus schmidti*	5
55	*Liparis mucosus*	5
55	*Ruscarius meanyi*	5
55	*Pholis* spp.	5
55	Disintegrated fish larvae	5
60	*Theragra chalcogramma*	4
60	*Liparis pulchellus*	4
	Total	22414

Table 18. Pooled occurrences of fish larvae taken south of and including line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008.

Rank	Taxon	Occurrences
1	*Stenobrachius leucopsarus*	108
1	*Protomyctophum crockeri*	108
3	*Sebastes* spp.	86
4	*Leuroglossus stilbius*	59
5	*Symbolophorus californiensis*	51
6	*Triphoturus mexicanus*	47
7	*Nannobrachium ritteri*	44
8	*Citharichthys stigmaeus*	43
9	*Diaphus* spp.	41
10	*Engraulis mordax*	35
11	*Cyclothone signata*	34
12	*Sardinops sagax*	32
13	*Bathylagoides wesethi*	29
13	*Tarletonbeania crenularis*	29
15	*Ceratoscopelus townsendi*	28
16	*Lipolagus ochotensis*	27
17	*Merluccius productus*	26
17	*Vinciguerria lucetia*	26
19	*Idiacanthus antrostomus*	23
20	*Nannobrachium* spp.	21
20	*Diogenichthys atlanticus*	21
22	*Lestidiops ringens*	19
23	*Chauliodus macouni*	18
24	*Sebastes jordani*	17
25	*Sebastes paucispinis*	15
25	*Danaphos oculatus*	15
27	Myctophidae	14
28	*Lyopsetta exilis*	13
29	*Microstoma* sp.	12
30	*Genyonemus lineatus*	11
30	*Melamphaes lugubris*	11
33	*Argyropelecus affinis*	8
33	*Chromis punctipinnis*	8
33	*Cyclothone* spp.	8
33	*Icichthys lockingtoni*	8
37	*Argyropelecus sladeni*	7
38	Disintegrated fish larvae	6
38	*Rhinogobiops nicholsii*	6
38	*Tactostoma macropus*	6
41	*Nansenia candida*	5
41	*Trachurus symmetricus*	5
41	*Scopelosaurus* spp.	5
41	*Scopelogadus mizolepis bispinosus*	5
41	*Notoscopelus resplendens*	5
41	*Citharichthys sordidus*	5
41	*Argyropelecus hemigymnus*	5

Table 18. (cont.)

Rank	Taxon	Occurrences
41	*Howella* spp.	5
41	*Hypsoblennius jenkinsi*	5
41	*Chiasmodon subniger*	5
51	*Parophrys vetulus*	4
51	*Argentina sialis*	4
51	*Oxyjulis californica*	4
51	*Melamphaes parvus*	4
51	*Paralichthys californicus*	4
56	*Pleuronichthys verticalis*	3
56	*Ichthyococcus irregularis*	3
56	*Melamphaes* spp.	3
56	*Arctozenus risso*	3
56	*Trachipterus altivelis*	3
56	Unidentified fish larvae	3
56	*Stomias atriventer*	3
56	*Sebastes aurora*	3
56	*Sebastes diploproa*	3
56	*Citharichthys* spp.	3
56	*Benthalbella dentata*	3
56	*Ruscarius creaseri*	3
56	*Lepidogobius lepidus*	3
56	*Paralabrax* spp.	3
70	*Bathophilus flemingi*	2
70	*Scopelarchus analis*	2
70	*Myctophum nitidulum*	2
70	*Nannobrachium regale*	2
70	*Lampanyctus steinbecki*	2
70	*Lampanyctus tenuiformis*	2
70	*Electrona risso*	2
70	*Xeneretmus latifrons*	2
70	*Pleuronichthys coenosus*	2
70	*Microstomus pacificus*	2
70	*Tetragonurus cuvieri*	2
70	*Sphyraena argentea*	2
70	*Typhlogobius californiensis*	2
70	*Neoclinus stephensae*	2
70	*Rathbunella* spp.	2
70	*Zaniolepis frenata*	2
70	*Argyropelecus* spp.	2
70	*Odontopyxis trispinosa*	2
70	*Artedius lateralis*	2
70	*Vinciguerria poweriae*	2
70	*Poromitra crassiceps*	2
70	*Sternoptyx* spp.	2
70	*Sebastolobus alascanus*	2
70	*Icelinus quadriseriatus*	2
70	*Leptocottus armatus*	2
95	*Aristostomias scintillans*	1

Table 18. (cont.)

Rank	Taxon	Occurrences
95	*Cyclothone acclinidens*	1
95	*Argyropelecus lychnus*	1
95	*Cololabis saira*	1
95	Sternoptychidae	1
95	*Valenciennellus tripunctulatus*	1
95	*Pseudobathylagus milleri*	1
95	Stomiidae	1
95	*Bathylagus pacificus*	1
95	*Gillichthys mirabilis*	1
95	*Brosmophycis marginata*	1
95	*Seriphus politus*	1
95	*Hermosilla azurea*	1
95	*Hypsypops rubicundus*	1
95	*Paraclinus integripinnis*	1
95	*Gibbonsia* spp.	1
95	*Liparis mucosus*	1
95	*Hypsoblennius gilberti*	1
95	*Agonopsis sterletus*	1
95	*Lythrypnus zebra*	1
95	Pleuronectiformes	1
95	*Citharichthys xanthostigma*	1
95	*Hippoglossina stomata*	1
95	*Pleuronichthys decurrens*	1
95	*Pleuronichthys ritteri*	1
95	*Neoclinus blanchardi*	1
95	*Ophidion scrippsae*	1
95	*Lestidiops* spp.	1
95	*Lampadena urophaos*	1
95	*Lampanyctus acanthurus*	1
95	*Nannobrachium bristori*	1
95	*Diogenichthys* spp.	1
95	*Hygophum reinhardtii*	1
95	*Brama japonica*	1
95	*Chilara taylori*	1
95	*Synodus lucioceps*	1
95	*Gigantactis* spp.	1
95	Melamphaidae	1
95	*Sebastolobus* spp.	1
95	*Oxylebius pictus*	1
95	*Ruscarius meanyi*	1
95	*Loweina rara*	1
	Total	1324

Table 19. Pooled counts of fish larvae taken south of and including line 60.0 in Bongo net tows on CalCOFI and CCES cruises in 2008. Counts are adjusted for percent of sample sorted and standard haul factor (see text).

Rank	Taxon	Count
1	*Sardinops sagax*	10580
2	*Stenobrachius leucopsarus*	5253
3	*Sebastes* spp.	3972
4	*Vinciguerria lucetia*	2037
5	*Leuroglossus stilbius*	1528
6	*Diaphus* spp.	1463
7	*Engraulis mordax*	1062
8	*Protomyctophum crockeri*	956
9	*Symbolophorus californiensis*	902
10	*Triphoturus mexicanus*	883
11	*Bathylagoides wesethi*	815
12	*Sebastes jordani*	695
13	*Nannobrachium ritteri*	608
14	*Ceratoscopelus townsendi*	600
15	*Idiacanthus antrostomus*	525
16	*Cyclothone signata*	424
17	*Citharichthys stigmaeus*	420
18	*Merluccius productus*	323
19	*Genyonemus lineatus*	304
20	*Tarletonbeania crenularis*	297
21	*Lipolagus ochotensis*	271
22	*Sebastes paucispinis*	246
23	*Paralichthys californicus*	174
24	*Lyopsetta exilis*	168
25	*Nannobrachium* spp.	161
27	*Lestidiops ringens*	130
28	*Diogenichthys atlanticus*	125
29	*Tactostoma macropus*	122
30	Myctophidae	116
31	*Chromis punctipinnis*	111
32	*Parophrys vetulus*	106
32	*Chauliodus macouni*	106
34	*Danaphos oculatus*	88
35	*Seriphus politus*	79
36	*Argentina sialis*	74
37	*Rhinogobiops nicholsii*	73
38	*Trachurus symmetricus*	72
38	*Paralabrax* spp.	72
40	*Melamphaes lugubris*	68
41	*Icichthys lockingtoni*	65
42	*Microstoma* sp.	64
43	*Argyropelecus affinis*	53
44	*Cyclothone* spp.	52
45	*Hypsoblennius jenkinsi*	51

Table 19. (cont.)

Rank	Taxon	Count
46	*Ruscarius creaseri*	48
46	*Argyropelecus sladeni*	48
48	*Notoscopelus resplendens*	44
48	*Nansenia candida*	44
50	*Argyropelecus hemigymnus*	41
51	*Xeneretmus latifrons*	38
52	Disintegrated fish larvae	34
52	*Scopelosaurus* spp.	34
54	*Scopelogadus mizolepis bispinosus*	30
55	*Stomias atriventer*	27
56	Unidentified fish larvae	26
57	*Citharichthys sordidus*	25
57	*Citharichthys* spp.	25
57	*Sebastes diploproa*	25
57	*Chiasmodon subniger*	25
61	*Oxyjulis californica*	24
61	*Howella* spp.	24
63	*Ophidion scrippsae*	23
64	*Arctozenus risso*	20
65	*Vinciguerria poweriae*	19
65	*Sebastes aurora*	19
67	*Liparis mucosus*	18
67	*Melamphaes parvus*	18
69	*Sphyraena argentea*	17
69	*Artedius lateralis*	17
71	*Benthalbella dentata*	16
72	*Ichthyococcus irregularis*	15
72	*Sternoptyx* spp.	15
72	*Argyropelecus* spp.	15
72	*Trachipterus altivelis*	15
72	*Typhlogobius californiensis*	15
72	*Leptocottus armatus*	15
72	*Melamphaes* spp.	15
72	*Neoclinus stephensae*	15
72	*Odontopyxis trispinosa*	15
81	*Tetragonurus cuvieri*	14
81	*Pleuronichthys coenosus*	14
81	*Zaniolepis frenata*	14
84	*Lepidogobius lepidus*	12
84	*Bathylagus pacificus*	12
84	*Icelinus quadriseriatus*	12
87	*Brosmophycis marginata*	11
87	*Pleuronichthys verticalis*	11
89	*Nannobrachium regale*	10
89	*Sebastolobus alascanus*	10
89	*Lampanyctus steinbecki*	10
89	*Myctophum nitidulum*	10
89	*Microstomus pacificus*	10

Table 19. (cont.)

Rank	Taxon	Count
89	*Poromitra crassiceps*	10
89	*Bathophilus flemingi*	10
89	*Scopelarchus analis*	10
97	*Rathbunella* spp.	9
97	*Citharichthys xanthostigma*	9
97	*Electrona risso*	9
97	*Lampanyctus tenuiformis*	9
101	*Hypsypops rubicundus*	6
102	*Pseudobathylagus milleri*	5
102	*Argyropelecus lychnus*	5
102	*Lampanyctus acanthurus*	5
102	Stomiidae	5
102	*Gigantactis* spp.	5
102	*Hippoglossina stomata*	5
102	*Valenciennellus tripunctulatus*	5
102	*Cyclothone acclinidens*	5
102	*Agonopsis sterletus*	5
102	*Chilara taylori*	5
102	Pleuronectiformes	5
102	*Pleuronichthys decurrens*	5
102	*Diogenichthys* spp.	5
102	*Lestidiops* spp.	5
102	*Brama japonica*	5
102	*Hermosilla azurea*	5
102	*Loweina rara*	5
102	*Nannobrachium bristori*	5
102	*Sebastolobus* spp.	5
102	*Aristostomias scintillans*	5
102	*Lampadena urophaos*	5
102	*Ruscarius meanyi*	5
102	*Synodus lucioceps*	5
102	*Lythrypnus zebra*	5
102	*Neoclinus blanchardi*	5
128	*Gibbonsia* spp.	4
128	*Cololabis saira*	4
128	*Paraclinus integripinnis*	4
128	Sternoptychidae	4
128	Melamphaidae	4
128	*Hygophum reinhardtii*	4
134	*Oxylebius pictus*	3
134	*Pleuronichthys ritteri*	3
134	*Gillichthys mirabilis*	3
137	*Hypsoblennius gilberti*	2
	Total	37540

Table 20. Number of paralarval cephalopods and fish larvae taken in Bongo net tows at stations occupied on CalCOFI and CCES cruises in 2008, listed by taxon, station, and month. Counts are adjusted for percent of sample sorted and standard haul factor (see text). Unoccupied stations are indicated by a dash.

Teuthida

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 55.0	4.8	-	-	-	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	4.5	-	-	-	-	0.0	-	0.0	-	-
93.3 28.0	10.8	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 45.0	4.8	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 50.0	5.0	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Doryteuthis opalescens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3 52.0	-	-	-	-	-	-	-	4.6	-	-	-	-
66.7 50.0	0.0	-	-	0.0	-	-	-	4.8	-	-	-	-
76.7 100.0	4.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0 51.0	0.0	-	-	36.4	-	-	-	0.0	-	0.0	-	-
83.3 42.0	0.0	-	-	8.4	-	-	-	0.0	-	0.0	-	-
83.3 51.0	0.0	-	-	0.0	-	-	-	8.1	-	0.0	-	-
85.4 35.8	7.8	-	-	-	-	-	-	-	-	-	-	-
86.7 35.0	0.0	-	-	11.0	-	-	-	0.0	-	0.0	-	-
86.7 40.0	10.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 45.0	0.0	-	-	0.0	-	-	-	4.7	-	0.0	-	-
86.7 50.0	0.0	-	-	0.0	-	-	-	3.6	-	0.0	-	-
88.5 30.1	3.1	-	-	-	-	-	-	-	-	0.0	-	-
90.0 35.0	27.9	-	0.0	-	-	-	-	10.5	-	0.0	-	-
90.0 37.0	0.0	-	45.1	-	-	-	-	4.7	-	0.0	-	-
93.3 26.7	0.0	-	0.0	-	-	-	-	4.9	-	0.0	-	-
93.3 30.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-

Abraliopsis felis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
18.6 33.2	-	-	-	0.0	-	-	10.7	-	-	-	-	-
23.0 30.3	-	-	-	0.0	-	-	10.6	-	-	-	-	-

Table 20. (cont.)

Abraliopsis felis . (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
26.0	34.8	-	-	-	0.0	-	-	24.1	-	-	-	-	-
29.4	57.0	-	-	-	0.0	-	-	5.4	-	-	-	-	-
32.6	60.5	-	-	-	16.6	-	-	5.3	-	-	-	-	-
32.8	39.5	-	-	-	0.0	-	-	5.1	-	-	-	-	-
34.3	51.7	-	-	-	0.0	-	-	5.8	-	-	-	-	-
34.3	71.6	-	-	-	0.0	-	-	23.8	-	-	-	-	-
36.0	43.0	-	-	-	22.2	-	-	4.8	-	-	-	-	-
36.0	62.9	-	-	-	0.0	-	-	44.5	-	-	-	-	-
37.6	54.2	-	-	-	0.0	-	-	5.7	-	-	-	-	-
37.7	34.2	-	-	-	0.0	-	-	5.0	-	-	-	-	-
38.9	67.9	-	-	-	9.3	-	-	187.8	-	-	-	-	-
39.3	45.5	-	-	-	0.0	-	-	60.3	-	-	-	-	-
41.4	74.6	-	-	-	0.0	-	-	151.1	-	-	-	-	-
43.1	66.0	-	-	-	10.6	-	-	0.0	-	-	-	-	-
43.5	83.8	-	-	-	11.2	-	-	0.0	-	-	-	-	-
44.7	57.3	-	-	-	0.0	-	-	9.9	-	-	-	-	-
45.1	75.2	-	-	-	41.3	-	-	-	-	-	-	-	-
46.4	48.6	-	-	-	0.0	-	-	6.1	-	-	-	-	-
46.8	66.6	-	-	-	9.6	-	-	0.0	-	-	-	-	-
47.0	85.8	-	-	-	5.0	-	-	-	-	-	-	-	-
48.5	58.0	-	-	-	0.0	-	-	5.1	-	-	-	-	-
48.6	77.2	-	-	-	11.1	-	-	-	-	-	-	-	-
50.2	87.2	-	-	-	4.5	-	-	-	-	-	-	-	-
51.9	59.9	-	-	-	30.5	-	-	0.0	-	-	-	-	-
53.6	88.6	-	-	-	15.6	-	-	-	-	-	-	-	-
56.7	70.0	-	-	-	0.0	-	-	-	10.9	-	-	-	-
56.7	80.0	-	-	-	10.0	-	-	-	0.0	-	-	-	-
56.7	90.0	-	-	-	8.2	-	-	-	0.0	-	-	-	-
60.0	90.0	-	-	-	0.0	-	-	-	10.0	-	-	-	-
63.3	60.0	-	-	-	-	-	-	-	10.6	-	-	-	-
63.3	70.0	-	-	-	-	-	-	-	11.0	-	-	-	-
63.3	90.0	-	-	-	4.5	-	-	-	0.0	-	-	-	-
66.7	70.0	-	-	-	5.4	-	-	-	0.0	-	-	-	-

Table 20. (cont.)

Abraliopsis felis (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
73.3 60.0	-	-	-	0.0	-	-	-	11.4	-	-	-	-
76.7 70.0	0.0	-	-	0.0	-	-	-	8.6	-	0.0	-	-
76.7 80.0	0.0	-	-	5.4	-	-	-	19.1	-	0.0	-	-
76.7 90.0	0.0	-	-	0.0	-	-	-	29.9	-	9.8	-	-
76.7 100.0	0.0	-	-	0.0	-	-	-	0.0	-	10.7	-	-
80.0 70.0	0.0	-	-	-	-	-	-	9.3	-	0.0	-	-
80.0 90.0	0.0	-	-	-	-	-	-	20.4	-	0.0	-	-
83.3 60.0	0.0	-	-	-	-	-	-	4.7	-	0.0	-	-
83.3 70.0	0.0	-	-	0.0	-	-	-	22.4	-	0.0	-	-
83.3 80.0	0.0	-	-	0.0	-	-	-	34.0	-	4.6	-	-
83.3 90.0	0.0	-	-	0.0	-	-	-	14.9	-	5.0	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	14.3	-	0.0	-	-
83.3 110.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-
86.7 55.0	-	-	-	0.0	-	-	-	4.7	-	0.0	-	-
86.7 60.0	0.0	-	-	0.0	-	-	-	4.6	-	0.0	-	-
86.7 70.0	0.0	-	-	0.0	-	-	-	20.4	-	0.0	-	-
86.7 80.0	0.0	-	-	0.0	-	-	-	9.1	-	0.0	-	-
86.7 90.0	10.6	-	-	0.0	-	-	-	13.5	-	4.8	-	-
86.7 100.0	5.1	-	-	0.0	-	-	-	80.3	-	0.0	-	-
86.7 110.0	4.9	-	-	9.8	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	21.2	-	-	-	-	4.3	-	5.2	-	-
90.0 70.0	0.0	-	9.9	-	-	-	-	0.0	-	0.0	-	-
90.0 80.0	0.0	-	0.0	-	-	-	-	0.0	-	14.1	-	-
90.0 90.0	4.2	-	21.5	-	-	-	-	5.0	-	10.5	-	-
90.0 100.0	0.0	-	22.5	-	-	-	-	25.1	-	0.0	-	-
90.0 110.0	0.0	-	19.3	-	-	-	-	0.0	-	0.0	-	-
90.0 120.0	0.0	-	58.0	-	-	-	-	9.4	-	0.0	-	-
93.3 35.0	0.0	-	0.0	-	-	-	-	0.0	-	4.5	-	-
93.3 45.0	0.0	-	9.7	-	-	-	-	0.0	-	0.0	-	-
93.3 50.0	0.0	-	21.3	-	-	-	-	8.8	-	8.8	-	-
93.3 55.0	0.0	-	9.0	-	-	-	-	9.0	-	4.7	-	-
93.3 60.0	5.0	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 70.0	9.3	-	-	-	-	-	-	9.6	-	0.0	-	-

Table 20. (cont.)

Abraliopsis felis (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 80.0	0.0	-	-	-	-	-	-	4.8	-	4.8	-	-
93.3 90.0	0.0	-	0.0	-	-	-	-	23.1	-	0.0	-	-
93.3 100.0	14.7	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3 110.0	9.3	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3 120.0	0.0	-	4.4	-	-	-	-	0.0	-	0.0	-	-

Pyroteuthidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
17.0 21.5	-	-	-	0.0	-	-	10.0	-	-	-	-	-
60.0 70.0	-	-	-	0.0	-	-	-	11.0	-	-	-	-
83.3 90.0	0.0	-	-	5.1	-	-	-	0.0	-	0.0	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-
93.3 100.0	0.0	-	-	-	-	-	-	18.6	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	14.5	-	0.0	-	-

Pterygioteuthis gemmata

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

Pterygioteuthis giardi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 100.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-

Pyroteuthis addolux

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.4	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	16.0	-	0.0	-	-
90.0 120.0	0.0	-	0.0	-	-	-	-	9.4	-	0.0	-	-
93.3 40.0	0.0	-	0.0	-	-	-	-	0.0	-	4.4	-	-
93.3 100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-

***Octopoteuthis* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 40.0	0.0	-	5.7	-	-	-	-	0.0	-	0.0	-	-

Octopoteuthis deletron

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
17.0 21.5	-	-	-	0.0	-	-	10.0	-	-	-	-	-
47.0 85.8	-	-	-	5.0	-	-	-	-	-	-	-	-

Table 20. (cont.)

Octopoteuthis deletron . (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
53.6 88.6	-	-	-	5.2	-	-	-	-	-	-	-	-
60.0 70.0	-	-	-	0.0	-	-	-	11.0	-	-	-	-
73.3 90.0	-	-	-	0.0	-	-	-	11.0	-	-	-	-
76.7 49.0	-	-	-	0.0	-	-	-	0.0	-	4.5	-	-
86.7 45.0	0.0	-	-	0.0	-	-	-	0.0	-	5.2	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
90.0 60.0	0.0	-	0.0	-	-	-	-	0.0	-	5.2	-	-
90.0 80.0	0.0	-	0.0	-	-	-	-	0.0	-	4.7	-	-

Onychoteuthis borealijaponica

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
27.7 25.9	-	-	-	0.0	-	-	5.4	-	-	-	-	-
32.6 60.5	-	-	-	0.0	-	-	5.3	-	-	-	-	-
34.3 51.7	-	-	-	0.0	-	-	5.8	-	-	-	-	-
36.0 43.0	-	-	-	0.0	-	-	14.5	-	-	-	-	-
37.6 54.2	-	-	-	0.0	-	-	5.7	-	-	-	-	-
48.5 58.0	-	-	-	0.0	-	-	5.1	-	-	-	-	-
53.5 88.7	-	-	-	-	-	-	-	10.5	-	-	-	-
53.6 88.6	-	-	-	10.4	-	-	-	-	-	-	-	-
56.7 90.0	-	-	-	0.0	-	-	-	11.2	-	-	-	-
63.3 80.0	-	-	-	0.0	-	-	-	6.0	-	-	-	-
63.3 90.0	-	-	-	9.0	-	-	-	0.0	-	-	-	-
80.0 51.0	0.0	-	-	0.0	-	-	-	3.8	-	0.0	-	-
81.8 46.9	5.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 40.0	0.0	-	-	0.0	-	-	-	0.0	-	5.0	-	-
86.7 80.0	5.0	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 70.0	0.0	-	0.0	-	-	-	-	0.0	-	4.7	-	-
93.3 80.0	0.0	-	-	-	-	-	-	0.0	-	4.8	-	-
93.3 90.0	0.0	-	0.0	-	-	-	-	4.6	-	0.0	-	-

Gonatidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
41.4 74.6	-	-	-	9.7	-	-	0.0	-	-	-	-	-

Table 20. (cont.)

Gonatopsis borealis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
11.7	7.2	-	-	-	0.0	-	-	10.8	-	-	-	-	-
80.0	80.0	0.0	-	-	-	-	-	-	4.2	-	0.0	-	-
83.3	110.0	4.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	90.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
86.7	100.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
93.3	100.0	4.9	-	-	-	-	-	-	0.0	-	0.0	-	-

***Gonatus* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
4.8	22.9	-	-	-	0.0	-	-	18.8	-	-	-	-	-
8.3	25.1	-	-	-	19.2	-	-	10.7	-	-	-	-	-
13.9	17.9	-	-	-	10.5	-	-	0.0	-	-	-	-	-
15.3	30.3	-	-	-	9.6	-	-	-	-	-	-	-	-
15.3	30.4	-	-	-	-	-	-	5.2	-	-	-	-	-
15.6	8.9	-	-	-	0.0	-	-	5.7	-	-	-	-	-
21.3	39.1	-	-	-	10.4	-	-	10.6	-	-	-	-	-
22.0	15.5	-	-	-	4.5	-	-	0.0	-	-	-	-	-
24.7	21.4	-	-	-	9.6	-	-	0.0	-	-	-	-	-
32.6	60.5	-	-	-	0.0	-	-	5.3	-	-	-	-	-
32.8	39.5	-	-	-	8.4	-	-	0.0	-	-	-	-	-
34.3	71.6	-	-	-	19.5	-	-	11.9	-	-	-	-	-
36.0	43.0	-	-	-	22.2	-	-	9.6	-	-	-	-	-
36.0	62.9	-	-	-	10.0	-	-	33.4	-	-	-	-	-
37.2	76.6	-	-	-	10.2	-	-	0.0	-	-	-	-	-
38.9	67.9	-	-	-	0.0	-	-	11.7	-	-	-	-	-
39.3	45.5	-	-	-	0.0	-	-	4.0	-	-	-	-	-
43.1	66.0	-	-	-	10.6	-	-	0.0	-	-	-	-	-
43.5	83.8	-	-	-	11.2	-	-	0.0	-	-	-	-	-
50.2	87.2	-	-	-	4.5	-	-	-	-	-	-	-	-
50.3	68.6	-	-	-	11.0	-	-	0.0	-	-	-	-	-
51.9	59.9	-	-	-	0.0	-	-	5.0	-	-	-	-	-
56.7	55.0	-	-	-	19.3	-	-	-	0.0	-	-	-	-
56.7	70.0	-	-	-	10.3	-	-	-	0.0	-	-	-	-
56.7	90.0	-	-	-	8.2	-	-	-	0.0	-	-	-	-

Table 20. (cont.)

***Gonatus* spp.** (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
60.0 60.0	-	-	-	5.2	-	-	-	0.0	-	-	-	-
60.0 90.0	-	-	-	0.0	-	-	-	10.0	-	-	-	-
63.3 80.0	-	-	-	9.0	-	-	-	0.0	-	-	-	-
63.3 90.0	-	-	-	4.5	-	-	-	0.0	-	-	-	-
73.3 70.0	-	-	-	5.3	-	-	-	0.0	-	-	-	-
76.7 70.0	0.0	-	-	4.4	-	-	-	0.0	-	0.0	-	-
80.0 55.0	4.9	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0 80.0	4.8	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0 100.0	5.0	-	-	-	-	-	-	0.0	-	0.0	-	-
83.3 55.0	4.8	-	-	-	-	-	-	0.0	-	0.0	-	-
83.3 70.0	0.0	-	-	6.7	-	-	-	0.0	-	0.0	-	-
83.3 100.0	9.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 110.0	0.0	-	-	9.9	-	-	-	0.0	-	0.0	-	-
86.7 45.0	10.1	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 60.0	0.0	-	-	11.4	-	-	-	9.3	-	0.0	-	-
86.7 70.0	0.0	-	-	5.1	-	-	-	0.0	-	0.0	-	-
90.0 37.0	9.2	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 53.0	0.0	-	8.0	-	-	-	-	0.0	-	0.0	-	-
90.0 80.0	4.6	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 90.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
90.0 100.0	4.8	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 120.0	0.0	-	4.8	-	-	-	-	4.7	-	0.0	-	-
93.3 50.0	0.0	-	0.0	-	-	-	-	8.8	-	0.0	-	-
93.3 90.0	4.6	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Gonatus onyx

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 60.0	0.0	-	-	8.9	-	-	-	0.0	-	0.0	-	-

Gonatus pyros

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
27.7 25.9	-	-	-	0.0	-	-	5.4	-	-	-	-	-

Ommastrephidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	0.0	-	-	-	9.3	-	0.0	-	-

Table 20. (cont.)

Chiroteuthis calyx

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
18.7 12.6	-	-	-	0.0	-	-	11.1	-	-	-	-	-
29.4 57.0	-	-	-	0.0	-	-	5.4	-	-	-	-	-
32.6 60.5	-	-	-	8.3	-	-	0.0	-	-	-	-	-
36.0 43.0	-	-	-	0.0	-	-	4.8	-	-	-	-	-
39.3 45.5	-	-	-	0.0	-	-	4.0	-	-	-	-	-
47.0 85.8	-	-	-	5.0	-	-	-	-	-	-	-	-
50.2 87.2	-	-	-	13.5	-	-	-	-	-	-	-	-
51.9 59.9	-	-	-	0.0	-	-	5.0	-	-	-	-	-
56.7 90.0	-	-	-	8.2	-	-	-	0.0	-	-	-	-
63.3 80.0	-	-	-	9.0	-	-	-	0.0	-	-	-	-
66.7 55.0	8.6	-	-	0.0	-	-	-	0.0	-	-	-	-
66.7 70.0	-	-	-	5.4	-	-	-	0.0	-	-	-	-
76.7 55.0	9.4	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 60.0	0.0	-	-	-	-	-	-	0.0	-	4.7	-	-
90.0 100.0	0.0	-	4.5	-	-	-	-	0.0	-	0.0	-	-

Cranchiinae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
40.5 59.3	-	-	-	9.1	-	-	0.0	-	-	-	-	-

Leachia pacifica

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	0.0	-	-	0.0	-	-	-	0.0	-	5.3	-	-
80.0 100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	4.7	-	0.0	-	-
90.0 60.0	0.0	-	0.0	-	-	-	-	0.0	-	5.2	-	-
90.0 70.0	0.0	-	0.0	-	-	-	-	0.0	-	9.5	-	-
90.0 110.0	0.0	-	4.8	-	-	-	-	0.0	-	0.0	-	-
93.3 60.0	0.0	-	0.0	-	-	-	-	0.0	-	4.4	-	-
93.3 100.0	0.0	-	-	-	-	-	-	4.6	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	0.0	-	4.1	-	-

***Galiteuthis* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
45.1 75.3	-	-	-	-	-	-	11.0	-	-	-	-	-
90.0 110.0	0.0	-	4.8	-	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

***Galiteuthis* spp.** (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	45.0	0.0	-	9.7	-	-	-	-	0.0	-	0.0	-	-

Galiteuthis pacifica

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
6.5	14.0	-	-	-	0.0	-	-	10.8	-	-	-	-	-
18.6	33.2	-	-	-	0.0	-	-	10.7	-	-	-	-	-

Galiteuthis phyllura

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
12.2	26.7	-	-	-	-	-	-	5.3	-	-	-	-	-
63.3	90.0	-	-	-	4.5	-	-	-	0.0	-	-	-	-

Japetella diaphana

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
32.8	39.5	-	-	-	0.0	-	-	5.1	-	-	-	-	-
93.3	70.0	0.0	-	-	-	-	-	-	4.8	-	0.0	-	-

Octopodidae

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
8.2	5.0	-	-	-	0.0	-	-	10.3	-	-	-	-	-
15.6	8.9	-	-	-	0.0	-	-	17.0	-	-	-	-	-
30.4	31.8	-	-	-	0.0	-	-	9.7	-	-	-	-	-
39.3	36.1	-	-	-	4.4	-	-	0.0	-	-	-	-	-
40.5	59.3	-	-	-	0.0	-	-	10.8	-	-	-	-	-
60.0	70.0	-	-	-	5.2	-	-	-	0.0	-	-	-	-
73.3	60.0	-	-	-	0.0	-	-	-	11.4	-	-	-	-
76.7	49.0	-	-	-	8.2	-	-	-	0.0	-	0.0	-	-
76.7	55.0	0.0	-	-	0.0	-	-	-	13.5	-	0.0	-	-
76.7	60.0	0.0	-	-	8.9	-	-	-	0.0	-	14.8	-	-
76.7	70.0	10.0	-	-	0.0	-	-	-	8.6	-	0.0	-	-
80.0	51.0	0.0	-	-	0.0	-	-	-	7.5	-	0.0	-	-
80.0	55.0	4.9	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0	60.0	5.0	-	-	-	-	-	-	0.0	-	0.0	-	-
81.8	46.9	25.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	55.0	0.0	-	-	-	-	-	-	5.0	-	0.0	-	-

Table 20. (cont.)

Octopodidae (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 60.0	19.0	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7 33.0	0.0	-	-	0.0	-	-	-	0.0	-	3.0	-	-
86.7 35.0	0.0	-	-	0.0	-	-	-	9.4	-	0.0	-	-
86.7 50.0	0.0	-	-	10.7	-	-	-	0.0	-	0.0	-	-
86.7 55.0	-	-	-	0.0	-	-	-	0.0	-	8.6	-	-
86.7 80.0	5.0	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 28.0	0.0	-	0.0	-	-	-	-	9.1	-	0.0	-	-
90.0 30.0	0.0	-	0.0	-	-	-	-	5.1	-	5.3	-	-
90.0 35.0	0.0	-	0.0	-	-	-	-	0.0	-	5.0	-	-
90.0 37.0	18.4	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 45.0	4.7	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3 28.0	10.8	-	4.6	-	-	-	-	4.9	-	5.3	-	-
93.3 50.0	5.0	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 60.0	0.0	-	10.0	-	-	-	-	0.0	-	0.0	-	-
93.4 26.4	3.6	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Clupeiformes

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
41.0 36.7	-	-	-	-	-	-	6.9	-	-	-	-	-

Sardinops sagax

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 70.0	-	-	-	5.4	-	-	-	0.0	-	-	-	-
73.3 80.0	-	-	-	54.7	-	-	-	0.0	-	-	-	-
73.3 90.0	-	-	-	16.4	-	-	-	0.0	-	-	-	-
76.7 80.0	0.0	-	-	1290.6	-	-	-	0.0	-	0.0	-	-
83.3 80.0	0.0	-	-	10.3	-	-	-	0.0	-	0.0	-	-
83.3 90.0	0.0	-	-	897.8	-	-	-	0.0	-	0.0	-	-
83.3 100.0	0.0	-	-	780.0	-	-	-	0.0	-	0.0	-	-
83.3 110.0	0.0	-	-	14.9	-	-	-	0.0	-	0.0	-	-
86.7 45.0	0.0	-	-	0.0	-	-	-	4.7	-	0.0	-	-
86.7 70.0	0.0	-	-	195.3	-	-	-	0.0	-	0.0	-	-
86.7 80.0	0.0	-	-	14.9	-	-	-	0.0	-	0.0	-	-
86.7 90.0	0.0	-	-	145.3	-	-	-	0.0	-	0.0	-	-
86.7 100.0	0.0	-	-	844.6	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Sardinops sagax (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 110.0	0.0	-	-	29.3	-	-	-	0.0	-	0.0	-	-
90.0 27.7	0.0	-	-	-	-	-	-	14.7	-	0.0	-	-
90.0 28.0	0.0	-	0.0	-	-	-	-	4.6	-	0.0	-	-
90.0 35.0	0.0	-	0.0	-	-	-	-	5.3	-	0.0	-	-
90.0 37.0	0.0	-	0.0	-	-	-	-	9.5	-	0.0	-	-
90.0 53.0	0.0	-	39.8	-	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	408.1	-	-	-	-	0.0	-	0.0	-	-
90.0 70.0	0.0	-	242.1	-	-	-	-	0.0	-	0.0	-	-
90.0 80.0	0.0	-	433.4	-	-	-	-	0.0	-	0.0	-	-
90.0 90.0	0.0	-	984.5	-	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	1651.5	-	-	-	-	0.0	-	0.0	-	-
90.0 120.0	0.0	-	797.0	-	-	-	-	0.0	-	0.0	-	-
93.3 28.0	0.0	-	0.0	-	-	-	-	4.9	-	0.0	-	-
93.3 45.0	0.0	-	619.0	-	-	-	-	0.0	-	0.0	-	-
93.3 50.0	0.0	-	42.6	-	-	-	-	0.0	-	0.0	-	-
93.3 55.0	0.0	-	448.0	-	-	-	-	0.0	-	0.0	-	-
93.3 60.0	0.0	-	75.2	-	-	-	-	0.0	-	0.0	-	-
93.3 90.0	0.0	-	483.4	-	-	-	-	0.0	-	0.0	-	-
93.4 26.4	0.0	-	0.0	-	-	-	-	11.7	-	0.0	-	-

Engraulis mordax

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
18.6 33.2	-	-	-	0.0	-	-	149.7	-	-	-	-	-
20.3 24.3	-	-	-	0.0	-	-	90.0	-	-	-	-	-
21.3 39.1	-	-	-	0.0	-	-	606.2	-	-	-	-	-
23.0 30.3	-	-	-	0.0	-	-	339.1	-	-	-	-	-
24.3 43.5	-	-	-	0.0	-	-	56.0	-	-	-	-	-
26.0 34.8	-	-	-	0.0	-	-	96.4	-	-	-	-	-
27.1 48.7	-	-	-	0.0	-	-	336.0	-	-	-	-	-
32.6 60.5	-	-	-	0.0	-	-	42.1	-	-	-	-	-
76.7 51.0	-	-	-	0.0	-	-	-	0.0	-	10.4	-	-
76.7 55.0	0.0	-	-	0.0	-	-	-	0.0	-	5.0	-	-
76.7 60.0	0.0	-	-	0.0	-	-	-	0.0	-	4.9	-	-
76.7 80.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-

Table 20. (cont.)

Engraulis mordax (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
81.8 46.9	0.0	-	-	0.0	-	-	-	0.0	-	334.6	-	-
83.3 40.6	0.0	-	-	39.1	-	-	-	0.0	-	0.0	-	-
83.3 42.0	0.0	-	-	0.0	-	-	-	0.0	-	17.6	-	-
83.3 51.0	0.0	-	-	10.7	-	-	-	0.0	-	5.0	-	-
83.3 55.0	0.0	-	-	-	-	-	-	5.0	-	10.0	-	-
86.7 33.0	0.0	-	-	61.4	-	-	-	6.2	-	0.0	-	-
86.7 35.0	0.0	-	-	11.0	-	-	-	9.4	-	0.0	-	-
86.7 40.0	0.0	-	-	0.0	-	-	-	10.2	-	0.0	-	-
86.7 45.0	0.0	-	-	80.6	-	-	-	14.0	-	0.0	-	-
86.7 50.0	0.0	-	-	42.9	-	-	-	25.1	-	0.0	-	-
90.0 27.7	0.0	-	-	-	-	-	-	82.0	-	0.0	-	-
90.0 28.0	0.0	-	19.7	-	-	-	-	72.8	-	3.6	-	-
90.0 37.0	0.0	-	36.1	-	-	-	-	4.7	-	0.0	-	-
90.0 53.0	0.0	-	15.9	-	-	-	-	0.0	-	0.0	-	-
90.0 80.0	0.0	-	15.5	-	-	-	-	0.0	-	0.0	-	-
93.3 26.7	0.0	-	0.0	-	-	-	-	9.8	-	0.0	-	-
93.3 28.0	0.0	-	23.2	-	-	-	-	9.8	-	0.0	-	-
93.3 30.0	0.0	-	20.2	-	-	-	-	0.0	-	0.0	-	-
93.3 35.0	0.0	-	9.9	-	-	-	-	0.0	-	0.0	-	-
93.3 45.0	0.0	-	9.7	-	-	-	-	0.0	-	0.0	-	-
93.4 26.4	0.0	-	0.0	-	-	-	-	19.6	-	0.0	-	-

Argentina sialis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 80.0	0.0	-	-	5.2	-	-	-	0.0	-	0.0	-	-
83.3 100.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-
90.0 70.0	0.0	-	4.9	-	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	58.5	-	-	-	-	0.0	-	0.0	-	-

***Microstoma* sp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 80.0	0.0	-	-	0.0	-	-	-	0.0	-	4.6	-	-
90.0 60.0	0.0	-	0.0	-	-	-	-	4.3	-	0.0	-	-

Table 20. (cont.)

***Microstoma* sp.** (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 80.0	4.6	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
90.0 110.0	4.7	-	4.8	-	-	-	-	0.0	-	0.0	-	-
90.0 120.0	0.0	-	0.0	-	-	-	-	4.7	-	0.0	-	-
93.3 50.0	0.0	-	10.7	-	-	-	-	0.0	-	0.0	-	-
93.3 60.0	5.0	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 90.0	4.6	-	0.0	-	-	-	-	0.0	-	4.2	-	-
93.3 100.0	0.0	-	-	-	-	-	-	4.6	-	0.0	-	-

Nansenia candida

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
45.1 75.2	-	-	-	8.3	-	-	-	-	-	-	-	-
50.2 87.2	-	-	-	4.5	-	-	-	-	-	-	-	-
63.3 90.0	-	-	-	4.5	-	-	-	0.0	-	-	-	-
76.7 80.0	0.0	-	-	10.8	-	-	-	0.0	-	0.0	-	-
86.7 100.0	0.0	-	-	5.5	-	-	-	0.0	-	0.0	-	-
90.0 80.0	0.0	-	15.5	-	-	-	-	0.0	-	0.0	-	-
93.3 90.0	0.0	-	8.5	-	-	-	-	0.0	-	0.0	-	-

Bathylagoides wesethi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	14.3	-	0.0	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	46.6	-	4.4	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	9.0	-	0.0	-	-
86.7 100.0	0.0	-	-	5.5	-	-	-	4.5	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	21.4	-	0.0	-	-
90.0 70.0	0.0	-	0.0	-	-	-	-	0.0	-	9.5	-	-
90.0 90.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
90.0 100.0	0.0	-	63.0	-	-	-	-	10.0	-	9.2	-	-
90.0 110.0	0.0	-	0.0	-	-	-	-	22.5	-	14.3	-	-
90.0 120.0	0.0	-	48.3	-	-	-	-	4.7	-	5.1	-	-
93.3 60.0	0.0	-	0.0	-	-	-	-	8.5	-	4.4	-	-
93.3 70.0	0.0	-	-	-	-	-	-	0.0	-	18.0	-	-
93.3 80.0	0.0	-	-	-	-	-	-	19.1	-	0.0	-	-

Table 20. (cont.)

Bathylagoides wesethi (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	90.0	0.0	-	0.0	-	-	-	-	9.2	-	0.0	-	-
93.3	100.0	4.9	-	-	-	-	-	-	157.8	-	0.0	-	-
93.3	110.0	0.0	-	-	-	-	-	-	198.0	-	12.3	-	-
93.3	120.0	0.0	-	21.8	-	-	-	-	61.9	-	0.0	-	-

Bathylagus pacificus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
15.6	8.9	-	-	-	0.0	-	-	5.7	-	-	-	-	-
18.6	33.2	-	-	-	9.3	-	-	0.0	-	-	-	-	-
21.3	39.1	-	-	-	10.4	-	-	0.0	-	-	-	-	-
24.3	43.5	-	-	-	10.3	-	-	0.0	-	-	-	-	-
27.7	25.9	-	-	-	0.0	-	-	5.4	-	-	-	-	-
30.4	31.8	-	-	-	9.5	-	-	0.0	-	-	-	-	-
32.6	60.5	-	-	-	8.3	-	-	0.0	-	-	-	-	-
34.3	51.7	-	-	-	28.6	-	-	0.0	-	-	-	-	-
34.3	71.6	-	-	-	9.8	-	-	0.0	-	-	-	-	-
36.0	43.0	-	-	-	11.1	-	-	0.0	-	-	-	-	-
39.3	45.5	-	-	-	8.6	-	-	0.0	-	-	-	-	-
44.7	57.3	-	-	-	7.8	-	-	0.0	-	-	-	-	-
50.1	49.2	-	-	-	9.4	-	-	0.0	-	-	-	-	-
66.7	60.0	-	-	-	11.9	-	-	-	0.0	-	-	-	-

Leuroglossus schmidti

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
11.7	7.2	-	-	-	5.2	-	-	0.0	-	-	-	-	-

Leuroglossus stilbius

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3	90.0	-	-	-	4.5	-	-	-	0.0	-	-	-	-
66.7	55.0	8.6	-	-	0.0	-	-	-	0.0	-	-	-	-
73.3	70.0	-	-	-	5.3	-	-	-	0.0	-	-	-	-
76.7	51.0	-	-	-	5.2	-	-	-	0.0	-	0.0	-	-
76.7	55.0	18.8	-	-	5.4	-	-	-	0.0	-	0.0	-	-
76.7	60.0	13.1	-	-	8.9	-	-	-	0.0	-	0.0	-	-
76.7	70.0	10.0	-	-	4.4	-	-	-	0.0	-	0.0	-	-
76.7	80.0	0.0	-	-	5.4	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Leuroglossus stilbius (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 90.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-
80.0 51.0	8.4	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0 55.0	34.0	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0 60.0	10.1	-	-	-	-	-	-	0.0	-	0.0	-	-
81.8 46.9	51.5	-	-	136.9	-	-	-	0.0	-	0.0	-	-
83.3 42.0	0.0	-	-	8.4	-	-	-	0.0	-	0.0	-	-
83.3 51.0	4.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 55.0	24.1	-	-	-	-	-	-	0.0	-	0.0	-	-
83.3 70.0	14.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 80.0	4.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 100.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-
86.7 35.0	0.0	-	-	77.3	-	-	-	0.0	-	0.0	-	-
86.7 40.0	32.0	-	-	14.5	-	-	-	0.0	-	0.0	-	-
86.7 45.0	20.3	-	-	5.4	-	-	-	0.0	-	0.0	-	-
86.7 50.0	4.4	-	-	10.7	-	-	-	0.0	-	0.0	-	-
86.7 55.0	-	-	-	79.8	-	-	-	0.0	-	0.0	-	-
86.7 60.0	8.3	-	-	22.7	-	-	-	0.0	-	0.0	-	-
86.7 70.0	0.0	-	-	20.6	-	-	-	0.0	-	0.0	-	-
86.7 80.0	40.0	-	-	9.9	-	-	-	0.0	-	0.0	-	-
86.7 90.0	0.0	-	-	5.2	-	-	-	0.0	-	0.0	-	-
90.0 30.0	0.0	-	55.6	-	-	-	-	0.0	-	0.0	-	-
90.0 35.0	18.6	-	132.6	-	-	-	-	0.0	-	0.0	-	-
90.0 37.0	9.2	-	9.0	-	-	-	-	0.0	-	0.0	-	-
90.0 45.0	4.7	-	-	-	-	-	-	0.0	-	0.0	-	-
90.0 53.0	0.0	-	63.7	-	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	26.5	-	-	-	-	0.0	-	0.0	-	-
90.0 70.0	0.0	-	54.3	-	-	-	-	0.0	-	0.0	-	-
90.0 80.0	0.0	-	5.2	-	-	-	-	0.0	-	0.0	-	-
90.0 110.0	0.0	-	24.2	-	-	-	-	0.0	-	0.0	-	-
93.3 26.7	0.0	-	7.0	-	-	-	-	0.0	-	0.0	-	-
93.3 28.0	0.0	-	74.2	-	-	-	-	0.0	-	0.0	-	-
93.3 30.0	0.0	-	20.2	-	-	-	-	0.0	-	0.0	-	-
93.3 35.0	0.0	-	24.9	-	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Leuroglossus stilbius (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	40.0	0.0	-	11.4	-	-	-	-	0.0	-	0.0	-	-
93.3	45.0	4.8	-	106.4	-	-	-	-	0.0	-	0.0	-	-
93.3	50.0	0.0	-	74.6	-	-	-	-	0.0	-	0.0	-	-
93.3	55.0	0.0	-	26.9	-	-	-	-	0.0	-	0.0	-	-
93.3	60.0	0.0	-	25.1	-	-	-	-	0.0	-	0.0	-	-
93.3	90.0	0.0	-	4.2	-	-	-	-	0.0	-	0.0	-	-

Lipolagus ochotensis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
17.0	21.5	-	-	-	0.0	-	-	10.0	-	-	-	-	-
24.3	43.5	-	-	-	10.3	-	-	0.0	-	-	-	-	-
27.1	48.7	-	-	-	11.4	-	-	0.0	-	-	-	-	-
31.1	48.2	-	-	-	20.4	-	-	0.0	-	-	-	-	-
32.6	60.5	-	-	-	8.3	-	-	0.0	-	-	-	-	-
32.8	39.5	-	-	-	16.8	-	-	0.0	-	-	-	-	-
34.3	51.7	-	-	-	9.5	-	-	0.0	-	-	-	-	-
34.3	71.6	-	-	-	29.3	-	-	0.0	-	-	-	-	-
36.0	32.8	-	-	-	5.3	-	-	0.0	-	-	-	-	-
37.2	76.6	-	-	-	30.7	-	-	0.0	-	-	-	-	-
37.6	54.2	-	-	-	18.6	-	-	0.0	-	-	-	-	-
39.3	45.5	-	-	-	17.3	-	-	0.0	-	-	-	-	-
39.8	83.2	-	-	-	9.7	-	-	0.0	-	-	-	-	-
43.5	83.8	-	-	-	11.2	-	-	0.0	-	-	-	-	-
43.7	41.2	-	-	-	4.2	-	-	-	-	-	-	-	-
44.7	57.3	-	-	-	7.8	-	-	0.0	-	-	-	-	-
45.1	75.2	-	-	-	24.8	-	-	-	-	-	-	-	-
46.8	66.6	-	-	-	9.6	-	-	0.0	-	-	-	-	-
47.0	85.8	-	-	-	40.1	-	-	-	-	-	-	-	-
48.5	58.0	-	-	-	38.2	-	-	0.0	-	-	-	-	-
48.6	77.2	-	-	-	11.1	-	-	-	-	-	-	-	-
50.1	49.2	-	-	-	9.4	-	-	0.0	-	-	-	-	-
50.2	87.2	-	-	-	40.5	-	-	-	-	-	-	-	-
51.9	59.9	-	-	-	40.7	-	-	0.0	-	-	-	-	-
53.6	88.6	-	-	-	41.6	-	-	-	-	-	-	-	-

Table 20. (cont.)

Lipolagus ochotensis (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
56.7 60.0	-	-	-	7.6	-	-	-	0.0	-	-	-	-
56.7 80.0	-	-	-	20.0	-	-	-	0.0	-	-	-	-
56.7 90.0	-	-	-	8.2	-	-	-	0.0	-	-	-	-
60.0 70.0	-	-	-	5.2	-	-	-	0.0	-	-	-	-
60.0 80.0	-	-	-	9.6	-	-	-	0.0	-	-	-	-
63.3 80.0	-	-	-	9.0	-	-	-	0.0	-	-	-	-
66.7 90.0	-	-	-	-	-	-	-	5.0	-	-	-	-
70.0 55.0	-	-	-	5.4	-	-	-	-	-	-	-	-
76.7 51.0	-	-	-	10.4	-	-	-	0.0	-	0.0	-	-
76.7 55.0	0.0	-	-	16.2	-	-	-	0.0	-	0.0	-	-
80.0 55.0	4.9	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0 60.0	5.0	-	-	-	-	-	-	0.0	-	0.0	-	-
83.3 55.0	4.8	-	-	-	-	-	-	0.0	-	0.0	-	-
83.3 70.0	0.0	-	-	13.3	-	-	-	0.0	-	0.0	-	-
86.7 35.0	0.0	-	-	11.0	-	-	-	0.0	-	0.0	-	-
86.7 60.0	16.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 70.0	0.0	-	-	10.3	-	-	-	0.0	-	0.0	-	-
86.7 80.0	0.0	-	-	9.9	-	-	-	0.0	-	0.0	-	-
86.7 90.0	0.0	-	-	15.6	-	-	-	0.0	-	0.0	-	-
86.7 100.0	5.1	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 35.0	0.0	-	11.1	-	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	10.6	-	-	-	-	0.0	-	0.0	-	-
90.0 70.0	9.1	-	24.7	-	-	-	-	0.0	-	0.0	-	-
93.3 35.0	0.0	-	9.9	-	-	-	-	0.0	-	0.0	-	-
93.3 40.0	0.0	-	11.4	-	-	-	-	0.0	-	0.0	-	-
93.3 45.0	0.0	-	9.7	-	-	-	-	0.0	-	0.0	-	-
93.3 50.0	5.0	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 55.0	5.1	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 90.0	0.0	-	17.0	-	-	-	-	0.0	-	0.0	-	-

Pseudobathylagus milleri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
51.9 59.9	-	-	-	10.2	-	-	0.0	-	-	-	-	-
80.0 100.0	5.0	-	-	-	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

***Cyclothone* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	4.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	9.3	-	0.0	-	-
86.7 100.0	5.1	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
90.0 110.0	0.0	-	4.8	-	-	-	-	0.0	-	0.0	-	-
93.3 40.0	0.0	-	0.0	-	-	-	-	0.0	-	4.4	-	-
93.3 100.0	4.9	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	14.5	-	0.0	-	-

Cyclothone acclinidens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 90.0	5.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Cyclothone signata

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	0.0	-	-	0.0	-	-	-	0.0	-	10.7	-	-
80.0 100.0	0.0	-	-	-	-	-	-	9.0	-	4.9	-	-
83.3 100.0	14.8	-	-	5.0	-	-	-	0.0	-	0.0	-	-
83.3 110.0	0.0	-	-	24.9	-	-	-	18.6	-	0.0	-	-
86.7 70.0	0.0	-	-	0.0	-	-	-	10.2	-	0.0	-	-
86.7 100.0	0.0	-	-	5.5	-	-	-	0.0	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	26.7	-	0.0	-	-
90.0 80.0	0.0	-	5.2	-	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	0.0	-	-	-	-	15.0	-	4.6	-	-
90.0 110.0	0.0	-	29.0	-	-	-	-	9.0	-	4.8	-	-
90.0 120.0	4.9	-	9.7	-	-	-	-	0.0	-	0.0	-	-
93.3 40.0	0.0	-	0.0	-	-	-	-	0.0	-	8.7	-	-
93.3 45.0	0.0	-	0.0	-	-	-	-	0.0	-	6.3	-	-
93.3 60.0	0.0	-	0.0	-	-	-	-	0.0	-	4.4	-	-
93.3 70.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-
93.3 80.0	0.0	-	-	-	-	-	-	4.8	-	0.0	-	-
93.3 90.0	9.1	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 100.0	9.8	-	-	-	-	-	-	18.6	-	29.1	-	-
93.3 110.0	18.6	-	-	-	-	-	-	24.2	-	8.2	-	-
93.3 120.0	4.6	-	21.8	-	-	-	-	31.0	-	4.5	-	-

Table 20. (cont.)

Sternoptychidae

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

***Argyropelecus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 70.0	0.0	-	-	10.3	-	-	-	0.0	-	0.0	-	-
90.0 100.0	4.8	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Argyropelecus affinis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	0.0	-	-	-	4.7	-	0.0	-	-
86.7 70.0	0.0	-	-	5.1	-	-	-	0.0	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	5.3	-	0.0	-	-
90.0 90.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
90.0 120.0	19.4	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	4.8	-	0.0	-	-
93.3 120.0	0.0	-	4.4	-	-	-	-	5.2	-	0.0	-	-

Argyropelecus hemigymnus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 55.0	-	-	-	10.0	-	-	-	0.0	-	0.0	-	-
86.7 90.0	5.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	16.0	-	0.0	-	-
90.0 100.0	4.8	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 100.0	4.9	-	-	-	-	-	-	0.0	-	0.0	-	-

Argyropelecus lychnus

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

Argyropelecus sladeni

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
50.3 87.2	-	-	-	-	-	-	-	10.9	-	-	-	-
86.7 55.0	-	-	-	10.0	-	-	-	0.0	-	0.0	-	-
90.0 60.0	9.1	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 120.0	4.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 30.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
93.3 35.0	0.0	-	0.0	-	-	-	-	5.1	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-

Table 20. (cont.)

Argyropelecus sladeni (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 120.0	0.0	-	8.7	-	-	-	-	0.0	-	0.0	-	-

Danaphos oculatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	-	0.0	-	-	-	0.0	-	5.2	-	-
76.7 100.0	0.0	-	-	0.0	-	-	-	5.2	-	0.0	-	-
86.7 55.0	-	-	-	0.0	-	-	-	4.7	-	0.0	-	-
90.0 30.0	0.0	-	0.0	-	-	-	-	5.1	-	0.0	-	-
90.0 60.0	0.0	-	0.0	-	-	-	-	4.3	-	0.0	-	-
90.0 70.0	0.0	-	14.8	-	-	-	-	0.0	-	0.0	-	-
93.3 30.0	0.0	-	0.0	-	-	-	-	0.0	-	4.9	-	-
93.3 50.0	5.0	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 70.0	9.3	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3 80.0	4.6	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3 90.0	4.6	-	0.0	-	-	-	-	4.6	-	0.0	-	-
93.3 100.0	4.9	-	-	-	-	-	-	4.6	-	0.0	-	-
93.3 120.0	0.0	-	0.0	-	-	-	-	0.0	-	4.5	-	-

***Sternoptyx* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	0.0	-	-	-	4.7	-	0.0	-	-
90.0 110.0	0.0	-	9.7	-	-	-	-	0.0	-	0.0	-	-

Valenciennellus tripunctulatus

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

Ichthyococcus irregularis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 120.0	4.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	4.6	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	4.8	-	0.0	-	-

Vinciguerria lucetia

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 90.0	0.0	-	-	-	-	-	-	30.6	-	4.7	-	-
80.0 100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	191.1	-	0.0	-	-

Table 20. (cont.)

Vinciguerria lucetia (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 40.0	0.0	-	-	0.0	-	-	-	0.0	-	5.0	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	149.5	-	0.0	-	-
90.0 70.0	0.0	-	0.0	-	-	-	-	0.0	-	9.5	-	-
90.0 90.0	0.0	-	0.0	-	-	-	-	0.0	-	5.3	-	-
90.0 100.0	0.0	-	0.0	-	-	-	-	55.1	-	9.2	-	-
90.0 110.0	0.0	-	4.8	-	-	-	-	58.4	-	33.3	-	-
90.0 120.0	0.0	-	0.0	-	-	-	-	0.0	-	60.8	-	-
93.3 60.0	0.0	-	0.0	-	-	-	-	0.0	-	17.8	-	-
93.3 70.0	0.0	-	-	-	-	-	-	0.0	-	9.0	-	-
93.3 80.0	0.0	-	-	-	-	-	-	19.1	-	0.0	-	-
93.3 90.0	4.6	-	0.0	-	-	-	-	23.1	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	403.7	-	121.3	-	-
93.3 110.0	0.0	-	-	-	-	-	-	227.0	-	90.0	-	-
93.3 120.0	0.0	-	0.0	-	-	-	-	485.0	-	9.1	-	-

Vinciguerria poweriae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 100.0	0.0	-	-	-	-	-	-	9.0	-	0.0	-	-
93.3 100.0	9.8	-	-	-	-	-	-	0.0	-	0.0	-	-

Stomiidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 100.0	0.0	-	-	0.0	-	-	-	4.8	-	0.0	-	-

Chauliodus macouni

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
18.6 33.2	-	-	-	0.0	-	-	10.7	-	-	-	-	-
21.3 39.1	-	-	-	10.4	-	-	0.0	-	-	-	-	-
22.0 15.5	-	-	-	0.0	-	-	5.6	-	-	-	-	-
30.4 31.8	-	-	-	0.0	-	-	29.1	-	-	-	-	-
32.6 60.5	-	-	-	0.0	-	-	10.5	-	-	-	-	-
34.3 51.7	-	-	-	0.0	-	-	5.8	-	-	-	-	-
36.0 62.9	-	-	-	0.0	-	-	33.4	-	-	-	-	-
37.2 76.6	-	-	-	0.0	-	-	9.9	-	-	-	-	-
37.6 54.2	-	-	-	0.0	-	-	5.7	-	-	-	-	-

Table 20. (cont.)

Chauliodus macouni (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
38.9 67.9	-	-	-	0.0	-	-	11.7	-	-	-	-	-
41.4 74.6	-	-	-	9.7	-	-	0.0	-	-	-	-	-
45.1 75.2	-	-	-	8.3	-	-	-	-	-	-	-	-
51.9 59.9	-	-	-	0.0	-	-	5.0	-	-	-	-	-
63.3 90.0	-	-	-	9.0	-	-	-	0.0	-	-	-	-
80.0 70.0	4.7	-	-	-	-	-	-	9.3	-	0.0	-	-
83.3 70.0	0.0	-	-	0.0	-	-	-	7.5	-	4.8	-	-
86.7 35.0	0.0	-	-	0.0	-	-	-	4.7	-	0.0	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.6	-	-
90.0 45.0	0.0	-	-	-	-	-	-	0.0	-	5.3	-	-
90.0 70.0	0.0	-	0.0	-	-	-	-	0.0	-	4.7	-	-
90.0 90.0	0.0	-	5.4	-	-	-	-	5.0	-	0.0	-	-
90.0 120.0	0.0	-	0.0	-	-	-	-	0.0	-	5.1	-	-
93.3 28.0	0.0	-	4.6	-	-	-	-	0.0	-	0.0	-	-
93.3 35.0	0.0	-	0.0	-	-	-	-	0.0	-	4.5	-	-
93.3 50.0	0.0	-	0.0	-	-	-	-	8.8	-	0.0	-	-
93.3 55.0	5.1	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 90.0	0.0	-	0.0	-	-	-	-	9.2	-	0.0	-	-

Stomias atriventer

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 100.0	0.0	-	18.0	-	-	-	-	0.0	-	0.0	-	-
90.0 110.0	0.0	-	0.0	-	-	-	-	4.5	-	0.0	-	-
93.3 110.0	4.6	-	-	-	-	-	-	0.0	-	0.0	-	-

Bathophilus flemingi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 110.0	0.0	-	4.8	-	-	-	-	0.0	-	0.0	-	-
93.3 90.0	4.6	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Tactostoma macropus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
38.9 67.9	-	-	-	0.0	-	-	11.7	-	-	-	-	-
41.4 74.6	-	-	-	0.0	-	-	81.3	-	-	-	-	-
44.7 57.3	-	-	-	0.0	-	-	9.9	-	-	-	-	-

Table 20. (cont.)

Tactostoma macropus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 90.0	0.0	-	-	-	-	-	-	10.2	-	0.0	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	14.3	-	0.0	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	46.6	-	0.0	-	-
86.7 70.0	0.0	-	-	0.0	-	-	-	10.2	-	0.0	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	37.4	-	0.0	-	-

Aristostomias scintillans

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 110.0	0.0	-	-	-	-	-	-	4.8	-	0.0	-	-

Idiacanthus antrostomus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 90.0	0.0	-	-	0.0	-	-	-	0.0	-	4.9	-	-
76.7 100.0	0.0	-	-	0.0	-	-	-	0.0	-	5.3	-	-
80.0 90.0	0.0	-	-	-	-	-	-	0.0	-	14.0	-	-
80.0 100.0	0.0	-	-	-	-	-	-	0.0	-	29.6	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	223.7	-	8.8	-	-
86.7 90.0	5.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	0.0	-	14.1	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	5.3	-	0.0	-	-
90.0 70.0	0.0	-	0.0	-	-	-	-	0.0	-	19.0	-	-
90.0 100.0	9.7	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 110.0	0.0	-	0.0	-	-	-	-	9.0	-	19.0	-	-
90.0 120.0	9.7	-	0.0	-	-	-	-	0.0	-	10.1	-	-
93.3 70.0	0.0	-	-	-	-	-	-	0.0	-	31.4	-	-
93.3 80.0	0.0	-	-	-	-	-	-	9.6	-	4.8	-	-
93.3 100.0	0.0	-	-	-	-	-	-	4.6	-	9.7	-	-
93.3 110.0	0.0	-	-	-	-	-	-	9.7	-	0.0	-	-
93.3 120.0	9.3	-	0.0	-	-	-	-	56.8	-	0.0	-	-

Benthalbella dentata

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 100.0	0.0	-	-	5.5	-	-	-	0.0	-	0.0	-	-
93.3 28.0	0.0	-	4.6	-	-	-	-	0.0	-	0.0	-	-
93.3 110.0	4.6	-	-	-	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Scopelarchus analis

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

***Scopelosaurus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 90.0	0.0	-	-	0.0	-	-	-	10.0	-	0.0	-	-
83.3 80.0	0.0	-	-	0.0	-	-	-	0.0	-	4.6	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
90.0 110.0	0.0	-	4.8	-	-	-	-	0.0	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	9.7	-	0.0	-	-

Synodus lucioceps

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
81.8 46.9	0.0	-	-	0.0	-	-	-	0.0	-	5.1	-	-

Arctozenus risso

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	9.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	5.3	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-

***Lestidiops* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 100.0	5.1	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Lestidiops ringens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
30.4 31.8	-	-	-	9.5	-	-	0.0	-	-	-	-	-
50.2 87.2	-	-	-	9.0	-	-	-	-	-	-	-	-
63.3 80.0	-	-	-	0.0	-	-	-	12.0	-	-	-	-
63.3 90.0	-	-	-	0.0	-	-	-	5.1	-	-	-	-
66.7 80.0	-	-	-	-	-	-	-	9.1	-	-	-	-
76.7 100.0	0.0	-	-	0.0	-	-	-	0.0	-	5.3	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	4.8	-	10.3	-	-
83.3 110.0	4.7	-	-	5.0	-	-	-	0.0	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	10.7	-	0.0	-	-
90.0 45.0	4.7	-	-	-	-	-	-	0.0	-	0.0	-	-
90.0 110.0	0.0	-	4.8	-	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Lestidiops ringens (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 120.0	0.0	-	0.0	-	-	-	-	0.0	-	5.1	-	-
93.3 35.0	0.0	-	0.0	-	-	-	-	5.1	-	0.0	-	-
93.3 80.0	0.0	-	-	-	-	-	-	4.8	-	0.0	-	-
93.3 90.0	0.0	-	0.0	-	-	-	-	4.6	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	4.6	-	9.7	-	-
93.3 110.0	0.0	-	-	-	-	-	-	14.5	-	4.1	-	-

Myctophidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
39.8 83.2	-	-	-	9.7	-	-	0.0	-	-	-	-	-
50.1 49.2	-	-	-	0.0	-	-	12.8	-	-	-	-	-
76.7 100.0	4.8	-	-	0.0	-	-	-	5.2	-	0.0	-	-
80.0 70.0	0.0	-	-	-	-	-	-	9.3	-	0.0	-	-
83.3 70.0	4.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	9.6	-	0.0	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	18.6	-	0.0	-	-
86.7 35.0	0.0	-	-	11.0	-	-	-	0.0	-	0.0	-	-
90.0 70.0	0.0	-	0.0	-	-	-	-	5.1	-	0.0	-	-
90.0 100.0	0.0	-	4.5	-	-	-	-	0.0	-	0.0	-	-
90.0 110.0	0.0	-	0.0	-	-	-	-	9.0	-	0.0	-	-
90.0 120.0	0.0	-	9.7	-	-	-	-	0.0	-	0.0	-	-
93.3 100.0	4.9	-	-	-	-	-	-	0.0	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	14.5	-	0.0	-	-
93.3 120.0	0.0	-	4.4	-	-	-	-	0.0	-	0.0	-	-

Ceratoscopelus townsendi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
46.8 66.6	-	-	-	0.0	-	-	9.6	-	-	-	-	-
63.3 60.0	-	-	-	-	-	-	-	10.6	-	-	-	-
66.7 80.0	-	-	-	-	-	-	-	4.6	-	-	-	-
80.0 90.0	0.0	-	-	-	-	-	-	0.0	-	4.7	-	-
80.0 100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-
83.3 100.0	0.0	-	-	0.0	-	-	-	4.8	-	0.0	-	-
83.3 110.0	0.0	-	-	5.0	-	-	-	135.1	-	0.0	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-

Table 20. (cont.)

Ceratoscopelus townsendi (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 100.0	10.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 110.0	0.0	-	-	9.8	-	-	-	154.9	-	0.0	-	-
90.0 100.0	4.8	-	4.5	-	-	-	-	20.0	-	0.0	-	-
90.0 110.0	0.0	-	48.3	-	-	-	-	0.0	-	0.0	-	-
90.0 120.0	0.0	-	0.0	-	-	-	-	0.0	-	10.1	-	-
93.3 70.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-
93.3 80.0	0.0	-	-	-	-	-	-	4.8	-	4.8	-	-
93.3 100.0	49.0	-	-	-	-	-	-	9.3	-	24.3	-	-
93.3 110.0	4.6	-	-	-	-	-	-	24.2	-	4.1	-	-
93.3 120.0	0.0	-	8.7	-	-	-	-	15.5	-	9.1	-	-

***Diaphus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
34.3 71.6	-	-	-	0.0	-	-	11.9	-	-	-	-	-
39.8 83.2	-	-	-	0.0	-	-	5.2	-	-	-	-	-
43.5 83.8	-	-	-	0.0	-	-	26.0	-	-	-	-	-
46.8 66.6	-	-	-	0.0	-	-	4.8	-	-	-	-	-
50.3 87.2	-	-	-	-	-	-	-	10.9	-	-	-	-
51.9 59.9	-	-	-	0.0	-	-	5.0	-	-	-	-	-
60.0 90.0	-	-	-	0.0	-	-	-	5.0	-	-	-	-
63.3 80.0	-	-	-	0.0	-	-	-	12.0	-	-	-	-
63.3 90.0	-	-	-	0.0	-	-	-	5.1	-	-	-	-
66.7 80.0	-	-	-	-	-	-	-	4.6	-	-	-	-
80.0 100.0	0.0	-	-	-	-	-	-	18.0	-	0.0	-	-
83.3 70.0	0.0	-	-	0.0	-	-	-	7.5	-	0.0	-	-
83.3 100.0	0.0	-	-	5.0	-	-	-	57.4	-	0.0	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	167.8	-	0.0	-	-
86.7 35.0	0.0	-	-	0.0	-	-	-	0.0	-	9.9	-	-
86.7 70.0	0.0	-	-	0.0	-	-	-	10.2	-	0.0	-	-
86.7 80.0	0.0	-	-	0.0	-	-	-	22.8	-	0.0	-	-
86.7 90.0	0.0	-	-	0.0	-	-	-	26.9	-	9.5	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	31.2	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	710.2	-	4.6	-	-

Table 20. (cont.)

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

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 27.7	0.0	-	-	-	-	-	-	2.9	-	0.0	-	-
90.0 28.0	0.0	-	0.0	-	-	-	-	9.1	-	0.0	-	-
90.0 37.0	0.0	-	0.0	-	-	-	-	4.7	-	9.7	-	-
90.0 45.0	0.0	-	-	-	-	-	-	4.7	-	0.0	-	-
90.0 60.0	0.0	-	0.0	-	-	-	-	4.3	-	0.0	-	-
90.0 80.0	0.0	-	15.5	-	-	-	-	0.0	-	0.0	-	-
90.0 90.0	0.0	-	0.0	-	-	-	-	14.9	-	0.0	-	-
90.0 100.0	0.0	-	22.5	-	-	-	-	30.1	-	4.6	-	-
90.0 110.0	0.0	-	0.0	-	-	-	-	4.5	-	0.0	-	-
90.0 120.0	0.0	-	38.6	-	-	-	-	0.0	-	25.4	-	-
93.3 30.0	0.0	-	0.0	-	-	-	-	0.0	-	4.9	-	-
93.3 35.0	0.0	-	0.0	-	-	-	-	0.0	-	4.5	-	-
93.3 40.0	0.0	-	0.0	-	-	-	-	0.0	-	4.4	-	-
93.3 50.0	0.0	-	0.0	-	-	-	-	0.0	-	13.2	-	-
93.3 80.0	0.0	-	-	-	-	-	-	28.7	-	0.0	-	-
93.3 90.0	0.0	-	0.0	-	-	-	-	50.7	-	12.5	-	-
93.3 100.0	0.0	-	-	-	-	-	-	4.6	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	33.8	-	0.0	-	-
93.3 120.0	0.0	-	0.0	-	-	-	-	5.2	-	0.0	-	-

Lampadena urophaos

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

Lampanyctus acanthurus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 110.0	0.0	-	4.8	-	-	-	-	0.0	-	0.0	-	-

Lampanyctus steinbecki

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-
90.0 110.0	0.0	-	4.8	-	-	-	-	0.0	-	0.0	-	-

Lampanyctus tenuiformis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.4	-	-

Table 20. (cont.)

Lampanyctus tenuiformis (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	110.0	0.0	-	-	0.0	-	-	-	5.3	-	0.0	-	-

***Nannobrachium* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
8.3	25.1	-	-	-	0.0	-	-	21.4	-	-	-	-	-
11.7	7.2	-	-	-	0.0	-	-	21.6	-	-	-	-	-
18.6	33.2	-	-	-	0.0	-	-	10.7	-	-	-	-	-
21.3	39.1	-	-	-	0.0	-	-	10.6	-	-	-	-	-
22.0	15.5	-	-	-	0.0	-	-	5.6	-	-	-	-	-
24.3	43.5	-	-	-	10.3	-	-	0.0	-	-	-	-	-
29.4	57.0	-	-	-	0.0	-	-	5.4	-	-	-	-	-
31.1	48.2	-	-	-	10.2	-	-	0.0	-	-	-	-	-
32.8	39.5	-	-	-	0.0	-	-	5.1	-	-	-	-	-
34.3	71.6	-	-	-	0.0	-	-	11.9	-	-	-	-	-
36.0	43.0	-	-	-	22.2	-	-	0.0	-	-	-	-	-
36.0	62.9	-	-	-	0.0	-	-	33.4	-	-	-	-	-
37.6	54.2	-	-	-	0.0	-	-	5.7	-	-	-	-	-
38.9	67.9	-	-	-	0.0	-	-	11.7	-	-	-	-	-
39.3	45.5	-	-	-	0.0	-	-	4.0	-	-	-	-	-
44.7	57.3	-	-	-	15.6	-	-	0.0	-	-	-	-	-
47.0	85.8	-	-	-	30.1	-	-	-	-	-	-	-	-
50.2	87.2	-	-	-	18.0	-	-	-	-	-	-	-	-
50.3	87.2	-	-	-	-	-	-	-	10.9	-	-	-	-
53.5	88.7	-	-	-	-	-	-	-	10.5	-	-	-	-
53.6	88.6	-	-	-	15.6	-	-	-	-	-	-	-	-
56.7	80.0	-	-	-	10.0	-	-	-	0.0	-	-	-	-
63.3	90.0	-	-	-	0.0	-	-	-	5.1	-	-	-	-
80.0	51.0	4.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	90.0	5.0	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	110.0	9.5	-	-	0.0	-	-	-	4.7	-	0.0	-	-
86.7	70.0	0.0	-	-	0.0	-	-	-	5.1	-	0.0	-	-
86.7	80.0	5.0	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	90.0	5.3	-	-	0.0	-	-	-	4.5	-	0.0	-	-

Table 20. (cont.)

***Nannobrachium* spp.** (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 100.0	10.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	10.7	-	0.0	-	-
90.0 53.0	4.8	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	10.6	-	-	-	-	0.0	-	0.0	-	-
90.0 80.0	4.6	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
90.0 110.0	9.4	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 40.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
93.3 60.0	5.0	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	18.6	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	24.2	-	0.0	-	-
93.3 120.0	4.6	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Nannobrachium bristori

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
73.3 90.0	-	-	-	0.0	-	-	-	5.5	-	-	-	-

Nannobrachium regale

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
10.0 16.1	-	-	-	0.0	-	-	10.9	-	-	-	-	-
17.0 21.5	-	-	-	0.0	-	-	10.0	-	-	-	-	-
22.0 15.5	-	-	-	0.0	-	-	5.6	-	-	-	-	-
32.6 60.5	-	-	-	0.0	-	-	5.3	-	-	-	-	-
34.3 71.6	-	-	-	9.8	-	-	0.0	-	-	-	-	-
36.0 62.9	-	-	-	10.0	-	-	0.0	-	-	-	-	-
39.3 45.5	-	-	-	0.0	-	-	4.0	-	-	-	-	-
43.5 83.8	-	-	-	0.0	-	-	5.2	-	-	-	-	-
44.7 57.3	-	-	-	7.8	-	-	0.0	-	-	-	-	-
47.0 85.8	-	-	-	5.0	-	-	-	-	-	-	-	-
63.3 90.0	-	-	-	0.0	-	-	-	5.1	-	-	-	-
83.3 90.0	0.0	-	-	0.0	-	-	-	5.0	-	0.0	-	-

Nannobrachium ritteri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
28.7 40.6	-	-	-	0.0	-	-	10.9	-	-	-	-	-
36.0 43.0	-	-	-	11.1	-	-	0.0	-	-	-	-	-

Table 20. (cont.)

Nannobrachium ritteri (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
39.3	45.5	-	-	-	0.0	-	-	4.0	-	-	-	-	-
39.8	83.2	-	-	-	0.0	-	-	5.2	-	-	-	-	-
41.4	74.6	-	-	-	0.0	-	-	23.2	-	-	-	-	-
43.1	66.0	-	-	-	0.0	-	-	20.9	-	-	-	-	-
44.7	57.3	-	-	-	7.8	-	-	0.0	-	-	-	-	-
47.0	85.8	-	-	-	5.0	-	-	-	-	-	-	-	-
50.2	87.2	-	-	-	18.0	-	-	-	-	-	-	-	-
60.0	80.0	-	-	-	0.0	-	-	-	12.2	-	-	-	-
60.0	90.0	-	-	-	0.0	-	-	-	5.0	-	-	-	-
63.3	80.0	-	-	-	0.0	-	-	-	6.0	-	-	-	-
63.3	90.0	-	-	-	0.0	-	-	-	10.2	-	-	-	-
66.7	50.0	5.5	-	-	0.0	-	-	-	0.0	-	-	-	-
66.7	70.0	-	-	-	5.4	-	-	-	0.0	-	-	-	-
76.7	55.0	0.0	-	-	5.4	-	-	-	0.0	-	0.0	-	-
76.7	100.0	0.0	-	-	0.0	-	-	-	5.2	-	0.0	-	-
80.0	80.0	4.8	-	-	-	-	-	-	0.0	-	0.0	-	-
83.3	60.0	0.0	-	-	-	-	-	-	4.7	-	0.0	-	-
83.3	80.0	4.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	90.0	0.0	-	-	10.3	-	-	-	0.0	-	0.0	-	-
83.3	100.0	9.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	90.0	26.4	-	-	0.0	-	-	-	9.0	-	0.0	-	-
86.7	100.0	0.0	-	-	38.6	-	-	-	4.5	-	0.0	-	-
86.7	110.0	4.9	-	-	24.5	-	-	-	5.3	-	0.0	-	-
90.0	35.0	0.0	-	0.0	-	-	-	-	5.3	-	0.0	-	-
90.0	70.0	4.6	-	4.9	-	-	-	-	0.0	-	0.0	-	-
90.0	80.0	0.0	-	5.2	-	-	-	-	0.0	-	0.0	-	-
90.0	90.0	0.0	-	5.4	-	-	-	-	0.0	-	0.0	-	-
90.0	100.0	0.0	-	58.5	-	-	-	-	5.0	-	0.0	-	-
90.0	110.0	0.0	-	53.1	-	-	-	-	0.0	-	0.0	-	-
90.0	120.0	48.6	-	29.0	-	-	-	-	0.0	-	0.0	-	-
93.3	28.0	0.0	-	0.0	-	-	-	-	4.9	-	0.0	-	-
93.3	35.0	10.0	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	40.0	4.7	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Nannobrachium ritteri (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 45.0	0.0	-	38.7	-	-	-	-	0.0	-	0.0	-	-
93.3 50.0	0.0	-	42.6	-	-	-	-	0.0	-	0.0	-	-
93.3 80.0	0.0	-	-	-	-	-	-	9.6	-	0.0	-	-
93.3 90.0	4.6	-	0.0	-	-	-	-	9.2	-	0.0	-	-
93.3 100.0	4.9	-	-	-	-	-	-	9.3	-	0.0	-	-
93.3 110.0	4.6	-	-	-	-	-	-	4.8	-	0.0	-	-
93.3 120.0	0.0	-	17.4	-	-	-	-	20.6	-	0.0	-	-

Notoscopelus resplendens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	9.9	-	-	-	0.0	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	16.0	-	0.0	-	-
93.3 35.0	0.0	-	0.0	-	-	-	-	0.0	-	4.5	-	-
93.3 100.0	0.0	-	-	-	-	-	-	9.3	-	0.0	-	-
93.3 120.0	0.0	-	0.0	-	-	-	-	5.2	-	0.0	-	-

Stenobrachius leucopsarus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
4.8 22.9	-	-	-	8.4	-	-	395.1	-	-	-	-	-
6.5 14.0	-	-	-	0.0	-	-	75.4	-	-	-	-	-
8.3 25.1	-	-	-	9.6	-	-	213.6	-	-	-	-	-
10.0 16.1	-	-	-	24.3	-	-	379.8	-	-	-	-	-
11.7 7.2	-	-	-	5.2	-	-	411.2	-	-	-	-	-
12.1 26.7	-	-	-	8.6	-	-	-	-	-	-	-	-
12.2 26.7	-	-	-	-	-	-	270.8	-	-	-	-	-
13.9 17.9	-	-	-	31.4	-	-	9.3	-	-	-	-	-
15.3 30.3	-	-	-	48.1	-	-	-	-	-	-	-	-
15.3 30.4	-	-	-	-	-	-	218.0	-	-	-	-	-
15.6 8.9	-	-	-	47.2	-	-	96.4	-	-	-	-	-
17.0 21.5	-	-	-	0.0	-	-	30.0	-	-	-	-	-
18.6 33.2	-	-	-	168.0	-	-	181.8	-	-	-	-	-
18.7 12.6	-	-	-	0.0	-	-	166.1	-	-	-	-	-
20.3 24.3	-	-	-	19.6	-	-	0.0	-	-	-	-	-
21.3 39.1	-	-	-	31.3	-	-	85.1	-	-	-	-	-
22.0 15.5	-	-	-	63.4	-	-	191.1	-	-	-	-	-

Table 20. (cont.)

Stenobrachius leucopsarus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
23.0	30.3	-	-	-	11.5	-	-	180.1	-	-	-	-	-
24.3	43.5	-	-	-	41.1	-	-	18.7	-	-	-	-	-
24.7	21.4	-	-	-	19.3	-	-	33.5	-	-	-	-	-
26.0	34.8	-	-	-	190.2	-	-	168.7	-	-	-	-	-
27.1	48.7	-	-	-	91.0	-	-	189.0	-	-	-	-	-
27.7	25.9	-	-	-	29.2	-	-	59.5	-	-	-	-	-
28.7	40.6	-	-	-	178.3	-	-	98.1	-	-	-	-	-
29.4	57.0	-	-	-	138.5	-	-	53.5	-	-	-	-	-
30.4	31.8	-	-	-	190.3	-	-	77.7	-	-	-	-	-
31.1	48.2	-	-	-	387.9	-	-	37.0	-	-	-	-	-
32.6	60.5	-	-	-	381.4	-	-	31.6	-	-	-	-	-
32.8	39.5	-	-	-	50.3	-	-	25.6	-	-	-	-	-
34.3	51.7	-	-	-	133.6	-	-	75.5	-	-	-	-	-
34.3	71.6	-	-	-	195.5	-	-	11.9	-	-	-	-	-
34.5	30.7	-	-	-	0.0	-	-	43.9	-	-	-	-	-
36.0	43.0	-	-	-	122.0	-	-	28.9	-	-	-	-	-
36.0	62.9	-	-	-	189.6	-	-	167.0	-	-	-	-	-
37.2	76.6	-	-	-	276.2	-	-	4.9	-	-	-	-	-
37.6	54.2	-	-	-	297.0	-	-	22.7	-	-	-	-	-
38.9	67.9	-	-	-	46.4	-	-	187.8	-	-	-	-	-
39.3	36.1	-	-	-	0.0	-	-	14.9	-	-	-	-	-
39.3	45.5	-	-	-	181.5	-	-	60.3	-	-	-	-	-
39.8	83.2	-	-	-	67.9	-	-	10.5	-	-	-	-	-
40.5	59.3	-	-	-	63.9	-	-	0.0	-	-	-	-	-
41.4	74.6	-	-	-	154.9	-	-	116.2	-	-	-	-	-
42.2	50.6	-	-	-	-	-	-	10.1	-	-	-	-	-
43.1	66.0	-	-	-	413.2	-	-	20.9	-	-	-	-	-
43.5	83.8	-	-	-	324.2	-	-	0.0	-	-	-	-	-
43.7	41.2	-	-	-	8.4	-	-	-	-	-	-	-	-
44.7	57.3	-	-	-	980.8	-	-	0.0	-	-	-	-	-
45.1	75.2	-	-	-	49.5	-	-	-	-	-	-	-	-
45.1	75.3	-	-	-	-	-	-	33.1	-	-	-	-	-
46.8	66.6	-	-	-	9.6	-	-	4.8	-	-	-	-	-

Table 20. (cont.)

Stenobrachius leucopsarus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
47.0	85.8	-	-	-	450.9	-	-	-	-	-	-	-	-
48.5	58.0	-	-	-	267.6	-	-	56.3	-	-	-	-	-
48.6	77.2	-	-	-	133.7	-	-	-	-	-	-	-	-
50.1	49.2	-	-	-	357.2	-	-	38.5	-	-	-	-	-
50.2	87.2	-	-	-	229.5	-	-	-	-	-	-	-	-
50.3	68.6	-	-	-	142.4	-	-	5.3	-	-	-	-	-
51.9	59.9	-	-	-	81.4	-	-	0.0	-	-	-	-	-
53.6	51.2	-	-	-	4.9	-	-	0.0	-	-	-	-	-
53.6	88.6	-	-	-	166.4	-	-	-	-	-	-	-	-
56.7	55.0	-	-	-	231.0	-	-	-	0.0	-	-	-	-
56.7	60.0	-	-	-	189.1	-	-	-	0.0	-	-	-	-
56.7	70.0	-	-	-	30.8	-	-	-	54.7	-	-	-	-
56.7	80.0	-	-	-	360.0	-	-	-	0.0	-	-	-	-
56.7	90.0	-	-	-	8.2	-	-	-	11.2	-	-	-	-
60.0	53.0	-	-	-	0.0	-	-	-	21.4	-	-	-	-
60.0	60.0	-	-	-	31.1	-	-	-	0.0	-	-	-	-
60.0	70.0	-	-	-	73.4	-	-	-	0.0	-	-	-	-
60.0	80.0	-	-	-	76.6	-	-	-	0.0	-	-	-	-
60.0	90.0	-	-	-	66.9	-	-	-	5.0	-	-	-	-
63.3	80.0	-	-	-	53.9	-	-	-	0.0	-	-	-	-
63.3	90.0	-	-	-	35.9	-	-	-	0.0	-	-	-	-
66.7	50.0	300.9	-	-	0.0	-	-	-	0.0	-	-	-	-
66.7	55.0	0.0	-	-	39.9	-	-	-	0.0	-	-	-	-
66.7	60.0	-	-	-	130.4	-	-	-	0.0	-	-	-	-
66.7	70.0	-	-	-	64.8	-	-	-	0.0	-	-	-	-
66.7	90.0	-	-	-	-	-	-	-	5.0	-	-	-	-
70.0	55.0	-	-	-	59.4	-	-	-	-	-	-	-	-
70.0	60.0	-	-	-	13.0	-	-	-	-	-	-	-	-
73.3	55.0	-	-	-	29.2	-	-	-	5.0	-	-	-	-
73.3	60.0	-	-	-	45.5	-	-	-	0.0	-	-	-	-
73.3	70.0	-	-	-	21.3	-	-	-	10.0	-	-	-	-
73.3	90.0	-	-	-	5.5	-	-	-	0.0	-	-	-	-
76.7	49.0	-	-	-	16.4	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Stenobrachius leucopsarus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	51.0	-	-	-	88.6	-	-	-	0.0	-	0.0	-	-
76.7	55.0	75.3	-	-	367.9	-	-	-	0.0	-	0.0	-	-
76.7	60.0	39.2	-	-	124.3	-	-	-	0.0	-	0.0	-	-
76.7	70.0	29.9	-	-	26.2	-	-	-	0.0	-	0.0	-	-
76.7	80.0	0.0	-	-	16.2	-	-	-	9.5	-	0.0	-	-
76.7	90.0	5.0	-	-	10.0	-	-	-	10.0	-	0.0	-	-
76.7	100.0	0.0	-	-	4.8	-	-	-	0.0	-	0.0	-	-
80.0	51.0	151.6	-	-	0.0	-	-	-	0.0	-	0.0	-	-
80.0	55.0	67.9	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0	60.0	130.8	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0	70.0	23.6	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0	80.0	9.6	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0	90.0	4.9	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0	100.0	5.0	-	-	-	-	-	-	0.0	-	0.0	-	-
81.8	46.9	36.1	-	-	39.1	-	-	-	0.0	-	0.0	-	-
83.3	40.6	7.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	42.0	9.3	-	-	8.4	-	-	-	0.0	-	0.0	-	-
83.3	51.0	16.8	-	-	21.4	-	-	-	0.0	-	0.0	-	-
83.3	55.0	33.7	-	-	-	-	-	-	0.0	-	0.0	-	-
83.3	60.0	85.7	-	-	-	-	-	-	0.0	-	0.0	-	-
83.3	70.0	470.3	-	-	60.0	-	-	-	0.0	-	0.0	-	-
83.3	80.0	4.9	-	-	15.5	-	-	-	0.0	-	0.0	-	-
83.3	90.0	0.0	-	-	5.1	-	-	-	0.0	-	0.0	-	-
83.3	100.0	4.9	-	-	5.0	-	-	-	0.0	-	0.0	-	-
85.4	35.8	7.8	-	-	-	-	-	-	-	-	-	-	-
86.7	33.0	4.2	-	-	72.2	-	-	-	0.0	-	0.0	-	-
86.7	35.0	10.3	-	-	44.2	-	-	-	0.0	-	0.0	-	-
86.7	40.0	53.3	-	-	19.3	-	-	-	0.0	-	0.0	-	-
86.7	45.0	40.6	-	-	48.3	-	-	-	0.0	-	0.0	-	-
86.7	50.0	57.5	-	-	10.7	-	-	-	0.0	-	0.0	-	-
86.7	55.0	-	-	-	139.7	-	-	-	0.0	-	0.0	-	-
86.7	60.0	66.7	-	-	22.7	-	-	-	0.0	-	0.0	-	-
86.7	70.0	21.2	-	-	20.6	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Stenobrachius leucopsarus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 80.0	95.0	-	-	14.9	-	-	-	0.0	-	0.0	-	-
86.7 90.0	31.7	-	-	10.4	-	-	-	0.0	-	0.0	-	-
86.7 100.0	0.0	-	-	5.5	-	-	-	0.0	-	0.0	-	-
90.0 28.0	0.0	-	49.2	-	-	-	-	0.0	-	0.0	-	-
90.0 30.0	0.0	-	77.8	-	-	-	-	0.0	-	0.0	-	-
90.0 35.0	46.4	-	44.2	-	-	-	-	0.0	-	0.0	-	-
90.0 37.0	18.4	-	162.3	-	-	-	-	0.0	-	0.0	-	-
90.0 45.0	23.7	-	-	-	-	-	-	0.0	-	0.0	-	-
90.0 53.0	9.6	-	47.8	-	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	10.6	-	-	-	-	0.0	-	0.0	-	-
90.0 70.0	0.0	-	24.7	-	-	-	-	0.0	-	0.0	-	-
90.0 80.0	4.6	-	5.2	-	-	-	-	0.0	-	0.0	-	-
90.0 90.0	0.0	-	16.1	-	-	-	-	0.0	-	0.0	-	-
90.0 120.0	29.2	-	14.5	-	-	-	-	0.0	-	0.0	-	-
91.7 26.4	-	-	1.8	-	-	-	-	0.0	-	-	-	-
93.3 26.7	0.0	-	28.0	-	-	-	-	0.0	-	0.0	-	-
93.3 28.0	0.0	-	148.5	-	-	-	-	0.0	-	0.0	-	-
93.3 30.0	10.1	-	367.9	-	-	-	-	0.0	-	0.0	-	-
93.3 35.0	0.0	-	14.9	-	-	-	-	0.0	-	0.0	-	-
93.3 40.0	4.7	-	91.0	-	-	-	-	0.0	-	0.0	-	-
93.3 45.0	4.8	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 55.0	30.4	-	26.9	-	-	-	-	0.0	-	0.0	-	-
93.3 90.0	4.6	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 120.0	0.0	-	4.4	-	-	-	-	0.0	-	0.0	-	-

Triphoturus mexicanus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 51.0	-	-	-	0.0	-	-	-	0.0	-	5.2	-	-
76.7 80.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-
81.8 46.9	0.0	-	-	0.0	-	-	-	9.5	-	0.0	-	-
83.3 51.0	0.0	-	-	0.0	-	-	-	4.0	-	0.0	-	-
83.3 110.0	0.0	-	-	5.0	-	-	-	9.3	-	0.0	-	-
86.7 33.0	0.0	-	-	0.0	-	-	-	9.3	-	0.0	-	-
86.7 35.0	0.0	-	-	0.0	-	-	-	4.7	-	0.0	-	-

Table 20. (cont.)

Triphoturus mexicanus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 40.0	0.0	-	-	0.0	-	-	-	35.8	-	5.0	-	-
86.7 45.0	0.0	-	-	0.0	-	-	-	4.7	-	0.0	-	-
86.7 50.0	0.0	-	-	0.0	-	-	-	3.6	-	0.0	-	-
86.7 70.0	0.0	-	-	0.0	-	-	-	0.0	-	9.7	-	-
86.7 110.0	0.0	-	-	14.7	-	-	-	0.0	-	0.0	-	-
90.0 28.0	0.0	-	0.0	-	-	-	-	9.1	-	0.0	-	-
90.0 30.0	0.0	-	0.0	-	-	-	-	5.1	-	0.0	-	-
90.0 35.0	0.0	-	0.0	-	-	-	-	5.3	-	10.1	-	-
90.0 37.0	0.0	-	0.0	-	-	-	-	0.0	-	4.8	-	-
90.0 45.0	0.0	-	-	-	-	-	-	75.4	-	0.0	-	-
90.0 53.0	0.0	-	0.0	-	-	-	-	4.7	-	0.0	-	-
90.0 80.0	0.0	-	0.0	-	-	-	-	4.9	-	0.0	-	-
90.0 100.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
90.0 110.0	0.0	-	24.2	-	-	-	-	13.5	-	9.5	-	-
90.0 120.0	0.0	-	14.5	-	-	-	-	0.0	-	0.0	-	-
93.3 26.7	0.0	-	0.0	-	-	-	-	4.9	-	0.0	-	-
93.3 28.0	0.0	-	0.0	-	-	-	-	14.7	-	10.5	-	-
93.3 30.0	0.0	-	0.0	-	-	-	-	179.6	-	14.6	-	-
93.3 35.0	0.0	-	0.0	-	-	-	-	51.3	-	13.4	-	-
93.3 45.0	0.0	-	9.7	-	-	-	-	10.5	-	0.0	-	-
93.3 50.0	0.0	-	21.3	-	-	-	-	0.0	-	0.0	-	-
93.3 60.0	0.0	-	0.0	-	-	-	-	0.0	-	4.4	-	-
93.3 70.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-
93.3 80.0	0.0	-	-	-	-	-	-	19.1	-	0.0	-	-
93.3 90.0	0.0	-	8.5	-	-	-	-	0.0	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	74.2	-	14.6	-	-
93.3 110.0	0.0	-	-	-	-	-	-	48.3	-	4.1	-	-
93.3 120.0	0.0	-	21.8	-	-	-	-	41.3	-	0.0	-	-

***Diogenichthys* spp.**

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

Table 20. (cont.)

Diogenichthys atlanticus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 100.0	4.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 110.0	0.0	-	-	5.0	-	-	-	0.0	-	4.4	-	-
86.7 100.0	5.1	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 110.0	0.0	-	-	4.9	-	-	-	0.0	-	0.0	-	-
90.0 60.0	0.0	-	5.3	-	-	-	-	0.0	-	0.0	-	-
90.0 70.0	0.0	-	0.0	-	-	-	-	0.0	-	4.7	-	-
90.0 90.0	4.2	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 100.0	4.8	-	13.5	-	-	-	-	0.0	-	0.0	-	-
90.0 110.0	4.7	-	9.7	-	-	-	-	0.0	-	0.0	-	-
90.0 120.0	4.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 55.0	5.1	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 60.0	5.0	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 90.0	0.0	-	0.0	-	-	-	-	4.6	-	0.0	-	-
93.3 100.0	4.9	-	-	-	-	-	-	9.3	-	4.9	-	-
93.3 110.0	0.0	-	-	-	-	-	-	4.8	-	0.0	-	-
93.3 120.0	0.0	-	8.7	-	-	-	-	0.0	-	0.0	-	-

Electrona risso

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 70.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-
93.3 110.0	4.6	-	-	-	-	-	-	0.0	-	0.0	-	-

Hygophum reinhardtii

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 120.0	0.0	-	4.4	-	-	-	-	0.0	-	0.0	-	-

Loweina rara

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 110.0	0.0	-	4.8	-	-	-	-	0.0	-	0.0	-	-

Myctophum nitidulum

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

***Protomyctophum* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
31.1 48.2	-	-	-	10.2	-	-	0.0	-	-	-	-	-

Table 20. (cont.)

***Protomyctophum* spp.** (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
32.8	39.5	-	-	-	8.4	-	-	0.0	-	-	-	-	-

Protomyctophum crockeri

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
6.5	14.0	-	-	-	0.0	-	-	10.8	-	-	-	-	-
11.7	7.2	-	-	-	0.0	-	-	10.8	-	-	-	-	-
17.0	21.5	-	-	-	0.0	-	-	10.0	-	-	-	-	-
21.3	39.1	-	-	-	0.0	-	-	10.6	-	-	-	-	-
22.0	15.5	-	-	-	0.0	-	-	5.6	-	-	-	-	-
26.0	34.8	-	-	-	0.0	-	-	16.1	-	-	-	-	-
27.7	25.9	-	-	-	0.0	-	-	5.4	-	-	-	-	-
29.4	57.0	-	-	-	0.0	-	-	5.4	-	-	-	-	-
30.4	31.8	-	-	-	9.5	-	-	9.7	-	-	-	-	-
32.6	60.5	-	-	-	33.2	-	-	5.3	-	-	-	-	-
34.3	51.7	-	-	-	19.1	-	-	11.6	-	-	-	-	-
34.3	71.6	-	-	-	9.8	-	-	0.0	-	-	-	-	-
36.0	32.8	-	-	-	0.0	-	-	9.8	-	-	-	-	-
36.0	43.0	-	-	-	0.0	-	-	4.8	-	-	-	-	-
36.0	62.9	-	-	-	20.0	-	-	11.1	-	-	-	-	-
37.6	54.2	-	-	-	27.8	-	-	0.0	-	-	-	-	-
38.9	67.9	-	-	-	0.0	-	-	93.9	-	-	-	-	-
39.3	45.5	-	-	-	0.0	-	-	4.0	-	-	-	-	-
39.8	83.2	-	-	-	9.7	-	-	0.0	-	-	-	-	-
40.5	59.3	-	-	-	0.0	-	-	10.8	-	-	-	-	-
40.7	37.8	-	-	-	4.3	-	-	-	-	-	-	-	-
41.4	74.6	-	-	-	0.0	-	-	11.6	-	-	-	-	-
42.2	50.6	-	-	-	-	-	-	5.1	-	-	-	-	-
43.1	66.0	-	-	-	21.2	-	-	20.9	-	-	-	-	-
43.5	83.8	-	-	-	11.2	-	-	5.2	-	-	-	-	-
44.7	57.3	-	-	-	0.0	-	-	9.9	-	-	-	-	-
45.1	75.3	-	-	-	-	-	-	11.0	-	-	-	-	-
46.8	66.6	-	-	-	19.2	-	-	9.6	-	-	-	-	-
47.0	85.8	-	-	-	10.0	-	-	-	-	-	-	-	-
48.5	58.0	-	-	-	0.0	-	-	5.1	-	-	-	-	-

Table 20. (cont.)

Protomyctophum crockeri (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
50.2	87.2	-	-	-	9.0	-	-	-	-	-	-	-	-
50.3	68.6	-	-	-	11.0	-	-	0.0	-	-	-	-	-
53.5	88.7	-	-	-	-	-	-	-	21.0	-	-	-	-
53.6	88.6	-	-	-	10.4	-	-	-	-	-	-	-	-
56.7	70.0	-	-	-	0.0	-	-	-	10.9	-	-	-	-
56.7	80.0	-	-	-	10.0	-	-	-	0.0	-	-	-	-
56.7	90.0	-	-	-	8.2	-	-	-	0.0	-	-	-	-
60.0	60.0	-	-	-	5.2	-	-	-	0.0	-	-	-	-
60.0	70.0	-	-	-	5.2	-	-	-	0.0	-	-	-	-
60.0	90.0	-	-	-	4.8	-	-	-	0.0	-	-	-	-
63.3	80.0	-	-	-	0.0	-	-	-	6.0	-	-	-	-
63.3	90.0	-	-	-	9.0	-	-	-	10.2	-	-	-	-
66.7	60.0	-	-	-	0.0	-	-	-	5.1	-	-	-	-
66.7	70.0	-	-	-	0.0	-	-	-	9.7	-	-	-	-
66.7	90.0	-	-	-	-	-	-	-	15.0	-	-	-	-
70.0	60.0	-	-	-	3.3	-	-	-	-	-	-	-	-
73.3	55.0	-	-	-	9.7	-	-	-	0.0	-	-	-	-
76.7	60.0	0.0	-	-	0.0	-	-	-	0.0	-	4.9	-	-
76.7	70.0	0.0	-	-	4.4	-	-	-	0.0	-	0.0	-	-
76.7	80.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-
76.7	90.0	0.0	-	-	5.0	-	-	-	10.0	-	0.0	-	-
76.7	100.0	0.0	-	-	0.0	-	-	-	15.5	-	0.0	-	-
80.0	70.0	9.4	-	-	-	-	-	-	18.6	-	0.0	-	-
80.0	80.0	4.8	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0	90.0	9.9	-	-	-	-	-	-	10.2	-	4.7	-	-
80.0	100.0	5.0	-	-	-	-	-	-	9.0	-	0.0	-	-
81.8	46.9	0.0	-	-	0.0	-	-	-	0.0	-	5.1	-	-
83.3	55.0	4.8	-	-	-	-	-	-	10.0	-	0.0	-	-
83.3	60.0	9.5	-	-	-	-	-	-	0.0	-	0.0	-	-
83.3	70.0	9.5	-	-	0.0	-	-	-	0.0	-	4.8	-	-
83.3	80.0	4.9	-	-	5.2	-	-	-	0.0	-	9.2	-	-
83.3	90.0	9.9	-	-	5.1	-	-	-	0.0	-	10.0	-	-
83.3	100.0	9.8	-	-	25.0	-	-	-	0.0	-	10.3	-	-

Table 20. (cont.)

Protomyctophum crockeri (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	4.7	-	-	0.0	-	-	-	9.3	-	4.4	-	-
86.7 35.0	0.0	-	-	11.0	-	-	-	0.0	-	0.0	-	-
86.7 40.0	0.0	-	-	4.8	-	-	-	5.1	-	14.9	-	-
86.7 50.0	4.4	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 55.0	-	-	-	0.0	-	-	-	9.4	-	0.0	-	-
86.7 60.0	16.7	-	-	11.4	-	-	-	0.0	-	0.0	-	-
86.7 70.0	0.0	-	-	0.0	-	-	-	5.1	-	0.0	-	-
86.7 90.0	10.6	-	-	5.2	-	-	-	0.0	-	0.0	-	-
86.7 100.0	30.5	-	-	0.0	-	-	-	4.5	-	9.4	-	-
86.7 110.0	4.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 28.0	4.4	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 30.0	0.0	-	0.0	-	-	-	-	15.4	-	0.0	-	-
90.0 37.0	0.0	-	0.0	-	-	-	-	4.7	-	0.0	-	-
90.0 45.0	0.0	-	-	-	-	-	-	4.7	-	0.0	-	-
90.0 53.0	4.8	-	0.0	-	-	-	-	4.7	-	0.0	-	-
90.0 60.0	9.1	-	5.3	-	-	-	-	8.5	-	0.0	-	-
90.0 70.0	0.0	-	4.9	-	-	-	-	5.1	-	4.7	-	-
90.0 90.0	0.0	-	5.4	-	-	-	-	24.9	-	0.0	-	-
90.0 100.0	4.8	-	4.5	-	-	-	-	15.0	-	4.6	-	-
90.0 110.0	9.4	-	14.5	-	-	-	-	9.0	-	0.0	-	-
90.0 120.0	14.6	-	14.5	-	-	-	-	4.7	-	0.0	-	-
93.3 28.0	0.0	-	0.0	-	-	-	-	0.0	-	5.3	-	-
93.3 30.0	0.0	-	0.0	-	-	-	-	15.0	-	4.9	-	-
93.3 35.0	0.0	-	0.0	-	-	-	-	10.3	-	0.0	-	-
93.3 40.0	0.0	-	0.0	-	-	-	-	5.0	-	4.4	-	-
93.3 45.0	9.6	-	9.7	-	-	-	-	0.0	-	0.0	-	-
93.3 50.0	0.0	-	0.0	-	-	-	-	0.0	-	13.2	-	-
93.3 55.0	15.2	-	0.0	-	-	-	-	9.0	-	4.7	-	-
93.3 60.0	0.0	-	5.0	-	-	-	-	8.5	-	4.4	-	-
93.3 70.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-
93.3 80.0	27.7	-	-	-	-	-	-	9.6	-	0.0	-	-
93.3 90.0	0.0	-	0.0	-	-	-	-	9.2	-	16.7	-	-
93.3 100.0	0.0	-	-	-	-	-	-	9.3	-	0.0	-	-

Table 20. (cont.)

Protomyctophum crockeri (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 110.0	13.9	-	-	-	-	-	-	0.0	-	8.2	-	-
93.3 120.0	18.5	-	8.7	-	-	-	-	5.2	-	0.0	-	-

Protomyctophum thompsoni

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
8.3 25.1	-	-	-	19.2	-	-	0.0	-	-	-	-	-
15.6 8.9	-	-	-	0.0	-	-	5.7	-	-	-	-	-
17.0 21.5	-	-	-	8.9	-	-	0.0	-	-	-	-	-
18.6 33.2	-	-	-	9.3	-	-	0.0	-	-	-	-	-
20.3 24.3	-	-	-	9.8	-	-	0.0	-	-	-	-	-
21.3 39.1	-	-	-	0.0	-	-	10.6	-	-	-	-	-
27.1 48.7	-	-	-	11.4	-	-	0.0	-	-	-	-	-
27.7 25.9	-	-	-	0.0	-	-	5.4	-	-	-	-	-
29.4 57.0	-	-	-	0.0	-	-	5.4	-	-	-	-	-
32.8 39.5	-	-	-	8.4	-	-	5.1	-	-	-	-	-
34.3 51.7	-	-	-	0.0	-	-	17.4	-	-	-	-	-
37.6 54.2	-	-	-	9.3	-	-	0.0	-	-	-	-	-

Symbolophorus californiensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 90.0	5.0	-	-	0.0	-	-	-	0.0	-	0.0	-	-
76.7 100.0	4.8	-	-	0.0	-	-	-	5.2	-	0.0	-	-
83.3 80.0	4.9	-	-	0.0	-	-	-	0.0	-	4.6	-	-
83.3 90.0	5.0	-	-	0.0	-	-	-	0.0	-	5.0	-	-
83.3 100.0	0.0	-	-	5.0	-	-	-	9.6	-	0.0	-	-
83.3 110.0	4.7	-	-	24.9	-	-	-	41.9	-	8.8	-	-
86.7 100.0	5.1	-	-	22.1	-	-	-	8.9	-	0.0	-	-
86.7 110.0	0.0	-	-	9.8	-	-	-	53.4	-	0.0	-	-
90.0 35.0	0.0	-	0.0	-	-	-	-	26.3	-	0.0	-	-
90.0 37.0	0.0	-	0.0	-	-	-	-	4.7	-	4.8	-	-
90.0 70.0	0.0	-	0.0	-	-	-	-	0.0	-	4.7	-	-
90.0 90.0	0.0	-	10.8	-	-	-	-	5.0	-	0.0	-	-
90.0 100.0	4.8	-	18.0	-	-	-	-	55.1	-	0.0	-	-
90.0 110.0	0.0	-	111.1	-	-	-	-	9.0	-	9.5	-	-
90.0 120.0	19.4	-	19.3	-	-	-	-	0.0	-	10.1	-	-

Table 20. (cont.)

Symbolophorus californiensis (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 35.0	0.0	-	0.0	-	-	-	-	0.0	-	4.5	-	-
93.3 40.0	0.0	-	0.0	-	-	-	-	20.1	-	0.0	-	-
93.3 55.0	5.1	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 60.0	10.0	-	0.0	-	-	-	-	8.5	-	0.0	-	-
93.3 70.0	9.3	-	-	-	-	-	-	0.0	-	9.0	-	-
93.3 90.0	9.1	-	0.0	-	-	-	-	27.7	-	0.0	-	-
93.3 100.0	19.6	-	-	-	-	-	-	92.8	-	4.9	-	-
93.3 110.0	18.6	-	-	-	-	-	-	48.3	-	4.1	-	-
93.3 120.0	4.6	-	21.8	-	-	-	-	41.3	-	0.0	-	-

Tarletonbeania crenularis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
4.8 22.9	-	-	-	0.0	-	-	9.4	-	-	-	-	-
11.7 7.2	-	-	-	0.0	-	-	21.6	-	-	-	-	-
13.9 17.9	-	-	-	0.0	-	-	18.6	-	-	-	-	-
15.3 30.4	-	-	-	-	-	-	5.2	-	-	-	-	-
15.6 8.9	-	-	-	0.0	-	-	17.0	-	-	-	-	-
17.0 21.5	-	-	-	0.0	-	-	30.0	-	-	-	-	-
18.6 33.2	-	-	-	0.0	-	-	64.2	-	-	-	-	-
18.7 12.6	-	-	-	0.0	-	-	33.2	-	-	-	-	-
21.3 39.1	-	-	-	20.9	-	-	0.0	-	-	-	-	-
22.0 15.5	-	-	-	4.5	-	-	28.1	-	-	-	-	-
23.0 30.3	-	-	-	0.0	-	-	53.0	-	-	-	-	-
24.3 43.5	-	-	-	10.3	-	-	0.0	-	-	-	-	-
26.0 34.8	-	-	-	0.0	-	-	40.2	-	-	-	-	-
27.7 25.9	-	-	-	0.0	-	-	21.6	-	-	-	-	-
28.7 40.6	-	-	-	0.0	-	-	10.9	-	-	-	-	-
29.4 57.0	-	-	-	21.3	-	-	5.4	-	-	-	-	-
30.4 31.8	-	-	-	28.5	-	-	29.1	-	-	-	-	-
31.1 48.2	-	-	-	20.4	-	-	24.7	-	-	-	-	-
32.1 23.0	-	-	-	5.2	-	-	0.0	-	-	-	-	-
32.6 60.5	-	-	-	0.0	-	-	5.3	-	-	-	-	-
32.8 39.5	-	-	-	8.4	-	-	20.5	-	-	-	-	-
34.3 51.7	-	-	-	9.5	-	-	0.0	-	-	-	-	-

Table 20. (cont.)

Tarletonbeania crenularis (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
34.3	71.6	-	-	-	9.8	-	-	23.8	-	-	-	-	-
36.0	43.0	-	-	-	11.1	-	-	24.1	-	-	-	-	-
36.0	62.9	-	-	-	29.9	-	-	11.1	-	-	-	-	-
37.2	76.6	-	-	-	30.7	-	-	14.8	-	-	-	-	-
37.6	54.2	-	-	-	0.0	-	-	17.0	-	-	-	-	-
38.9	67.9	-	-	-	0.0	-	-	23.5	-	-	-	-	-
39.3	45.5	-	-	-	8.6	-	-	28.1	-	-	-	-	-
40.5	59.3	-	-	-	27.4	-	-	10.8	-	-	-	-	-
41.4	74.6	-	-	-	38.7	-	-	0.0	-	-	-	-	-
42.2	50.6	-	-	-	-	-	-	5.1	-	-	-	-	-
43.1	66.0	-	-	-	10.6	-	-	0.0	-	-	-	-	-
43.5	83.8	-	-	-	50.3	-	-	0.0	-	-	-	-	-
44.7	57.3	-	-	-	7.8	-	-	0.0	-	-	-	-	-
45.1	75.2	-	-	-	33.0	-	-	-	-	-	-	-	-
46.8	66.6	-	-	-	28.8	-	-	9.6	-	-	-	-	-
47.0	85.8	-	-	-	35.1	-	-	-	-	-	-	-	-
48.5	58.0	-	-	-	38.2	-	-	15.4	-	-	-	-	-
48.6	77.2	-	-	-	11.1	-	-	-	-	-	-	-	-
50.1	49.2	-	-	-	28.2	-	-	25.6	-	-	-	-	-
50.2	87.2	-	-	-	18.0	-	-	-	-	-	-	-	-
50.3	87.2	-	-	-	-	-	-	-	10.9	-	-	-	-
51.9	59.9	-	-	-	0.0	-	-	19.9	-	-	-	-	-
53.5	88.7	-	-	-	-	-	-	-	10.5	-	-	-	-
53.6	88.6	-	-	-	26.0	-	-	-	-	-	-	-	-
56.7	55.0	-	-	-	28.9	-	-	-	0.0	-	-	-	-
56.7	60.0	-	-	-	7.6	-	-	-	0.0	-	-	-	-
56.7	70.0	-	-	-	20.6	-	-	-	21.9	-	-	-	-
56.7	80.0	-	-	-	50.0	-	-	-	0.0	-	-	-	-
56.7	90.0	-	-	-	8.2	-	-	-	0.0	-	-	-	-
60.0	80.0	-	-	-	38.3	-	-	-	12.2	-	-	-	-
60.0	90.0	-	-	-	19.1	-	-	-	35.1	-	-	-	-
63.3	70.0	-	-	-	-	-	-	-	11.0	-	-	-	-
63.3	80.0	-	-	-	18.0	-	-	-	6.0	-	-	-	-

Table 20. (cont.)

Tarletonbeania crenularis (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3 90.0	-	-	-	4.5	-	-	-	0.0	-	-	-	-
66.7 60.0	-	-	-	11.9	-	-	-	5.1	-	-	-	-
66.7 70.0	-	-	-	10.8	-	-	-	0.0	-	-	-	-
70.0 60.0	-	-	-	3.3	-	-	-	-	-	-	-	-
73.3 80.0	-	-	-	0.0	-	-	-	16.2	-	-	-	-
76.7 60.0	4.4	-	-	8.9	-	-	-	0.0	-	0.0	-	-
76.7 70.0	0.0	-	-	4.4	-	-	-	0.0	-	0.0	-	-
76.7 80.0	0.0	-	-	0.0	-	-	-	9.5	-	0.0	-	-
76.7 100.0	0.0	-	-	0.0	-	-	-	10.4	-	0.0	-	-
80.0 55.0	9.7	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0 100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-
83.3 60.0	9.5	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7 60.0	0.0	-	-	0.0	-	-	-	0.0	-	9.7	-	-
86.7 80.0	5.0	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 90.0	5.3	-	-	0.0	-	-	-	4.5	-	0.0	-	-
86.7 100.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	5.3	-	0.0	-	-
90.0 53.0	0.0	-	8.0	-	-	-	-	0.0	-	0.0	-	-
93.3 60.0	0.0	-	0.0	-	-	-	-	0.0	-	4.4	-	-

Trachipterus altivelis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
22.0 15.5	-	-	-	0.0	-	-	5.6	-	-	-	-	-
43.1 66.0	-	-	-	0.0	-	-	10.4	-	-	-	-	-
60.0 90.0	-	-	-	0.0	-	-	-	5.0	-	-	-	-
90.0 120.0	4.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3 100.0	4.9	-	-	-	-	-	-	0.0	-	0.0	-	-

Coryphaenoides acrolepis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
51.9 59.9	-	-	-	10.2	-	-	0.0	-	-	-	-	-

Coryphaenoides leptolepis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
27.1 48.7	-	-	-	11.4	-	-	0.0	-	-	-	-	-

Table 20. (cont.)

Microgadus proximus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
28.0	14.7	-	-	-	8.2	-	-	0.0	-	-	-	-	-

Theragra chalcogramma

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
15.2	-2.1	-	-	-	3.6	-	-	-	-	-	-	-	-

Merluccius productus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
40.5	59.3	-	-	-	9.1	-	-	0.0	-	-	-	-	-
41.4	74.6	-	-	-	9.7	-	-	0.0	-	-	-	-	-
43.5	83.8	-	-	-	5.6	-	-	0.0	-	-	-	-	-
47.0	85.8	-	-	-	5.0	-	-	-	-	-	-	-	-
50.3	68.6	-	-	-	11.0	-	-	0.0	-	-	-	-	-
56.7	60.0	-	-	-	7.6	-	-	-	0.0	-	-	-	-
56.7	80.0	-	-	-	10.0	-	-	-	0.0	-	-	-	-
70.0	55.0	-	-	-	16.2	-	-	-	-	-	-	-	-
73.3	90.0	-	-	-	5.5	-	-	-	0.0	-	-	-	-
76.7	70.0	0.0	-	-	4.4	-	-	-	0.0	-	0.0	-	-
80.0	51.0	21.1	-	-	9.1	-	-	-	0.0	-	0.0	-	-
80.0	55.0	19.4	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0	60.0	5.0	-	-	-	-	-	-	0.0	-	0.0	-	-
81.8	46.9	20.6	-	-	19.6	-	-	-	0.0	-	0.0	-	-
83.3	42.0	0.0	-	-	8.4	-	-	-	0.0	-	0.0	-	-
83.3	70.0	0.0	-	-	6.7	-	-	-	0.0	-	0.0	-	-
86.7	33.0	0.0	-	-	7.2	-	-	-	0.0	-	0.0	-	-
86.7	35.0	0.0	-	-	11.0	-	-	-	0.0	-	0.0	-	-
86.7	45.0	0.0	-	-	5.4	-	-	-	0.0	-	0.0	-	-
86.7	50.0	0.0	-	-	21.5	-	-	-	0.0	-	0.0	-	-
86.7	55.0	-	-	-	10.0	-	-	-	0.0	-	0.0	-	-
86.7	60.0	0.0	-	-	11.4	-	-	-	0.0	-	0.0	-	-
86.7	70.0	0.0	-	-	10.3	-	-	-	0.0	-	0.0	-	-
86.7	80.0	0.0	-	-	5.0	-	-	-	0.0	-	0.0	-	-
90.0	28.0	0.0	-	19.7	-	-	-	-	0.0	-	0.0	-	-
90.0	30.0	0.0	-	33.4	-	-	-	-	0.0	-	0.0	-	-
90.0	35.0	0.0	-	11.1	-	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Merluccius productus (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 37.0	0.0	-	18.0	-	-	-	-	0.0	-	0.0	-	-
90.0 53.0	0.0	-	15.9	-	-	-	-	0.0	-	0.0	-	-
93.3 28.0	0.0	-	4.6	-	-	-	-	0.0	-	0.0	-	-
93.3 30.0	0.0	-	5.0	-	-	-	-	0.0	-	0.0	-	-

Chilara taylori

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 45.0	0.0	-	-	0.0	-	-	-	4.7	-	0.0	-	-

Ophidion scrippsae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	0.0	-	0.0	-	-	-	-	22.8	-	0.0	-	-

Brosmophycis marginata

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 50.0	0.0	-	-	10.7	-	-	-	0.0	-	0.0	-	-

***Gigantactis* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 100.0	0.0	-	-	-	-	-	-	4.6	-	0.0	-	-

Cololabis saira

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3 70.0	0.0	-	-	-	-	-	-	0.0	-	4.5	-	-

Melamphaidae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 60.0	0.0	-	0.0	-	-	-	-	4.3	-	0.0	-	-

***Melamphaes* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
36.0 62.9	-	-	-	10.0	-	-	0.0	-	-	-	-	-
90.0 100.0	0.0	-	4.5	-	-	-	-	0.0	-	0.0	-	-
90.0 110.0	0.0	-	4.8	-	-	-	-	0.0	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	4.6	-	0.0	-	-

Melamphaes lugubris

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
53.5 88.7	-	-	-	-	-	-	-	10.5	-	-	-	-
60.0 90.0	-	-	-	0.0	-	-	-	5.0	-	-	-	-
80.0 100.0	0.0	-	-	-	-	-	-	4.5	-	0.0	-	-

Table 20. (cont.)

Melamphaes lugubris (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 100.0	0.0	-	-	0.0	-	-	-	4.8	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.6	-	-
90.0 60.0	0.0	-	5.3	-	-	-	-	0.0	-	0.0	-	-
90.0 90.0	0.0	-	5.4	-	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
90.0 120.0	0.0	-	9.7	-	-	-	-	0.0	-	0.0	-	-
93.3 45.0	0.0	-	0.0	-	-	-	-	0.0	-	6.3	-	-
93.3 55.0	0.0	-	4.5	-	-	-	-	0.0	-	0.0	-	-
93.3 120.0	0.0	-	13.1	-	-	-	-	0.0	-	0.0	-	-

Melamphaes parvus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
47.0 85.8	-	-	-	5.0	-	-	-	-	-	-	-	-
50.1 49.2	-	-	-	9.4	-	-	0.0	-	-	-	-	-
53.6 88.6	-	-	-	10.4	-	-	-	-	-	-	-	-
56.7 80.0	-	-	-	20.0	-	-	-	0.0	-	-	-	-
83.3 80.0	0.0	-	-	0.0	-	-	-	0.0	-	4.6	-	-
83.3 110.0	0.0	-	-	0.0	-	-	-	0.0	-	4.4	-	-
90.0 80.0	0.0	-	5.2	-	-	-	-	0.0	-	0.0	-	-
90.0 110.0	0.0	-	0.0	-	-	-	-	4.5	-	0.0	-	-

Poromitra crassiceps

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 70.0	-	-	-	0.0	-	-	-	4.9	-	-	-	-
90.0 110.0	0.0	-	4.8	-	-	-	-	0.0	-	0.0	-	-

Scopelogadus mizolepis bispinosus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 110.0	0.0	-	-	0.0	-	-	-	5.3	-	0.0	-	-
93.3 90.0	0.0	-	0.0	-	-	-	-	4.6	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	0.0	-	4.9	-	-
93.3 110.0	0.0	-	-	-	-	-	-	4.8	-	0.0	-	-
93.3 120.0	0.0	-	0.0	-	-	-	-	10.3	-	0.0	-	-

Table 20. (cont.)

		***Sebastes* spp.**											
Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
4.8	22.9	-	-	-	0.0	-	-	9.4	-	-	-	-	-
6.5	14.0	-	-	-	0.0	-	-	10.8	-	-	-	-	-
8.2	5.0	-	-	-	36.7	-	-	341.4	-	-	-	-	-
10.0	-4.0	-	-	-	0.0	-	-	45.4	-	-	-	-	-
11.7	7.2	-	-	-	5.2	-	-	162.3	-	-	-	-	-
13.4	-1.8	-	-	-	3.5	-	-	0.0	-	-	-	-	-
15.6	8.9	-	-	-	0.0	-	-	158.8	-	-	-	-	-
17.0	21.5	-	-	-	8.9	-	-	0.0	-	-	-	-	-
18.6	33.2	-	-	-	168.0	-	-	64.2	-	-	-	-	-
18.7	12.6	-	-	-	0.0	-	-	11.1	-	-	-	-	-
20.3	24.3	-	-	-	9.8	-	-	0.0	-	-	-	-	-
21.3	39.1	-	-	-	62.6	-	-	0.0	-	-	-	-	-
22.0	15.5	-	-	-	36.2	-	-	39.3	-	-	-	-	-
23.0	30.3	-	-	-	46.2	-	-	84.8	-	-	-	-	-
24.3	43.5	-	-	-	71.9	-	-	0.0	-	-	-	-	-
24.7	21.4	-	-	-	19.3	-	-	89.3	-	-	-	-	-
26.0	34.8	-	-	-	33.6	-	-	8.0	-	-	-	-	-
26.4	12.5	-	-	-	4.9	-	-	4.9	-	-	-	-	-
27.1	48.7	-	-	-	91.0	-	-	0.0	-	-	-	-	-
27.7	25.9	-	-	-	0.0	-	-	27.1	-	-	-	-	-
28.7	40.6	-	-	-	19.8	-	-	76.3	-	-	-	-	-
29.4	57.0	-	-	-	42.6	-	-	21.4	-	-	-	-	-
30.4	31.8	-	-	-	9.5	-	-	29.1	-	-	-	-	-
31.1	48.2	-	-	-	30.6	-	-	24.7	-	-	-	-	-
32.6	60.5	-	-	-	16.6	-	-	0.0	-	-	-	-	-
32.8	39.5	-	-	-	33.5	-	-	0.0	-	-	-	-	-
33.2	27.2	-	-	-	0.0	-	-	19.3	-	-	-	-	-
34.3	71.6	-	-	-	9.8	-	-	0.0	-	-	-	-	-
34.5	30.7	-	-	-	0.0	-	-	32.9	-	-	-	-	-
36.0	43.0	-	-	-	33.3	-	-	14.5	-	-	-	-	-
36.0	62.9	-	-	-	0.0	-	-	66.8	-	-	-	-	-
37.6	54.2	-	-	-	0.0	-	-	51.0	-	-	-	-	-
38.9	67.9	-	-	-	0.0	-	-	70.4	-	-	-	-	-

Table 20. (cont.)

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

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
39.3	45.5	-	-	-	17.3	-	-	32.2	-	-	-	-	-
39.8	83.2	-	-	-	9.7	-	-	0.0	-	-	-	-	-
40.5	59.3	-	-	-	36.5	-	-	0.0	-	-	-	-	-
40.7	37.8	-	-	-	4.3	-	-	-	-	-	-	-	-
41.4	74.6	-	-	-	58.1	-	-	23.2	-	-	-	-	-
42.2	50.6	-	-	-	-	-	-	25.3	-	-	-	-	-
43.1	66.0	-	-	-	0.0	-	-	10.4	-	-	-	-	-
45.1	75.3	-	-	-	-	-	-	11.0	-	-	-	-	-
46.4	48.6	-	-	-	0.0	-	-	30.6	-	-	-	-	-
46.8	66.6	-	-	-	0.0	-	-	9.6	-	-	-	-	-
50.1	49.2	-	-	-	0.0	-	-	12.8	-	-	-	-	-
50.2	87.2	-	-	-	4.5	-	-	-	-	-	-	-	-
50.3	68.6	-	-	-	0.0	-	-	5.3	-	-	-	-	-
51.9	59.9	-	-	-	0.0	-	-	5.0	-	-	-	-	-
56.7	55.0	-	-	-	9.6	-	-	-	0.0	-	-	-	-
56.7	60.0	-	-	-	0.0	-	-	-	5.2	-	-	-	-
60.0	60.0	-	-	-	5.2	-	-	-	5.2	-	-	-	-
60.0	70.0	-	-	-	0.0	-	-	-	11.0	-	-	-	-
63.3	52.0	-	-	-	-	-	-	-	13.9	-	-	-	-
63.3	55.0	-	-	-	-	-	-	-	91.4	-	-	-	-
63.3	60.0	-	-	-	-	-	-	-	10.6	-	-	-	-
66.7	50.0	547.0	-	-	9.4	-	-	-	38.6	-	-	-	-
66.7	55.0	8.6	-	-	29.9	-	-	-	0.0	-	-	-	-
70.0	55.0	-	-	-	5.4	-	-	-	-	-	-	-	-
70.0	60.0	-	-	-	9.8	-	-	-	-	-	-	-	-
73.3	50.0	-	-	-	-	-	-	-	4.2	-	-	-	-
73.3	70.0	-	-	-	5.3	-	-	-	0.0	-	-	-	-
76.7	49.0	-	-	-	12.3	-	-	-	0.0	-	4.5	-	-
76.7	51.0	-	-	-	5.2	-	-	-	4.4	-	10.4	-	-
76.7	55.0	9.4	-	-	0.0	-	-	-	0.0	-	5.0	-	-
76.7	60.0	8.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
76.7	70.0	0.0	-	-	4.4	-	-	-	0.0	-	0.0	-	-
80.0	51.0	320.0	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

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

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	55.0	48.5	-	-	-	-	-	-	0.0	-	0.0	-	-
80.0	60.0	140.8	-	-	-	-	-	-	0.0	-	0.0	-	-
81.8	46.9	41.2	-	-	0.0	-	-	-	0.0	-	5.1	-	-
83.3	42.0	37.3	-	-	41.9	-	-	-	0.0	-	4.4	-	-
83.3	51.0	16.8	-	-	0.0	-	-	-	4.0	-	0.0	-	-
83.3	55.0	19.2	-	-	-	-	-	-	0.0	-	10.0	-	-
83.3	70.0	4.8	-	-	6.7	-	-	-	0.0	-	0.0	-	-
83.3	80.0	0.0	-	-	5.2	-	-	-	0.0	-	0.0	-	-
85.4	35.8	23.3	-	-	-	-	-	-	-	-	-	-	-
86.7	33.0	4.2	-	-	0.0	-	-	-	3.1	-	3.0	-	-
86.7	35.0	102.8	-	-	66.3	-	-	-	9.4	-	0.0	-	-
86.7	40.0	74.6	-	-	58.0	-	-	-	0.0	-	0.0	-	-
86.7	45.0	10.1	-	-	32.2	-	-	-	18.6	-	0.0	-	-
86.7	50.0	601.1	-	-	182.5	-	-	-	7.2	-	3.8	-	-
86.7	55.0	-	-	-	10.0	-	-	-	0.0	-	0.0	-	-
86.7	60.0	8.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	70.0	0.0	-	-	15.4	-	-	-	0.0	-	0.0	-	-
86.7	80.0	5.0	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0	28.0	8.8	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0	30.0	18.7	-	89.0	-	-	-	-	0.0	-	0.0	-	-
90.0	35.0	111.5	-	320.5	-	-	-	-	0.0	-	15.1	-	-
90.0	37.0	27.6	-	63.1	-	-	-	-	4.7	-	0.0	-	-
90.0	45.0	4.7	-	-	-	-	-	-	0.0	-	0.0	-	-
90.0	53.0	52.8	-	47.8	-	-	-	-	0.0	-	0.0	-	-
90.0	60.0	0.0	-	5.3	-	-	-	-	0.0	-	0.0	-	-
90.0	70.0	0.0	-	9.9	-	-	-	-	0.0	-	0.0	-	-
90.0	120.0	4.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	26.7	61.7	-	7.0	-	-	-	-	9.8	-	0.0	-	-
93.3	28.0	0.0	-	46.4	-	-	-	-	0.0	-	0.0	-	-
93.3	30.0	0.0	-	25.2	-	-	-	-	0.0	-	0.0	-	-
93.3	35.0	0.0	-	69.6	-	-	-	-	0.0	-	13.4	-	-
93.3	40.0	0.0	-	11.4	-	-	-	-	0.0	-	0.0	-	-
93.3	45.0	9.6	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

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

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.3	55.0	116.4	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	60.0	0.0	-	15.0	-	-	-	-	0.0	-	0.0	-	-
93.4	26.4	0.0	-	2.3	-	-	-	-	0.0	-	0.0	-	-

Sebastes aurora

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
26.0	34.8	-	-	-	0.0	-	-	8.0	-	-	-	-	-
27.1	48.7	-	-	-	0.0	-	-	10.5	-	-	-	-	-
66.7	50.0	0.0	-	-	0.0	-	-	-	4.8	-	-	-	-
76.7	55.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
90.0	37.0	0.0	-	9.0	-	-	-	-	0.0	-	0.0	-	-

Sebastes diploproa

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	80.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-
86.7	40.0	0.0	-	-	0.0	-	-	-	0.0	-	9.9	-	-
86.7	45.0	0.0	-	-	0.0	-	-	-	0.0	-	10.3	-	-

Sebastes jordani

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7	60.0	-	-	-	47.4	-	-	-	0.0	-	-	-	-
76.7	60.0	0.0	-	-	8.9	-	-	-	0.0	-	0.0	-	-
76.7	70.0	0.0	-	-	4.4	-	-	-	0.0	-	0.0	-	-
80.0	51.0	315.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
81.8	46.9	10.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	42.0	23.3	-	-	16.8	-	-	-	0.0	-	0.0	-	-
83.3	51.0	4.2	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3	55.0	4.8	-	-	-	-	-	-	0.0	-	0.0	-	-
83.3	70.0	0.0	-	-	13.3	-	-	-	0.0	-	0.0	-	-
86.7	33.0	0.0	-	-	28.9	-	-	-	0.0	-	0.0	-	-
86.7	35.0	51.4	-	-	77.3	-	-	-	0.0	-	0.0	-	-
86.7	50.0	0.0	-	-	32.2	-	-	-	0.0	-	0.0	-	-
93.3	28.0	32.5	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	30.0	10.1	-	15.1	-	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Sebastes paucispinis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
51.9 59.9	-	-	-	10.2	-	-	0.0	-	-	-	-	-
73.3 70.0	-	-	-	5.3	-	-	-	0.0	-	-	-	-
76.7 60.0	0.0	-	-	8.9	-	-	-	0.0	-	0.0	-	-
80.0 60.0	30.2	-	-	-	-	-	-	0.0	-	0.0	-	-
81.8 46.9	10.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 42.0	4.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 55.0	72.2	-	-	-	-	-	-	0.0	-	0.0	-	-
85.4 35.8	3.9	-	-	-	-	-	-	-	-	-	-	-
86.7 35.0	0.0	-	-	11.0	-	-	-	0.0	-	0.0	-	-
86.7 50.0	13.3	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 30.0	0.0	-	22.2	-	-	-	-	0.0	-	0.0	-	-
90.0 35.0	27.9	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0 37.0	0.0	-	9.0	-	-	-	-	0.0	-	0.0	-	-
90.0 53.0	0.0	-	8.0	-	-	-	-	0.0	-	0.0	-	-
93.3 30.0	0.0	-	5.0	-	-	-	-	0.0	-	0.0	-	-
93.3 55.0	15.2	-	0.0	-	-	-	-	0.0	-	0.0	-	-

***Sebastolobus* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
31.1 48.2	-	-	-	10.2	-	-	0.0	-	-	-	-	-
32.6 60.5	-	-	-	33.2	-	-	0.0	-	-	-	-	-
34.3 71.6	-	-	-	39.1	-	-	0.0	-	-	-	-	-
36.0 62.9	-	-	-	10.0	-	-	0.0	-	-	-	-	-
43.5 83.8	-	-	-	5.6	-	-	0.0	-	-	-	-	-
44.7 57.3	-	-	-	7.8	-	-	0.0	-	-	-	-	-
90.0 80.0	0.0	-	5.2	-	-	-	-	0.0	-	0.0	-	-

Sebastolobus alascanus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 100.0	0.0	-	-	0.0	-	-	-	5.2	-	0.0	-	-
90.0 70.0	0.0	-	0.0	-	-	-	-	5.1	-	0.0	-	-

Anoplopoma fimbria

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
24.7 21.4	-	-	-	9.6	-	-	0.0	-	-	-	-	-
27.7 25.9	-	-	-	9.7	-	-	0.0	-	-	-	-	-

Table 20. (cont.)

Anoplopoma fimbria (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
30.4	31.8	-	-	-	19.0	-	-	0.0	-	-	-	-	-
41.4	74.6	-	-	-	9.7	-	-	0.0	-	-	-	-	-

Hexagrammos decagrammus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
11.7	-2.6	-	-	-	11.0	-	-	0.0	-	-	-	-	-
30.4	31.8	-	-	-	9.5	-	-	0.0	-	-	-	-	-

Ophiodon elongatus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
13.4	-1.8	-	-	-	3.5	-	-	0.0	-	-	-	-	-
21.9	5.9	-	-	-	3.5	-	-	0.0	-	-	-	-	-

Oxylebius pictus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	40.6	0.0	-	-	0.0	-	-	-	3.4	-	0.0	-	-

Zaniolepis frenata

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	45.0	0.0	-	-	5.4	-	-	-	0.0	-	0.0	-	-
90.0	35.0	9.3	-	0.0	-	-	-	-	0.0	-	0.0	-	-

***Artedius* spp.**

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
15.2	-2.1	-	-	-	24.9	-	-	-	-	-	-	-	-
41.0	36.7	-	-	-	-	-	-	3.5	-	-	-	-	-

Artedius fenestralis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
11.7	-2.6	-	-	-	0.0	-	-	3.0	-	-	-	-	-
13.4	-1.8	-	-	-	7.0	-	-	0.0	-	-	-	-	-

Artedius harringtoni

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
10.0	-4.0	-	-	-	0.0	-	-	11.4	-	-	-	-	-
11.7	-2.6	-	-	-	0.0	-	-	9.0	-	-	-	-	-
13.4	-1.8	-	-	-	0.0	-	-	3.6	-	-	-	-	-
20.5	3.7	-	-	-	0.0	-	-	5.4	-	-	-	-	-
29.4	17.0	-	-	-	0.0	-	-	4.9	-	-	-	-	-
53.6	51.2	-	-	-	0.0	-	-	4.8	-	-	-	-	-

Table 20. (cont.)

Artedius lateralis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
73.3 50.0	-	-	-	-	-	-	-	8.3	-	-	-	-
80.0 51.0	0.0	-	-	9.1	-	-	-	0.0	-	0.0	-	-

Hemilepidotus spinosus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
13.9 17.9	-	-	-	5.2	-	-	0.0	-	-	-	-	-
20.3 24.3	-	-	-	9.8	-	-	0.0	-	-	-	-	-
26.0 34.8	-	-	-	22.4	-	-	0.0	-	-	-	-	-

Icelinus quadriseriatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 51.0	0.0	-	-	0.0	-	-	-	8.1	-	0.0	-	-
86.7 33.0	0.0	-	-	3.6	-	-	-	0.0	-	0.0	-	-

Leptocottus armatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 50.0	10.9	-	-	0.0	-	-	-	0.0	-	-	-	-
76.7 49.0	-	-	-	0.0	-	-	-	0.0	-	4.5	-	-

Radulinus asprellus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
26.4 12.5	-	-	-	9.7	-	-	0.0	-	-	-	-	-

Ruscarius creaseri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 50.0	10.9	-	-	0.0	-	-	-	0.0	-	-	-	-
76.7 55.0	0.0	-	-	5.4	-	-	-	0.0	-	0.0	-	-
86.7 50.0	0.0	-	-	32.2	-	-	-	0.0	-	0.0	-	-

Ruscarius meanyi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
39.3 36.1	-	-	-	0.0	-	-	5.0	-	-	-	-	-
63.3 52.0	-	-	-	-	-	-	-	4.6	-	-	-	-

Scorpaenichthys marmoratus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
23.8 6.5	-	-	-	7.1	-	-	-	-	-	-	-	-
50.1 49.2	-	-	-	9.4	-	-	0.0	-	-	-	-	-

Table 20. (cont.)

Agonopsis sterletus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	55.0	0.0	-	-	5.4	-	-	-	0.0	-	0.0	-	-

Odontopyxis trispinosa

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3	40.6	3.9	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7	50.0	0.0	-	-	10.7	-	-	-	0.0	-	0.0	-	-

Xeneretmus latifrons

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	51.0	0.0	-	-	27.3	-	-	-	0.0	-	0.0	-	-
83.3	51.0	0.0	-	-	10.7	-	-	-	0.0	-	0.0	-	-

Liparis fucensis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
6.5	14.0	-	-	-	0.0	-	-	43.1	-	-	-	-	-
8.2	5.0	-	-	-	9.2	-	-	10.3	-	-	-	-	-
10.0	-4.0	-	-	-	7.1	-	-	0.0	-	-	-	-	-
11.7	7.2	-	-	-	0.0	-	-	10.8	-	-	-	-	-
22.0	15.5	-	-	-	4.5	-	-	0.0	-	-	-	-	-
28.7	40.6	-	-	-	9.9	-	-	0.0	-	-	-	-	-
29.4	17.0	-	-	-	0.0	-	-	4.9	-	-	-	-	-
30.8	20.0	-	-	-	0.0	-	-	8.5	-	-	-	-	-
41.0	36.7	-	-	-	-	-	-	3.5	-	-	-	-	-
44.7	57.3	-	-	-	7.8	-	-	0.0	-	-	-	-	-
50.1	49.2	-	-	-	9.4	-	-	0.0	-	-	-	-	-
51.9	59.9	-	-	-	10.2	-	-	0.0	-	-	-	-	-
56.7	55.0	-	-	-	9.6	-	-	-	0.0	-	-	-	-

Liparis mucosus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
53.6	51.2	-	-	-	0.0	-	-	4.8	-	-	-	-	-
80.0	51.0	0.0	-	-	18.2	-	-	-	0.0	-	0.0	-	-

Liparis pulchellus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
15.2	-2.1	-	-	-	3.6	-	-	-	-	-	-	-	-

Table 20. (cont.)

***Howella* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 110.0	0.0	-	-	0.0	-	-	-	4.7	-	4.4	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	5.3	-	0.0	-	-
90.0 100.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
90.0 120.0	0.0	-	0.0	-	-	-	-	0.0	-	5.1	-	-

***Paralabrax* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 45.0	0.0	-	-	0.0	-	-	-	4.7	-	0.0	-	-
90.0 27.7	0.0	-	-	-	-	-	-	61.5	-	0.0	-	-
93.3 28.0	0.0	-	0.0	-	-	-	-	4.9	-	0.0	-	-

Trachurus symmetricus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 90.0	0.0	-	-	5.1	-	-	-	0.0	-	0.0	-	-
86.7 100.0	0.0	-	-	5.5	-	-	-	0.0	-	0.0	-	-
90.0 100.0	0.0	-	31.5	-	-	-	-	0.0	-	0.0	-	-
90.0 120.0	0.0	-	24.2	-	-	-	-	0.0	-	0.0	-	-
93.3 90.0	0.0	-	0.0	-	-	-	-	4.6	-	0.0	-	-

Brama japonica

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

Genyonemus lineatus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0 50.5	-	-	-	-	-	-	-	-	-	2.2	-	-
80.0 51.0	0.0	-	-	0.0	-	-	-	0.0	-	7.8	-	-
83.3 40.6	73.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
83.3 42.0	4.7	-	-	0.0	-	-	-	0.0	-	0.0	-	-
86.7 33.0	0.0	-	-	50.5	-	-	-	0.0	-	0.0	-	-
86.7 35.0	0.0	-	-	143.6	-	-	-	0.0	-	0.0	-	-
88.5 30.1	3.1	-	-	-	-	-	-	-	-	3.2	-	-
91.7 26.4	-	-	1.8	-	-	-	-	0.0	-	-	-	-
93.3 28.0	0.0	-	0.0	-	-	-	-	9.8	-	0.0	-	-
93.4 26.4	0.0	-	2.3	-	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Seriphus politus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	27.7	0.0	-	-	-	-	-	-	79.1	-	0.0	-	-

Hermosilla azurea

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	30.0	0.0	-	0.0	-	-	-	-	5.1	-	0.0	-	-

Chromis punctipinnis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	60.0	0.0	-	-	0.0	-	-	-	9.3	-	0.0	-	-
90.0	27.7	0.0	-	-	-	-	-	-	20.5	-	0.0	-	-
90.0	28.0	0.0	-	0.0	-	-	-	-	18.2	-	0.0	-	-
90.0	30.0	0.0	-	0.0	-	-	-	-	10.2	-	0.0	-	-
93.3	26.7	0.0	-	0.0	-	-	-	-	9.8	-	0.0	-	-
93.3	28.0	0.0	-	0.0	-	-	-	-	14.7	-	0.0	-	-
93.3	45.0	0.0	-	0.0	-	-	-	-	5.3	-	0.0	-	-
93.4	26.4	0.0	-	0.0	-	-	-	-	23.5	-	0.0	-	-

Hypsypops rubicundus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	27.7	0.0	-	-	-	-	-	-	5.9	-	0.0	-	-

Oxyjulis californica

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	40.0	0.0	-	-	0.0	-	-	-	0.0	-	5.0	-	-
90.0	30.0	0.0	-	0.0	-	-	-	-	10.2	-	0.0	-	-
90.0	53.0	0.0	-	0.0	-	-	-	-	4.7	-	0.0	-	-
93.4	26.4	0.0	-	0.0	-	-	-	-	3.9	-	0.0	-	-

Rathbunella spp.

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7	50.0	5.5	-	-	0.0	-	-	-	0.0	-	-	-	-
86.7	50.0	4.4	-	-	0.0	-	-	-	0.0	-	0.0	-	-

Stichaeidae

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
17.3	-.1	-	-	-	12.2	-	-	-	-	-	-	-	-
20.5	3.7	-	-	-	3.0	-	-	0.0	-	-	-	-	-
28.0	14.7	-	-	-	8.2	-	-	0.0	-	-	-	-	-

Table 20. (cont.)

Cryptacanthodes aleutensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
11.7 -2.6	-	-	-	3.7	-	-	0.0	-	-	-	-	-
18.9 1.4	-	-	-	3.4	-	-	-	-	-	-	-	-
21.9 5.9	-	-	-	14.1	-	-	0.0	-	-	-	-	-

***Pholis* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
46.4 48.6	-	-	-	4.6	-	-	0.0	-	-	-	-	-

Chiasmodon subniger

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 110.0	0.0	-	-	0.0	-	-	-	5.3	-	0.0	-	-
90.0 110.0	0.0	-	4.8	-	-	-	-	0.0	-	0.0	-	-
93.3 100.0	0.0	-	-	-	-	-	-	4.6	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	4.8	-	0.0	-	-
93.3 120.0	4.6	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Paraclinus integripinnis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
91.7 26.4	-	-	0.0	-	-	-	-	3.8	-	-	-	-

***Gibbonsia* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 50.0	0.0	-	-	0.0	-	-	-	0.0	-	3.8	-	-

Neoclinus blanchardi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
81.8 46.9	0.0	-	-	0.0	-	-	-	0.0	-	5.1	-	-

Neoclinus stephensae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 33.0	0.0	-	-	3.6	-	-	-	0.0	-	0.0	-	-
86.7 50.0	0.0	-	-	10.7	-	-	-	0.0	-	0.0	-	-

Hypsoblennius gilberti

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
93.4 26.4	0.0	-	2.3	-	-	-	-	0.0	-	0.0	-	-

Hypsoblennius jenkinsi

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.8 32.5	0.0	-	-	-	-	-	-	-	-	2.6	-	-
90.0 27.7	0.0	-	-	-	-	-	-	20.5	-	0.0	-	-

Table 20. (cont.)

Hypsoblennius jenkinsi (cont.)

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
91.7 26.4	-	-	0.0	-	-	-	-	19.0	-	-	-	-
93.3 26.7	0.0	-	0.0	-	-	-	-	4.9	-	0.0	-	-
93.4 26.4	0.0	-	0.0	-	-	-	-	0.0	-	2.7	-	-

Icosteus aenigmaticus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
6.5 14.0	-	-	-	0.0	-	-	21.5	-	-	-	-	-
31.1 48.2	-	-	-	10.2	-	-	0.0	-	-	-	-	-
32.6 60.5	-	-	-	16.6	-	-	0.0	-	-	-	-	-
36.0 43.0	-	-	-	22.2	-	-	0.0	-	-	-	-	-

Gillichthys mirabilis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 27.7	3.2	-	-	-	-	-	-	0.0	-	0.0	-	-

Lepidogobius lepidus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 33.0	0.0	-	-	0.0	-	-	-	0.0	-	6.0	-	-
86.8 32.5	0.0	-	-	-	-	-	-	-	-	2.6	-	-
93.4 26.4	0.0	-	0.0	-	-	-	-	0.0	-	2.7	-	-

Lythrypnus zebra

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 35.0	0.0	-	0.0	-	-	-	-	5.3	-	0.0	-	-

Rhinogobiops nicholsii

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7 55.0	0.0	-	-	0.0	-	-	-	4.5	-	0.0	-	-
80.0 55.0	0.0	-	-	-	-	-	-	10.9	-	0.0	-	-
81.8 46.9	0.0	-	-	0.0	-	-	-	38.2	-	0.0	-	-
86.7 50.0	8.8	-	-	0.0	-	-	-	0.0	-	0.0	-	-
90.0 45.0	0.0	-	-	-	-	-	-	0.0	-	5.3	-	-
90.0 53.0	0.0	-	0.0	-	-	-	-	4.7	-	0.0	-	-

Typhlogobius californiensis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3 55.0	-	-	-	-	-	-	-	11.4	-	-	-	-
91.7 26.4	-	-	3.7	-	-	-	-	0.0	-	-	-	-

Table 20. (cont.)

Sphyraena argentea

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 27.7	0.0	-	-	-	-	-	-	11.7	-	0.0	-	-
90.0 28.0	0.0	-	0.0	-	-	-	-	4.6	-	0.0	-	-

Icichthys lockingtoni

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
36.0 43.0	-	-	-	0.0	-	-	4.8	-	-	-	-	-
36.0 62.9	-	-	-	0.0	-	-	44.5	-	-	-	-	-
38.9 67.9	-	-	-	0.0	-	-	23.5	-	-	-	-	-
41.4 74.6	-	-	-	0.0	-	-	23.2	-	-	-	-	-
44.7 57.3	-	-	-	0.0	-	-	9.9	-	-	-	-	-
47.0 85.8	-	-	-	5.0	-	-	-	-	-	-	-	-
48.5 58.0	-	-	-	0.0	-	-	5.1	-	-	-	-	-
73.3 80.0	-	-	-	5.5	-	-	-	0.0	-	-	-	-
76.7 49.0	-	-	-	4.1	-	-	-	0.0	-	0.0	-	-
76.7 60.0	0.0	-	-	8.9	-	-	-	0.0	-	0.0	-	-
80.0 90.0	0.0	-	-	-	-	-	-	20.4	-	0.0	-	-
83.3 55.0	4.8	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	5.3	-	0.0	-	-
90.0 30.0	0.0	-	11.1	-	-	-	-	0.0	-	0.0	-	-
93.3 40.0	0.0	-	5.7	-	-	-	-	0.0	-	0.0	-	-

Tetragonurus cuvieri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 100.0	0.0	-	0.0	-	-	-	-	10.0	-	0.0	-	-
93.3 110.0	0.0	-	-	-	-	-	-	0.0	-	4.1	-	-

Pleuronectiformes

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 30.0	0.0	-	0.0	-	-	-	-	5.1	-	0.0	-	-

***Citharichthys* spp.**

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0 28.0	0.0	-	0.0	-	-	-	-	9.1	-	0.0	-	-
90.0 35.0	0.0	-	0.0	-	-	-	-	10.5	-	0.0	-	-
90.0 37.0	0.0	-	0.0	-	-	-	-	4.7	-	0.0	-	-

Table 20. (cont.)

Citharichthys sordidus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
11.7	7.2	-	-	-	0.0	-	-	10.8	-	-	-	-	-
28.7	40.6	-	-	-	0.0	-	-	10.9	-	-	-	-	-
76.7	80.0	0.0	-	-	0.0	-	-	-	0.0	-	4.7	-	-
86.7	40.0	0.0	-	-	0.0	-	-	-	0.0	-	5.0	-	-
90.0	30.0	0.0	-	0.0	-	-	-	-	0.0	-	5.3	-	-
90.0	53.0	4.8	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	50.0	5.0	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Citharichthys stigmaeus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
63.3	52.0	-	-	-	-	-	-	-	4.6	-	-	-	-
66.7	55.0	8.6	-	-	0.0	-	-	-	0.0	-	-	-	-
66.7	70.0	-	-	-	0.0	-	-	-	4.9	-	-	-	-
73.3	50.0	-	-	-	-	-	-	-	8.3	-	-	-	-
76.7	49.0	-	-	-	0.0	-	-	-	4.2	-	0.0	-	-
76.7	51.0	-	-	-	0.0	-	-	-	8.7	-	0.0	-	-
76.7	55.0	9.4	-	-	0.0	-	-	-	0.0	-	19.8	-	-
76.7	60.0	0.0	-	-	0.0	-	-	-	9.4	-	4.9	-	-
76.7	80.0	0.0	-	-	0.0	-	-	-	0.0	-	14.2	-	-
80.0	51.0	8.4	-	-	0.0	-	-	-	11.3	-	0.0	-	-
80.0	55.0	0.0	-	-	-	-	-	-	21.8	-	9.6	-	-
80.0	80.0	0.0	-	-	-	-	-	-	4.2	-	0.0	-	-
81.8	46.9	0.0	-	-	0.0	-	-	-	42.9	-	0.0	-	-
83.3	42.0	0.0	-	-	0.0	-	-	-	10.1	-	0.0	-	-
83.3	51.0	0.0	-	-	0.0	-	-	-	12.1	-	0.0	-	-
83.3	60.0	9.5	-	-	-	-	-	-	0.0	-	4.7	-	-
86.7	35.0	0.0	-	-	0.0	-	-	-	4.7	-	4.9	-	-
86.7	40.0	0.0	-	-	0.0	-	-	-	15.4	-	0.0	-	-
86.7	45.0	0.0	-	-	0.0	-	-	-	9.3	-	5.2	-	-
86.7	50.0	0.0	-	-	0.0	-	-	-	3.6	-	3.8	-	-
86.7	55.0	-	-	-	10.0	-	-	-	0.0	-	8.6	-	-
86.7	60.0	33.3	-	-	11.4	-	-	-	0.0	-	0.0	-	-
86.7	90.0	0.0	-	-	5.2	-	-	-	0.0	-	0.0	-	-
90.0	28.0	0.0	-	0.0	-	-	-	-	18.2	-	0.0	-	-

Table 20. (cont.)

Citharichthys stigmaeus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	30.0	0.0	-	0.0	-	-	-	-	5.1	-	0.0	-	-
90.0	45.0	4.7	-	-	-	-	-	-	0.0	-	0.0	-	-
90.0	53.0	9.6	-	0.0	-	-	-	-	0.0	-	0.0	-	-
90.0	70.0	9.1	-	0.0	-	-	-	-	0.0	-	0.0	-	-
93.3	26.7	0.0	-	0.0	-	-	-	-	4.9	-	0.0	-	-
93.3	28.0	0.0	-	0.0	-	-	-	-	0.0	-	5.3	-	-
93.3	30.0	0.0	-	0.0	-	-	-	-	0.0	-	4.9	-	-
93.3	40.0	0.0	-	5.7	-	-	-	-	0.0	-	0.0	-	-
93.3	50.0	5.0	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Citharichthys xanthostigma

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
76.7	70.0	0.0	-	-	0.0	-	-	-	8.6	-	0.0	-	-

Hippoglossina stomata

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
90.0	30.0	0.0	-	0.0	-	-	-	-	5.1	-	0.0	-	-

Paralichthys californicus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7	33.0	0.0	-	-	3.6	-	-	-	0.0	-	0.0	-	-
86.7	35.0	0.0	-	-	143.6	-	-	-	0.0	-	0.0	-	-
90.0	27.7	0.0	-	-	-	-	-	-	17.6	-	0.0	-	-
91.7	26.4	-	-	0.0	-	-	-	-	7.6	-	-	-	-

Glyptocephalus zachirus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
17.0	21.5	-	-	-	0.0	-	-	10.0	-	-	-	-	-
27.7	25.9	-	-	-	9.7	-	-	5.4	-	-	-	-	-
30.8	20.0	-	-	-	4.8	-	-	0.0	-	-	-	-	-
31.1	48.2	-	-	-	10.2	-	-	0.0	-	-	-	-	-
32.1	23.0	-	-	-	5.2	-	-	0.0	-	-	-	-	-
32.6	60.5	-	-	-	8.3	-	-	0.0	-	-	-	-	-
33.2	27.2	-	-	-	9.1	-	-	0.0	-	-	-	-	-
37.6	54.2	-	-	-	18.6	-	-	0.0	-	-	-	-	-
39.3	45.5	-	-	-	25.9	-	-	4.0	-	-	-	-	-
50.1	49.2	-	-	-	9.4	-	-	0.0	-	-	-	-	-

Table 20. (cont.)

Glyptocephalus zachirus (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
53.6	51.2	-	-	-	0.0	-	-	4.8	-	-	-	-	-
56.7	55.0	-	-	-	9.6	-	-	-	0.0	-	-	-	-

Isopsetta isolepis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
13.4	-1.8	-	-	-	0.0	-	-	3.6	-	-	-	-	-
21.9	5.9	-	-	-	3.5	-	-	0.0	-	-	-	-	-
26.4	12.5	-	-	-	4.9	-	-	0.0	-	-	-	-	-
28.0	14.7	-	-	-	16.3	-	-	0.0	-	-	-	-	-
29.4	17.0	-	-	-	4.3	-	-	0.0	-	-	-	-	-

Lyopsetta exilis

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
10.0	-4.0	-	-	-	0.0	-	-	11.4	-	-	-	-	-
18.6	33.2	-	-	-	0.0	-	-	21.4	-	-	-	-	-
23.0	30.3	-	-	-	0.0	-	-	10.6	-	-	-	-	-
24.7	21.4	-	-	-	0.0	-	-	11.2	-	-	-	-	-
25.2	9.3	-	-	-	0.0	-	-	4.6	-	-	-	-	-
27.7	25.9	-	-	-	0.0	-	-	5.4	-	-	-	-	-
28.0	14.7	-	-	-	8.2	-	-	0.0	-	-	-	-	-
29.4	17.0	-	-	-	0.0	-	-	4.9	-	-	-	-	-
31.1	48.2	-	-	-	10.2	-	-	0.0	-	-	-	-	-
32.1	23.0	-	-	-	26.2	-	-	0.0	-	-	-	-	-
34.5	30.7	-	-	-	0.0	-	-	11.0	-	-	-	-	-
37.7	34.2	-	-	-	0.0	-	-	5.0	-	-	-	-	-
42.2	50.6	-	-	-	-	-	-	5.1	-	-	-	-	-
44.7	57.3	-	-	-	15.6	-	-	0.0	-	-	-	-	-
50.3	68.6	-	-	-	0.0	-	-	5.3	-	-	-	-	-
51.9	59.9	-	-	-	0.0	-	-	5.0	-	-	-	-	-
60.0	60.0	-	-	-	5.2	-	-	-	0.0	-	-	-	-
63.3	52.0	-	-	-	-	-	-	-	4.6	-	-	-	-
63.3	80.0	-	-	-	9.0	-	-	-	0.0	-	-	-	-
66.7	60.0	-	-	-	11.9	-	-	-	0.0	-	-	-	-
70.0	55.0	-	-	-	5.4	-	-	-	-	-	-	-	-
76.7	51.0	-	-	-	10.4	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Lyopsetta exilis (cont.)

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
80.0	51.0	0.0	-	-	9.1	-	-	-	0.0	-	0.0	-	-
90.0	28.0	0.0	-	9.8	-	-	-	-	0.0	-	0.0	-	-
90.0	30.0	0.0	-	44.5	-	-	-	-	0.0	-	0.0	-	-
90.0	35.0	0.0	-	22.1	-	-	-	-	0.0	-	0.0	-	-
93.3	26.7	0.0	-	7.0	-	-	-	-	0.0	-	0.0	-	-
93.3	28.0	0.0	-	27.8	-	-	-	-	0.0	-	0.0	-	-
93.4	26.4	0.0	-	2.3	-	-	-	-	0.0	-	0.0	-	-

Microstomus pacificus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
26.4	12.5	-	-	-	0.0	-	-	4.9	-	-	-	-	-
27.7	25.9	-	-	-	38.9	-	-	0.0	-	-	-	-	-
31.1	48.2	-	-	-	0.0	-	-	12.3	-	-	-	-	-
51.9	59.9	-	-	-	20.3	-	-	0.0	-	-	-	-	-
73.3	80.0	-	-	-	0.0	-	-	-	5.4	-	-	-	-
86.7	70.0	0.0	-	-	5.1	-	-	-	0.0	-	0.0	-	-

Parophrys vetulus

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
17.3	-.1	-	-	-	6.1	-	-	-	-	-	-	-	-
18.9	1.4	-	-	-	3.4	-	-	-	-	-	-	-	-
20.5	3.7	-	-	-	3.0	-	-	0.0	-	-	-	-	-
24.7	21.4	-	-	-	9.6	-	-	0.0	-	-	-	-	-
28.0	14.7	-	-	-	8.2	-	-	0.0	-	-	-	-	-
29.4	17.0	-	-	-	4.3	-	-	0.0	-	-	-	-	-
30.8	20.0	-	-	-	9.6	-	-	0.0	-	-	-	-	-
34.5	30.7	-	-	-	10.5	-	-	0.0	-	-	-	-	-
36.0	32.8	-	-	-	5.3	-	-	0.0	-	-	-	-	-
40.7	37.8	-	-	-	4.3	-	-	-	-	-	-	-	-
43.7	41.2	-	-	-	4.2	-	-	-	-	-	-	-	-
66.7	50.0	10.9	-	-	0.0	-	-	-	0.0	-	-	-	-
80.0	51.0	0.0	-	-	18.2	-	-	-	0.0	-	0.0	-	-
80.0	55.0	19.4	-	-	-	-	-	-	0.0	-	0.0	-	-
86.7	33.0	0.0	-	-	57.8	-	-	-	0.0	-	0.0	-	-

Table 20. (cont.)

Pleuronichthys coenosus

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.7 50.0	0.0	-	-	0.0	-	-	-	3.6	-	0.0	-	-
86.7 55.0	-	-	-	10.0	-	-	-	0.0	-	0.0	-	-

Pleuronichthys decurrens

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
50.3 68.6	-	-	-	11.0	-	-	0.0	-	-	-	-	-
83.3 55.0	4.8	-	-	-	-	-	-	0.0	-	0.0	-	-

Pleuronichthys ritteri

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
86.8 32.5	2.8	-	-	-	-	-	-	-	-	0.0	-	-

Pleuronichthys verticalis

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
83.3 40.6	0.0	-	-	0.0	-	-	-	3.4	-	0.0	-	-
90.0 27.7	0.0	-	-	-	-	-	-	2.9	-	0.0	-	-
90.0 28.0	0.0	-	0.0	-	-	-	-	4.6	-	0.0	-	-

Disintegrated fish larvae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
32.6 60.5	-	-	-	0.0	-	-	5.3	-	-	-	-	-
66.7 90.0	-	-	-	-	-	-	-	5.0	-	-	-	-
86.7 110.0	0.0	-	-	0.0	-	-	-	10.7	-	0.0	-	-
90.0 27.7	0.0	-	-	-	-	-	-	2.9	-	0.0	-	-
90.0 28.0	0.0	-	0.0	-	-	-	-	4.6	-	0.0	-	-
90.0 90.0	0.0	-	0.0	-	-	-	-	5.0	-	0.0	-	-
93.3 90.0	4.6	-	0.0	-	-	-	-	0.0	-	0.0	-	-

Unidentified fish larvae

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
66.7 55.0	0.0	-	-	0.0	-	-	-	10.3	-	-	-	-
86.7 35.0	0.0	-	-	11.0	-	-	-	0.0	-	0.0	-	-
93.3 28.0	0.0	-	0.0	-	-	-	-	4.9	-	0.0	-	-

PHYLOGENETIC INDEX TO TABLES 10 AND 20

ALPHABETICAL INDEX TO TABLES 10 AND 20

RECENT TECHNICAL MEMORANDUMS

SWFSC Technical Memorandums are accessible online at the SWFSC web site (http://swfsc.noaa.gov). Copies are also available form the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 (http://www.ntis.gov). Recent issues of NOAA Technical Memorandums from the NMFS Southwest Fisheries Science Center are listed below:

NOAA-TM-NMFS-SWFSC-471 Rationale for the 2010 revision of stock boundaries for the Hawai'i insular and pelagic stocks of false killer whales, *Pseudorca crassidens*.
K.A. FORNEY, R.W. BAIRD, and E.M. OLESON
(December 2010)

472 Historical occurrence of coho salmon *(Oncorhynchus kisutch)* in streams of the Santa Cruz Mountain region of California: response to an Endangered Species Act petition to delist coho salmon south of San Francisco Bay.
B.C. SPENCE, W.G. DUFFY, J.C. GARZA, B C. HARVEY, S.M. SOGARD, L.A. WEITKAMP, T.H. WILLIAMS, and D.A. BOUGHTON
(February 2011)

473 Comparison of real-time and post-cruise acoustic species identification of dolphin whistles using ROCCA (Real-time Odontocete Call Classification Algorithm).
Y. BARKLEY, J.N. OSWALD, J.V. CARRETTA, S. RANKIN, A.RUDD, and M.O. LAMMERS
(February 2011)

474 Global review of Humpback whale, *(Megaptera novaeangliae)*
A. FLEMING and J. JACKSON
(March 2011)

475 Status review update for Pacific salmon and steelhead listed under the Endangered Species Act: Central California Coast Coho Salmon ESU.
B.C. SPENCE and T.H. WILLIAMS
(March 2011)

476 U.S. Pacific marine mammal stock assessments: 2011.
J.V. CARRETTA, K.A. FORNEY, E. OLESON, K. MARTIEN, M.M. MUTO, M.S. LOWRY, J. BARLOW, J. BAKER, B. HANSON, D. LYNCH, L. CARSWELL, R.L. BROWNELL JR., J. ROBBINS, D.K. MATTILA, K. RALLS, and M.C. HILL
(June 2011)

477 Osteological specimens of tropical dolphins *(Delphinus, Grampus, Lagenodelphis, Stenella, Steno and Tursiops)* killed in the tuna fishery in the tuna fishery in the eastern tropical Pacific (1966-1992) and placed in museums by the Southwest Fisheries Science Center.
W.F. PERRIN and S.J. CHIVERS
(May 2011)

478 Ichthyoplankton and station data for surface (Manta) and oblique (Bongo) plankton tows for California Cooperative Oceanic Fisheries Investigations Survey cruises in 2007.
S.R. CHARTER, W. WATSON, and S.M. MANION
(May 2011)

479 Passive acoustic beaked whale monitoring survey of the Channel Islands, CA.
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(May 2011)

480 Determining transmitter drag and best-practice attachment procedures for sea turtle biotelemetry studies.
T.T. JONES, B. BOSTROM, M. CAREY, B. IMLACH, J. MIKKELSEN, P. OSTIFACHUK, S. ECKERT, P. OPAY, Y. SWIMMER, J.A. SEMINOFF, and D.R. JONES
(May 2011)