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LARVAL FISHES  
IN OCEAN WATERS  
OFF  
YAQUINA BAY,  
OREGON:  
abundance  
distribution  
and seasonality  
January 1971  
to August 1972

Sally L. Richardson



OREGON STATE UNIVERSITY  
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Publication no. ORESU-T-77-003

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## author

SALLY RICHARDSON: Research Assistant Professor of oceanography at Oregon State University.

## abstract

This report summarizes data on planktonic fish larvae collected from 2 to 111km off Yaquina Bay, Oregon during a 1 1/2 year survey from January 1971 to August 1972. Data came from 287 bongo net plankton samples which contained 23,578 fish larvae in 90 taxonomic groups, 78 identified at the species level. Data on larval fish occurrences, given as number of larvae under 10m<sup>2</sup> sea surface, are presented for each of the 90 taxa separately and for all fish larvae combined.

Hydrographic data (temperature at 0m, 10m, and the bottom or 140m and salinity at 0m and the bottom or 140m) collected at the same time and location are also presented.

All data are listed in relation to distance from the coast and cruise date. Information on relative abundance, inshore-offshore distribution trends and seasonal occurrences of larval fishes can be readily derived and compared with the hydrographic data.

## acknowledgment

Many people deserve acknowledgment for this study. Dr. William McNeil and Dr. William G. Pearcy were instrumental in initiating the Early Life History project. Dr. Jefferson Gonor, Dr. Charles B. Miller, Dr. Howard F. Horton and Dr. Carl E. Bond also served at various times as principal investigators on the project. Dr. R. Gregory Lough and Dr. Peter Rothlisberg (then graduate students) were responsible for collecting most of the samples. Dr. Elbert H. Ahlstrom, James Blackburn, Dr. Carl E. Bond, Jean Dunn, Joanne Laroche, April McLean, Dr. H. Geoffrey Moser, Karl Niggol, Sharon Roe, Elain Sandknop, Betsy Stevens and Kenneth Waldron have all helped at one time or another with larval fish identifications. Wayne Laroche provided names for our agonid "larval types". Many additional people, too numerous to mention, made this report possible by helping to collect samples, sort, enumerate and measure fish larvae, and transfer and reduce data; Barbara Dexter was particularly diligent in the latter two tasks. This research was supported by NOAA (U.S. Department of Commerce) Sea Grant Institutional Grant No. 04-6-158-44004. Ship operations support was provided by the National Science Foundation.



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- Figure 1. Location of bongo net sampling stations along an east-west transect (latitude 44°39.1'N) off Yaquina Bay, Oregon.
- Figure 2. Bongo net sampling array showing 20-cm and 70-cm bongo nets, a time depth recorder on the cable between the two bongos, and a kite-otter depressor beneath the 70-cm bongos.

#### ERRATA

- Table 18. (Page 27). The occurrence of *Tactostoma macropus* (2.05/10 m<sup>2</sup>, Station 93, 22 July 1971) is in error, a result of incorrect data transfer. The occurrence was actually *Chauliodus macouni*.

#### ADDENDA

- Table 36. (Page 36). *Artedius* sp. 1 = *Artedius harringtoni*
- Table 37. (Page 36). *Artedius* sp. 2 = *Artedius fenestralis*
- Table 78. (Page 57). *Stichaeidae* sp. 2 = *Poroclinus rothrocki*

## INTRODUCTION

This report summarizes data on larval fishes collected over the continental shelf and slope off the mid-Oregon coast, an area of upwelling, during an 18 month period. This is the most comprehensive quantitative time series of data available to date on ichthyoplankton in coastal regions of the northeast Pacific Ocean, north of northern California. The data show relative abundance (number of larvae under 10m<sup>2</sup> sea surface), inshore-offshore distribution trends and seasonal occurrence of fish larvae in 90 taxonomic groups, more than in any previous study in this area. This report makes these data accessible, allowing for comparison with ichthyoplankton baseline studies in other areas of the northeast Pacific and elsewhere. Information can also be derived on reproductive patterns of particular species, i.e., spawning times and locations, which are important aspects of life history and migration studies.

Other reports on general ichthyoplankton surveys conducted in ocean waters from northern California to the Gulf of Alaska (excluding the Aleutian Chain and Bering Sea) are available (Aron 1958, 1959, 1960; Pearcy 1962; Porter 1964; Le-Brasseur 1964, 1965, 1970; Day 1971, Waldron 1972, Richardson 1973, Naplin, Dunn and Niggol 1973; Dunn and Naplin 1974; Pearcy and Myers 1974; Laroche in press). These ocean studies (up to 1976) were reviewed by Richardson and Pearcy (1977). In addition, a number of ichthyoplankton surveys have been conducted in bays and sounds from northern California to Alaska:

Humboldt Bay, Calif.	Eldridge 1970; Eldridge and Bryon 1972
Yaquina Bay, Oregon	Pearcy and Myers 1974
Columbia River	Mistano in press
Puget Sound, WA	Aron 1958, 1960; Waldron 1972; Black- burn 1973
Strait of Georgia, B.C.	Barraclough 1967a, 1967b, 1967c; Barra- clough and Fulton 1967, 1968; Barra- clough, Robin- son and Fulton 1968; Robinson, Barraclough

and Fulton 1968a,  
1968b; Robinson  
1969a, 1969b;  
Parsons, Le-  
Brasseur and  
Barraclough  
1970

The sampling program for these data was part of an Oregon State University Sea Grant project on the early life history of boreal foodfish and shellfish designed to study the ecology of the larvae of fishes, shrimps and crabs together with the zooplankton off the Oregon coast. Related papers to date include studies on zooplankton (Peterson and Miller 1975, 1976), pink shrimp (*Pandalus jordani*) larvae (Rothlisberg 1975) crab larvae (Lough 1975, 1976) and fish larvae (Pearcy and Myers 1974, Richardson and DeHart 1975, Richardson and Pearcy 1977).

The data presented here on larval fishes formed the basis for the paper by Richardson and Pearcy (1977). In that paper, two assemblages of larval fishes were characterized off the Oregon coast; a coastal assemblage was located 2 to 27km offshore and an offshore assemblage 37 to 111km offshore. Although Richardson and Pearcy listed the 90 taxa found in the study, only dominant taxa (13 coastal and 10 offshore) in each assemblage were discussed in any detail. Data on all taxa is presented here as a supplement to that paper.

As this is a data report, no attempt is made to analyze or discuss the data presented. Methods of collecting and working up the samples are given. Data on sampling specifics, hydrography and the 90 taxa of fish larvae are presented in tabular form. Because of the consistent tabular approach, comparisons can be easily made between hydrographic conditions and larval fish abundances at the time of collection; information on relative abundance, inshore-offshore distribution trends and seasonality can be readily derived.

#### MATERIALS AND METHODS

##### *Survey Area*

Data in this report came from samples taken at 12 stations, located 2,6,9,18,28,37,46,56,65,74, 93 and 111km offshore along an east-west transect (latitude 44°39.1'N) off Newport, Oregon, just north of Yaquina Bay (Fig. 1). Stations were located at approximately 9km (5 nautical miles [n. mi.]) intervals except for the three most offshore stations which were about 18km (10 n. mi.) apart; an additional coastal station was located 6km (3 n. mi.) offshore. This transect extended over the continental shelf and slope off the mid-Oregon coast; water depths ranged from approximately 20 to 2850m (Table 1). Thirty cruises were made between January 1971 and August 1972. Samples were taken every month except January and February 1972, although not every station was sampled every month. A total of 287 station occupancies were made, 219 in daylight, 50 at night and 18 at dawn or dusk (i.e., within one half hour before or after sunrise or sunset).

##### *Sampling Procedures*

Sampling gear consisted of an array of paired 70cm and 20cm (mouth diameter) bongo nets without closing mechanisms (Fig. 2). The 70 cm bongos were fitted with two cylindrical-conical nets made of 0.571mm mesh Nitex. The nets were 4.6m long and had a filtering area to mouth area ratio of about 10:1. The 20cm bongos were fitted with 0.233mm and 0.571mm mesh nets, which were 1.8 and 1.6m long respectively. Each had a filtering area to mouth area ratio of about 10.5:1. Tsurumi-Seiki Kosakusho (TSK) flowmeters were mounted off-center in the mouth of each net to measure the volume of water filtered for quantification purposes. A 40kg multiplane kite-otter depressor (Colton 1959) was attached to the cable beneath the bongos which produced a 2:1 wire out to depth fished ratio. A time-depth recorder (Bathykymograph) was attached to the cable above the 70cm bongos to record depth and path of tow.

The bongos were towed along depth contours parallel to the coast at a vessel speed of 2 to 3 knots. Tows were made obliquely through the water column in equal stepped intervals from the bottom or from roughly 150m to the surface. Tow times ranged from 8 to 39 minutes and were usually between 10 and 30 minutes. Volume of water filtered per tow ranged from 283 to 1675m<sup>3</sup> and was usually between 500 and 1000m (Table 2).

Surface bucket temperatures were recorded with a mercury thermometer at most stations. Surface bucket salinity samples were also taken. On most cruises a bathythermograph (BT) cast was made from the surface to the bottom or to roughly 140m (wire out) to record change in temperature with depth. A deep (bottom or ~149m) salinity sample was taken at the deepest point of each BT cast with a National Institute of Oceanography (NIO) bottle. Salinity samples were analyzed using a CSIRO inductively coupled salinometer. BT slides were sent to Scripps Institution of Oceanography for processing and data computerization. (BT slides for a number of cruises in the first half of 1971 were lost before being sent for processing.)

After each tow, the plankton nets were washed down with sea water and the samples were preserved in 10 percent buffered formalin in seawater. Samples were brought to the shore laboratory for further processing.

##### *Laboratory Procedures*

One sample from each of the 287 pairs of 70cm bongo samples was sorted in its entirety for fish larvae. (Samples from the 20cm bongos were not considered in this study.) All fish larvae were removed from each sample and stored in 5 percent formalin in freshwater buffered with a saturated solution of sodium borate. (A saturated solution of sodium borate was slowly added to a gallon of 5 percent formalin until the formalin solution consistently tested neutral with pH paper.) Fish larvae were later identified to the lowest possible taxonomic group, counted and standard lengths were measured, i.e. snout tip to notochord tip preceding development of caudal fin, then to posterior margin of hypural plate. Length data

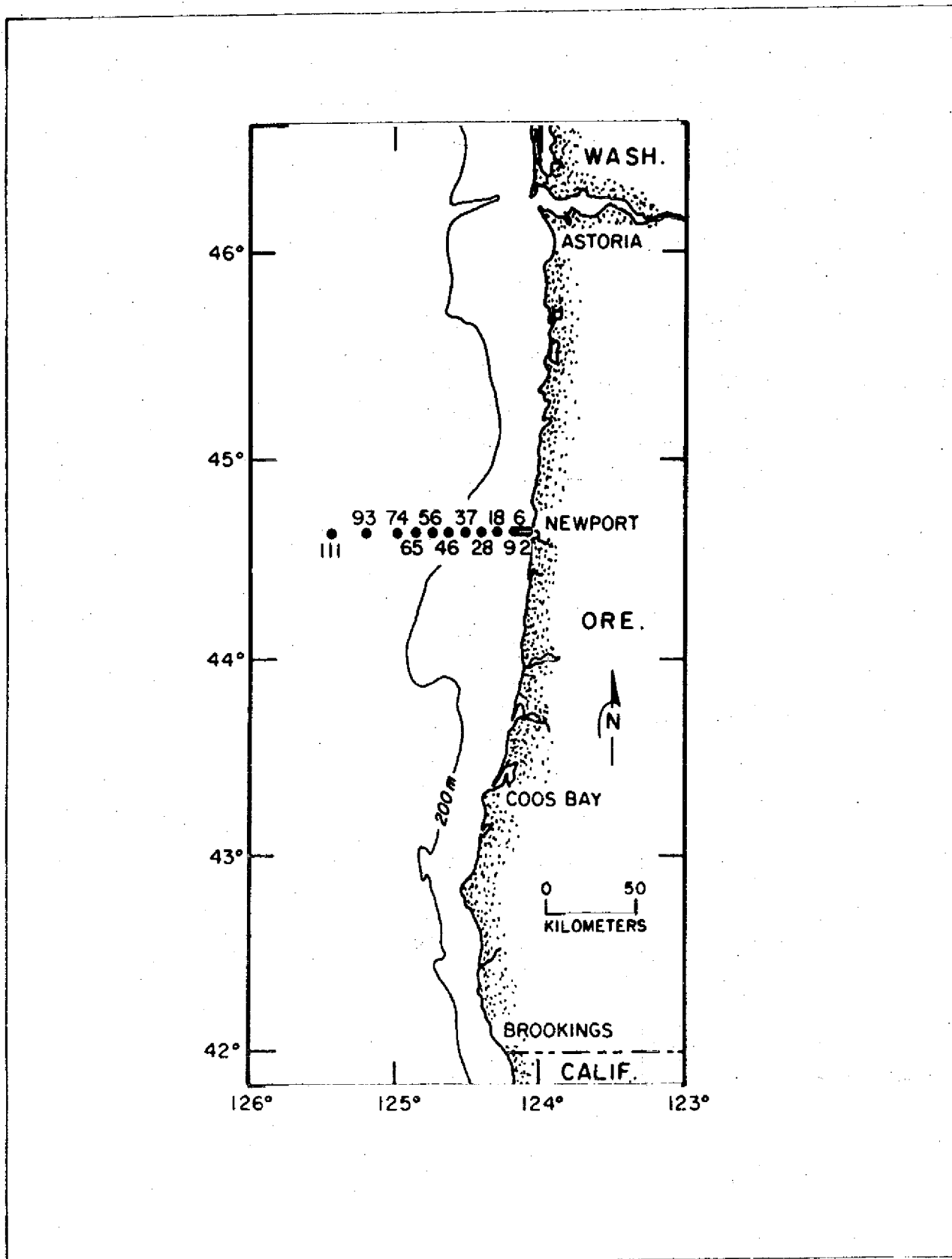


Fig. 1. Location of bongo net sampling stations along an east-west transect (latitude 44°39.1'N) off Yaquina Bay, Oregon. Numbers are km from the coast. The 200 m depth contour is shown.

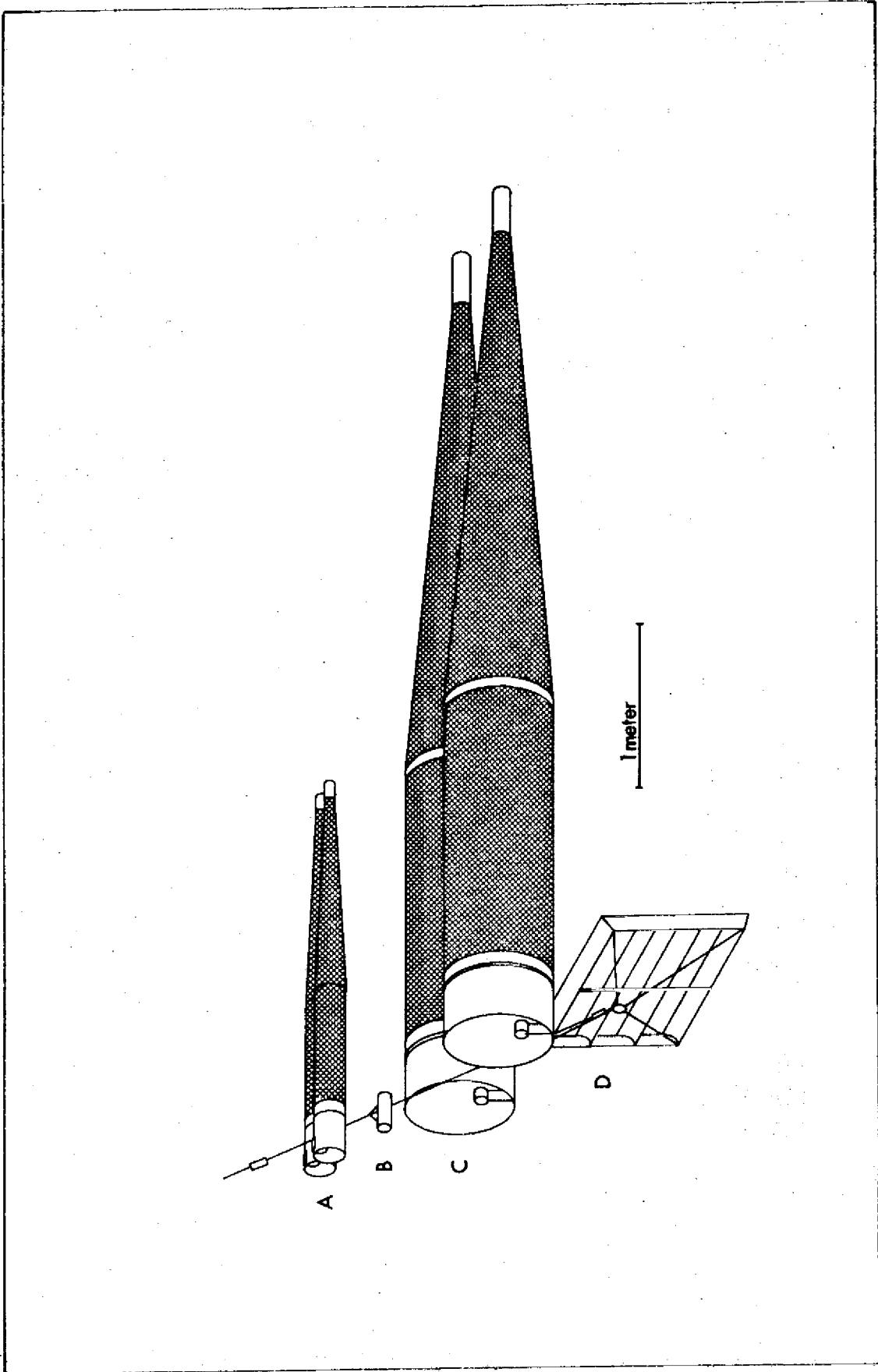


Fig. 2. Bongo net sampling array showing 20-cm (A) and 70-cm (C) bongo nets, a time depth recorder (B) on the cable between the two bongos, and a kite-otter depressor (D) beneath the 20-cm bongos (From Rothlisberg 1975).

are on file at the School of Oceanography, Oregon State University.

#### *Data Standardization*

The number of larvae in each sample was standardized to the number of larvae under  $10\text{m}^2$  sea surface. To do this, a standard haul factor was calculated for each sample using the following formula:

$$\text{SHF} = 10 \left( \frac{Z}{V} \right)$$

"Z" is the depth of the tow (meters) and "V" is the volume of water filtered (cubic meters) during the tow. The volume of water filtered was obtained from the following equation:

$$V = C \times R \times A$$

"C" is the calibration factor (meters per revolution) for the flowmeter positioned in the mouth of the net, "R" is the number of revolutions made by the flowmeter during the course of the tow and "A" is the mouth area ( $\pi r^2$  in square meters) of the bongo sampler. The number of larvae under  $10\text{m}^2$  sea surface was calculated as follows:

$$N/10\text{m}^2 = \text{SHF}(n)$$

"n" is the number of larvae originally in the sample. Papers by Ahlstrom (1954), Kramer, Kalin, Stevens, Thraillkill, and Zweifel (1972), Houde (1977) and Smith and Richardson (in press) provide additional procedural descriptions for data standardization.

Standard haul factors derived from the above equations are given in Table 3 for each sample analyzed for fish larvae. The original number of larvae in a sample can be obtained by dividing the standardized number of larvae by the SHF for that sample. The number of larvae per unit volume of water filtered can be calculated by dividing the standardized number of larvae by the SHF, then dividing the resultant number (number of larvae actually in the sample) by the volume of water filtered (Table 2) which gives the number of larvae per  $\text{m}^3$ ; this value multiplied by 10 gives the number of larvae per  $10\text{m}^3$ , multiplied by 100 the number of larvae per  $100\text{m}^3$ , etc. Numbers of larvae standardized to numbers per unit volume of water may be useful when making comparisons with other sets of data which have been standardized to volume. However, in larval fish studies, the preferred method is to standardize values to numbers of larvae under a unit area, usually  $10\text{m}^2$ , of sea surface.

## RESULTS

### *Hydrographic Data*

Hydrographic data collected in conjunction with the  $1\frac{1}{2}$ -year plankton sampling effort are presented here for comparison with data on larval fishes. The most complete sets of data are surface bucket temperatures (Table 4), surface bucket salinities (Table 5), and deep (bottom or  $\sim 140\text{m}$ ) salinities (Table 6) taken at most stations immediately before a plankton tow was made.

Temperature data from BT traces are not as comprehensive. They are presented for comparison with bucket surface temperatures and to give an idea of the change in temperature with depth. Temperature readings were extracted from computer printouts for each BT trace. Temperatures are listed for the surface (Table 7),  $10\text{m}^2$  below the surface (Table 8) and the bottom of the BT cast (Table 9). The depth at which the deepest BT temperature was recorded is given in Table 10.

Data on temperatures and salinities may provide insight into the occurrence of certain oceanographic phenomena at the time of collection of the larvae. For example, high surface salinities and low surface temperatures near the coast in summer months indicate that upwelling was occurring. High surface temperatures and low surface salinities offshore in the summer may indicate the presence of the Columbia River plume. Low surface salinities nearshore in winter months reflect increased freshwater run off as well as increased precipitation in general\*. However, these data should be viewed with conservatism, particularly when relating them to larval fish occurrences.

### *Larval Fish Identifications*

Larvae of relatively few fish species from coastal areas of the northeast Pacific have been described in detail. Existing literature is widely scattered and a review of this literature is beyond the scope of this data report. Caution should be exercised if only figures or partial descriptions from the literature are used for larval fish identification. Important details needed for positive identification may not be shown in the figures. Also, a number of similar-appearing but as yet undescribed larval fish species may occur together in samples, resulting in confusion and/or erroneous identification. This is a particularly important consideration in coastal areas of the northeast Pacific.

In this study, larvae in 90 taxonomic groups (Table 11) were identified. This is the greatest number of species recorded to date from a larval fish study in the northeast Pacific. Many of these larvae are not yet described in the literature. Identifications were made based on several factors. The literature provided some assistance. A good time series of data yielded 23,578 specimens and included many complete developmental series of which the largest specimens could be identified using adult characters. Helpful advice and information was provided by larval and adult fish taxonomists and workers involved with larval fish identification (see acknowledgments).

\*Additional information on oceanographic and hydrographic phenomena off the Oregon coast is available in a number of descriptive papers (Smith, Mooers and Enfield 1971; Wyatt, Burt and Pattullo 1972; Huyer 1974; Smith 1974; Huyer, Pillsbury and Smith 1975; and others) and in summaries of coastal hydrography, wind and current patterns given by Peterson and Miller (1975, 1976), Lough (1976) and Richardson and Pearcy (1977).

Of the 90 taxa identified (Table 11), 78 were identified at the species level. Seventeen of the 78 are still only numbered "larval types"\*\*\* (primarily in the Cottidae and Stichaeidae) considered to be identified at the level of distinct species. These "larval types" have not yet been named because large specimens needed for positive identification were absent in the collections.

Identification of many of the abundant larvae, particularly pleuronectids and myctophids, was accomplished with certainty. However, a few major taxonomic problems remain, primarily involving osmerids and scorpaenids, mainly *Sebastes* spp. Initial attempts to identify osmerid larvae <30mm to species were unsuccessful. Five species reportedly occur off Oregon: *Allosmerus elongatus*, *Hypomesus pretiosus*, *Spirinchus starksi*, *Spirinchus thaleichthys*, and *Thaleichthys pacificus*. Available descriptions of the larvae of these species (Morris MS.; Yap-Chiongco 1941; DeLacy and Batts 1963; Dryfoos 1965; Moulton 1970) are inadequate to distinguish all five. "Larval types" below the family level were not established.

No attempt was made to separate *Sebastes* spp., another problem group, into "larval types" (species or species groups) although a few distinct kinds appeared to be present. Samples from Oregon waters could contain some 35 species but identification of the larvae is difficult (Moser 1967, 1972; Moser, Ahlstrom and Sandknop in press).

The Cyclopteridae is another problem group, containing a potentially large number of species. Based on its broad distribution pattern, our Cyclopteridae spp. 1 probably represents a multi-species group, perhaps *Liparis* spp. Preliminary efforts to subdivide it on the basis of larval characters were unsuccessful.

Another species complex not separated in this study is *Pholis* spp. Four species may be present off Oregon: *P. clemensi*, *P. laeta*, *P. ornata* and *P. schultzi*. Vertebral counts (Rosenblatt, 1964; Miller and Lea, 1972), which are approximately equal to myomere counts in larvae, serve to distinguish *P. laeta* (V=84-85) and *P. ornata* (V=83-86) from *P. schultzi* (V=89-93) and *P. clemensi* (V=94-98). Larvae were found in each of these three categories on the basis of myomere counts, but to date no additional larval characters have been found to distinguish the four species. Because myomeres were not counted on all *Pholis* specimens, they were grouped together as *Pholis* spp.

#### Larval Fish Occurrences

A total of 23,578 fish larvae were collected in the 287 samples analyzed in this study. This total was 22,367\*\*\* after numbers of larvae in each sample had been standardized to number under 10m<sup>2</sup> sea surface.

The 90 taxa identified from these samples are listed in Table 11 in phyletic order [following Greenwood, Rosen, Weitzman and Myers (1966)]. Data on occurrence of each species and all taxa combined are presented in Tables 12 through 106 in the order listed in Table 11. Each table heading includes the family name [after Greenwood et al. (1966)], scientific name and common name [following Bailey (1970)]. An alphabetical index of family names, scientific names and common names of the taxa listed in Tables 12 through 104 is provided in an appendix.

The same format is used in each of the tables showing larval fish occurrences. Stations, given as kilometers and nautical miles from the coast, are listed from left to right across the top in increasing distance from shore. Approximate water depth at each station is also listed across the top. Cruise dates are listed in chronological order from top to bottom on the left-hand side. Numbers of larvae given in the table refer to standardized numbers (number under 10m<sup>2</sup> sea surface) of larvae in each sample. Dashes indicate a station was not occupied and blanks indicate no larvae were taken at a station. Sums of standardized numbers of larvae ( $\Sigma$  No./10m<sup>2</sup>) are listed for each station and cruise; an overall sum is given in the lower right corner. Mean number of larvae under 10m<sup>2</sup> sea surface for any cruise or station can be derived by appropriate division. Information on relative abundance, inshore-off-shore distribution trends and seasonal occurrence can be readily derived from these species tables. Analyses and discussion of the data presented in this report were given by Richardson and Percy (1977).

\*\*The term larval type used in this paper refers to a particular kind of larva which may be distinguished from other larvae on the basis of larval characters but which has not yet been named. The term does not necessarily denote identification to the species level and is not intended to have any taxonomic implications.

\*\*\*Authors Note: Some of the standardized numbers of larvae presented in this report differ slightly from those presented by Richardson and Percy (1977) due to corrections of minor errors made in the course of data transfer and analysis. No major changes were made and results presented by them have not been significantly altered.

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STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ	
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60		
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850		
1971	JAN	6	D	D	D	D	--	--	--	--	--	--	--	--	4	
	JAN	18	D	D	D	D	--	--	--	D	--	--	--	--	4	
	FEB	3	D	D	D	D	--	D	--	--	--	--	--	--	6	
	FEB	16-17	D	D	D	D	--	D	--	T	--	D	D	D	9	
	MAR	1	D	D	D	D	--	D	--	T	--	N	N	N	9	
	MAR	20	D	D	D	D	D	D	--	N	--	N	N	N	11	
	APR	22-26	--	--	D	D	D	T	N	N	--	N	D	--	8	
	MAY	3-4	D	D	D	D	D	D	D	D	D	N	N	N	12	
	MAY	14-20	D	D	D	D	D	D	T	D	--	--	--	--	8	
	MAY	29-2	D	D	T	N	D	D	D	D	T	N	N	N	12	
	JUN	12-13	D	D	D	D	D	D	D	D	T	N	N	T	12	
	JUN	28-30	D	D	D	N	N	D	D	D	D	D	D	D	12	
	JUL	6	D	D	D	D	--	--	--	--	--	--	--	--	4	
	JUL	21-22	D	D	D	D	D	D	D	D	D	D	N	N	12	
	AUG	2-3	D	D	D	D	D	D	D	D	D	D	D	D	12	
	AUG	19-20	D	D	D	D	D	T	N	D	D	D	D	--	11	
	SEP	23-24	D	D	D	D	D	D	D	T	N	D	D	D	12	
	OCT	11-12	D	D	D	D	D	D	D	D	T	N	D	D	12	
	NOV	6-7	D	D	D	D	D	D	D	T	N	N	D	D	12	
	DEC	7	D	D	D	D	D	N	N	N	N	N	--	--	10	
1972	MAR	3-4	D	D	D	T	N	N	N	N	N	N	N	D	12	
	MAR	15-16	D	D	D	D	D	D	T	T	D	D	D	D	12	
	MAR	29-30	D	--	T	D	D	D	D	--	--	--	--	--	7	
	APR	11	D	D	D	D	--	--	--	--	--	--	--	--	4	
	APR	20-21	T	--	N	D	D	D	D	--	--	--	--	--	7	
	MAY	22-23	D	D	D	D	D	D	N	N	D	D	D	D	12	
	JUN	11-12	D	D	D	D	D	D	D	N	D	D	D	D	12	
	JUN	28-29	D	D	D	D	D	D	D	D	D	D	D	D	12	
	JUL	21-22	D	D	D	D	D	D	D	N	N	N	N	N	12	
	AUG	5	D	D	D	D	D	--	--	--	--	--	--	--	5	
			Σ	29	27	30	30	23	25	21	25	18	21	20	18	287

Table 1. Summary of 287 bongo net station occupancies made on an east-west transect (latitude 44°39.1'N) off Yaquina Bay, Oregon in 1971-72. D, daytime; N, night; T, transitional.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6	573.0	659.4	625.0	705.8	--	--	--	--	--	--	--	--	
	JAN	18	646.1	447.7	643.4	712.1	--	--	--	--	--	--	--	--	
	FEB	3	409.8	537.4	722.6	741.9	--	771.4	--	790.2	--	--	--	--	
	FEB	16-17	449.7	596.3	569.1	664.6	--	522.9	--	454.2	--	703.8	541.3	545.4	
	MAR	1	313.6	639.7	561.5	608.0	--	617.7	--	1024.1	--	983.6	994.4	811.1	
	MAR	20	283.3	584.5	631.9	689.5	705.4	939.2	--	905.8	127.6	1057.7	945.0	772.7	
	APR	22-26	--	--	968.8	1214.7	1266.8	975.0	728.5	704.4	--	748.6	993.7	--	
	MAY	3-4	577.4	476.5	576.7	605.1	584.0	1247.9	184.6	848.7	1675.7	1045.8	1396.4	1222.0	
	MAY	14-20	396.0	531.7	511.9	686.1	617.9	158.5	170.0	112.7	--	--	--	--	
	MAY	29-2	378.8	423.5	397.4	732.9	841.5	690.8	808.8	915.1	785.6	774.2	796.8	788.7	
	JUN	12-13	473.6	498.3	610.7	923.9	851.6	915.2	101.1	989.0	1136.0	994.9	1088.1	970.8	
	JUN	28-30	509.9	496.0	547.1	722.8	654.0	614.8	782.3	1039.4	810.4	4787.6	688.0	989.0	
	JUL	6	491.9	536.5	614.1	800.9	--	--	--	--	--	--	--	--	
	JUL	21-22	486.4	526.4	506.1	568.3	569.2	722.3	881.7	833.2	710.7	829.5	828.9	934.9	
	AUG	2-3	538.9	520.4	454.0	682.2	835.8	942.0	977.5	1128.3	1071.6	1022.8	983.7	1031.1	
	AUG	19-20	556.2	608.4	735.4	996.1	1018.8	915.5	1056.2	978.8	1121.6	1085.3	1053.3	--	
	SEP	23-24	606.2	547.0	640.5	710.8	780.4	920.6	907.6	1331.6	838.2	915.7	1115.7	944.0	
	OCT	11-12	629.1	1293.1	666.2	713.8	689.2	714.7	847.4	843.8	999.0	1050.6	1036.6	1014.5	
	NOV	6-7	569.6	596.1	657.6	568.8	520.3	554.8	849.2	1394.0	862.1	925.6	974.4	759.7	
	DEC	7	814.0	730.7	539.8	738.5	680.1	839.3	879.2	1411.4	242.6	1228.6	--	--	
1972	MAR	3-4	497.1	741.5	713.0	670.0	826.0	929.4	1177.1	1150.6	1086.1	972.8	976.4	1194.6	
	MAR	15-16	611.5	724.1	676.2	673.3	697.3	793.9	1090.0	957.4	867.8	867.8	1148.8	1037.7	
	MAR	29-30	538.8	--	678.5	817.6	788.1	1018.6	1158.0	1014.8	--	--	--	--	
	APR	11	775.1	789.1	744.9	742.1	--	--	--	--	--	--	--	--	
	APR	20-21	605.5	--	721.8	614.6	703.1	891.6	798.3	777.9	--	--	--	--	
	MAY	22-23	522.9	529.8	592.1	562.7	687.8	796.4	826.4	893.3	833.1	859.3	906.6	726.1	
	JUN	11-12	709.8	720.9	667.2	828.6	970.5	1081.9	1208.7	960.0	1124.8	1115.9	1069.8	1078.9	
	JUN	28-29	634.3	644.8	664.7	598.5	686.3	747.8	777.7	707.2	615.1	725.0	837.3	839.5	
	JUL	21-22	586.4	646.3	658.0	618.8	718.0	834.8	903.5	852.3	838.7	802.3	879.6	958.4	
	AUG	5	422.5	529.0	465.2	626.6	719.0	--	--	--	--	--	--	--	

Table 2. Volume of water filtered per tow for the bongo net samples analyzed for fish larvae.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111
		1	3	5	10	15	20	25	30	35	40	50	60
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850
1971	JAN 6	0.31	0.71	0.90	1.06	--	--	--	--	--	--	--	--
	JAN 18	0.29	0.94	0.87	1.05	--	--	--	--	--	--	--	--
	FEB 3	0.44	0.84	0.75	1.05	--	1.75	--	1.27	--	--	--	--
	FEB 16-17	0.44	0.76	0.98	1.17	--	2.75	--	2.27	--	1.56	1.85	1.89
	MAR 1	0.48	0.70	1.07	1.12	--	1.94	--	1.54	--	1.58	1.54	2.77
	MAR 20	0.53	0.51	0.63	0.80	0.75	1.35	--	1.55	1.15	1.34	1.48	1.92
	APR 22-26	--	--	0.52	0.61	0.54	1.08	2.88	3.05	--	3.47	1.69	--
	MAY 3-4	0.43	0.84	1.04	1.24	1.46	0.80	1.10	2.00	0.90	1.43	0.82	1.06
	MAY 14-20	0.51	0.75	1.13	1.09	1.38	1.04	1.15	1.35	--	--	--	--
	MAY 29-2	0.26	0.83	1.46	1.00	1.01	1.88	1.99	1.59	1.91	1.94	1.76	1.84
	JUN 12-13	0.42	0.70	0.66	0.79	0.82	1.09	1.15	1.28	1.14	1.21	1.06	1.24
	JUN 28-30	0.29	0.81	0.91	1.04	1.38	2.36	1.97	1.44	1.75	2.03	2.54	1.47
	JUL 6	0.31	0.65	0.90	1.00	--	--	--	--	--	--	--	--
	JUL 21-22	0.51	0.86	1.09	1.67	1.53	2.08	2.21	2.04	2.53	2.17	2.05	2.03
	AUG 2-3	0.46	0.90	1.43	1.28	0.96	1.11	1.43	1.02	1.21	1.22	1.32	1.26
	AUG 19-20	0.36	0.58	0.61	0.66	0.79	1.26	1.28	1.48	1.29	1.24	1.30	--
	SEP 23-24	0.25	0.64	0.78	0.91	0.90	1.09	1.27	0.83	1.55	1.31	1.17	1.43
	OCT 11-12	0.32	0.27	0.75	1.05	1.16	1.82	1.71	1.66	1.55	1.48	1.59	1.58
	NOV 6-7	0.32	0.79	0.72	1.23	1.77	1.87	1.53	1.09	1.74	1.64	1.36	1.84
	DEC 7	0.27	0.66	1.15	1.03	1.18	1.37	1.68	1.06	1.22	1.20	--	--
1972	MAR 3-4	0.36	0.54	0.76	1.16	1.03	1.45	1.32	1.39	1.45	1.65	1.69	1.40
	MAR 15-16	0.33	0.62	0.71	1.07	1.22	1.57	1.37	1.47	1.85	1.92	1.23	1.35
	MAR 29-30	0.24	--	0.77	0.89	1.04	1.24	1.30	1.40	--	--	--	--
	APR 11	0.30	0.51	0.64	0.93	--	--	--	--	--	--	--	--
	APR 20-21	0.41	--	0.87	1.24	1.08	1.47	2.09	2.34	--	--	--	--
	MAY 22-23	0.29	0.89	0.96	1.33	1.32	1.72	1.83	2.07	2.31	2.17	1.82	2.88
	JUN 11-12	0.31	0.55	0.75	0.70	0.91	1.02	1.13	1.57	1.16	1.14	1.23	1.23
	JUN 28-29	0.31	0.70	0.80	1.12	1.38	1.94	2.48	3.00	4.06	2.72	2.37	2.18
	JUL 21-22	0.29	0.67	0.78	1.13	1.67	1.55	1.83	2.11	2.15	2.31	1.80	1.53
	AUG 5	0.36	0.95	1.08	0.99	1.32	--	--	--	--	--	--	--

Table 3. Standard haul factor (SHF) for each bongo net sample analyzed for fish larvae. (See text for derivation and use as a conversion factor.)

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111
		1	3	5	10	15	20	25	30	35	40	50	60
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850
1971	JAN 6	8.0	8.1	8.2	7.4	--	--	--	--	--	--	--	--
	JAN 18	9.5	10.5	9.9	9.8	--	--	--	--	--	--	--	--
	FEB 3	8.4	8.8	8.7	8.6	--	8.4	--	8.9	--	--	--	--
	FEB 16-17	9.5	9.3	9.2	9.0	--	9.1	--	9.2	--	9.2	9.1	9.0
	MAR 1	8.3	7.8	8.2	7.9	--	8.4	--	8.3	--	7.3	7.8	8.0
	MAR 20	8.7	8.6	8.6	8.5	7.8	8.8	--	7.8	7.5	7.8	7.4	7.6
	APR 22-26	--	--	9.5	9.6	9.5	9.4	10.2	10.0	--	9.3	9.3	--
	MAY 3-4	9.9	10.4	10.6	10.7	10.6	11.1	10.9	10.6	10.2	10.2	10.4	10.3
	MAY 14-20	11.9	11.4	11.4	11.2	11.2	11.6	11.3	10.8	--	--	--	--
	MAY 29-2	9.1	8.7	8.1	9.1	11.9	11.0	11.5	11.0	11.0	11.1	11.1	11.4
	JUN 12-13	13.2	13.2	13.3	13.7	13.9	14.4	14.4	13.9	13.7	13.7	12.8	12.7
	JUN 28-30	14.9	15.3	15.2	14.1	13.9	14.4	14.5	14.6	14.5	14.8	14.6	14.1
	JUL 6	10.3	10.7	11.5	14.3	--	--	--	--	--	--	--	--
	JUL 21-22	8.5	9.3	9.1	9.1	10.6	10.5	12.0	13.0	14.2	13.3	13.8	15.0
	AUG 2-3	13.8	13.8	13.8	16.6	16.8	16.8	15.7	16.8	17.1	17.3	17.3	17.3
	AUG 19-20	13.9	15.8	16.3	16.1	15.8	16.0	17.2	16.5	15.7	16.8	16.8	--
	SEP 23-24	10.3	10.3	10.2	10.4	12.6	12.0	13.5	14.2	15.2	15.9	15.2	15.9
	OCT 11-12	12.4	12.4	12.3	13.4	13.8	13.8	14.5	14.6	14.7	14.9	15.3	15.6
	NOV 6-7	9.6	9.8	9.8	10.4	10.1	10.4	10.6	10.1	10.2	10.4	11.2	11.4
	DEC 7	9.6	9.2	?	8.4	8.0	8.7	8.4	9.9	8.5	9.7	--	--
1972	MAR 3-4	9.8	9.3	9.6	9.3	9.2	9.1	8.6	8.8	8.6	8.6	9.5	8.9
	MAR 15-16	10.6	11.1	11.4	11.7	11.1	11.1	10.6	9.7	?	?	?	9.4
	MAR 29-30	10.4	--	9.7	9.6	9.5	9.5	9.5	9.8	--	--	--	--
	APR 11	10.3	10.4	10.2	10.1	--	--	--	--	--	--	--	--
	APR 20-21	10.0	--	9.7	9.4	10.0	10.0	10.0	10.0	--	--	--	--
	MAY 22-23	9.8	9.9	10.3	10.5	11.1	11.4	11.2	11.1	11.3	11.3	11.9	11.6
	JUN 11-12	10.1	10.4	10.7	10.7	11.3	11.9	13.1	12.6	13.9	13.6	13.6	14.1
	JUN 28-29	10.3	9.7	9.9	11.9	12.5	13.4	14.6	15.6	15.9	15.8	16.2	16.4
	JUL 21-22	10.3	10.5	10.5	11.7	12.2	12.9	13.6	14.9	14.7	15.8	16.4	16.4
	AUG 5	8.5	8.6	8.5	9.0	8.6	--	--	--	--	--	--	--

Table 4. Surface bucket temperatures (°C) taken in conjunction with bongo net samples.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111
		1	3	5	10	15	20	25	30	35	40	50	60
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850
1971	JAN 6	31.4	31.2	31.4	31.7	--	--	--	--	--	--	--	--
	JAN 18	28.1	25.2	32.3	32.4	--	--	--	--	--	--	--	--
	FEB 3	32.1	32.0	31.5	30.6	--	30.1	--	32.0	--	--	--	--
	FEB 16-17	30.6	30.4	31.5	31.5	--	31.4	--	32.1	--	?	?	32.5
	MAR 1	32.4	31.8	32.3	32.0	--	32.3	--	32.6	--	32.6	32.6	32.6
	MAR 20	32.4	32.2	32.1	32.2	32.0	31.8	--	32.2	32.2	32.3	32.6	32.6
	APR 22-26	--	--	32.4	32.5	32.9	33.1	?	31.6	--	32.5	32.4	--
	MAY 3-4	31.2	31.4	31.1	29.3	28.9	27.4	28.0	31.9	32.1	32.1	32.2	32.2
	MAY 14-20	32.0	31.8	31.2	31.0	31.0	31.0	31.2	?	--	--	--	--
	MAY 29-2	33.7	33.7	33.6	33.9	30.5	28.7	28.4	30.1	29.8	29.1	27.2	28.1
	JUN 12-13	30.1	29.7	30.9	29.4	30.7	28.4	26.1	26.6	27.8	28.0	31.0	30.4
	JUN 28-30	30.7	30.8	30.8	30.9	31.0	30.6	30.6	30.5	30.6	30.3	30.7	31.0
	JUL 6	33.4	33.4	33.3	27.2	--	--	--	--	--	--	--	--
	JUL 21-22	33.8	33.6	33.5	33.2	32.6	32.6	31.8	31.5	30.4	31.2	31.3	30.4
	AUG 2-3	33.4	33.3	33.2	29.7	29.6	30.5	31.5	29.5	30.2	30.2	30.2	29.6
	AUG 19-20	32.9	32.9	32.8	32.9	32.0	32.0	31.6	31.3	31.6	31.1	31.1	--
	SEP 23-24	33.2	33.0	32.8	32.5	32.2	32.2	32.0	31.9	31.8	31.8	31.8	31.6
	OCT 11-12	32.7	32.7	32.8	32.5	32.3	32.1	32.0	31.6	31.4	31.3	32.9	31.8
	NOV 6-7	32.3	31.8	31.6	31.8	32.1	32.0	32.0	32.3	32.2	32.1	32.1	32.1
	DEC 7	31.9	32.1	?	31.4	31.5	32.2	32.2	32.2	32.2	33.7	--	--
1972	MAR 3-4	25.0	28.1	35.9	32.3	32.6	32.6	32.5	32.6	32.5	32.5	32.5	32.6
	MAR 15-16	29.2	25.9	29.5	32.2	32.4	32.5	32.6	32.5	32.6	32.5	32.5	32.5
	MAR 29-30	30.9	--	31.6	32.2	32.0	32.5	32.5	32.5	--	--	--	--
	APR 11	30.3	30.5	31.3	32.0	--	--	--	--	--	--	--	--
	APR 20-21	21.4	--	19.3	17.1	18.4	17.9	20.7	20.4	--	--	--	--
	MAY 22-23	31.7	31.7	31.3	31.1	30.4	30.0	29.7	30.1	30.1	30.2	30.9	31.9
	JUN 11-12	32.9	32.2	31.8	32.0	31.9	31.8	31.5	31.5	30.2	30.5	30.1	31.4
	JUN 28-29	33.3	33.2	32.9	32.3	31.2	30.9	29.9	27.6	26.4	26.4	24.8	24.1
	JUL 21-22	33.7	33.5	33.6	32.7	32.5	32.5	32.4	32.0	32.0	31.3	30.6	30.7
	AUG 5	33.8	33.8	33.8	33.2	32.9	--	--	--	--	--	--	--

Table 5. Surface bucket salinities (‰) taken in conjunction with bongo net samples.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111
		1	3	5	10	15	20	25	30	35	40	50	60
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850
1971	JAN 6	31.6	32.4	32.9	32.4	--	--	--	--	--	--	--	--
	JAN 18	31.0	32.2	32.4	32.6	--	--	--	--	--	--	--	--
	FEB 3	32.6	33.1	33.6	33.6	--	33.8	--	33.5	--	--	--	--
	FEB 16-17	31.4	32.5	33.0	33.6	--	33.8	--	33.0	--	?	?	33.5
	MAR 1	33.4	33.7	34.6	33.8	--	33.3	--	33.4	--	33.4	33.4	33.4
	MAR 20	32.4	32.8	32.3	33.4	33.4	33.3	--	33.1	32.9	32.6	33.1	32.7
	APR 22-26	--	--	34.2	34.7	34.4	34.8	?	33.1	--	34.0	33.9	--
	MAY 3-4	32.6	33.4	33.6	33.8	33.5	33.7	33.8	33.7	33.7	33.8	33.9	33.7
	MAY 14-20	32.0	33.4	33.7	33.8	33.6	34.0	34.0	?	--	--	--	--
	MAY 29-2	33.8	33.9	33.9	33.8	33.8	33.9	33.9	33.9	33.9	33.9	33.8	33.8
	JUN 12-13	33.3	33.8	33.8	33.8	33.8	33.9	33.9	33.9	33.8	33.8	33.1	33.7
	JUN 28-30	31.1	33.6	30.8	33.8	33.4	33.9	33.9	33.9	33.9	33.6	33.7	33.6
	JUL 6	33.7	33.8	33.8	33.9	--	--	--	--	--	--	--	--
	JUL 21-22	33.9	33.8	33.9	33.9	33.8	33.9	33.6	33.9	33.2	33.5	33.1	33.4
	AUG 2-3	33.5	33.8	33.9	33.9	33.4	33.9	33.9	33.9	33.9	34.0	33.8	33.7
	AUG 19-20	33.1	33.4	33.6	33.8	33.7	33.8	33.8	33.3	33.7	33.7	33.7	--
	SEP 23-24	33.3	33.6	33.6	33.7	33.6	33.7	33.8	33.8	33.8	33.9	33.7	33.8
	OCT 11-12	33.3	33.5	33.5	33.7	33.7	33.8	33.8	33.9	33.8	33.9	33.8	33.8
	NOV 6-7	32.5	32.5	33.6	33.7	33.5	33.9	33.9	33.9	33.9	33.8	33.8	33.0
	DEC 7	32.2	32.3	?	33.5	?	33.8	?	33.8	?	33.7	--	--
1972	MAR 3-4	31.2	32.1	32.2	32.6	32.8	33.7	33.3	33.8	33.9	33.9	33.9	33.8
	MAR 15-16	31.0	31.6	32.3	32.8	33.1	33.5	33.8	33.8	33.7	33.7	33.7	33.7
	MAR 29-30	32.5	--	32.7	33.1	33.7	33.8	33.8	33.7	--	--	--	--
	APR 11	31.3	32.1	32.1	32.3	--	--	--	--	--	--	--	--
	APR 20-21	32.7	--	32.9	33.5	33.9	33.9	33.3	33.6	--	--	--	--
	MAY 22-23	32.9	32.9	33.6	33.5	33.5	33.8	33.9	33.8	33.8	33.8	33.8	33.8
	JUN 11-12	32.8	33.6	33.8	33.8	33.7	33.9	33.9	33.9	33.9	33.8	34.0	33.8
	JUN 28-29	33.7	33.8	33.8	33.9	33.8	33.9	33.9	33.8	33.3	33.8	33.9	33.9
	JUL 21-22	33.8	33.8	33.9	33.9	33.9	33.9	33.9	34.0	33.9	33.8	33.8	33.8
	AUG 5	33.8	33.8	33.9	33.9	33.8	--	--	--	--	--	--	--

Table 6. Deep salinities (‰) taken in conjunction with bongo net samples. (Refer to Table 10 for approximate depths at which these salinity samples were taken.)

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850
1971	JAN	6	?	?	?	?	--	--	--	--	--	--	--	--
	JAN	18	?	?	?	?	--	?	--	?	--	--	--	--
	FEB	3	?	?	?	?	--	?	--	?	--	--	--	--
	FEB	16-17	?	?	?	?	--	?	--	?	--	?	?	?
	MAR	1	?	?	?	?	--	?	--	?	--	?	?	?
	MAR	20	?	?	?	?	?	?	--	?	?	?	?	?
	APR	22-26	--	--	?	?	?	?	?	?	--	?	?	--
	MAY	3-4	10.2	10.4	10.6	10.8	10.8	11.3	11.2	10.7	10.4	10.5	10.7	10.4
	MAY	14-20	?	11.3	10.9	?	11.5	11.6	12.5	11.5	--	--	--	--
	MAY	29-2	8.7	8.9	8.3	9.4	11.3	11.0	11.5	11.1	10.9	11.4	?	?
	JUN	12-13	12.9	13.2	13.3	13.6	13.4	13.9	13.3	14.4	13.9	14.3	12.2	13.0
	JUN	28-30	14.3	14.4	14.7	14.8	14.3	14.6	14.6	14.9	14.8	14.5	14.6	14.2
	JUL	6	9.8	10.7	11.3	14.4	--	--	--	--	--	--	--	--
	JUL	21-22	8.8	8.2	8.5	8.8	9.4	10.0	11.5	12.4	14.0	12.9	13.5	14.7
	AUG	2-3	13.4	13.4	13.3	16.2	16.2	17.2	14.8	16.2	16.9	17.2	17.4	17.4
	AUG	19-20	13.7	14.2	14.8	16.4	15.9	16.1	17.2	?	15.3	16.5	16.8	--
	SEP	23-24	9.5	9.6	9.6	9.7	12.2	11.7	13.1	13.6	14.8	15.5	14.6	15.3
	OCT	11-12	11.4	11.7	11.9	12.7	13.0	12.9	13.9	14.2	14.5	14.7	15.0	15.3
	NOV	6-7	9.4	9.7	9.6	9.8	10.0	10.2	10.2	9.8	10.1	10.1	10.8	11.2
	DEC	7	9.4	9.8	?	7.9	?	10.1	?	10.3	?	?	--	--
1972	MAR	3-4	8.8	8.8	9.3	9.0	9.0	8.9	8.5	8.5	8.4	8.4	8.4	8.5
	MAR	15-16	10.3	10.3	10.1	10.2	9.5	9.7	9.5	9.7	9.4	9.2	9.2	9.2
	MAR	29-30	10.4	--	10.0	9.6	9.7	9.6	9.4	9.4	--	--	--	--
	APR	11	10.4	10.4	10.5	9.5	--	--	--	--	--	--	--	--
	APR	20-21	9.8	--	9.4	9.2	9.5	9.6	9.5	9.9	--	--	--	--
	MAY	22-23	?	9.4	9.3	9.6	9.6	8.9	9.4	9.6	9.2	9.9	11.4	10.9
	JUN	11-12	10.2	10.8	10.9	10.8	11.2	11.8	12.7	12.8	13.7	13.2	14.1	14.6
	JUN	28-29	8.8	9.1	9.7	11.8	12.2	13.1	14.7	15.8	16.0	15.8	16.5	16.7
	JUL	21-22	11.1	11.1	11.0	10.8	12.0	11.1	12.6	13.5	13.9	16.1	17.8	18.0
	AUG	5	8.5	8.6	8.7	8.4	?	--	--	--	--	--	--	--

Table 7. Surface temperatures (°C) recorded from bathythermograph casts made in conjunction with bongo net tows.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850
1971	JAN	6	?	?	?	?	--	--	--	--	--	--	--	--
	JAN	18	?	?	?	?	--	--	--	--	--	--	--	--
	FEB	3	?	?	?	?	--	?	--	?	--	--	--	--
	FEB	16-17	?	?	?	?	--	?	--	?	--	?	?	?
	MAR	1	?	?	?	?	--	?	--	?	--	?	?	?
	MAR	20	?	?	?	?	?	?	--	?	?	?	?	?
	APR	22-26	--	--	?	?	?	?	?	?	--	?	?	--
	MAY	3-4	9.4	9.3	9.9	9.1	9.8	10.2	11.0	10.7	10.4	10.5	10.7	10.4
	MAY	14-20	?	10.8	10.4	?	11.0	11.3	11.5	10.8	--	--	--	--
	MAY	29-2	8.2	8.4	8.3	9.0	10.5	10.4	10.9	10.8	10.9	11.4	?	?
	JUN	12-13	12.6	12.9	12.4	10.9	11.4	10.4	11.6	12.0	12.0	13.0	10.8	12.3
	JUN	28-30	14.1	14.1	14.3	14.7	14.2	14.6	14.6	14.7	14.8	14.5	13.9	14.0
	JUL	6	8.4	8.7	9.1	8.6	--	--	--	--	--	--	--	--
	JUL	21-22	7.4	8.2	8.4	8.4	8.6	9.6	11.4	12.2	13.3	12.8	13.5	14.3
	AUG	2-3	13.3	10.9	10.6	14.3	14.8	13.7	16.0	11.8	15.3	16.6	?	?
	AUG	19-20	11.7	9.9	9.2	10.8	11.5	10.0	12.3	11.4	12.7	11.5	13.5	--
	SEP	23-24	9.2	9.4	9.0	9.5	11.4	11.3	11.3	11.9	14.3	15.5	14.4	13.6
	OCT	11-12	10.8	10.4	11.4	11.8	11.7	12.1	13.0	12.7	13.7	14.4	15.0	15.2
	NOV	6-7	9.4	9.7	9.6	9.8	9.6	9.9	10.2	9.8	10.1	10.0	10.8	11.2
	DEC	7	9.5	9.8	?	8.1	?	10.1	?	10.3	?	?	--	--
1972	MAR	3-4	8.4	9.2	9.3	9.0	9.0	8.9	8.5	8.5	8.4	8.4	8.4	8.5
	MAR	15-16	9.9	9.9	9.8	9.5	9.0	8.9	8.8	9.0	9.3	9.0	8.8	9.1
	MAR	29-30	10.0	--	10.0	9.4	9.5	9.6	9.1	9.2	--	--	--	--
	APR	11	10.3	10.3	10.2	9.5	--	--	--	--	--	--	--	--
	APR	20-21	9.8	--	9.4	9.1	9.2	9.6	9.4	9.8	--	--	--	--
	MAY	22-23	?	9.4	9.1	8.1	8.7	8.4	9.0	8.5	9.1	9.3	10.1	10.7
	JUN	11-12	10.2	9.7	10.7	10.7	10.5	10.8	11.8	12.0	12.6	12.6	13.6	14.2
	JUN	28-29	7.6	8.8	8.7	7.8	8.7	12.7	12.4	12.9	13.9	13.6	13.5	15.1
	JUL	21-22	9.9	9.6	9.1	10.0	9.8	10.5	12.5	10.9	11.6	15.7	17.1	15.7
	AUG	5	8.4	8.5	8.6	8.5	?	--	--	--	--	--	--	--

Table 8. Temperatures (°C) at 10 m below the surface recorded from bathythermograph casts made in conjunction with bongo net tows.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850
1971	JAN	6	?	?	?	?	--	--	--	--	--	--	--	--
	JAN	18	?	?	?	?	--	?	--	?	--	--	--	--
	FEB	3	?	?	?	?	--	?	--	?	--	?	?	?
	FEB	16-17	?	?	?	?	--	?	--	?	--	?	?	?
	MAR	1	?	?	?	?	?	?	--	?	?	?	?	?
	MAR	20	?	?	?	?	?	?	?	?	?	?	?	?
	APR	22-26	--	--	?	?	?	?	?	?	?	?	?	--
	MAY	3-4	8.7	8.2	8.0	7.6	8.0	8.0	7.8	8.2	8.1	8.2	7.9	8.3
	MAY	14-20	?	8.2	7.8	?	7.9	7.7	7.8	8.8	--	--	--	--
	MAY	29-2	8.2	7.4	7.3	7.3	7.6	7.4	7.3	7.6	7.4	7.3	?	?
	JUN	12-13	10.0	8.2	7.7	7.4	7.3	6.7	6.7	7.4	7.0	7.4	7.3	7.7
	JUN	28-30	13.3	7.9	7.6	7.6	7.6	7.3	7.5	8.0	8.1	8.5	8.6	8.5
	JUL	6	8.2	7.8	7.6	7.4	--	--	--	--	--	--	--	--
	JUL	21-22	7.1	7.1	7.0	7.1	7.2	7.0	7.5	7.4	7.8	7.8	7.8	8.0
	AUG	2-3	9.8	8.4	8.0	7.6	7.6	7.3	7.2	?	6.8	7.3	7.6	?
	AUG	19-20	8.7	7.6	7.2	7.1	7.3	7.2	7.4	7.2	7.5	7.1	7.7	--
	SEP	23-24	9.1	7.7	7.7	7.3	7.6	7.3	7.5	7.2	7.4	7.5	7.5	7.5
	OCT	11-12	9.3	8.7	8.5	7.7	7.7	7.7	7.6	7.6	7.8	7.6	7.5	7.9
	NOV	6-7	9.4	7.8	7.7	7.5	7.6	7.2	7.6	7.4	7.5	7.6	7.4	7.6
	DEC	7	9.7	10.0	?	6.5	?	8.0	?	8.1	?	?	--	--
1972	MAR	3-4	8.3	9.1	9.0	8.9	8.8	8.3	8.4	8.1	8.3	8.1	8.1	8.3
	MAR	15-16	9.7	9.5	9.2	9.1	8.6	8.5	8.4	8.4	8.4	8.3	8.3	8.2
	MAR	29-30	9.7	--	9.9	8.2	8.7	8.3	8.2	8.2	--	--	--	--
	APR	11	10.3	9.7	9.7	8.8	--	--	--	--	--	--	--	--
	APR	20-21	9.1	--	7.8	7.7	8.4	8.0	7.9	8.5	--	--	--	--
	MAY	22-23	?	9.2	7.8	8.0	7.9	7.7	7.7	8.1	7.9	8.2	7.7	8.4
	JUN	11-12	10.1	8.2	8.0	7.7	7.5	7.2	7.0	7.1	7.3	7.7	6.6	8.0
	JUN	28-29	7.4	7.1	7.0	6.8	6.9	6.3	6.6	7.1	7.3	6.9	6.8	7.0
	JUL	21-22	8.9	8.1	7.8	7.6	7.5	7.5	6.1	7.5	6.5	7.7	8.0	7.9
	AUG	5	8.2	7.7	7.9	6.9	?	--	--	--	--	--	--	--

Table 9. Deep temperatures (°C) recorded from bathythermograph casts at the deepest depth sampled by the BT and made in conjunction with bongo net tows. (Refer to Table 10 for depth at which temperatures were read.)

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850
1971	JAN	6	?	?	?	?	--	--	--	--	--	--	--	--
	JAN	18	?	?	?	?	--	?	--	?	--	?	?	?
	FEB	3	?	?	?	?	--	?	--	?	--	?	?	?
	FEB	16-17	?	?	?	?	--	?	--	?	--	?	?	?
	MAR	1	?	?	?	?	?	?	--	?	?	?	?	?
	MAR	20	?	?	?	?	?	?	?	?	?	?	?	?
	APR	22-26	--	--	?	?	?	?	?	?	?	?	?	--
	MAY	3-4	20	45	55	85	95	125	125	125	125	125	125	125
	MAY	14-20	?	40	65	?	100	140	170	55	--	--	--	--
	MAY	29-2	20	50	45	70	85	125	160	155	145	135	?	?
	JUN	12-13	15	35	50	65	65	90	90	85	85	85	80	80
	JUN	28-30	15	45	65	80	105	125	125	125	125	125	125	125
	JUL	6	15	50	65	75	--	--	--	--	--	--	--	--
	JUL	21-22	20	45	65	85	90	125	125	125	105	125	120	125
	AUG	2-3	25	45	55	80	100	125	125	125	?	125	125	?
	AUG	19-20	20	50	65	85	100	125	125	125	125	125	125	125
	SEP	23-24	20	50	60	90	105	125	125	125	125	125	125	125
	OCT	11-12	25	50	60	85	100	125	125	125	125	125	125	125
	NOV	6-7	20	55	65	90	85	125	125	125	125	125	125	125
	DEC	7	25	50	?	90	?	125	?	125	?	?	--	--
1972	MAR	3-4	20	45	60	85	95	125	125	125	125	125	125	125
	MAR	15-16	25	50	65	80	100	125	125	125	125	125	125	125
	MAR	29-30	20	--	25	85	90	125	125	125	--	--	--	--
	APR	11	25	50	55	75	--	--	--	--	--	--	--	--
	APR	20-21	25	--	65	90	80	125	125	125	--	--	--	--
	MAY	22-23	?	25	30	50	80	125	130	135	140	140	145	145
	JUN	11-12	20	40	60	80	95	145	150	140	145	140	225	140
	JUN	28-29	15	40	50	75	85	130	130	110	95	135	150	150
	JUL	21-22	15	40	50	75	95	140	275	155	145	140	150	145
	AUG	5	15	45	55	75	?	--	--	--	--	--	--	--

Table 10. Approximate depth (m) of deepest bathythermograph readings (refer to Table 9) and deep salinity readings (refer to Table 6).

Table 11. Species composition of fish larvae taken 2 to 111 km off Yaquina Bay, Oregon from January 1971 to August 1972. The number of the table listing larval fish occurrences for each species is also given.

Taxa	Table Listing Larval Fish Occurrences	Taxa	Table Listing Larval Fish Occurrences
CLUPEIDAE		ACONIDAE	
<i>Clupea harengus pallasii</i>	12	<i>Agonopsis emmelane</i>	57
ENGRADLIDAE		<i>Bathyagonus</i> spp.	58
<i>Engraulis mordax</i>	13	<i>Ocella verrucosa</i>	59
OSMERIDAE		<i>Odontopyxis trispinosa</i>	60
Undetermined spp.	14	<i>Pallasina barbata</i>	61
BATHYLAGIDAE		<i>Stellerina xyosterna</i>	62
<i>Bathylagus milleri</i>	15	<i>Zeneretmus latifrons</i>	63
<i>Bathylagus ochotensis</i>	16	Agonidae sp. 6	64
<i>Bathylagus pacificus</i>	17	CYCLOPTERIDAE	
MELANOSTOMIATIDAE		<i>Liparis pulchellus</i>	65
<i>Tactostoma macropus</i>	18	Cyclopteridae spp. 1	66
CHAULIQUONTIDAE		Cyclopteridae sp. 3	67
<i>Chaulioquus macouni</i>	19	Undetermined spp.	68
PAPALEPIDIDAE		BATHYMASTERIDAE	
<i>Lestidiops ringens</i>	20	<i>Ronquilus jordani</i>	69
MYCTOPHIDAE		BLENNIIDS	
<i>Lampanyctus regalis</i>	21	Undetermined spp.	70
? <i>Loweina rara</i> *	22	CLINIDAE	
<i>Protomyctophum crockeri</i>	23	<i>Gibbonsia ?montereyensis</i>	71
<i>Protomyctophum thompsoni</i>	24	STICHAEIDAE	
<i>Stenobranchius leucopsarus</i>	25	<i>Anoplarchus</i> sp. 1	72
<i>Tarletonbeania crenularis</i>	26	<i>Chirolophis</i> sp. 1	73
Undetermined spp.	27	<i>Lyconectes aleutensis</i>	74
GAJIDAE		<i>Lumpenus sagitta</i>	75
<i>Microgadus proximus</i>	28	<i>Plectobranchnus evides</i>	76
OPHIDIIDAE		Stichaeidae sp. 1	77
<i>Brosomphycis marginata</i>	29	Stichaeidae sp. 2	78
Ophidiidae sp. 1	30	Stichaeidae sp. 4	79
SCORPAENIDAE		PTILICHTHYIDAE	
<i>Sebastes</i> spp.	31	<i>Ptilichthys goodei</i>	80
<i>Sebastolobus</i> spp.	32	PHOLIDAE	
HEXAGRAMMIDAE		<i>Apodichthys flavidus</i>	81
<i>Hexagrammos</i> spp.	33	<i>Pholis</i> spp.	82
<i>Ophiodon elongatus</i>	34	ICOSTEIDAE	
ANOPLPOMATIDAE		<i>Icosteus aenigmaticus</i>	83
<i>Anoplopoma fimbria</i>	35	AMMODYTIDAE	
COTTIDAE		<i>Ammodytes hexapterus</i>	84
<i>Artedius</i> sp. 1	36	GOBIIDAE	
<i>Artedius</i> sp. 2	37	<i>Clevelandia ios</i>	85
<i>Chitonotus pugetensis</i>	38	CENTROLOPHIDAE	
<i>Cottus asper</i>	39	<i>Icichthys lockingtoni</i>	86
<i>Enophrys bison</i>	40	BOTHIDAE	
<i>Hemilepidotus hemilepidotus</i>	41	<i>Citharichthys sordidus</i>	87
<i>Hemilepidotus spinosus</i>	42	<i>Citharichthys stigmaeus</i>	88
<i>Icelinus</i> sp. 1	43	<i>Citharichthys</i> spp. **	89
<i>Leptocottus armatus</i>	44	PLEURONECTIDAE	
<i>Nautichthys oculo-fasciatus</i>	45	<i>Atheresthes stomias</i>	90
<i>Oligocottus</i> sp. 1	46	<i>Embassichthys bathybius</i>	91
<i>Paricelinus hopliticus</i>	47	<i>Eopsetta jordani</i>	92
<i>Psychrolutes</i> -like sp. 1	48	<i>Glyptocephalus zachirus</i>	93
<i>Radulinus asprellus</i>	49	<i>Hippoglossoides classodon</i>	94
<i>Rhamphocottus richardsoni</i>	50	<i>Isopsetta isolepis</i>	95
<i>Scorpaenichthys marmoratus</i>	51	<i>Lepidopsetta bilineata</i>	96
Cottidae sp. 1C	52	<i>Lyopsetta exilis</i>	97
Cottidae sp. 12	53	<i>Microstomus pacificus</i>	98
Cottidae sp. 19	54	<i>Parophrys vetulus</i>	99
Cottidae sp. 20	55	<i>Platichthys stellatus</i>	100
Undetermined spp.	56	<i>Psettichthys melanostictus</i>	101
		UNIDENTIFIED LARVAE	102
		FRAGMENTS	103
		TOTAL LARVAE (all taxa combined)	104

\* Identification based on one partly mutilated specimen.

\*\* Specimen too small to identify to species.



STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1	37.92	23.10											61.02
	MAR 20		1.02	0.63	0.80									2.45
	APR 22-26	--	--											
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4	0.36												0.36
	MAR 15-16													
	MAR 29-30	0.72	--											0.72
	APR 11													
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ	39.00	24.12	0.63	0.80									64.55

Table 12. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: CLUPEIDAE, *Clupea harengus pallasii*, Pacific herring.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26	--	--											
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30	0.29			1.04	1.38		1.97						4.68
	JUL 6													
	JUL 21-22							2.21	2.04	146.74	6.51	6.75	12.18	175.83
	AUG 2-3	1.80	1.43	2.56				6.40		9.68	12.20	3.96	3.78	35.41
	AUG 19-20					0.79				1.29				8.48
	SEP 23-24			0.91										0.91
	OCT 11-12	0.32												0.32
	NOV 6-7	0.64	0.79											1.43
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30													
	APR 11													
	APR 20-21													
	MAY 22-23													
	JUN 11-12												8.61	8.61
	JUN 28-29						1.55	2.48		8.12	16.32	21.33	37.06	85.37
	JUL 21-22						1.55	1.83	12.66	21.50	235.62	297.00	23.93	694.09
	AUG 5	1.08												1.08
	Σ	2.33	2.59	1.43	4.51	2.17	1.55	14.89	14.70	187.33	270.71	328.44	185.56	1016.21

Table 13. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: ENGRAULIDAE, *Engraulis mordax*, northern anchovy.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6	3.72	5.68	5.40	1.06									15.86
	JAN 18	7.54	33.84											41.38
	FEB 3	11.44	44.52	3.00										58.96
	FEB 16-17	4.40	2.28	2.94										9.62
	MAR 1	65.76	51.10	17.12										133.98
	MAR 20	0.53	1.02	0.63	1.60									3.78
	APR 22-26													
	MAY 3-4	39.56	74.76	55.12	106.64	1.46								277.54
	MAY 14-20	0.51	218.25	25.99	33.79									278.54
	MAY 29-2	3.12	908.02	237.98	65.00	3.03	1.88	1.99						1221.02
	JUN 12-13	36.96	540.40	230.24	85.32	2.46	1.09				1.21			1897.68
	JUN 28-30	1.16	214.65	72.80	386.88	17.94			2.88					696.31
	JUL 6	18.29	169.00	189.00										376.29
	JUL 21-22	62.22	65.36	2.18	1.67		2.08							133.51
	AUG 2-3	8.74	22.50	14.30										45.54
	AUG 19-20	0.36		1.83			2.52							4.71
	SEP 23-24													
	OCT 11-12	1.28												1.28
	NOV 6-7	0.32												0.32
	DEC 7	1.89	3.96	1.15										7.00
1972	MAR 3-4	20.16	87.48	3.80										111.44
	MAR 15-16	12.87	14.88	5.68										33.43
	MAR 29-30	9.36		15.40										24.76
	APR 11	7.20	0.51	0.64										8.35
	APR 20-21	9.02												9.02
	MAY 22-23	00.05	81.88	50.88	1.33									234.14
	JUN 11-12	0.62	6.60	5.25	0.70									13.17
	JUN 28-29	15.18	16.80	32.00	11.20									75.81
	JUL 21-22	0.87	1.34	2.34	10.17									14.72
	AUG 5	34.92	0.95											35.87
	Σ	478.68	2565.78	1975.67	705.36	24.89	7.57	1.99	2.88		1.21			5764.03

Table 14. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: OSMERIDAE, Undetermined species, smelts.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3									1.21				1.21
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4											1.69		1.69
	MAR 15-16													
	MAR 29-30													
	APR 11													
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ									1.21		1.69		2.90

Table 15. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: BATHYLAGIDAE, *Bathylagus milleri* (deepsea smelt).

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1												8.31	8.31
	MAR 20										1.34	4.44	1.92	7.70
	APR 22-26											1.69		1.69
	MAY 3-4											0.82	1.06	1.88
	MAY 14-20													
	MAY 29-2							1.99	1.59	7.64	1.94	5.28	1.84	20.28
	JUN 12-13							3.45	6.40	9.12	7.26	11.66	7.44	45.33
	JUN 28-30							1.97	4.32	7.00	2.03	5.08	11.76	32.11
	JUL 6													
	JUL 21-22											2.05	4.06	6.11
	AUG 2-3												2.52	2.52
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30													
	APR 11													
	APR 20-21													
	MAY 22-23												1.23	1.23
	JUN 11-12													
	JUN 28-29										2.72			2.72
	JUL 21-22												1.53	1.53
	AUG 5													
	Σ							7.41	12.31	23.76	15.29	31.02	41.67	131.46

Table 16. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: BATHYLAGIDAE, *Bathylagus ochotensis*, (deepsea smelt).

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26													
	MAY 3-4							2.20						
	MAY 14-20													
	MAY 29-2									3.82	1.94	1.76		7.52
	JUN 12-13													
	JUN 28-30										2.03	5.08		7.11
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4									1.45				1.45
	MAR 15-16									1.85				1.85
	MAR 29-30													
	APR 11													
	APR 20-21													
	MAY 22-23										2.17		2.88	5.05
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ							2.20		7.12	7.72	9.20	9.48	35.72

Table 17. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: BATHYLAGIDAE, *Bathylagus pacificus*, (deepsea smelt).

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17												
	MAR	1												
	MAR	20												
	APR	22-26												
	MAY	3-4												
	MAY	14-20												
	MAY	29-2												
	JUN	12-13												
	JUN	28-30												
	JUL	6												
	JUL	21-22										2.05		2.05
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4												
	MAR	15-16												
	MAR	29-30												
	APR	11												
	APR	20-21												
	MAY	22-23												
	JUN	11-12												
	JUN	28-29												
	JUL	21-22												
	AUG	5										2.05		2.05

Table 18. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: MELANOSTOMIATIDAE, *Tactostoma macropus*, (longfin dragonfish).

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17												
	MAR	1												
	MAR	20												
	APR	22-26												
	MAY	3-4												
	MAY	14-20												
	MAY	29-2												
	JUN	12-13												
	JUN	28-30												
	JUL	6												
	JUL	21-22												
	AUG	2-3												
	AUG	19-20									1.24			1.24
	SEP	23-24											1.43	1.43
	OCT	11-12									1.48		4.74	6.22
	NOV	6-7												
	DEC	7												
1972	MAR	3-4												
	MAR	15-16												
	MAR	29-30												
	APR	11												
	APR	20-21												
	MAY	22-23												
	JUN	11-12												
	JUN	28-29									2.72			2.72
	JUL	21-22											1.53	1.53
	AUG	5												
											6.65	10.12	12.70	29.47

Table 19. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: CHAULIODONTIDAE, *Chauliodus macouni*, Pacific viperfish.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17												
	MAR	1												
	MAR	20												
	APR	22-26	--	--										
	MAY	3-4												
	MAY	14-20												
	MAY	29-2												
	JUN	12-13									2.42	2.12	1.24	5.78
	JUN	28-30												
	JUL	6												
	JUL	21-22												
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4												
	MAR	15-16												
	MAR	29-30	--	--										
	APR	11												
	APR	20-21												
	MAY	22-23												
	JUN	11-12												
	JUN	28-29												
	JUL	21-22												
	AUG	5												
		Σ									2.42	2.12	1.24	5.78

Table 20. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PARALEPIDIDAE, *Lestidiops ringens*.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17												
	MAR	1												
	MAR	20												
	APR	22-26	--	--										
	MAY	3-4												
	MAY	14-20												
	MAY	29-2												
	JUN	12-13				0.82			3.84	5.70	6.05	2.12		18.53
	JUN	28-30								4.06	2.54	1.47		8.07
	JUL	6												
	JUL	21-22										2.64		2.64
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4												
	MAR	15-16												
	MAR	29-30	--	--										
	APR	11												
	APR	20-21												
	MAY	22-23												
	JUN	11-12								1.16			2.46	3.62
	JUN	28-29											3.06	3.06
	JUL	21-22												
	AUG	5												
		Σ				0.82			3.84	6.86	10.11	7.30	6.99	35.92

Table 21. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: MYCTOPHIDAE, *Lampanyctus regalis*, pinpoint lampfish.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26	--	--											
	MAY 3-4													
	MAY 14-20													
	MAY 29-2							1.15						1.15
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30		--											
	APR 11													
	APR 20-21		--											
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5							1.15						1.15
		Σ												

Table 22. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: MYCTOPHIDAE, *Loweina vara*, (lanternfish).

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20												3.84	3.84
	APR 22-26	--	--											
	MAY 3-4											0.82		0.82
	MAY 14-20													
	MAY 29-2													
	JUN 12-13										1.21	4.24	7.44	12.89
	JUN 28-30												4.41	4.41
	JUL 6													
	JUL 21-22												6.09	6.09
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12									3.10				3.10
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30		--											
	APR 11													
	APR 20-21		--											
	MAY 22-23												2.88	2.88
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
		Σ								3.10	1.21	5.06	24.66	34.03

Table 23. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: MYCTOPHIDAE, *Protomyctophum crockeri*, flashlightfish.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													7.08
	MAR 1											1.54	5.54	18.22
	MAR 20								3.10		5.36	5.92	3.84	3.47
	APR 22-26										3.47			4.13
	MAY 3-4				1.24	1.46					1.43			3.85
	MAY 14-20							1.15	2.70					44.19
	MAY 29-2				1.00			1.59						22.16
	JUN 12-13							2.30	1.28	6.84	4.84	3.18	3.72	7.45
	JUN 28-30							1.97				2.54	2.94	
	JUL 6													5.59
	JUL 21-22					1.53							4.06	4.99
	AUG 2-3			1.43					1.02		1.22	1.32		6.39
	AUG 19-20							2.56		1.29	1.24	1.30		14.48
	SEP 23-24		0.64					2.54		3.10	1.31	1.17	5.72	9.40
	OCT 11-12						1.82			1.55	4.44	1.59		3.18
	NOV 6-7			1.44						1.74				2.42
	DEC 7									1.22	1.20			2.80
1972	MAR 3-4												2.80	2.80
	MAR 15-16									1.85			1.35	3.20
	MAR 29-30													
	APR 11													0.87
	APR 20-21			0.87										2.17
	MAY 22-23										2.17			3.62
	JUN 11-12									1.16			2.46	4.06
	JUN 28-29									4.06				13.13
	JUL 21-22									2.15		1.80	9.18	0.36
	AUG 5	0.36												187.27
	Σ	0.36	0.64	3.74	2.24	2.99	1.82	10.52	9.69	24.96	34.44	45.00	58.81	

Table 24. Larval fish occurrences (number under 10m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: MYCTOPHIDAE *Protomyctophum thompsoni*, (lanternfish).

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6	0.31												0.31
	JAN 18													1.75
	FEB 3						1.75							8.96
	FEB 16-17										1.56	7.40		25.95
	MAR 1						1.94		1.54			3.08	19.39	101.12
	MAR 20				0.80	0.75	1.35		9.30	2.30	14.74	48.84	23.04	10.14
	APR 22-26							2.20				10.14	96.46	111.30
	MAY 3-4				1.24	7.30						4.10	96.46	38.61
	MAY 14-20				1.09	4.14	2.08	21.85	9.45					417.34
	MAY 29-2				2.00		3.76	1.99	3.18	9.55	29.10	126.72	241.04	1384.82
	JUN 12-13						2.18	35.65	78.08	145.92	444.07	485.48	193.44	615.81
	JUN 28-30				1.04	2.76			4.32	92.75	158.34	162.56	194.04	369.46
	JUL 6									5.06	21.70	170.15	172.55	50.48
	JUL 21-22								1.02		4.88	10.56	34.02	19.31
	AUG 2-3							2.56		3.87	2.48	10.40		51.21
	AUG 19-20				0.91	0.90	3.27	3.81	18.26	20.15	1.31	1.17	1.43	5.96
	SEP 23-24					2.32	3.64							
	OCT 11-12													
	NOV 6-7													
	DEC 7												1.40	3.78
1972	MAR 3-4		1.62	0.76									1.35	51.55
	MAR 15-16	0.66	13.02	1.42		1.22	4.71		2.94	9.25	9.60	7.38		2.34
	MAR 29-30					1.04		1.30						
	APR 11													
	APR 20-21													
	MAY 22-23							1.83	4.14	20.79	13.02	103.74	40.32	183.84
	JUN 11-12						1.02	1.13	6.28	1.16	21.66	45.51	55.35	132.11
	JUN 28-29							2.48	3.00		2.72	14.22	13.08	35.50
	JUL 21-22									25.80		16.20	32.13	74.13
	AUG 5													
	Σ	0.97	14.64	2.18	7.08	20.43	25.70	74.80	141.51	336.60	725.18	1227.65	1190.04	3695.78

Table 25. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: MYCTOPHIDAE, *Stenobranchius leucopsarus*, northern lampfish.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18						1.75							1.75
	FEB 3													1.89
	FEB 16-17													14.16
	MAR 1													26.04
	MAR 20										2.68	11.84	11.52	6.85
	APR 22-26										3.47	3.38		7.42
	MAY 3-4													7.42
	MAY 14-20							2.70						2.70
	MAY 29-2							1.99	1.91			10.56	34.96	49.42
	JUN 12-13						1.09	2.30	1.28	39.90	22.99	24.38	26.04	117.98
	JUN 28-30							2.88	17.50	20.30	22.86	19.11		82.65
	JUL 6													
	JUL 21-22							2.21	2.53	6.51	43.05	48.72		103.02
	AUG 2-3										6.60	32.76		39.36
	AUG 19-20			0.61					1.29	4.96	5.20			12.06
	SEP 23-24			0.78		0.90			4.15	4.65	2.62	1.17	2.86	17.13
	OCT 11-12						1.82					3.18	1.58	6.58
	NOV 6-7													
	DEC 7								2.12					2.12
1972	MAR 3-4						1.45	1.32					2.80	5.57
	MAR 15-16							1.37				2.46	1.35	5.18
	MAR 29-30													
	APR 11													
	APR 20-21													
	MAY 22-23							3.14			2.17		5.76	11.07
	JUN 11-12									2.32	2.28	4.92	28.29	37.81
	JUN 28-29									21.50		12.60	45.90	80.00
	JUL 21-22													
	AUG 5			1.39		0.90	6.11	12.33	13.13	91.61	167.98	157.65	286.40	637.49

Table 26. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: MYCTOPHIDAE, *Tarletonbeania crenularis*, blue lanternfish.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22												4.06	4.06
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30													
	APR 11													
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5												7.24	7.24

Table 27. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: MYCTOPHIDAE, Undetermined species, lanternfishes.



STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													1.76
	FEB	3	1.76												6.45
	FEB	16-17	1.20	1.52	0.98			2.75							19.55
	MAR	1		3.50	16.05										20.93
	MAR	20		7.14	8.19	5.60									26.54
	APR	22-26			22.88	3.66									76.17
	MAY	3-4	21.93	18.48	33.28	2.48									42.26
	MAY	14-20	3.06	15.75	15.82	7.63									66.43
	MAY	29-2		52.29	13.14	1.00									96.85
	JUN	12-13	7.98	23.80	62.70	2.37									81.39
	JUN	28-30		43.74	15.47	20.80	1.38								51.22
	JUL	6	9.92	14.30	27.00										13.89
	JUL	21-22	3.57	10.32											5.93
	AUG	2-3		4.50	1.43										0.58
	AUG	19-20		0.58											
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4		8.10											8.10
	MAR	15-16	0.33	1.24											1.57
	MAR	29-30	6.00		12.32	0.89									19.21
	APR	11	3.60	1.02	0.64										5.26
	APR	20-21			11.31	1.24									12.55
	MAY	22-23	0.58	2.67	9.60										12.85
	JUN	11-12	0.62	2.20	1.50	0.70					1.14				6.16
	JUN	28-29			3.20										3.20
	JUL	21-22	0.29	2.01				1.55							3.85
	AUG	5		0.95	1.08	0.99									3.02
			60.84	214.11	256.59	47.36	1.38	4.30				1.14			585.72

Table 28. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: GADIDAE, *Microgadus proximus*, Pacific tomcod.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3						1.75							1.75
	FEB	16-17													
	MAR	1													
	MAR	20													
	APR	22-26													
	MAY	3-4													
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3						1.11							1.11
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30													
	APR	11													
	APR	20-21													
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
								2.86							2.86

Table 29. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: OPHIDIIDAE, *Brosomphycis marginata*, red brotula.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17												
	MAR	1												
	MAR	20												
	APR	22-26												
	MAY	3-4												
	MAY	14-20												
	MAY	29-2												
	JUN	12-13												
	JUN	28-30												
	JUL	6												
	JUL	21-22												
	AUG	2-3										1.32		1.32
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4												
	MAR	15-16												
	MAR	29-30												
	APR	11												
	APR	20-21												
	MAY	22-23												
	JUN	11-12												
	JUN	28-29												
	JUL	21-22												
	AUG	5										1.32		1.32
		Σ										1.32		1.32

Table 30. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: OPHIDIIDAE, Ophidiidae sp. 1, (cusk eel or brotula).

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ	
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60		
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850		
1971	JAN	6			24.38									29.59	
	JAN	18	0.87	11.28	0.87									13.02	
	FEB	3	1.32	3.36	0.75	5.25		5.25		12.70				28.63	
	FEB	16-17	1.60		4.90	1.17			6.81		20.28	11.10	3.78	49.64	
	MAR	1		0.70	1.07				15.40		37.92	7.70	8.31	109.90	
	MAR	20		0.51			2.70		7.75	34.50	40.20	10.36	38.40	134.42	
	APR	22-26			1.56	1.22	2.16		109.80		31.23	33.80		179.77	
	MAY	3-4	3.01	5.04		1.24		29.70	622.00	2.39	12.87	617.46	73.14	1366.85	
	MAY	14-20		5.25			1.38	12.48	55.20	12.15				86.46	
	MAY	29-2			1.46			1.99	22.26	9.55	15.52	98.56	143.52	292.86	
	JUN	12-13			0.79	1.64	1.09	41.40	43.52	19.38	48.40	20.14	33.48	209.84	
	JUN	28-30		0.81	8.19	3.12	8.28	11.80	33.49	51.84	19.25	16.24	10.16	163.18	
	JUL	6													
	JUL	21-22		0.86							10.85	49.20	8.12	69.03	
	AUG	2-3	1.38	0.90		3.84	4.80	1.11	18.59	7.14	4.88	10.56	6.30	59.50	
	AUG	19-20					0.79	1.26		1.48				3.53	
	SEP	23-24				1.82	5.40						1.17	9.94	
	OCT	11-12						34.58		19.92	9.30	1.48		66.86	
	NOV	6-7				1.23		1.53						2.76	
	DEC	7				2.06		1.68	2.12	1.22				9.82	
1972	MAR	3-4		2.70	2.28	2.32	3.09	5.80	33.00	15.29	8.70	3.30	23.66	4.20	104.34
	MAR	15-16		7.44	0.71		6.10	47.10	27.40	33.81	38.75	188.16	12.30	6.75	468.52
	MAR	29-30	1.68		1.54	2.67		18.20	9.80						33.89
	APR	11	6.30	1.53	2.56	6.51									16.90
	APR	20-21					1.47		4.68						6.15
	MAY	22-23			0.96			14.64	2.07	6.93	43.40	10.92	20.16		99.08
	JUN	11-12				1.40		232.56	12.43	51.81	10.44	12.54	6.15	9.84	337.17
	JUN	28-29						2.48	24.00	12.18	21.76	18.96	37.06		116.44
	JUL	21-22							10.55	15.05	13.86	18.00	26.01		83.47
	AUG	5													
		Σ	16.16	41.09	31.35	59.02	33.64	398.74	291.73	1086.90	289.19	522.89	960.20	420.65	4151.56

Table 31. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: SCORPAENIDAE, Sebastes spp., (rockfishes).

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17										1.56			1.56
	MAR 1											1.54		1.54
	MAR 20													
	APR 22-26											1.64	1.06	2.70
	MAY 3-4													
	MAY 14-20											1.10		1.10
	MAY 29-2											2.12		2.12
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4											1.23		1.23
	MAR 15-16													
	MAR 29-30							2.60						2.60
	APR 11													
	APR 20-21													
	MAY 22-23										1.14		3.69	4.83
	JUN 11-12													
	JUN 28-29												1.53	1.53
	JUL 21-22													
	AUG 5							2.60			2.70	7.63	6.28	19.21

Table 32. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: SCORPAENIDAE, *Sebastes* spp., (thornyheads).

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3	0.44												0.44
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30													
	APR 11													
	APR 20-21						2.94							2.94
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5	0.44					2.94							3.38

Table 33. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: HEXAGRAMMIDAE, *Hexagrammos* spp., (greenlings).

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6			0.90										0.90
	JAN 18													13.19
	FEB 3	4.40	5.04	3.75	1.17									11.83
	FEB 16-17		3.80	6.86										10.95
	MAR 1		5.60	5.35										1.82
	MAR 20		1.02		0.80									1.13
	APR 22-26	--	--	0.52	0.61									
	MAY 3-4													
	MAY 14-20													
	MAY 29-2			1.46										1.46
	JUN 12-13													
	JUN 28-30													
	JUL 6					--	--	--	--	--	--	--	--	
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4		2.70	1.52	3.48									7.70
	MAR 15-16	0.66		2.13										2.79
	MAR 29-30	0.24	--				1.24							1.48
	APR 11		1.02			--	--	--	--	--	--	--	--	1.02
	APR 20-21	0.41	--											0.41
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ	5.71	19.18	22.49	6.06		1.24							54.68

Table 34. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: HEXAGRAMMIDAE, *Ophiodon elongatus*, lingcod.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20												1.92	1.92
	APR 22-26	--	--											
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6					--	--	--	--	--	--	--	--	
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4							1.37	1.47			1.23	1.35	5.42
	MAR 15-16													
	MAR 29-30		--											0.93
	APR 11				0.93	--	--	--	--	--	--	--	--	
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ				0.93			1.37	1.47			1.23	3.27	8.27

Table 35. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: ANOPILOMATIDAE, *Anoplopoma fimbria*, sablefish.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6				1.06									1.06
	JAN	18		0.94											0.94
	FEB	3	6.60	15.96	1.50										24.06
	FEB	16-17	1.20		2.94			5.50							9.64
	MAR	1	0.48	0.70	5.35										6.53
	MAR	20			1.26	4.00	6.00	1.35							12.61
	APR	22-26			4.68	0.61	0.54								5.83
	MAY	3-4	3.01	15.12		1.24									19.37
	MAY	14-20	0.51	3.00	5.65										9.16
	MAY	29-2	0.52	3.32	7.30										11.14
	JUN	12-13		2.80	3.96	0.79		1.09							8.64
	JUN	28-30		3.24	2.73	1.04	4.14								11.15
	JUL	6	5.89		1.80										7.69
	JUL	21-22	1.53	1.72											3.25
	AUG	2-3	0.46	2.70	1.43	1.28									5.87
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4		0.54	0.76										1.30
	MAR	15-16	0.99	2.48	1.42										4.89
	MAR	29-30	3.36		13.09	3.56									20.01
	APR	11	1.20	0.51	5.76										7.47
	APR	20-21	0.82		2.61										3.43
	MAY	22-23	0.87	1.78	5.76		2.64								11.05
	JUN	11-12	0.62	1.10	3.00	0.70									5.42
	JUN	28-29	0.31				2.76								3.07
	JUL	21-22	0.29		1.56										1.85
	AUG	5				0.99	1.32								2.31
			Σ	28.66	55.91	72.56	15.27	17.40	7.94						197.74

Table 36. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Arteidius* sp. 1, (sculpin).

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													0.58
	JAN	18	0.58												0.58
	FEB	3	1.32	16.80	1.50										19.62
	FEB	16-17	1.20	1.52	10.78										13.50
	MAR	1	0.48	17.50	5.35	2.24									25.57
	MAR	20		1.02	2.52										3.54
	APR	22-26			1.04										1.04
	MAY	3-4	4.73	4.20	2.08										11.01
	MAY	14-20	1.02	6.00	1.13										8.15
	MAY	29-2	1.04	0.83											1.87
	JUN	12-13	1.68	4.20	0.66										6.54
	JUN	28-30	2.32	1.62	0.91		2.76								7.61
	JUL	6	4.96												4.96
	JUL	21-22	4.59												4.59
	AUG	2-3	1.84	0.90											2.74
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4		2.70		3.48									6.18
	MAR	15-16	0.66		0.71										1.37
	MAR	29-30	1.92		4.62										6.54
	APR	11		0.51	1.28										1.79
	APR	20-21	1.23		0.87										2.10
	MAY	22-23	2.90												2.90
	JUN	11-12	3.41	0.55											3.96
	JUN	28-29	3.10	0.70											3.80
	JUL	21-22													
	AUG	5													
			Σ	38.98	59.05	33.45	5.72	2.76							139.96

Table 37. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Arteidius* sp. 2, (sculpin).

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26	--	--	0.52										0.52
	MAY 3-4													
	MAY 14-20			1.13										1.13
	MAY 29-2					1.38								1.38
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24			0.78										0.78
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30		--	0.77										0.77
	APR 11													
	APR 20-21													
	MAY 22-23		0.89	0.96										1.85
	JUN 11-12													
	JUN 28-29				1.12									1.12
	JUL 21-22													
	AUG 5		0.89	4.16	1.12	1.38								7.55

Table 38. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Chitonotus pugetensis*, roughback sculpin.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17	0.40												0.40
	MAR 1	51.36	15.40	17.12										83.88
	MAR 20	0.53			0.80									1.33
	APR 22-26	--	--											
	MAY 3-4	3.44	2.52											5.96
	MAY 14-20	0.51												0.51
	MAY 29-2	2.34	0.83											3.17
	JUN 12-13													
	JUN 28-30	0.58												0.58
	JUL 6	1.24												1.24
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4	5.76												5.76
	MAR 15-16	9.90	5.58											15.48
	MAR 29-30	7.92	--	2.31										10.23
	APR 11													
	APR 20-21	10.66	--											10.66
	MAY 22-23	4.06												4.06
	JUN 11-12	0.93												0.93
	JUN 28-29	1.24												1.24
	JUL 21-22													
	AUG 5													
		Σ	100.87	24.33	19.43	0.80								145.43

Table 39. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Cottus asper*, prickly sculpin.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ	
		1	3	5	10	15	20	25	30	35	40	50	60		
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850		
1971	JAN 6													0.29	
	JAN 18	0.29												1.28	
	FEB 3	0.44	0.84											36.13	
	FEB 16-17	3.20	12.16	15.68	2.34		2.75							6.02	
	MAR 1	1.44	0.70				3.88							4.75	
	MAR 20			3.15	1.60										
	APR 22-26														
	MAY 3-4	0.86	0.84												1.70
	MAY 14-20	1.02	0.75												1.77
	MAY 29-2	0.52													0.52
	JUN 12-13														
	JUN 28-30														
JUL 6															
JUL 21-22															
AUG 2-3															
AUG 19-20															
SEP 23-24															
OCT 11-12															
NOV 6-7															
DEC 7															
1972	MAR 3-4													3.30	
	MAR 15-16	3.30												2.93	
	MAR 29-30	2.16	--	0.77										2.10	
	APR 11	2.10												6.20	
	APR 20-21	5.33	--	0.87										0.29	
	MAY 22-23	0.29													
	JUN 11-12														
	JUN 28-29														
JUL 21-22															
AUG 5															
Σ		20.95	15.29	20.47	3.94		6.63							67.28	

Table 40. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Enophrys bison*, buffalo sculpin.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ	
		1	3	5	10	15	20	25	30	35	40	50	60		
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850		
1971	JAN 6	1.55	5.68	1.80	1.06									10.09	
	JAN 18													4.79	
	FEB 3	2.20	0.84				1.75							2.75	
	FEB 16-17						2.75							1.94	
	MAR 1						1.94								
	MAR 20														
	APR 22-26														
	MAY 3-4														
	MAY 14-20														
	MAY 29-2														
	JUN 12-13														
	JUN 28-30														
JUL 6															
JUL 21-22															
AUG 2-3															
AUG 19-20															
SEP 23-24															
OCT 11-12															
NOV 6-7															
DEC 7															
1972	MAR 3-4														
	MAR 15-16														
	MAR 29-30														
	APR 11														
	APR 20-21														
	MAY 22-23														
	JUN 11-12														
	JUN 28-29														
JUL 21-22															
AUG 5															
Σ		3.75	6.52	1.80	1.06		6.44							19.57	

Table 41. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Hemilepidotus hemilepidotus*, red Irish lord.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6	0.93	2.84	6.30	2.12									12.79
	JAN 18		1.88	0.87	2.10									4.85
	FEB 3	1.76	5.04	3.75			3.50							14.05
	FEB 16-17	0.40	4.56	1.96	1.17									8.09
	MAR 1		2.80	19.26	1.12		7.76							30.94
	MAR 20					0.75								0.75
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
JUL 6														
JUL 21-22														
AUG 2-3														
AUG 19-20														
SEP 23-24														
OCT 11-12														
NOV 6-7														
DEC 7														
1972	MAR 3-4		0.54		5.80	3.09	2.90	1.32						13.65
	MAR 15-16							5.48		1.85	1.92	2.46	1.35	13.06
	MAR 29-30						1.24							1.24
	APR 11													
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
JUL 21-22														
AUG 5														
	Σ	3.09	17.66	32.14	12.31	3.84	15.40	6.80		1.85	1.92	2.46	1.35	98.82

Table 42. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE *Hemilepidotus spinosus*, brown Irish lord.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ	
		1	3	5	10	15	20	25	30	35	40	50	60		
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850		
1971	JAN 6														
	JAN 18														
	FEB 3														
	FEB 16-17														
	MAR 1														
	MAR 20														
	APR 22-26			0.52	0.61										7.13
	MAY 3-4	0.43	10.08	4.16											14.67
	MAY 14-20		1.50	1.13											2.63
	MAY 29-2		2.49												2.49
	JUN 12-13			1.98											1.98
	JUN 28-30			0.91	2.08	1.38									4.37
JUL 6															
JUL 21-22	1.53													1.53	
AUG 2-3															
AUG 19-20															
SEP 23-24															
OCT 11-12															
NOV 6-7															
DEC 7															
1972	MAR 3-4														
	MAR 15-16			8.47	2.67									11.14	
	MAR 29-30													0.90	
	APR 11	0.90												2.98	
	APR 20-21			1.74	1.24									2.22	
	MAY 22-23		0.89		1.33									3.75	
	JUN 11-12			3.75										3.44	
	JUN 28-29		0.70	0.80			1.94							0.78	
JUL 21-22			0.78										2.39		
AUG 5	0.36	0.95	1.08												
	Σ	3.22	16.61	25.32	7.93	1.38	1.94							56.40	

Table 43. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Icelinus* sp. 1, (sculpin).



STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6		0.71											0.71
	JAN 18													
	FEB 3	0.44												0.44
	FEB 16-17			0.98	1.17		5.50							7.65
	MAR 1		1.40	2.14										3.54
	MAR 20	0.53												0.53
	APR 22-26	--												
	MAY 3-4		0.84											0.84
	MAY 14-20													
	MAY 29-2	0.26												0.26
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24		1.92	0.78										2.70
	OCT 11-12		0.27	0.75										1.02
	NOV 6-7	0.96	0.79	1.44										3.19
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30		--	2.31										2.31
	APR 11	0.60												0.60
	APR 20-21	0.41												0.41
	MAY 22-23													
	JUN 11-12	0.31												0.31
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ	3.51	5.93	8.40	1.17		5.50							24.51

Table 44. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Leptocottus armatus*, Pacific staghorn sculpin.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30		--	0.77										0.77
	APR 11													
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ			0.77										0.77

Table 45. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Nautichthys oculofasciatus*, sailfin sculpin.

STATION	KM. FROM COAST	N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
			1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3	0.88												0.88
	FEB	16-17													
	MAR	1		1.40											1.40
	MAR	20													
	APR	22-26													
	MAY	3-4													
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6	0.31												0.31
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7	0.27												0.27
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30													
	APR	11													
	APR	20-21													
	MAY	22-23	0.29												0.29
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
			Σ	1.75	1.40										3.15

Table 46. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Oligocottus* sp. 1, (sculpin).

STATION	KM. FROM COAST	N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
			1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1													
	MAR	20													
	APR	22-26													
	MAY	3-4													
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30								1.44					1.44
	JUL	6													
	JUL	21-22													
	AUG	2-3					0.79								0.79
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30													
	APR	11													
	APR	20-21													
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5					0.79			1.44					2.23
			Σ				0.79			1.44					2.23

Table 47. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Paricelinus haptiticus*, thornback sculpin.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1													
	MAR	20													
	APR	22-26													
	MAY	3-4												1.06	1.06
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30													
	APR	11													
	APR	20-21													
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
			Σ											1.06	1.06

Table 48. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Psychrolutes*-type sp. 1 (sculpin).

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3			0.75										0.75
	FEB	16-17				1.17		2.75							3.92
	MAR	1		0.70	2.14	1.12									3.96
	MAR	20					1.50	5.40							6.90
	APR	22-26			0.52	1.22	0.54								2.28
	MAY	3-4	0.43	1.68		1.24									3.35
	MAY	14-20		0.75	5.65	2.18		1.04							9.62
	MAY	29-2		0.83	5.84	4.00	1.01								11.68
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22			1.09										1.09
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16			0.71		1.22								1.93
	MAR	29-30			3.08	2.67	3.12								8.87
	APR	11		0.51		4.65									5.16
	APR	20-21			3.48	1.24									4.72
	MAY	22-23		0.89											0.89
	JUN	11-12				1.40									1.40
	JUN	28-29				1.12									1.12
	JUL	21-22													
	AUG	5													
			Σ	0.43	5.36	23.26	22.01	7.39	9.19						67.64

Table 49. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Radulinus asprellus*, slim sculpin.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17												
	MAR	1												
	MAR	20												
	APR	22-26												
	MAY	3-4												
	MAY	14-20												
	MAY	29-2												
	JUN	12-13												
	JUN	28-30												
	JUL	6												
	JUL	21-22												
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4												
	MAR	15-16			0.77									0.77
	MAR	29-30												
	APR	11												
	APR	20-21												
	MAY	22-23												
	JUN	11-12												
	JUN	28-29												
	JUL	21-22												
	AUG	5			0.77									0.77

Table 50. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Rhamphocottus richardsoni*, grunt sculpin.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6		0.90										0.90
	JAN	18	0.29	0.84										1.13
	FEB	3												
	FEB	16-17	0.80											0.80
	MAR	1	0.48	1.40	1.07									2.95
	MAR	20		0.51	0.80									1.31
	APR	22-26				1.08								1.08
	MAY	3-4												
	MAY	14-20		1.50										1.50
	MAY	29-2	0.26											0.26
	JUN	12-13												
	JUN	28-30												
	JUL	6		0.90										0.90
	JUL	21-22												
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7		0.66										0.66
1972	MAR	3-4	0.36	0.54	1.52									2.42
	MAR	15-16	0.99	2.48	0.71									4.18
	MAR	29-30	0.96											0.96
	APR	11	0.90	1.02										1.92
	APR	20-21			0.87									0.87
	MAY	22-23												
	JUN	11-12												
	JUN	28-29												
	JUL	21-22												
	AUG	5												
			Σ	5.04	9.85	5.07	0.80	1.08						21.84

Table 51. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, *Scorpaenichthys marmoratus*, cabezon.

STATION	KM. FROM COAST	N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
			1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													0.44
	FEB	3	0.44												
	FEB	16-17													4.28
	MAR	1	2.88	1.40											1.60
	MAR	20				1.60									
	APR	22-26	--	--											
	MAY	3-4													0.51
	MAY	14-20	0.51												
	MAY	29-2													0.42
	JUN	12-13	0.42												0.29
	JUN	28-30	0.29												
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30		--											
	APR	11													
	APR	20-21													
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
			Σ	4.54	1.40		1.60								7.54

Table 52. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, Cottidae sp. 1 C, (sculpin).

STATION	KM. FROM COAST	N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
			1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													2.54
	FEB	16-17	0.80	0.76	0.98										2.40
	MAR	1	2.40												
	MAR	20													
	APR	22-26	--	--											
	MAY	3-4													0.75
	MAY	14-20		0.75											1.35
	MAY	29-2	0.52	0.83											1.74
	JUN	12-13	0.42		1.32										
	JUN	28-30													8.99
	JUL	6	8.99												5.61
	JUL	21-22	5.61												1.38
	AUG	2-3	1.38												
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													1.44
1972	MAR	3-4	1.44												0.33
	MAR	15-16	0.33												1.68
	MAR	29-30	1.68	--											
	APR	11													2.46
	APR	20-21	2.46	--											3.48
	MAY	22-23	3.48												3.03
	JUN	11-12	2.48	0.55											3.72
	JUN	28-29	3.72												
	JUL	21-22													1.80
	AUG	5	1.80												42.70
			Σ	37.51	2.89	2.30									

Table 53. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, Cottidae sp. 12, (sculpin).

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16	0.33												0.33
	MAR 29-30		--											
	APR 11		--											
	APR 20-21		--											
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													0.33
	Σ	0.33												

Table 54. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, Cottidae sp. 19, (sculpin).

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3	0.44												0.44
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26		--											
	MAY 3-4													
	MAY 14-20													
	MAY 29-2	0.52												0.52
	JUN 12-13	0.42												0.42
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30		--											
	APR 11		--											
	APR 20-21		--											
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ	1.38												1.38

Table 55. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, Cottidae sp. 20, (sculpin).

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													0.44
	FEB 3	0.44												2.34
	FEB 16-17				2.34									4.28
	MAR 1			4.28										2.64
	MAR 20	0.53	0.51		1.60									
	APR 22-26													
	MAY 3-4													1.13
	MAY 14-20			1.13										1.30
	MAY 29-2	1.30												0.70
	JUN 12-13		0.70											
	JUN 28-30													0.31
	JUL 6	0.31												0.51
	JUL 21-22	0.51												
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													0.36
1972	MAR 3-4	0.36												0.99
	MAR 15-16	0.99												0.48
	MAR 29-30	0.48												0.30
	APR 11	0.30												2.15
	APR 20-21	0.41		1.74										2.95
	MAY 22-23	0.29			2.66									
	JUN 11-12													0.31
	JUN 28-29	0.31												
	JUL 21-22													0.36
	AUG 5	0.36												21.55
	Σ	6.59	1.21	7.15	6.60									

Table 56. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: COTTIDAE, Undetermined species, sculpins.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													0.24
	MAR 29-30	0.24												0.93
	APR 11				0.93									
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ	0.24			0.93									1.17

Table 57. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: AGONIDAE, *Agonopsis emmelane*, northern spearnose poacher.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26				0.52									0.52
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30									1.75				1.75
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7				1.03									1.03
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30													
	APR 11													
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ				1.55					1.75				3.30

Table 58. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: AGONIDAE, *Bathyaegonus* spp., (poachers).

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 12													
	FEB 3													
	FEB 16-17	0.80	1.52											2.32
	MAR 1	1.92	4.20	2.14										8.26
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4	0.36												0.36
	MAR 15-16	1.20												1.20
	MAR 29-30													
	APR 11													
	APR 20-21	0.82												0.82
	MAY 22-23													
	JUN 11-12	0.31												0.31
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ	5.41	5.72	2.14										13.27

Table 59. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: AGONIDAE, *Ocella verrucosa*, warty poacher.



STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3				1.05									1.05
	FEB	16-17													
	MAR	1													
	MAR	20													
	APR	22-26													
	MAY	3-4	0.43												0.43
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30													
	APR	11													
	APR	20-21													
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5	0.43			1.05									1.48

Table 60. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: AGONIDAE, *Odontopyxis trispinosa*, pygmy poacher.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1													
	MAR	20		0.51											0.51
	APR	22-26													
	MAY	3-4													
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4	0.36												0.36
	MAR	15-16													
	MAR	29-30													
	APR	11													
	APR	20-21													
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5	0.36	0.51											0.87

Table 61. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: AGONIDAE, *Pallasina barbata*, tubenose poacher.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3		2.52	0.75										3.27
	FEB	16-17													
	MAR	1		0.70	1.07										1.77
	MAR	20													
	APR	22-26													
	MAY	3-4													
	MAY	14-20	0.51												0.51
	MAY	29-2	0.26												0.26
	JUN	12-13		0.70											0.70
	JUN	28-30		0.81											0.81
	JUL	6	3.10	0.65	0.90										4.65
	JUL	21-22	2.04												2.04
	AUG	2-3	0.46												0.46
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16		0.62											0.62
	MAR	29-30	0.96		1.54										2.50
	APR	11													
	APR	20-21													
	MAY	22-23	0.58												0.58
	JUN	11-12													
	JUN	28-29	4.03	1.40											5.43
	JUL	21-22	0.87												0.87
	AUG	5	3.96												3.96
			Σ	16.77	7.40	4.26									28.43

Table 62. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: AGONIDAE, *Stellerina xyosterna*, pricklebrest poacher.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1													
	MAR	20													
	APR	22-26													
	MAY	3-4													
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4				1.16									1.16
	MAR	15-16													
	MAR	29-30													
	APR	11													
	APR	20-21													
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
			Σ			1.16									1.16

Table 63. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: AGONIDAE, *Zenarctus latifrons*, blacktip poacher.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17												
	MAR	1		1.07										1.07
	MAR	20												
	APR	22-26			0.61									0.61
	MAY	3-4												
	MAY	14-20												
	MAY	29-2	1.46											1.46
	JUN	12-13												
	JUN	28-30												
	JUL	6												
	JUL	21-22												
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4												
	MAR	15-16												
	MAR	29-30												
	APR	11												
	APR	20-21												
	MAY	22-23												
	JUN	11-12												
	JUN	28-29												
	JUL	21-22												
	AUG	5												
		Σ	1.46	1.07	0.61									3.14

Table 64. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: AGONIDAE, Agonidae sp. 6, (poacher).

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17	1.52											1.52
	MAR	1	2.10	1.07										3.17
	MAR	20												
	APR	22-26												
	MAY	3-4	0.84											0.84
	MAY	14-20												
	MAY	29-2		1.46										1.46
	JUN	12-13	0.70											0.70
	JUN	28-30	0.81											0.81
	JUL	6	0.31	1.80										2.11
	JUL	21-22												
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7		0.72										0.72
	DEC	7												
1972	MAR	3-4												
	MAR	15-16												
	MAR	29-30		0.77										0.77
	APR	11		0.64										0.64
	APR	20-21												
	MAY	22-23		0.96										0.96
	JUN	11-12		0.75	1.40									2.15
	JUN	28-29												
	JUL	21-22												
	AUG	5												
		Σ	6.28	8.17	1.40									15.85

Table 65. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: CYCLOPTERIDAE, *Liparis pulchellus*, showy snailfish.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850		
1971	JAN	6													0.94
	JAN	18		0.94											9.22
	FEB	3		6.72	0.75			1.75							6.96
	FEB	16-17		0.76				2.75				1.56		1.89	1.82
	MAR	1		0.70		1.12									3.03
	MAR	20				0.80	0.75						1.48		4.08
	APR	22-26	--	--		0.61						3.47			5.63
	MAY	3-4			1.04	1.24			1.10			1.43	0.82		1.15
	MAY	14-20							1.15						2.99
	MAY	29-2				1.00			1.99						3.12
	JUN	12-13					0.82		2.30						3.41
	JUN	28-30							1.97	1.44					
	JUL	6													2.17
	JUL	21-22										2.17			2.83
	AUG	2-3	0.46					1.11						1.26	2.76
	AUG	19-20						1.28	1.48						2.92
	SEP	23-24			0.78				0.83			1.31			2.25
	OCT	11-12			2.25										
	NOV	6-7												--	--
	DEC	7													7.23
1972	MAR	3-4						1.45	2.64		1.45		1.69		6.87
	MAR	15-16	0.66	0.62	0.71		4.88								2.90
	MAR	29-30		--	0.77	0.89		1.24							5.83
	APR	11	2.40		0.64	2.79	--	--	--	--	--	--	--	--	5.67
	APR	20-21		--		1.24			2.09	2.34	--	--	--	--	4.71
	MAY	22-23						1.83							7.38
	JUN	11-12							1.57	1.16	3.42	1.23			13.56
	JUN	28-29								8.12	5.44				6.61
	JUL	21-22								4.30	2.31				
	AUG	5													
Σ			3.52	9.74	6.94	9.69	6.45	8.30	16.38	7.66	15.03	21.11	5.22	6.03	116.04

Table 66. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: CYCLOPTERIDAE, Cyclopteridae spp. 1, (lumpfishes and snailfishes).

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850		
1971	JAN	6													
	JAN	18													
	FEB	3													2.50
	FEB	16-17		1.52	0.98										
	MAR	1													
	MAR	20													
	APR	22-26	--	--											0.43
	MAY	3-4	0.43												0.75
	MAY	14-20		0.75											
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16		--	0.77										0.77
	MAR	29-30													
	APR	11													
	APR	20-21		--											
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
Σ			0.43	2.27	1.75										4.45

Table 67. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: CYCLOPTERIDAE, Cyclopteridae sp. 3, (lumpfish or snailfish).

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ	
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60		
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850		
1971	JAN	6														
	JAN	18														
	FEB	3		2.52	0.75										3.27	
	FEB	16-17														
	MAR	1			1.07										1.07	
	MAR	20									1.15				1.15	
	APR	22-26	--	--												
	MAY	3-4	0.86											1.06	1.92	
	MAY	14-20		0.75											0.75	
	MAY	29-2	0.78												0.78	
	JUN	12-13				0.79									0.79	
	JUN	28-30	0.29			1.04						4.06			5.39	
	JUL	6	6.51												6.51	
	JUL	21-22	2.04	1.72											3.76	
	AUG	2-3								1.43					1.43	
	AUG	19-20						1.26							1.26	
	SEP	23-24														
	OCT	11-12														
	NOV	6-7		0.79											0.79	
	DEC	7														
1972	MAR	3-4	0.36	0.54											0.90	
	MAR	15-16														
	MAR	29-30	0.72	--							--	--	--	--	0.72	
	APR	11	0.60				--	--	--	--	--	--	--	--	0.60	
	APR	20-21		--												
	MAY	22-23	0.29												0.29	
	JUN	11-12														
	JUN	28-29	0.62												0.62	
	JUL	21-22	0.29		0.78	1.13									2.20	
	AUG	5	1.80												1.80	
			Σ	15.16	6.32	2.60	2.96		1.26	1.43		1.15	4.06		1.06	36.00

Table 68. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: CYCLOPTERIDAE, Undetermined species, (lumpfishes and snailfishes).

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1													
	MAR	20													
	APR	22-26	--	--	5.72	4.88									10.60
	MAY	3-4	0.43						2.20						2.63
	MAY	14-20		3.75	1.13	1.09			1.15		--	--	--	--	7.12
	MAY	29-2													
	JUN	12-13													
	JUN	28-30			1.82	1.04									2.86
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16				1.07									1.07
	MAR	29-30	0.48	--	0.77						--	--	--	--	1.25
	APR	11	5.70	3.06							--	--	--	--	8.76
	APR	20-21				1.24					--	--	--	--	1.24
	MAY	22-23	0.29												0.29
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
			Σ	6.90	6.81	9.44	9.32		3.35						35.82

Table 69. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: BATHYMASTERIDAE, *Ronquilus jordani*, northern ronquil.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1													
	MAR	20													
	APR	22-26													
	MAY	3-4													
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12	0.32												0.32
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30													
	APR	11													
	APR	20-21													
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5	0.32												0.32

Table 70. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: BLENNIIDS, Undetermined species, (b)Tommy-like fishes.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1		0.70											0.70
	MAR	20													
	APR	22-26													
	MAY	3-4													
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30													
	APR	11													
	APR	20-21													
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5	0.70												0.70

Table 71. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: CLINIDAE, *Gibbonsia montereyensis*, crevice kelpfish.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												0.76
	FEB	16-17		0.76										19.24
	MAR	1	2.40	14.70	2.14									1.16
	MAR	20	0.53		0.63									1.04
	APR	22-26	--	--	1.04									
	MAY	3-4												
	MAY	14-20												
	MAY	29-2												
	JUN	12-13												
	JUN	28-30												
	JUL	6												
	JUL	21-22												
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4	0.36	2.16										2.52
	MAR	15-16	0.99		1.42									2.41
	MAR	29-30	0.72	--	3.85									4.57
	APR	11	0.60		0.64									1.24
	APR	20-21		--	0.87									0.87
	MAY	22-23												
	JUN	11-12												
	JUN	28-29												
	JUL	21-22												
	AUG	5												
	Σ		5.60	17.62	10.59									33.81

Table 72. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: STICHAETIDAE, *Anoplarchus* sp. 1, (prickleback).

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3	1.76											1.76
	FEB	16-17	0.40	0.76										1.16
	MAR	1	0.48	8.40	3.21									12.09
	MAR	20		0.51	2.52	3.00								6.03
	APR	22-26	--	--										
	MAY	3-4												
	MAY	14-20												
	MAY	29-2												
	JUN	12-13												
	JUN	28-30												
	JUL	6												
	JUL	21-22												
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4	0.36			4.64								5.00
	MAR	15-16		0.62	2.13	1.07	2.44							6.26
	MAR	29-30	0.24	--	4.62									4.86
	APR	11			0.64									0.64
	APR	20-21		--										
	MAY	22-23												
	JUN	11-12												
	JUN	28-29												
	JUL	21-22												
	AUG	5												
	Σ		3.24	10.29	13.12	5.71	5.44							37.80

Table 73. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: STICHAETIDAE, *Chirolophis* sp. 1, (prickleback).

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1													
	MAR	20													
	APR	22-26	--	--											
	MAY	3-4													
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4					1.03								1.03
	MAR	15-16													
	MAR	29-30		--											
	APR	11													
	APR	20-21		--											
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
			Σ				1.03								1.03

Table 74. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: STICHAETIDAE, *Lyconectes aleutensis*, dwarf wrymouth.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18		0.94											0.94
	FEB	3													
	FEB	16-17													
	MAR	1													
	MAR	20													
	APR	22-26		--											
	MAY	3-4	0.43												0.43
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30		--											
	APR	11													
	APR	20-21		--											
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
			Σ	0.43	0.94										1.37

Table 75. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: STICHAETIDAE, *Lumpenus sagitta*, snake prickleback.



STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17												
	MAR	1												
	MAR	20												
	APR	22-26												
	MAY	3-4												
	MAY	14-20												
	MAY	29-2												
	JUN	12-13												
	JUN	28-30												
	JUL	6												
	JUL	21-22												
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4												
	MAR	15-16												
	MAR	29-30												
	APR	11												
	APR	20-21												
	MAY	22-23												
	JUN	11-12												
	JUN	28-29			1.12									1.12
	JUL	21-22												
	AUG	5												
		Σ			1.12									1.12

Table 76. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: STICHAETIDAE, *Plectobranchus evides*, bluebarred prickleback.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17												
	MAR	1												
	MAR	20												
	APR	22-26												
	MAY	3-4												
	MAY	14-20												
	MAY	29-2												
	JUN	12-13												
	JUN	28-30												
	JUL	6												
	JUL	21-22												
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4												
	MAR	15-16												
	MAR	29-30		0.77										0.77
	APR	11												
	APR	20-21												
	MAY	22-23												
	JUN	11-12												
	JUN	28-29												
	JUL	21-22												
	AUG	5												
		Σ		0.77										0.77

Table 77. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: STICHAETIDAE, *Stichaeidae* sp. 1, (prickleback).

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17												
	MAR	1												
	MAR	20												
	APR	22-26												
	MAY	3-4			1.04	1.24								2.28
	MAY	14-20				1.09	1.04							2.13
	MAY	29-2				1.00								1.00
	JUN	12-13												
	JUN	28-30												
	JUL	6												
	JUL	21-22												
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4			1.16									1.16
	MAR	15-16												
	MAR	29-30												
	APR	11												
	APR	20-21												
	MAY	22-23												
	JUN	11-12												
	JUN	28-29												
	JUL	21-22												
	AUG	5			1.04	4.49	1.04							6.57

Table 78. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: STICHAETIDAE, Stichaeidae sp. 2, (prickleback).

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17												
	MAR	1												
	MAR	20												
	APR	22-26												
	MAY	3-4												
	MAY	14-20				4.14								4.14
	MAY	29-2												
	JUN	12-13												
	JUN	28-30				1.38								1.38
	JUL	6												
	JUL	21-22												
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4												
	MAR	15-16												
	MAR	29-30				1.04								1.04
	APR	11												
	APR	20-21												
	MAY	22-23												
	JUN	11-12												
	JUN	28-29												
	JUL	21-22												
	AUG	5												
						6.56								6.56

Table 79. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: STICHAETIDAE, Stichaeidae sp. 4, (prickleback).

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
DEPTH (m)	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
1971	JAN 6	20	46	59	85	95	142	330	220	340	1060	1300	2850	
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20				1.09									1.09
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30													
	APR 11													
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ				1.09									1.09

Table 80. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: Ptilichthyidae, *Ptilichthys goodei*, quillfish.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
DEPTH (m)	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
1971	JAN 6	20	46	59	85	95	142	330	220	340	1060	1300	2850	
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1		0.70											0.70
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30													
	APR 11													
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ		0.70											0.70

Table 81. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PHOLIDAE, *Apodichthys flavidus*, penpoint gunnel.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6		0.71	3.60										4.31
	JAN	18		0.94											0.94
	FEB	3	3.08	4.20	0.75										8.03
	FEB	16-17		3.04	1.96										5.00
	MAR	1	8.64	26.60	3.21										38.45
	MAR	20	1.06	1.53	3.15										5.74
	APR	22-26			0.52										0.52
	MAY	3-4	0.43												0.43
	MAY	14-20		0.75											0.75
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													0.33
	MAR	15-16	0.33												0.33
	MAR	29-30	0.48		4.62										5.10
	APR	11			0.64	0.93									1.57
	APR	20-21													
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
			Σ	14.02	37.77	18.45	0.93								71.17

Table 82. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PHOLIDAE, *Pholis* spp., (gunnels).

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1													
	MAR	20													
	APR	22-26													
	MAY	3-4													
	MAY	14-20													
	MAY	29-2								1.59			1.76	1.84	5.19
	JUN	12-13							1.15	1.28					2.43
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30													
	APR	11													
	APR	20-21													
	MAY	22-23										4.34	3.64		7.98
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
			Σ						1.15	2.87		4.34	5.40	1.84	15.60

Table 83. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: ICOSTEIDAE, *ICosteus aenigmaticus*, ragfish.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17	1.60	9.88	10.78	2.34									24.60
	MAR 1	0.96	151.20	23.54										175.70
	MAR 20		2.04	18.27	12.00	2.25								34.56
	APR 22-26			2.08		0.54								2.62
	MAY 3-4		1.68											1.68
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4				2.32									2.32
	MAR 15-16		2.48	1.42										3.90
	MAR 29-30	1.20		10.01										11.12
	APR 11	6.30	3.06	2.56	0.93									12.85
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ	10.06	170.34	68.66	17.59	2.79								269.44

Table 84. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: AMMODYTIDAE, *Ammodytes hexapterus*, Pacific sand lance.

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3		0.84											0.84
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6	0.31												0.31
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16			0.71										0.71
	MAR 29-30													
	APR 11													
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ	0.31	0.84	0.71										1.86

Table 85. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: GOBIIDAE, *Clevelandia ios*, arrow goby.

STATION	KM. FROM COAST	N. MI. FROM COAST														Σ
		2	6	9	18	28	37	46	56	65	74	93	111			
DEPTH (m)		1	3	5	10	15	20	25	30	35	40	50	60	2850		
1971	JAN 6															
	JAN 18															
	FEB 3															
	FEB 16-17															
	MAR 1															
	MAR 20															
	APR 22-26	--	--													
	MAY 3-4															
	MAY 14-20															
	MAY 29-2															
	JUN 12-13															
	JUN 28-30								11.50	20.48	9.12	1.94	3.52	3.68	9.14	
	JUL 6															
	JUL 21-22													2.03	2.03	
	AUG 2-3															
	AUG 19-20															
	SEP 23-24															
	OCT 11-12															
	NOV 6-7															
	DEC 7															
1972	MAR 3-4															
	MAR 15-16															
	MAR 29-30		--													
	APR 11															
	APR 20-21		--													
	MAY 22-23															
	JUN 11-12												1.14		1.14	
	JUN 28-29															
	JUL 21-22															
	AUG 5								11.50	21.92	9.12	4.29	7.76	5.71	60.30	

Table 86. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: CENTROLOPHIDAE, *Leichtichthys lockingtoni*, medusafish.

STATION	KM. FROM COAST	N. MI. FROM COAST														Σ
		2	6	9	18	28	37	46	56	65	74	93	111			
DEPTH (m)		1	3	5	10	15	20	25	30	35	40	50	60	2850		
1971	JAN 6															
	JAN 18															
	FEB 3															
	FEB 16-17															
	MAR 1															
	MAR 20															
	APR 22-26	--	--													
	MAY 3-4															
	MAY 14-20															
	MAY 29-2															
	JUN 12-13															
	JUN 28-30															
	JUL 6															
	JUL 21-22															
	AUG 2-3															
	AUG 19-20															
	SEP 23-24															
	OCT 11-12															
	NOV 6-7															
	DEC 7															
1972	MAR 3-4															
	MAR 15-16		--													
	MAR 29-30															
	APR 11															
	APR 20-21		--													
	MAY 22-23															
	JUN 11-12															
	JUN 28-29															
	JUL 21-22												1.80		1.80	
	AUG 5													1.80	1.80	

Table 87. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: BOTHIDAE, *Citharichthys sordidus*, Pacific sanddab.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
DEPTH (m)	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6		0.71											0.71
	JAN 18			0.87										0.87
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13					1.01								1.01
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30													
	APR 11													
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ		0.71	0.87		1.01								2.59

Table 88. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: BOTHIDAE, *Citharichthys stigmæus*, speckled sanddab.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
DEPTH (m)	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6			0.90										0.90
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24			0.78	3.64					1.55				
	OCT 11-12				1.05	1.16	45.50	8.55				1.59		5.97
	NOV 6-7													57.85
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30													
	APR 11													
	APR 20-21													
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ			1.68	4.69	1.16	45.50	8.55		1.55		1.59		64.72

Table 89. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: BOTHIDAE, *Citharichthys* spp., (sanddabs).

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1													
	MAR	20											1.48	1.92	3.40
	APR	22-26													
	MAY	3-4													
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4												1.40	1.40
	MAR	15-16													
	MAR	29-30													
	APR	11													
	APR	20-21													
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
													1.48	3.32	4.80

Table 90. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PLEURONECTIDAE, *Atheresthes stomias*, arrowtooth flounder.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1													
	MAR	20													
	APR	22-26													
	MAY	3-4													
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30													
	APR	11			0.64										0.64
	APR	20-21													
	MAY	22-23											1.82		1.82
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
					0.64				1.15				1.82	1.24	4.85

Table 91. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PLEURONECTIDAE, *Embassichthys bathybius*, deepsea sole.



STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26													
	MAY 3-4													
	MAY 14-20													
	MAY 29-2													
	JUN 12-13													
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30		--											
	APR 11													
	APR 20-21		--											
	MAY 22-23													
	JUN 11-12													
	JUN 28-29								1.57					1.57
	JUL 21-22													
	AUG 5													
	Σ								1.57					1.57

Table 92. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PLEURONECTIDAE, *Eopsetta jordani*, petrale sole.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26			0.52	1.83	0.54								2.89
	MAY 3-4					1.46		31.90	6.00		4.29	3.28	5.30	52.23
	MAY 14-20		0.75				4.16	5.75	4.05					14.71
	MAY 29-2									1.91	1.94	1.76	1.84	7.45
	JUN 12-13				0.79		1.09	6.90	2.56	2.28				13.62
	JUN 28-30					2.76		1.97		5.25	2.03			12.01
	JUL 6													
	JUL 21-22													
	AUG 2-3												2.03	2.03
	AUG 19-20			0.61								1.32		1.32
	SEP 23-24						1.09							0.61
	OCT 11-12													1.09
	NOV 6-7													
	DEC 7													
1972	MAR 3-4													
	MAR 15-16													
	MAR 29-30	0.48		4.62	0.89									5.99
	APR 11	0.30	0.51	1.28	0.93									3.02
	APR 20-21													
	MAY 22-23								4.68					4.68
	JUN 11-12										2.17			2.17
	JUN 28-29							1.13			1.14			2.27
	JUL 21-22													
	AUG 5													
	Σ	0.78	1.26	7.03	4.44	4.76	6.34	47.65	17.29	9.44	11.57	6.36	9.17	126.09

Table 93. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PLEURONECTIDAE, *Glyptocephalus zachirus*, rex sole.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N.	MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1													
	MAR	20													
	APR	22-26													
	MAY	3-4													
	MAY	14-20							1.15						1.15
	MAY	29-2													
	JUN	12-13					1.04			1.44					2.48
	JUN	28-30													
	JUL	6													
	JUL	21-22													
	AUG	2-3													
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30													
	APR	11													
	APR	20-21													
	MAY	22-23													
	JUN	11-12			0.75		0.91								1.66
	JUN	28-29													
	JUL	21-22													
	AUG	5			0.75	1.04	0.91		1.15	1.44					5.29
			Σ												

Table 94. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PLEURONECTIDAE, Hippoglossoides elassodon, flathead sole.

STATION	KM. FROM COAST		2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N.	MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													0.94
	JAN	18		0.94											61.94
	FEB	3	42.68	15.96	2.25	1.05									16.00
	FEB	16-17		2.28	13.72										96.63
	MAR	1		76.30	20.33										34.01
	MAR	20		4.59	15.12	12.80	1.50								18.25
	APR	22-26			13.00	1.83	0.54		2.88						157.48
	MAY	3-4	61.92	41.16	39.52	14.88									177.95
	MAY	14-20	1.53	96.75	64.41	15.26									327.13
	MAY	29-2	0.26	16.63	102.20	4.00	4.04								68.96
	JUN	12-13		16.80	48.18	3.16	0.82								39.02
	JUN	28-30		8.91	10.01	5.20	9.66	2.36		2.88					11.93
	JUL	6	7.13	3.90	0.90										8.25
	JUL	21-22	0.51	7.74											2.33
	AUG	2-3		0.90	1.43										
	AUG	19-20													
	SEP	23-24													
	OCT	11-12				1.05		1.82							2.87
	NOV	6-7													
	DEC	7													
1972	MAR	3-4		0.54	2.28	1.16									3.98
	MAR	15-16		3.72				1.57							5.29
	MAR	29-30	16.56		19.25	8.90									44.71
	MAR	29-30	7.80	4.08	3.20										15.08
	APR	11			0.87	1.24									2.11
	APR	20-21													
	MAY	22-23	1.45	12.46	25.92	1.33			1.83	2.07					45.06
	JUN	11-12		4.40	10.50	4.20									19.10
	JUN	28-29		1.40	6.40		2.76								10.56
	JUL	21-22		0.67											0.67
	AUG	5		0.95	1.08										2.03
			Σ	139.84	521.08	400.57	76.06	19.32	5.75	4.71	4.95				1172.28

Table 95. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PLEURONECTIDAE, Isopsetta isolepis, butter sole.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6												
	JAN	18												
	FEB	3												
	FEB	16-17												
	MAR	1												
	MAR	20												
	APR	22-26	--	--										
	MAY	3-4												
	MAY	14-20												
	MAY	29-2												
	JUN	12-13												
	JUN	28-30												
	JUL	6				--	--	--	--	--	--	--	--	
	JUL	21-22												
	AUG	2-3												
	AUG	19-20												
	SEP	23-24												
	OCT	11-12												
	NOV	6-7												
	DEC	7												
1972	MAR	3-4												
	MAR	15-16												
	MAR	29-30	0.24	--	0.77									1.01
	APR	11	0.30	--										0.30
	APR	20-21		--										
	MAY	22-23												
	JUN	11-12												
	JUN	28-29												
	JUL	21-22												
	AUG	5					--	--	--	--	--	--	--	
		Σ	0.54		0.77									1.31

Table 96. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PLEURONECTIDAE, *Lepidopsetta bilineata*, rock sole.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ	
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60		
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850		
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1	0.51											0.51	
	MAR	20													
	APR	22-26	--	--	3.64	1.22				--			--	4.86	
	MAY	3-4	0.86	2.52	1.04	2.48		19.80	6.00			2.46	4.24	39.40	
	MAY	14-20		3.00	1.13	4.36	2.76	13.52	23.00	13.50	--	--	--	61.27	
	MAY	29-2		0.83	5.84	8.00	1.01	17.91	9.54	68.76	17.46	28.16	--	157.51	
	JUN	12-13		2.10	5.28	3.95	0.82	64.40	54.76	18.24	1.21	3.18	--	152.94	
	JUN	28-30	0.29	3.24	7.28	4.16	2.76	2.36	1.97	12.96	8.75	2.03	2.54	2.94	51.28
	JUL	6	1.55	1.30	4.50	1.00	--	--	--	--	--	--	--	--	8.35
	JUL	21-22	0.51	2.58	3.27			4.42	2.04		4.34	4.10	4.06	25.32	
	AUG	2-3		0.90								2.64	3.78	7.32	
	AUG	19-20			1.22		1.26						--	2.48	
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16													
	MAR	29-30	0.24	--										0.24	
	APR	11													
	APR	20-21		--											
	MAY	22-23		0.89	1.92						2.17	3.64	2.88	11.50	
	JUN	11-12		1.10	1.50	0.70		1.02	4.52	3.14	2.28	3.69	2.46	20.41	
	JUN	28-29			3.20			1.94				9.48		14.62	
	JUL	21-22								2.15		9.00	1.53	12.68	
	AUG	5			1.08									1.08	
		Σ	3.45	18.97	40.90	25.87	7.35	20.10	136.02	100.94	97.90	29.49	68.89	21.89	571.77

Table 97. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PLEURONECTIDAE, *Lyopsetta exilis*, slender sole.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6													
	JAN 18													
	FEB 3													
	FEB 16-17													
	MAR 1													
	MAR 20													
	APR 22-26			0.52		1.08						1.69		3.29
	MAY 3-4					1.46					1.43	9.84	3.18	19.01
	MAY 14-20						2.08	2.30	2.00					8.43
	MAY 29-2								4.05				1.76	12.88
	JUN 12-13								2.56	6.84	2.42	1.06	8.68	21.56
	JUN 28-30										2.03	2.54		4.57
	JUL 6													
	JUL 21-22										2.17	2.05		4.22
	AUG 2-3												1.26	1.26
	AUG 19-20													
	SEP 23-24													
	OCT 11-12													
	NOV 6-7													
	DEC 7													
1972	MAR 3-4												1.40	1.40
	MAR 15-16													
	MAR 29-30	0.48		2.31	0.89									3.68
	APR 11	1.50												1.50
	APR 20-21													
	MAY 22-23									2.31			2.88	5.19
	JUN 11-12												1.23	1.23
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ	1.98		2.83	0.89	2.54	2.08	3.40	8.61	9.15	8.05	18.94	31.51	89.98

Table 98. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PLEURONECTIDAE, *Microstomus pacificus*, Dover sole.

STATION	KM. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
	N. MI. FROM COAST	1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6	0.93	8.52	15.30	5.30									30.05
	JAN 18	0.29	46.06	3.48	1.05									50.88
	FEB 3	171.16	283.08	66.75	15.75		15.75							552.49
	FEB 16-17	0.80	30.40	36.22	18.72		13.75							199.89
	MAR 1		100.10	33.75	4.48						1.58			239.91
	MAR 20	1.06	23.97	37.17	31.20	13.50	1.35							108.25
	APR 22-26			21.84	4.88	1.62								28.34
	MAY 3-4	5.59	13.44	6.24	2.48				2.00					29.75
	MAY 14-20		4.50	6.78										11.28
	MAY 29-2		4.98	1.46										6.44
	JUN 12-13		1.40	2.64										4.04
	JUN 28-30													
	JUL 6													
	JUL 21-22													
	AUG 2-3													
	AUG 19-20													
	SEP 23-24		7.68											7.68
	OCT 11-12	0.32	0.54	16.50	7.35	2.32	1.82							28.85
	NOV 6-7	0.64	14.22	2.16	6.15									23.17
	DEC 6-7	0.54	60.72	37.95	66.95	1.18	1.37							168.71
	DEC 7			0.76										0.76
1972	MAR 3-4		0.62	2.84										3.46
	MAR 15-16													
	MAR 29-30	0.48		17.71	2.67									20.86
	APR 11		1.53											1.53
	APR 20-21			0.87										0.87
	MAY 22-23													
	JUN 11-12													
	JUN 28-29													
	JUL 21-22													
	AUG 5													
	Σ	181.81	601.76	510.42	166.98	18.62	34.04		2.00		1.58			1517.21

Table 99. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PLEURONECTIDAE, *Parophrys vetulus*, English sole.

STATION	KM. FROM COAST	N. MI. FROM COAST													Σ
		2	6	9	18	28	37	46	56	65	74	93	111		
DEPTH (m)		1	3	5	10	15	20	25	30	35	40	50	60	2850	
1971	JAN 6	20	46	59	85	95	142	330	220	340	1060	1300	2850		
	JAN 18														
	FEB 3														
	FEB 16-17														
	MAR 1		2.10											2.10	
	MAR 20			0.63										0.63	
	APR 22-26			0.52										0.52	
	MAY 3-4	6.02	1.68	13.52	3.72	2.92								27.86	
	MAY 14-20	14.28	18.00			1.38								33.66	
	MAY 29-2	3.64	39.84	2.92										46.40	
	JUN 12-13	0.42	10.50	5.94										16.86	
	JUN 28-30	0.58												0.58	
	JUL 6														
	JUL 21-22														
	AUG 2-3														
	AUG 19-20														
	SEP 23-24			0.78										0.78	
	OCT 11-12														
	NOV 6-7														
	DEC 7														
1972	MAR 3-4														
	MAR 15-16														
	MAR 29-30	14.64			0.89									15.53	
	APR 11	1.20	0.51											1.71	
	APR 20-21	0.82		6.96										7.78	
	MAY 22-23	9.28	18.69	1.92			1.72							31.61	
	JUN 11-12	1.86												1.86	
	JUN 28-29	1.24												1.24	
	JUL 21-22														
	AUG 5														
	Σ	53.98	91.32	33.19	4.61	4.30	1.72							189.12	

Table 100. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PLEURONECTIDAE, *Platichthys stellatus*, starry flounder.

STATION	KM. FROM COAST	N. MI. FROM COAST													Σ
		2	6	9	18	28	37	46	56	65	74	93	111		
DEPTH (m)		1	3	5	10	15	20	25	30	35	40	50	60	2850	
1971	JAN 6				1.06									1.06	
	JAN 18		1.88											1.88	
	FEB 3	8.36	4.20	0.75										13.31	
	FEB 16-17			0.98										0.98	
	MAR 1														
	MAR 20				1.60									1.60	
	APR 22-26			1.04										1.04	
	MAY 3-4	2.58		2.08										4.66	
	MAY 14-20		0.75											0.75	
	MAY 29-2	0.26	72.21	17.30	1.00									80.77	
	JUN 12-13	0.84	16.10	17.16	0.79									34.89	
	JUN 28-30		10.53	1.82	1.04									13.39	
	JUL 6	15.50	1.95	0.90										18.35	
	JUL 21-22	23.97	5.16	2.18										31.31	
	AUG 2-3		1.80											1.80	
	AUG 19-20														
	SEP 23-24		4.48											4.48	
	OCT 11-12		0.54	36.00	1.05									37.59	
	NOV 6-7	0.32	2.37	5.04	8.61	1.77								18.11	
	DEC 7														
1972	MAR 3-4														
	MAR 15-16		0.62											0.62	
	MAR 29-30	1.20		3.85	0.89									5.94	
	APR 11	0.30												0.30	
	APR 20-21			4.35										4.35	
	MAY 22-23	2.61	10.68	0.96	1.33									15.58	
	JUN 11-12	0.31	2.20	1.50				1.13						5.14	
	JUN 28-29		2.80	4.80										7.60	
	JUL 21-22														
	AUG 5		3.80			1.32								5.12	
	Σ	56.29	142.07	91.11	17.37	3.09		1.13						310.62	

Table 101. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: PLEURONECTIDAE, *Psetichthys melanostictus*, sand sole.

STATION	KM. FROM COAST	N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
			1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3													
	FEB	16-17													
	MAR	1		0.70								1.58			2.28
	MAR	20	0.53			0.80									1.33
	APR	22-26													
	MAY	3-4								2.00					5.30
	MAY	14-20													
	MAY	29-2													
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22	0.51										5.30	2.48	8.29
	AUG	2-3	0.46										1.32		1.78
	AUG	19-20													
	SEP	23-24													
	OCT	11-12													
	NOV	6-7													
	DEC	7													
1972	MAR	3-4		1.08											1.08
	MAR	15-16													
	MAR	29-30													
	APR	11				0.93									0.93
	APR	20-21													
	MAY	22-23													
	JUN	11-12	0.31												0.31
	JUN	28-29													
	JUL	21-22													
	AUG	5													
		Σ	1.81	1.78		1.73				2.00		1.58	6.62	7.78	23.30

Table 102. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: Unidentified larvae.

STATION	KM. FROM COAST	N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
			1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)			20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN	6													
	JAN	18													
	FEB	3		2.52											2.52
	FEB	16-17													
	MAR	1	11.52*	13.30	11.77										36.59
	MAR	20			0.63		6.00								6.63
	APR	22-26			0.52										0.52
	MAY	3-4													
	MAY	14-20													
	MAY	29-2		1.66											1.66
	JUN	12-13													
	JUN	28-30													
	JUL	6													
	JUL	21-22									12.65	6.51	8.20	16.24	43.60
	AUG	2-3											1.30		1.30
	AUG	19-20													
	SEP	23-24													
	OCT	11-12				1.23									1.23
	NOV	6-7													
	DEC	7													
1972	MAR	3-4													
	MAR	15-16		0.62											0.62
	MAR	29-30	1.92		1.54										3.46
	APR	11													
	APR	20-21													
	MAY	22-23													
	JUN	11-12													
	JUN	28-29													
	JUL	21-22													
	AUG	5													
		Σ	13.44	18.10	14.46	1.23	6.00				13.79	7.72	10.32	18.08	103.14

Table 103. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: Fragments (\*unidentifiable herring and smelt).

STATION	KM. FROM COAST N. MI. FROM COAST	2	6	9	18	28	37	46	56	65	74	93	111	Σ
		1	3	5	10	15	20	25	30	35	40	50	60	
DEPTH (m)		20	46	59	85	95	142	330	220	340	1060	1300	2850	
1971	JAN 6	7.4	25.6	39.6	36.0	---	---	---	---	---	---	---	---	108.6
	JAN 18	9.9	99.6	6.1	3.2	---	---	---	---	---	---	---	---	118.8
	FEB 3	261.4	415.8	87.8	23.1	---	33.2	---	12.7	---	---	---	---	834.0
	FEB 16-17	18.8	79.0	213.6	31.6	---	38.5	---	6.8	---	25.0	18.5	7.6	439.4
	MAR 1	189.1	529.9	300.7	10.1	---	54.3	---	16.9	---	42.7	23.1	58.2	1225.0
	MAR 20	5.3	46.4	94.5	77.6	36.0	12.2	---	20.2	38.0	64.3	87.3	88.3	570.1
	APR 22-26	---	---	83.7	23.8	8.6	0	2.9	109.8	---	41.6	50.7	---	321.1
	MAY 3-4	157.4	194.9	159.1	141.4	16.1	0	91.3	640.0	2.4	21.4	642.9	202.5	2269.4
	MAY 14-20	23.5	383.2	131.1	67.6	13.8	36.4	112.7	48.6	---	---	---	---	816.9
	MAY 29-2	15.6	1305.6	389.9	88.0	10.1	5.6	29.8	39.8	103.1	79.5	304.5	454.5	2825.9
	JUN 12-13	49.1	620.2	380.1	98.8	7.4	7.6	173.6	215.0	264.5	545.7	569.2	286.4	4217.6
	JUN 28-30	5.8	288.4	121.9	429.5	58.0	16.5	45.3	87.8	152.2	213.2	218.4	236.7	1873.7
	JUL 6	84.3	191.1	227.7	1.0	---	---	---	---	---	---	---	---	504.1
	JUL 21-22	109.1	95.5	8.7	1.7	1.5	2.1	8.8	4.1	167.0	60.8	287.0	284.2	1030.5
	AUG 2-3	15.6	36.9	21.4	7.7	4.8	3.3	20.0	9.2	10.9	23.2	42.2	85.7	280.9
	AUG 19-20	0.4	0.6	4.3	0	2.4	6.3	12.8	3.0	7.7	9.9	18.2	---	65.6
	SEP 23-24	0	14.7	4.7	7.3	7.2	4.4	6.4	23.2	31.0	6.6	4.7	11.4	121.6
	OCT 11-12	2.2	1.4	55.5	10.5	5.8	91.0	8.6	19.9	14.0	7.4	6.4	7.9	230.6
	NOV 6-7	2.9	19.0	10.8	17.2	1.8	0	1.5	0	1.7	0	0	0	54.9
	DEC 7	2.7	65.3	39.1	70.0	1.2	4.1	1.7	4.2	2.4	1.2	---	---	191.9
1972	MAR 3-4	30.2	111.2	13.7	25.5	7.2	11.6	38.3	15.3	11.6	3.3	27.0	14.0	308.9
	MAR 15-16	34.0	57.0	22.7	2.1	15.9	53.4	35.6	38.2	153.6	199.7	27.1	13.5	652.8
	MAR 29-30	79.0	---	144.8	28.5	5.2	3.7	22.1	9.8	---	---	---	---	293.1
	APR 11	50.1	19.4	21.8	19.5	---	---	---	---	---	---	---	---	110.8
	APR 20-21	32.4	---	38.3	7.4	0	4.4	2.1	11.7	---	---	---	---	96.3
	MAY 22-23	127.3	131.7	99.8	8.0	2.6	1.7	20.1	8.3	30.0	71.6	123.8	80.6	705.5
	JUN 11-12	11.8	18.7	28.5	11.2	0.92	34.6	20.3	67.5	17.4	46.7	61.5	115.6	634.7
	JUN 28-29	30.4	23.8	50.4	14.6	5.5	3.9	7.4	27.0	32.5	51.7	66.4	91.6	405.2
	JUL 21-22	2.6	4.0	5.5	11.3	0	3.1	1.8	23.2	92.4	251.8	356.4	246.3	998.4
	AUG 5	44.6	7.6	4.3	2.0	2.6	---	---	---	---	---	---	---	61.1
	Σ	1402.9	14786.5	3810.0	1276.2	214.6	631.9	663.1	1462.2	132.4	1767.3	2935.3	2285.0	22367.4

Table 104. Larval fish occurrences (number under 10 m<sup>2</sup> sea surface) off Yaquina Bay, Oregon: Total larvae (all taxa combined including unidentified larvae and fragments). (Values were rounded to the nearest tenth to fit into space allowed.)

APPENDIX

Alphabetical index of family names, scientific names, and common names of fishes for which larval occurrences are presented. Corresponding table numbers are listed.

<u>Name</u>	<u>Table No.</u>
<u>aenigmaticus, Icosteus</u>	83
<u>Agonopsis</u>	57
AGONIDAE	57,58,59,60,61, 62,63,64
<u>aleutensis, Lyconectes</u>	74
<u>Ammodytes</u>	84
AMMODYTIDAE	84
anchovy, northern	13
<u>Anoplarchus</u>	72
<u>Anoplopoma</u>	35
ANOPILOPOMATIDAE	35
<u>Apodichthys</u>	81
<u>armatus, Leptocottus</u>	44
<u>Artemius</u>	36, 37
<u>asper, Cottus</u>	39
<u>asprellus, Radulinus</u>	49
<u>Atheresthes</u>	90
<u> barbata, Pallasina</u>	61
<u>Bathyagonus</u>	58
<u>bathybius, Embassichthys</u>	91
BATHYLAGIDAE	15,16,17
<u>Bathylagus</u>	15,16,17
BATHYMASTERIDAE	69
<u> bilineata, Lepidopsetta</u>	96
<u>bison, Enophrys</u>	40
BLENNIOIDS	70
blenny-like fishes, unidentified	70
BOTHIDAE	87,88,89
<u>Brosmophycis</u>	29
brotula, red	29
cabezon	51
CENTROLOPHIDAE	86
CHAULIODONTIDAE	19
<u>Chauliodus</u>	19
<u>Chirolophis</u>	73
<u>Chitonotus</u>	38
<u>Citharichthys</u>	87,88,89
<u>Clevelandia</u>	85
CLINIDAE	71
<u>Clupea</u>	12
CLUPEIDAE	12
COTTIDAE	36,37,38,39,40, 41,42,43,44,45, 46,47,48,49,50, 51,52,53,54,55, 56
<u>Cottus</u>	39
<u>crenularis, Tarettonbeania</u>	26
<u>crockeri, Protomyctophum</u>	23
cusk eels or brotulas, misc.	30



Name	Table No.	Name	Table No.
CYCLOPTERIDAE	65,66,67,68,	medusafish	86
dragonfish, longfin	18	melanostictus, Psettichthys	104
classoden, Hippoglossoides	94	MELANOSTOMIATIDAE	18
elongatus, Ophiodon	34	Microgadus	28
Embassichthys	76	Microstomus	98
emmelane, Agonopsis	57	milleri, Bathylagus	15
ENGRAULIDAE	13	montereyensis, Gibbonsia	71
Engraulis	13	mordax, Engraulis	13
Enophrys	40	MYCTOPHIDAE	21,22,23,24,25, 26,27
Eopsetta	92	Nautichthys	45
evides, Plectobranchnus	76	Ocella	59
exilis, Lyopsetta	97	ochotensis, Bathylagus	16
fimbria, Anoplopoma	35	oculofasciatus, Nautichthys	45
Flashlightfish	23	Odontopyxis	60
flavidus, Apodichthys	81	Oligocottus	47
flounder, arrowtooth	90	OPHIDIIDAE	29,30
flounder, starry	100	Ophiodon	34
GADIDAE	28	OSMERIDAE	14
Gibbonsia	71	pacificus, Bathylagus	17
Glyptocephalus	93	pacificus, Microstomus	98
GOBIIDAE	85	pallasi, Clupea harengus	12
goby, arrow	85	Pallasina	61
goodei, Ptilichthys	80	PARALEPIDIDAE	20
greenlings, miscellaneous	33	Paricelinus	47
gunnel, penpoint	81	Parophrys	99
gunnels, miscellaneous	82	PHOLIDAE	81,82
Hemilepidotus	41,42	Pholis	82
hemilepidotus, Hemilepidotus	41	Platichthys	100
herring, Pacific	12	Plectobranchnus	76
HEXAGRAMMIDAE	33,34	PLEURONECTIDAE	90,91,92,93,94, 95,96,97,98,99, 100,101
Hexagrammos	33	poacher, blacktip	63
hexapterus, Anmodytes	84	poacher, northern spearnose	54
Hippoglossoides	94	poacher, pricklebreast	62
hopliticus, Paricelinus	47	poacher, pygmy	60
Icelinus	43	poacher, tubenose	61
Icichthys	86	poacher, warty	59
ICOSTEIDAE	83	poachers, miscellaneous	58,64
icosteus	83	prickleback, bluebarred	76
ios, Clevelandia	85	prickleback, snake	75
isolepis, Isopsetta	95	prickleback, miscellaneous	72,73,77,78,79
Isopsetta	95	Protomyctophum	23,24
jordani, Eopsetta	92	proximus, Microgadus	28
jordani, Ronquilus	69	Psettichthys	101
kelpfish, crevice	71	Psychrolutes-like	48
Lampanyctus	21	PTILICHTHYIDAE	80
lampfish, northern	25	Ptilichthys	80
lampfish, pinpoint	21	pugetensis, Chitonotus	38
lance, Pacific sand	84	pulchellus, Liparis	65
lanternfish, blue	26	quillfish	80
lanternfishes, misc. and unid.	22,24,27	Radulinus	49
latifrons, Zeneretmus	63	ragfish	85
Lepidopsetta	96	rara, Loweina	22
leptocottus	44	regalis, Lampanyctus	21
Lestidiops	20	Rhamphocottus	50
leucopsarus, Stenobranchius	25	richardsoni, Rhamphocottus	50
lingcod	34	ringens, Lestidiops	20
Liparis	65	rockfishes, miscellaneous	31
lockingtoni, Icichthys	86	ronquil, northern	69
lord, brown Irish	42	Ronquilus	69
lord, red Irish	41	sablefish	35
Loweina	22	sagitta, Lumpenus	75
Lumpenus	75	sanddab, Pacific	87
lumpfishes and snailfishes, misc. and unidentified	66,67,68	sanddab, speckled	88
Lyconectes	74	sanddab, miscellaneous	89
Lyopsetta	97	Scorpaenichthys	51
macoumi, Chauliodus	19	SCORPAENIDAE	31,32
macropus, Tactostoma	18	sculpin, buffalo	40
marginata, Brosmophycis	29		
marmoratus, Scorpaenichthys	51		

<u>Name</u>	<u>Table No.</u>
sculpin, grunt	40
sculpin, Pacific staghorn	44
sculpin, prickly	39
sculpin, roughback	38
sculpin, sailfin	45
sculpin, slim	49
sculpin, thornback	47
sculpins, miscellaneous and unidentified	36, 37, 43, 46, 48, 52, 53, 54, 55, 56
<u>Sebastes</u>	31
<u>Sebastolobus</u>	32
smelts, deepsea	15, 16, 17
smelts, unidentified	14
snailfish, showy	65
<u>sordidus, Citharichthys</u>	87
sole, butter	95
sole, deepsea	91
sole, Dover	98
sole, English	99
sole, flathead	94
sole, petrale	92
sole, rex	93
sole, rock	96
sole, sand	102
sole, slender	97
<u>spinosus, Hemilepidotus</u>	42
<u>stellatus, Platicichthys</u>	100
<u>Stellerina</u>	62
<u>Stenobranchius</u>	25
<u>STIGIAEIDAE</u>	72, 73, 74, 75, 76, 77, 78, 79
<u>stigmaeus, Citharichthys</u>	88
<u>stomius, Atheresthes</u>	90
<u>Tactostoma</u>	18
<u>Tarletonbeania</u>	26
<u>thompsoni, Protomyctophum</u>	24
thornyheads, miscellaneous	32
tomcod, Pacific	28
<u>trispinosa, Odontopyxis</u>	60
<u>verrucosa, Ocella</u>	59
<u>vetulus, Parophrys</u>	99
viperfish, Pacific	19
wrymouth, dwarf	74
<u>xyosterna, Stellerina</u>	62
<u>zachirus, Glyptocephalus</u>	93
<u>Zenereimus</u>	63

