CENTRAL FILE

The Distribution and Abundance of Ichthyoplankton in the Middle Atlantic Bight as Determined from Coastal Surveys and Site-Specific Studies, 1965-1976

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Abstract:

Ichthyoplankton data from the files of the Sandy Hook Marine Laboratory are summarized from collections in the Middle Atlantic Bight between 1965 and 1976. The data are compiled from plankton samples collected on coastal surveys designed to monitor seasonal shifts in the distribution and abundance of planktonic fishes, and from site-specific studies designed to investigate the vertical distribution and diel movements of larvae representing selected species. The report describes occurrences and seasonal patterns of distribution of larvae for the numerically dominant species collected on the 13-month R/V Dolphin survey in 1965-66; a 15-month survey of the New York Bight from 1974 to 1976; and semi-annual surveys from Cape Hatteras to Martha's Vineyard from 1973 to 1976. All larval fish data from the three surveys are tabulated by station or by cruise. Results emphasize the seasonal nature of spawning in the Middle Atlantic Bight. Inter-survey comparisons of dominant species are discussed. In addition, the report contains information on the distribution of fish eggs, community assemblages of larval fish, neuston collections and zooplankton volumes. Site-specific studies include information on diurnal movements of larval fishes in relation to size, circulation and temperature.

1.0 Introduction:

This report is part of BLM-NOAA Interagency Agreement (No. AA550-IA7-35), a contractual arrangement whereby NOAA is to provide BLM with resource information on coastal marine fishes in the Middle Atlantic Bight, or that part of the continental shelf between Cape Hatteras, North Carolina and Cape Cod, Massachusetts. It specifically pertains to that portion of the agreement dealing with historical ichthyoplankton samples collected between 1965 and 1976 by personnel of the Sandy Hook Laboratory, NOAA's National Marine Fisheries Service facility at Highlands, New Jersey.

The historical ichthyoplankton file at Sandy Hook includes: 1) a comprehensive series of eight cruises in the 13-month period between December 1965 and December 1966; 2) a series of 15 cruises in the New York Bight from July 1974 to June 1976; 3) semi-annual cruises conducted in spring and fall from 1973 to 1976; and 4) site specific cruises designed to investigate the vertical distribution and diel movements of selected species of fish larvae.

Fishery scientists agree that a reduction in the abundance of a fish species can result from: 1) a decline in the size of spawning stocks to a level below that required to produce enough young to maintain a competitive advantage over the developing young stages of other species; 2) shifts in spawning time and/or location, which cause temporal or spatial mismatches between newly hatched larvae and optimal densities of their planktonic prey organisms; 3) changes in environmental and climatic events which cause mass mortalities by transporting young planktonic stages away from their traditional nursery areas; and 4) increased embryonic and larval mortality imposed by the release of pollutants over principal spawning areas. In large part, it is the deviations from average conditions that influence the size of a year class. Measures of these deviations cannot be made without a time series of observations (Sherman 1978). Information contained in this report represents the beginning of our continuing efforts to develop such a data base for those species that spawn in the Middle Atlantic Bight.

2.0 Overview of the Fishery, Spawning, Hydrography, and Annual Plankton Cycles in the Middle Atlantic Bight:

2.1 The Fishery: Coastal waters off the Middle Atlantic states are among the richest and most heavily fished in the western hemisphere. In both 1975 and 1976 commercial landings were in excess of 890,000 metric tons (NEFC Lab. Ref. 77-11, June 1977). These commercial landings do not include the contribution from an intensive recreational fishery in the Bight. Even so, they far outstripped commercial catches on the traditional and more famous fishing grounds off New England during the 2-year period. To gain some insight into the magnitude of the recreational fishery of the Middle Atlantic states we must go back to 1970 when the last creel census was taken. At that time sport fishermen from New Jersey to Cape Hatteras caught more than 110,000 metric tons of fish (Deuel 1973). If we assume this contribution remained about the same in the ensuing years, overall landings from the Bight probably were on the order of 1 million metric tons in 1975 and again in 1976.

2.2 Spawning: In addition to providing habitat for adult fishes, shelf waters of the Bight serve as spawning grounds for many economically important species and as nursery grounds for their young developing stages. Indeed, fish eggs and larvae, as well as adults are so widely distributed and mixed that the entire section of the continental shelf between capes Hatteras and Cod must be considered important habitat for coastal marine fishes (Grosslein 1976). Eggs and larvae can be found year-round but spring, summer and fall are the seasons when most spawning takes place. Although a few species might spawn throughout the year, the vast majority do so over a period of a few months and spawning usually peaks during a period of weeks (Kendall 1975).

Most of the pelagic fishes in the Bight are seasonal migrants and many of those that spawn there do so during their spring immigration or fall emigration. Because migrations are closely tied to water temperature, spawning is often localized at the outset but shifts seasonally and increases in areal extent as the migrations advance through the Bight. Young stages of migratory species that spawn in spring first appear in the southern part of the Bight soon after spring warming begins. With time their distribution spreads northward and seaward and abundance increases. In the fall, when coastal waters are cooling and migratory species are beginning their exodus

southward through the Bight, the opposite holds. Namely, spawning begins in the northern part of the Bight and progresses southward. These seasonal spawning patterns also apply to many species that remain year-round in the Bight. For example, several of the flatfishes move seasonally within the Bight but they do not migrate great distances. Most are considered residents of the general area where they are found. Despite the relatively limited movements of adult flatfishes, their seasonal spawning patterns resemble those of the migratory pelagic species by proceeding northward during spring and southward in fall. Thus the onset of spawning by fishes that are migratory, as well as some of those that are not, is closely tied to seasonal temperature changes in the Middle Atlantic Bight (Smith et al. 1975).

Life begins for most marine fishes as a free-floating egg, one of thousands, perhaps millions, cast by an adult female into the sea, where it is immediately fertilized by sperm from a male. The density of the fertilized egg is less than that of its environment and it drifts near the surface until development is complete and hatching takes place. There are, of course, exceptions to this type of early development. For example, in the Middle Atlantic Bight, sand lances of the genus Ammodytes, lay demersal eggs. The anglerfish, Lophius americanus, encases its eggs in long ribbon-like gelatinous threads which drift in the water column. Regardless of egg type, after embryonic development and hatching most young fish pass through a planktonic larval stage (Figure 2.2.0). Adults vary in size, morphology and behavior, but regardless of the species, their planktonic eggs are similar in size, ranging from about 0.7 to 2.0 mm in diameter. The rate of egg development depends on water temperature. Most eggs found in the Bight require from 3 days to a week to hatch. At hatching the larvae are 3 to 7 mm in length and by the time they reach 15 to 30 mm, depending on species, most have metamorphosed into juveniles. At this stage of development the young fish usually resemble adults. In the Middle Atlantic Bight this pattern of development holds true for small forage species such as anchovies, the large pelagic tunas, semi-demersal fishes such as Atlantic cod, Gadus morhua, and tautog, Tautoga onitis, and most demersal flounders (Kendall 1975).

2.3 Hydrography: Both temperature and salinity undergo pronounced seasonal changes in the Middle Atlantic Bight, largely in response to changes in weather and freshwater runoff from

adjacent estuaries. Water temperatures warm rapidly during the spring, beginning in shallow inshore waters along the outer banks of North Carolina. The warming trend continues northward and seaward as strong winter winds succumb to warm spring breezes (Norcross and Stanley 1967). A seasonal thermocline develops throughout most of the Bight by summer and the water column remains thermally stratified until fall, when the stratification is obliterated by cooling temperatures and increased wind velocity. By winter the water column is isothermal, except along the shelf break where temperatures near bottom are usually warmer than those near the surface. These seasonal trends are depicted in temperature observations recorded during the Dolphin survey in 1965-66 (Figures 2.3.0 to 2.3.2).

One of the unique hydrographic features of the Middle Atlantic Bight is a cell of cold water that forms below the summer thermocline from New York to as far south as Virginia (Bigelow 1933; Ketchum and Corwin 1964). The cell affects the distribution and seasonal movements of several species of coastal fishes and, consequently plays a role in the distribution of eggs and larvae for those species that spawn during summer (see Figure 2.3.1).

Salinity seldom reaches 35 o/oo in the Middle Atlantic Bight and it is often less than 30 o/oo at the mouths of the major estuaries, especially during spring and other periods of high runoff. The exception to the above occurs off Cape Hatteras where the Gulf Stream with salinity >35 o/oo often meanders onto the shelf (Figures 2.3.3 and 2.3.4).

Most of our knowledge of circulation in the Bight stems from the release and return of drift devices. Residual drift is generally west and southwest off southern New England and New York, becoming south to southwest from New Jersey to North Carolina. Current velocity, however, changes seasonally and surface and subsurface currents sometimes oppose each other (Bumpus and Lauzier 1965; Norcross and Stanley 1967). Wind and runoff are the two major driving forces behind nontidal transport. The intrusion of high salinity ocean water occurs through the exchange of shelf and slope water along the shelf break, or 183 m isobath. Much of the shelf water exits the Bight near Cape Hatteras, where it turns seaward and becomes entrained in the Gulf Stream.

The Gulf Stream passes within 22 km of Cape Hatteras. Further north it takes a more eastward course. As it meanders northward the Stream serves as a transport mechanism for fish eggs and larvae spawned throughout warm temperate and tropical waters of the western North Atlantic. Many of the larvae caught up in the Stream find their way into the Middle Atlantic Bight, mostly off the outer bank of North Carolina but occasionally as far north as New York and beyond. Colton (1961) found Bothus sp. larvae in plankton samples from Georges Bank. He concluded that they originated far to the south and were subsequently transported northward by the Gulf Stream.

2.4 Phytoplankton and Zooplankton: Patterns of distribution and abundance of phytoplankton and invertebrate zooplankton of New York and New Jersey resemble that of ichthyoplankton in that periods of peak abundance and species diversity change with time. Both phytoplankton and zooplankton densities decrease with increasing distance from shore. Phytoplankton populations are dominated by diatoms during the cold months. During the warm months chlorophytes dominate nearshore and diatoms offshore. Peaks in diatom abundance occur from late autumn through spring nearshore and during winter offshore. The abundance of chlorophytes peaks during summer and early autumn. Copepods dominate the zooplankton throughout the year but meroplanktonic organisms such as bivalves, polychaetes, echinoderms, siphonophores and salps sometimes outnumber copepods (Malone 1977).

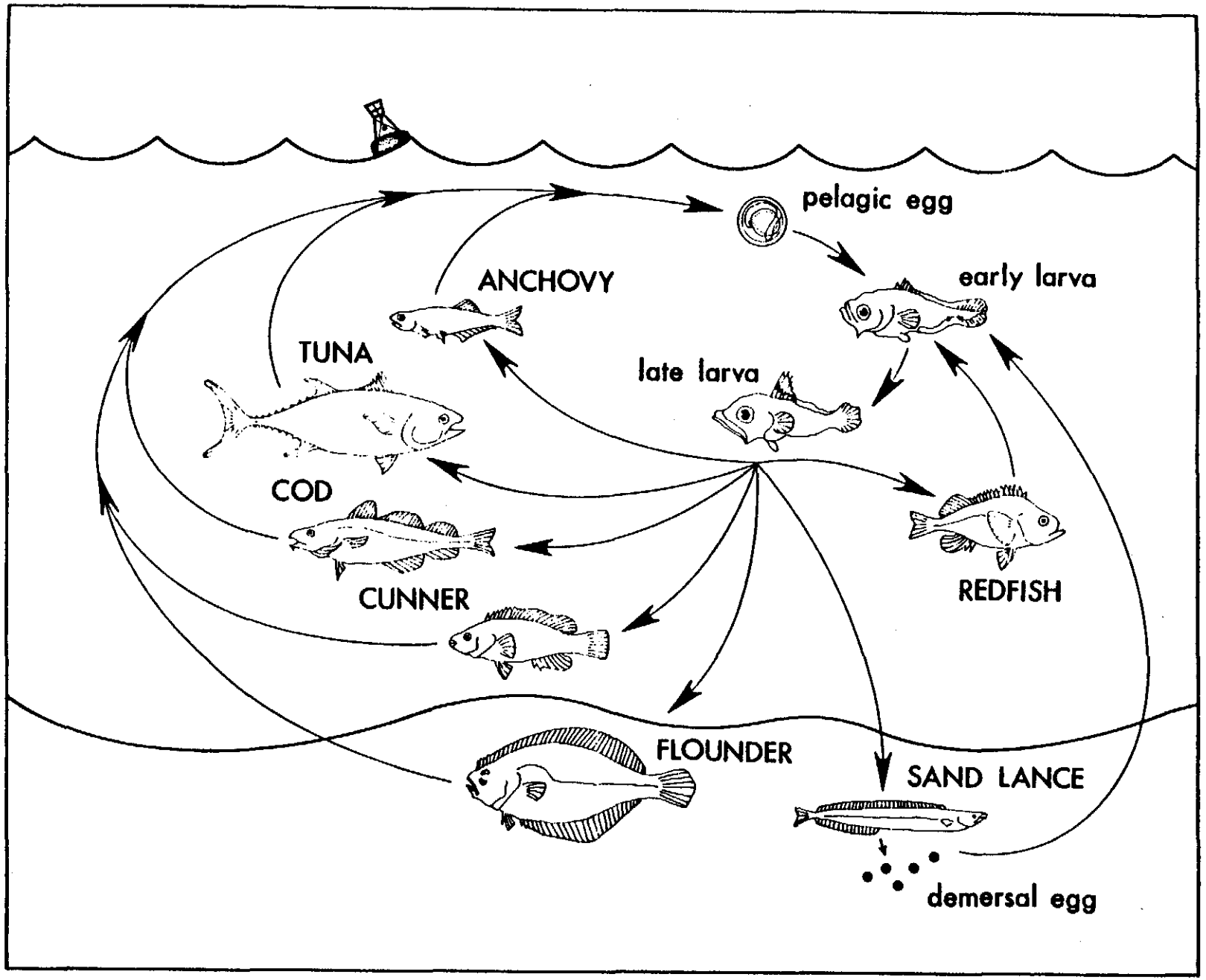

FIGURE 2.2.0 Diagrammatic representation of initial stages of development of coastal marine fishes (from Kendall 1975).

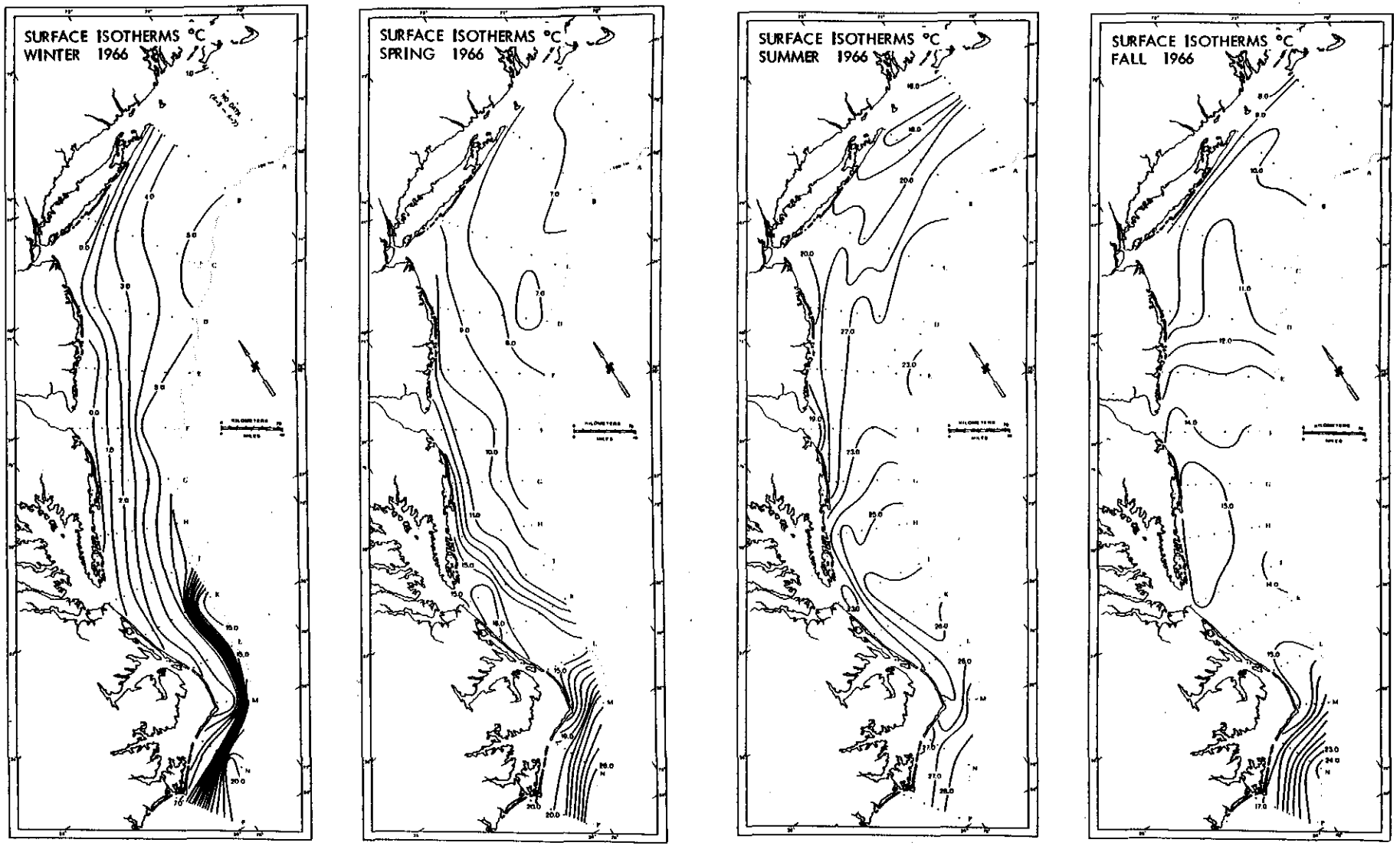

FIGURE 2.3.0 Representative surface temperatures (°C) in Middle Atlantic Bight during four seasons of the year (from Clark et al. 1969).

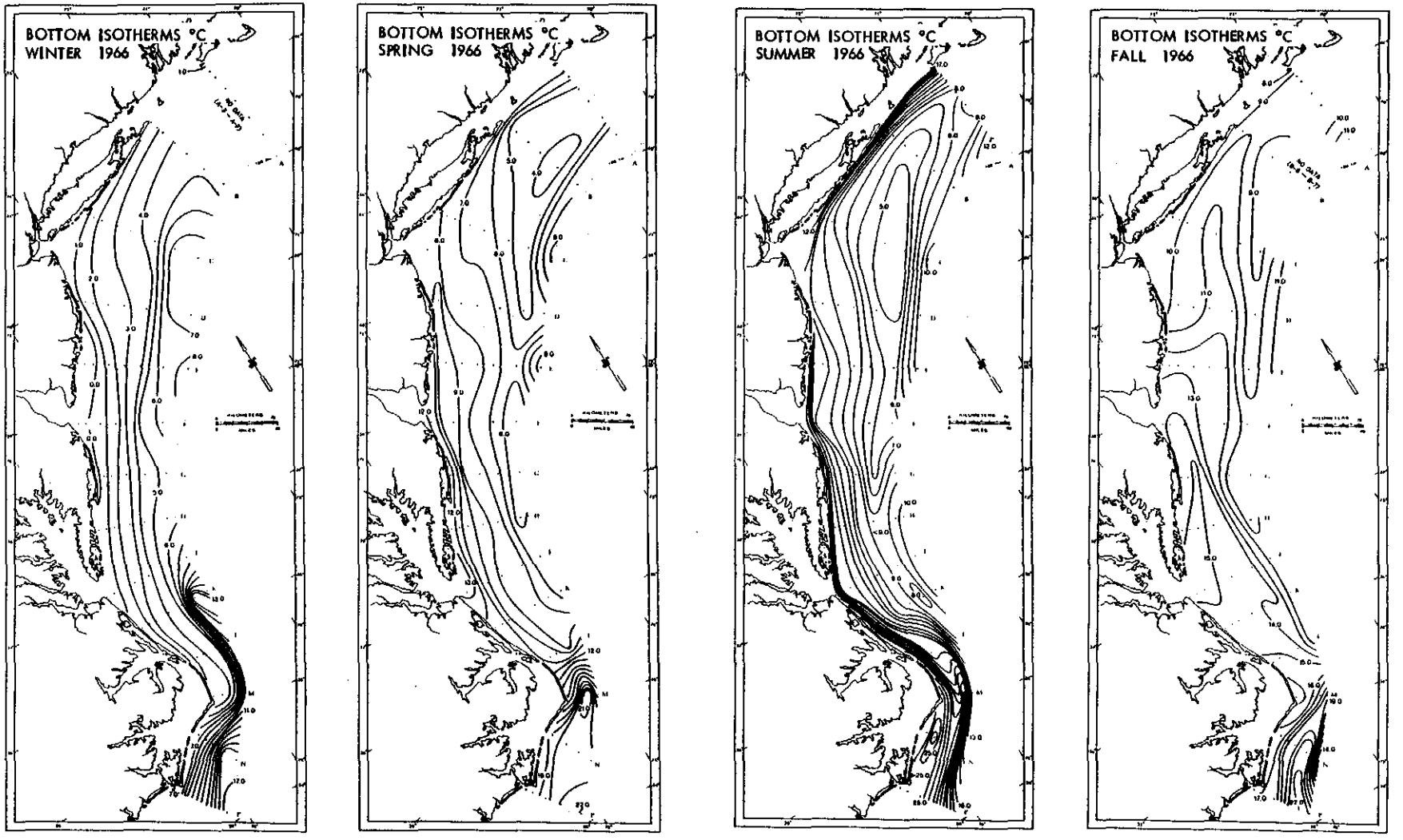

FIGURE 2.3.1 Representative bottom temperatures (°C) in Middle Atlantic Bight during four seasons of the year (from Clark et al. 1969).

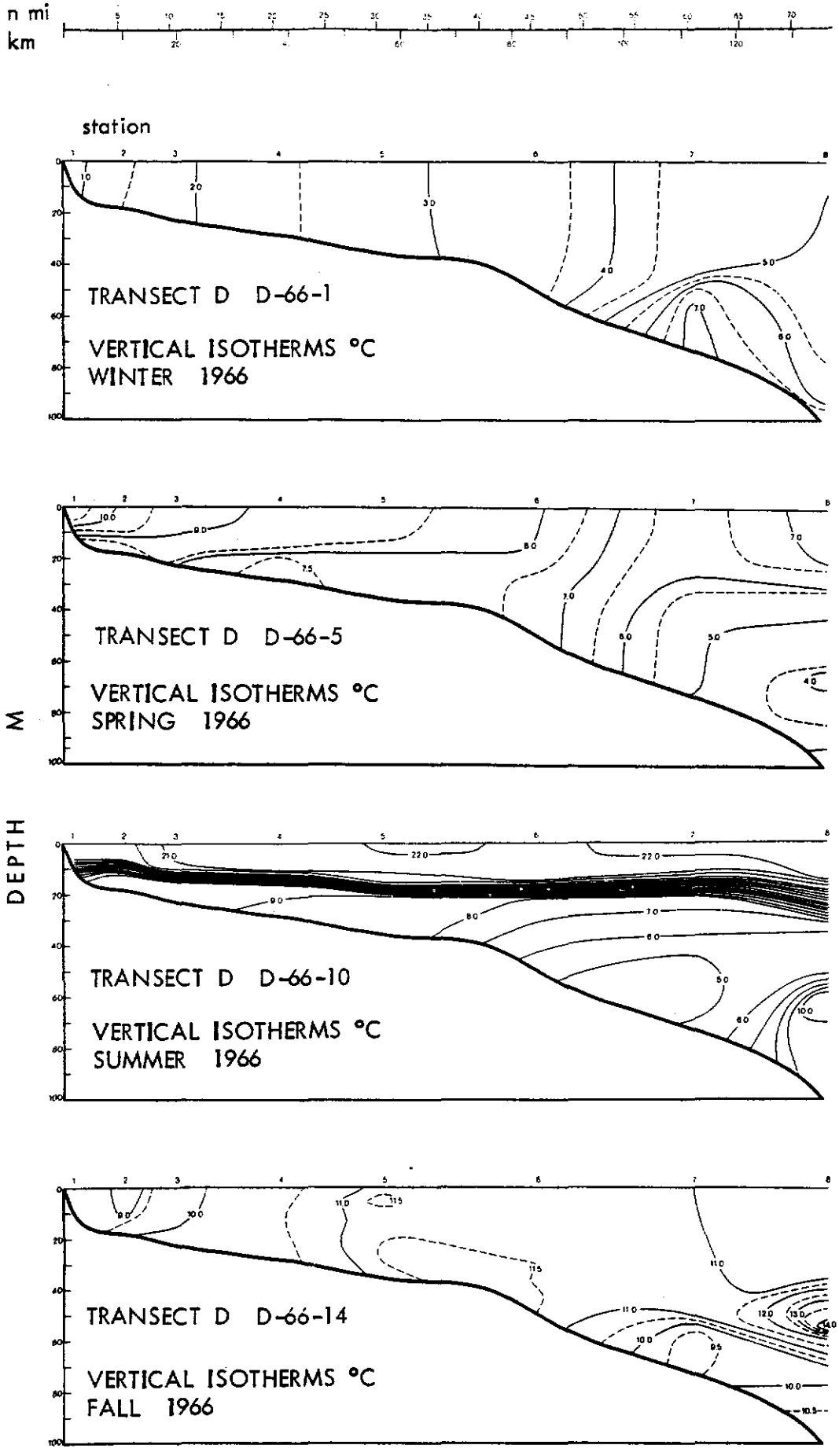

FIGURE 2.3.2 Representative vertical temperature profile (°C) off New Jersey during four seasons of the year (from Clark et al. 1969).

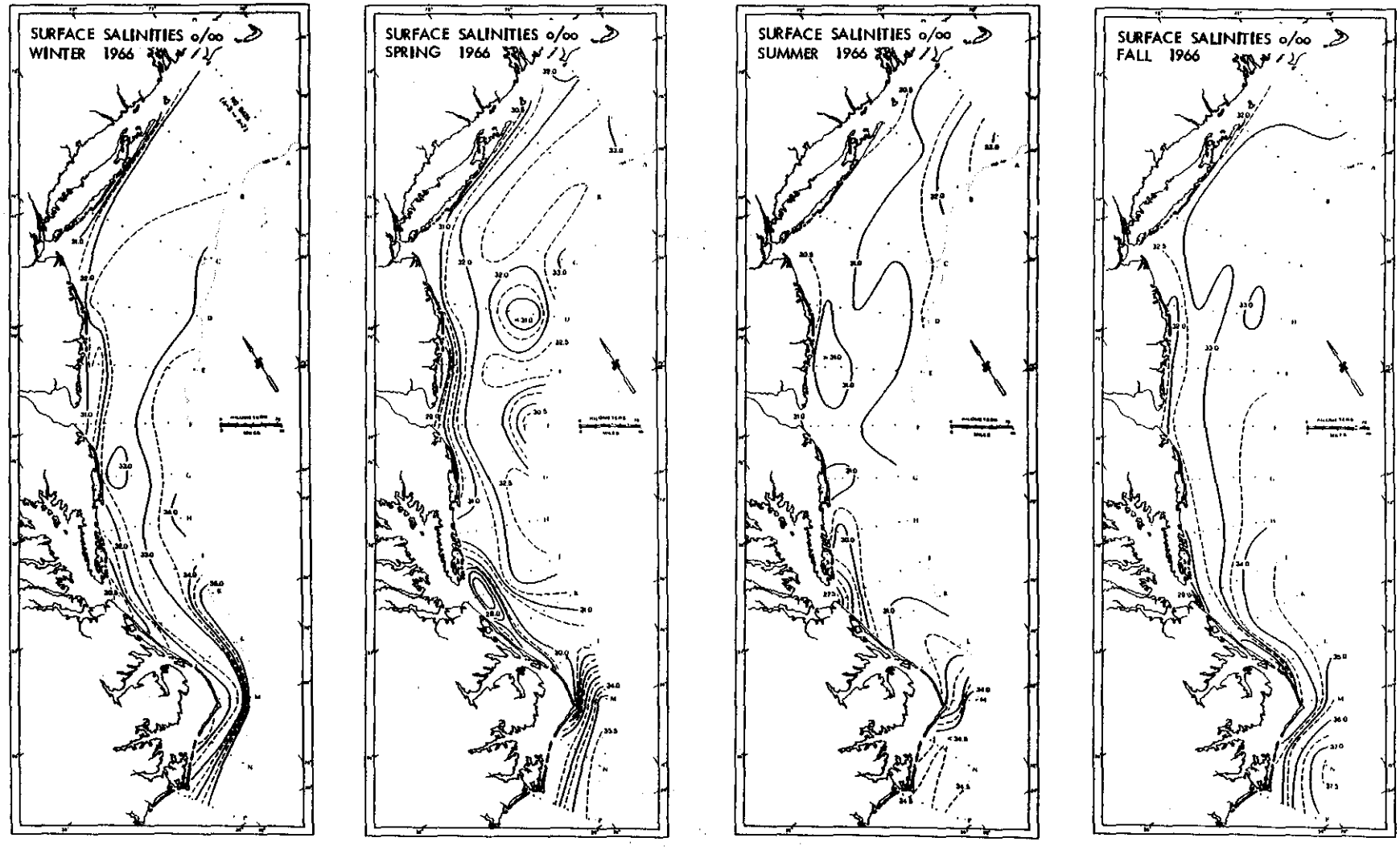

FIGURE 2.3.3 Representative surface salinity (o/oo) in the Middle Atlantic Bight during four seasons of the year (from Clark et al. 1969).

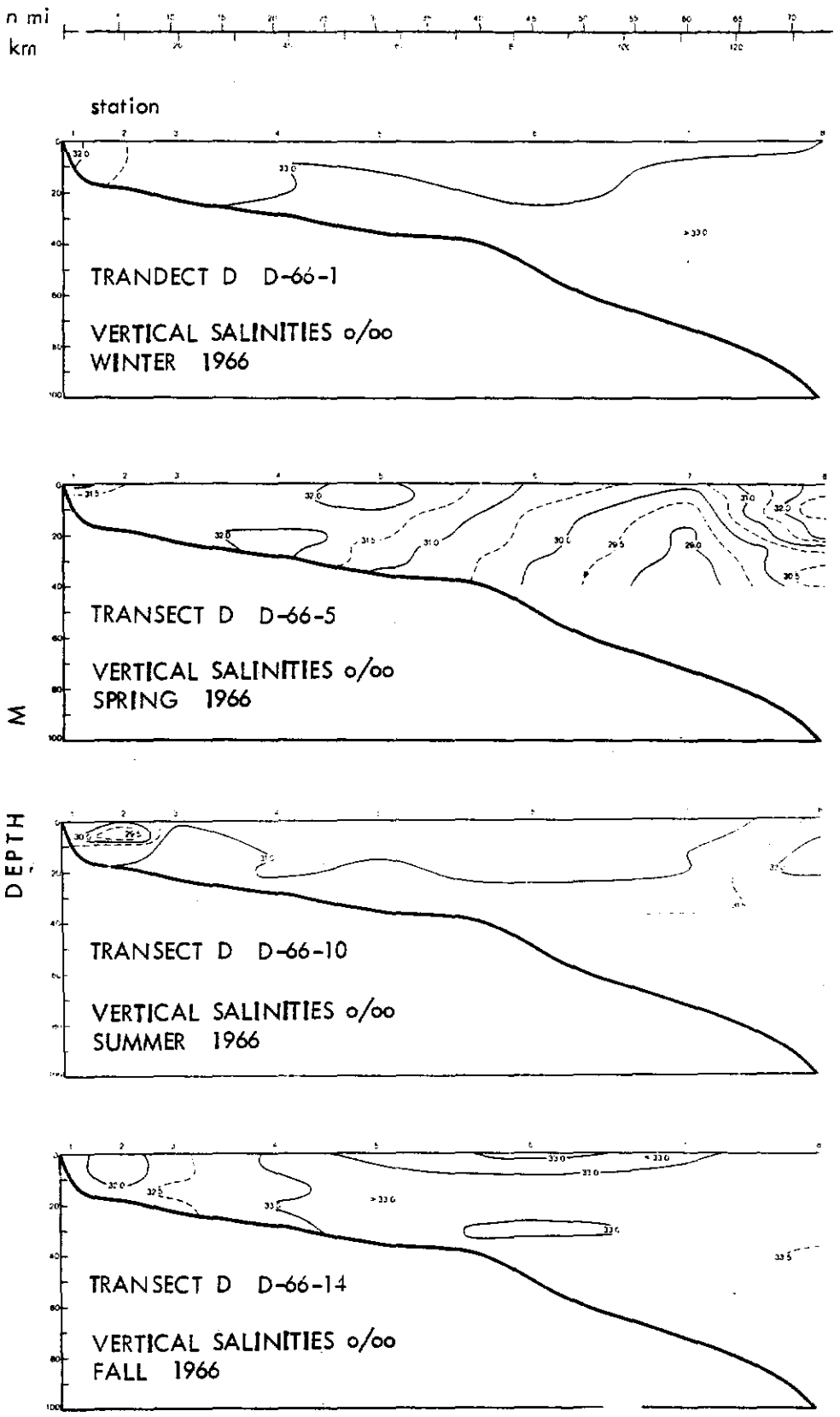

FIGURE 2.3.4 Representative vertical salinity profile (o/oo) off New Jersey during four seasons of the year (from Clark et al. 1969).

3.0 The 1965-66 R/V Dolphin Survey:

3.1 Introduction: Of the four studies included in this report, the Dolphin survey in 1965-66 provides the most comprehensive data base on seasonality of occurrence, distribution and abundance of fish eggs and larvae in the Middle Atlantic Bight. The 13-month field program is based on 8 completed cruises to survey the ichthyoplankton in shelf waters from Cape Cod, Massachusetts to Ocracoke Inlet, North Carolina. The Dolphin survey was initiated to gain some insight into what species spawn in the Bight, where they spawn, and when. The long range objective was to use the survey results to assess the importance of estuaries as nursery grounds for young fishes.

Prior to the Dolphin survey, information on the temporal and spatial distribution of fish eggs and larvae in coastal waters off the Middle Atlantic states was based on a handful of studies. Perhaps the most noteworthy were those of Perlmutter (1939) who surveyed eggs and larvae off Long Island; Pearson (1941) who worked largely in Chesapeake Bay but made some collections in adjacent shelf waters; Sette (1943) who surveyed the Bight as far south as Chesapeake Bay to collect young Atlantic mackerel, Scomber scombrus; and the Virginia Institute of Marine Science which began a series of monthly surveys off Virginia in 1959 to track the transport of young fish to nursery grounds in Chesapeake Bay (see Joseph et al. 1960; Massmann et al. 1962; Norcross et al. 1961). Information in Hildebrand and Cable (1930) and Kuntz and Radcliffe (1918) is helpful, especially for some of those species that spawn in the southern part of the Bight.

Despite their contributions to our knowledge of the early life history of coastal fishes, all of the above have seasonal or areal limitations. Some are based on collections taken over a period of a few months in a restricted area. None include the entire Bight. Thus the Dolphin survey was the most comprehensive survey of young fishes ever conducted in the Middle Atlantic Bight. It remained so until 1976 when NOAA's Northeast Fisheries Center began an intensive long term survey of fish eggs and larvae from Cape Hatteras to Nova Scotia, an area more than three times the size of that covered by the Dolphin and one that includes the Middle Atlantic Bight, Georges Bank and the Gulf of Maine.

3.2 Methods: Our objective was to collect plankton samples at 92 stations located along 14 transects on each cruise. Transects were approximately normal to the coastline, with the inshore station situated as close to the beach as the vessel could safely operate and the offshore station near the 183 m isobath (Figure 3.2.0). As in any extended oceanic field program, weather and equipment malfunctions were interrupting factors. Some of the survey statistics are shown in Table 3.2.0.

A Gulf V plankton sampler, fitted with 0.52-mm mesh, was used to collect plankton (Arnold 1959). When depth permitted, two nets were used. The towing profile was step-oblique (Figure 3.2.1) for 30 minutes at a speed of 5 kts. In a standard tow, both nets sampled for 5 minutes at each of six 3-m depth increments. One Gulf V sampled from surface to 15-m, the other from 18 to 33-m, the maximum depth sampled. Variations in the towing procedure were dictated by depth.

Hydrographic observations included temperature and salinity. We measured surface temperatures with a stem thermometer. Mechanical bathythermographs provided a vertical temperature profile at each station. Salinity was measured with an induction salinometer at 5-m depth increments to a maximum depth of 50-m.

We used the following standardization procedure to convert catches of fish eggs and larvae into numbers/10 m^2 sea surface. All deep net catches (18-33-m) were reduced by 10% of the shallow net catch (0-15-m) to adjust for contamination when the deep net passed through the shallow net zone during setting and retrieval. Flowmeters were not used to estimate the amount of water sampled by the Gulf V's. Instead, we assumed that a net sampled 495 m^3 of water during a 30-minute tow. This assumption was based on an 85% filtration efficiency for uncased nets with the dimensions and mesh aperture of the Gulf V (Tranter and Smith 1968). The amount of water filtered, therefore, equalled 0.85 (πr^2 n); where r = 0.2 m and n = 4630 m. The catch/m^2 sea surface was then calculated by dividing the standardized catch by the area corresponding to the volume of water filtered, after equalizing effort at each depth increment to the 5-minute standard (see Figure 3.2.1). We subsequently converted the catch to numbers/10 m^2 sea surface (Berrien et al. 1978).

We measured the volume of zooplankton retained in the Gulf V's using the displacement method described by Bigelow and Sears (1939) and Deevey (1960). The technique was refined by using some of the methods of Ealey (1954), Frolander (1954), Tranter (1960), and Yentsch and Hebard (1957). Volumetric determinations were made after sorting fish eggs, larvae and seston items larger than 3 mm. The remaining plankton and preservative was measured in a graduated cylinder. Then the two were separated by vacuum filtration and the filtrate measured. The difference in volume between filtrate and plankton with preservative was recorded as milliliters of zooplankton/tow (Clark et al. 1969).

3.3 Results: We caught larvae representing 166 taxa. As noted earlier, their occurrence and distribution is limited in time and space. Larvae representing most of the taxa occur during two or, at most, three seasons of the year. The actual spawning season, of course, is temporally more restricted than the planktonic larval phase of development. This seasonality of occurrence is strikingly evident in Table 3.3.0. Planktonic stages of those species that spawn over an extended period of time, i.e. Atlantic menhaden, *Brevoortia tyrannus*, often exhibit shifts in distribution within the Bight. For the most part, we assume these shifts represent shifts in spawning locations by different parental stocks.

Specific catch data for all ichthyoplankton are presented in Appendix table 3.3.0, which lists catches by stations as they occur on transects. (Refer to Figure 3.2.0 for geographic location of station in question). Fishes are categorized as "species analyzed" and "additional larvae caught". Eggs are identified only for selected species. The absence of an entry in the "No. eggs" column does not necessarily mean they did not occur at the station in question. It simply means we did not identify them at that station. They may or may not have been in the sample. Taxa under "additional larvae caught" include those young fishes that were not counted or measured, usually because we could identify them only to family or a higher taxon. The table clearly shows that fish eggs and larvae are ubiquitous in the Middle Atlantic Bight regardless of area or season of the year. Species diversity, i.e. the number of different taxa/station ranged from 1 to 16 during winter. By spring it can exceed 25 taxa, especially near Cape Hatteras. During summer and fall, it is not uncommon to collect more than 30 different taxa in a single plankton tow.

The seasonal distribution of twelve of the numerically dominant larvae is herein summarized. They represent different trophic levels and vary in their direct economic significance. Atlantic menhaden is a filter feeding species that is commercially important as a source of oil and meal. Bluefish, Pomatomus saltatrix, and summer flounder, Paralichthys dentatus, are highly prized by both commercial and recreational fishermen. On the other hand, the sand lances, Ammodytes spp., have no economic value but they are important prey species for bluefish, summer flounder, Atlantic cod, Gadus morhua, and many other important piscivorous species. Although the precise time and location of peak spawning, the subsequent patterns of distribution, and the abundance of fish eggs and larvae vary from year to year, the survey results generally hold from one year to the next in the sense that seasonality of spawning and the location of spawning products are relatively consistent over large areas. (See the distribution of Urophycis spp. larvae in 1966 and the fall of 1973 and 1974, Figures 3.3.3, 5.3.4 and 5.3.13.) This kind of baseline information is extremely helpful, in fact, essential when assessing the impact of either man-induced or natural events which might have an adverse impact on living marine resources. For example, should a potentially catastrophic event such as an oil spill occur at a given point and time, the survey results provide information on the species of planktonic fishes that would be affected by the spill.

3.3.0 Brevoortia tyrannus - Atlantic menhaden

Atlantic menhaden spawn along the eastern seaboard from Maine to Florida. The spawning season is protracted but the occurrence of eggs and larvae shifts geographically with time (Table 3.3.0). They occur off New York and New Jersey in late spring and summer. By early fall spawning is widespread from southern New England to Virginia. In late fall and early winter spawning is usually limited to the southern half of the Bight (Kendall 1975). The center of larval abundance in the Bight lies along the inner part of the shelf but the young fish may be found seaward to the shelf break (Figure 3.3.0).

Spawning and subsequent development of eggs and larvae take place over a wide range of both temperature and salinity. The larvae represented in Figure 3.3.0 were taken at temperatures ranging from 0° to 25°C and salinities between 23 and 38 o/oo. Most catches in

excess of 100 larvae, however, were in water between 15.8 and 18.5°C and 30 to 36 o/oo (Kendall and Reintjes 1975).

Larvae become estuarine dependent after their initial development at sea. They enter coastal inlets over a long period of time. During mild winters they seek out the protected estuarine environment before the winter temperature minimum. Other years they may postpone their entrance until spring warming begins. Nursery ground temperatures below 3°C are considered lethal to young menhaden (Reintjes and Pacheco 1966).

3.3.1 Enchelyopus cimbrius - fourbeard rockling

This species can be found on both sides of the Atlantic. In the eastern Atlantic it spawns from January to August (Bigelow and Schroeder 1953). In the western Atlantic the season is of similar duration but begins and ends later in the year (Table 3.3.0). Huntsman (1922) and Battle (1930) found eggs off Massachusetts in May, with the period of maximum abundance being synonymous with 9 to 10°C bottom temperatures.

Rockling larvae occur throughout the Middle Atlantic Bight from spring through early autumn, or from May to October. They are most abundant in June over depths of 57 to 91 m. Although their distribution spreads with time from one end of the Bight to the other, the center of their distribution lies along the outer half of the shelf in the northern part of the Bight (Figure 3.3.1). In June, the time of peak abundance, larvae are concentrated south of Montauk Point in the vicinity of the cold cell of 5°C bottom water. It seems unlikely that the larvae originate there, as bottom temperatures are well below those where spawning occurs. Like most gadids, young fourbeard rockling drift at or near the surface as they develop. This pelagic phase might last for two to three months (Bigelow and Schroeder 1953). Thus we assume that the concentration of larvae in June is associated with surface waters over the cold cell and it is transported there by currents, probably from Georges Bank.

3.3.2 Merluccius bilinearis - silver hake

The Middle Atlantic Bight marks the southern limit of the silver hake's distribution. A significant portion of the eggs and larvae in the Bight probably originate on Nantucket Shoals and the southwestern part of Georges Bank. This economically important gadid spawns from

spring to mid fall but peak spawning in the Bight occurs in June, mostly south of Martha's Vineyard. Larvae occur throughout the northern half of the Bight from May to December (Table 3.3.0). The center of their abundance lies along the outer half of the continental shelf between Hudson Canyon and Martha's Vineyard (Figure 3.3.2). Within this area there is a noticeable seaward and deeper shift in the distribution with size. Small larvae are most numerous inshore near the surface, while large larvae are more abundant at subsurface depths offshore. This size-depth gradient suggests that larvae are transported west and south as they grow. Based on the first occurrence of eggs and juveniles, the pelagic life of the developing young fish lasts about 2 months.

Contrary to the general northerly progression of spawning characteristic of most fish that spawn in spring, silver hake spawning progresses southward with time. Both eggs and larvae can be found over a wide range of temperature but most eggs occur where surface temperatures range between 13.5 and 21.7°C; most larvae from 9.0 to 20.9°C (Fahay 1974).

3.3.3 *Urophycis* spp. - hakes

Three species of *Urophycis* spawn in the Middle Atlantic Bight (Table 3.3.0). The larvae are so similar that their specific identifications have not been resolved. This situation is further confused by the occurrence of larvae of a fourth species, *Phycis chesteri*, the longfinned hake, which cannot be differentiated from the other three. Although the spawning seasons for each of the three species of *Urophycis* are generally known, they overlap in time and location. Because the larvae co-occur, we must treat all specimens of the genus collectively as *Urophycis* spp. When considered in this manner, *Urophycis* larvae can be expected to rank near the top in numerical dominance of the ichthyoplankton of the Middle Atlantic Bight. During out 1965-66 survey they were the most abundant taxa.

Red hake, *U. chuss*, and spotted hake, *U. regius*, account for most of the young hake in the Bight (Figure 3.3.3). The contribution from white hake, *U. tenuis*, is less significant. Adults do not commonly occur in the Bight and the distribution of their larvae is probably limited to the seaward edge of the shelf where adults are most numerous. It seems certain that some of the white hake

larvae that occur in the northern part of the Bight find their way there from spawning grounds further north and east on Georges Bank.

Red hake spawn during spring, summer and into early fall, mostly in the northern half of the Bight, where adults are abundant. The season peaks in June and July but larvae can be found almost anywhere through October, or after the spawning season of spotted hake has begun. By mid fall most of the red hake larvae have completed metamorphosis and taken up life on or near bottom. At this time the vast majority of the hake larvae found throughout the Bight are young spotted hake.

3.3.4 *Pomatomus saltatrix* - bluefish

Bluefish spawn year-round in coastal waters from New England to Florida but spawning by this pelagic species shifts geographically with the seasons. Based on the occurrence of larvae, spawning occurs off Florida in winter; off South Carolina in spring and, to a lesser extent, again in the fall; and off the Middle Atlantic and southern New England states in late spring and summer (Table 3.3.0).

The height of the spawning season in the Bight occurs in July and August from New Jersey to Virginia. During the summer months the distribution of larvae reaches from Chesapeake Bay northward to New England (Figure 3.3.4). The center of their distribution lies along the outer half of the shelf in water between 17 and 26°C. Larvae remain above the thermocline during their development and young fish that have attained a length of 10 mm appear to be more strongly surface-oriented than earlier stages of development.

Young fish spawned south of Cape Hatteras show up as juveniles in the Middle Atlantic Bight in June. They first appear along the outer edge of the continental shelf where water temperatures exceed 15°C. As spring warming continues they move shoreward across the shelf to coastal estuaries for the summer. Conversely, most of the larvae spawned in the Bight during the summer remain at sea, with relatively few seeking the estuarine environment. By mid autumn both groups of young fish leave the summering grounds and migrate south (Kendall in press).

3.3.5 Ammodytes spp. - sand lance

Two species of sand lance reportedly occur in the Bight, A. americanus and A. dubius (Richards et al. 1963). Their identification remains confused and we are unsure whether our larval collections consist of one or both species. Until the identity of larvae is clarified, they are classified as Ammodytes spp.

Sand lance spawn in the Middle Atlantic Bight from late autumn through spring. The season peaks during winter. Eggs are demersal. Larvae are common in the Middle Atlantic Bight from December through March (Table 3.3.0). During this period they are usually the numerically dominant larvae in the ichthyoplankton. In 1966 they accounted for 45% of the larvae collected in early April. In 1977 they made up more than 92% of larvae collected in March. Part of this increase can be attributed to timing of surveys, but both plankton and trawl surveys indicate a precipitous increase in the biomass of sand lance off our northeast coast during the late 1970's. We are unsure of the causative factors.

Spawning begins inshore in late November or early December and progresses seaward with the season. By January, the period of maximum spawning, larvae occur throughout the Bight but concentrations are usually found between New Jersey and southern New England. At this time the distribution of larvae extends farther seaward than in December. Young fish occur off the outer banks of North Carolina but they are not abundant south of Chesapeake Bay. Their numbers drop sharply in April, and by May they disappear from the plankton (Figure 3.3.5). Water temperatures are uniform from surface to bottom during the spawning season. Ammodytes larvae occur at temperatures between 0 and 6°C and at salinities from 31 to 33 o/oo during the height of the spawning season. By the end of the season in early spring,water temperature has reached 10°C (Richards and Kendall 1973).

3.3.6 Scomber scombrus - Atlantic mackerel

Atlantic mackerel spawn from Cape Hatteras to the Gulf of St. Lawrence. Spawning takes place during spring and early summer in the Middle Atlantic Bight, concurrent with the annual migration of adults to New England and Canadian waters (Table 3.3.0). Because fish spawn while

moving through the Bight, the season lasts from a few days to a few weeks at a given latitude. Spawning generally takes place over the inner half of the shelf but small numbers of both eggs and larvae can be found along the seaward extent of the shelf. Larvae first occur in May in the southern part of the Bight, off the outer banks of North Carolina. During June their distribution is restricted almost entirely to the northern half of the Bight. By August adults have passed through the Bight and remaining larvae will occur only in the northeast corner, off southern New England. They probably originate on Georges Bank and are subsequently transported into the survey area by coastal currents (Figure 3.3.6).

Sette (1943) estimated that the young fish grow at a rate of about 1 mm/day. Because of this exceptional growth, the larvae quickly become nektonic and within a few weeks from hatching they are capable of avoiding plankton nets. Thus the migratory habits of spawning adults, and the rapid growth rate of their larvae, create the need for an intensive survey schedule to adequately assess spawning of this fast-moving pelagic species.

Sette (1943) related spawning to surface temperature and found that 98% of his mackerel eggs occurred at temperatures between 9.0 and 13.5°C. In May 1966 we caught eggs where surface temperatures ranged from 6.3 to 16.9°C, with 97% at 8.7 to 13.8°C. Because mackerel spawn during the time of spring warming, larvae are usually found in warmer water than eggs. We caught 96% of the mackerel larvae in our samples where surface temperatures ranged from 13.7 to 16.8°C (Berrien 1978).

3.3.7 *Prionotus carolinus* - northern searobin

Larvae of the northern searobin occur year-round off the Middle Atlantic states but spawning in the Bight takes place from late spring to mid autumn (Table 3.3.0). During winter and spring the distribution of young fish is restricted to coastal waters off North Carolina. In summer and fall the areal extent of their distribution extends northward to southern New England. The cold cell of bottom water off New York and New Jersey seems to play a role in the distributional pattern of larvae during the summer months, probably as a result of its influence on the distribution of adults.

Wong (1968) found running ripe searobins off Chesapeake Bay in August and September of 1966. This information on adult gonadal condition agrees closely with the time of maximum spawning that we derived from our plankton survey during 1966. Our data show that larvae first occur in June, mostly within 50 km of shore from Delaware to North Carolina. By August their distribution is centered off the Delmarva Peninsula, but the young planktonic fishes occur along the entire length of the Bight and the distribution spills over to the offings of Ocracoke Inlet, where our survey ended. In October the distribution of searobin larvae is more widespread and they are more abundant than at any other time of year. During early autumn the young fish occur throughout the Bight but their center of abundance lies midway out on the shelf between Delaware and Chesapeake bays. Later in the fall the distribution of larvae progresses southward and by December most occur south of Cape Hatteras (Figure 3.3.7).

Like young bluefish, larval searobins are concentrated near the surface. They are most abundant at temperatures between 15 and 24°C and salinities between 30 and 32 o/oo, which represent existing conditions over much of the shelf in summer and early autumn (Kendall and Roberts unpubl.).

3.3.8 *Citharichthys arctifrons* - Gulf Stream flounder

Gulf Stream flounder are common in the Middle Atlantic Bight. They occur most frequently in depths >40 m. Spawning begins in late spring, peaks during summer and declines sharply in the fall (Table 3.3.0).

The distribution of larvae is continuous by late summer, extending from southern New England to Cape Hatteras. The center of abundance occurs along the outer half of the shelf between southern New England and Chesapeake Bay, over depths of 30 to 175 m and bottom temperatures of 6 to 11°C (Figure 3.3.8). Although the summer distribution of larvae overlaps the boundaries of the cold cell of bottom water off Long Island and New Jersey, concentrations of newly hatched larvae are outside the core of the cold cell. Depsite this flounder's apparent tolerance of cold water, spawning begins in the southern part of the Bight in spring and progresses northward, a

trend we associate with spring warming. The influence of circulation on the distribution of larvae is not clear but the lack of large larvae off southern New England suggests transport from there southward. Indeed, circulation may account for the occurrence of Gulf Stream flounder larvae over the cold bottom water (Smith et al. 1975).

3.3.9 Paralichthys dentatus - summer flounder

The Middle Atlantic Bight encompasses the center of distribution for this economically important flatfish. Spawning begins in late summer, peaks during the fall and ends in mid winter (Table 3.3.0). During the course of the spawning season larvae occur throughout the Bight. The most important spawning grounds are off New York and New Jersey and, to a lesser extent, off North Carolina (Figure 3.3.9). Because of a pronounced southerly shift in spawning during the course of the season, what appears from the above table to be an extended spawning season is, in fact, limited to a few months or less at a given latitude. For example, north of Chesapeake Bay spawning takes place from September to December; south of the bay from November to February.

The onset of the spawning season is closely tied to the annual seaward migration of adults. They summer in shallow coastal and estuarine waters, then move offshore during fall to spend the winter along the outer half of the shelf where depths exceed 60 m. Most spawning occurs at temperatures between 12 and 19°C but, based on our environmental and distributional data, both eggs and larvae can withstand a much wider range of temperature.

Although spawning takes place at sea, young-of-the-year are found in estuaries and summer flounder are, therefore, considered estuarine dependent (Smith 1973). Their tolerance to wide ranges of temperature and salinity indicates that they are physiologically adapted to withstand the variations in temperature and salinity characteristic of our temperate latitude estuaries. Young have been collected from waters that ranged in temperature between 2 and 31.2°C and salinity from 0.2 to 37 o/oo (Tagatz and Dudley 1961; Williams and Deubler 1968).

3.3.10 Scophthalmus aquosus - windowpane

The Middle Atlantic Bight encompasses the center of distribution for windowpane, a resident flatfish, hence it is the area where most spawning takes place. It appears from the occurrence of larvae that windowpane have an extended spawning season but, like many other species, one that shifts seasonally. Spawning begins in April in the southern part of the Bight, where it peaks in May and ends by June. During late spring it advances northward to New York and New Jersey but does not peak there until fall, when it recommences south of Chesapeake Bay (Table 3.3.0). Although larvae may not appear in coastal waters off New York until as late as June, both Wheatland (1956) and Perlmutter (1939) caught them in the more protected waters off Long Island Sound in April. During the summer the seaward distribution of larvae off New York and New Jersey is restricted by the shoreward edge of the cold cell.

The height of the spawning seasons occurs in the fall, usually around the first half of October. Soon thereafter the distribution of larvae is continuous from southern New England to Maryland. The center of larval abundance occurs along the inner half of the shelf off New York and New Jersey, over depths between 20 and 40 m (Figure 3.3.10). Bottom temperatures, or those presumed to represent spawning temperatures, were between 9 and 16°C where most small larvae were concentrated in October. During the year 70% of the larvae <4.1 mm occurred over bottom water between 8.5 and 13.5°C, a range of just 5°. It appears from our collections that spawning is interrupted when summer bottom temperatures exceed 15 to 16°C.

3.3.11 Limanda ferruginea - yellowtail flounder

This economically important flatfish is a mainstay of the trawl fleet based in New Bedford, Massachusetts. Although the center of adult distribution lies to the east and north of the survey area, the larvae were among the most abundant that we collected during 1966. Since then the adult population has declined sharply. This decline is evident when comparisons are made between catches of larvae from the mid 1960's with those from our spring cruises in the mid 1970's. In May 1966 the

abundance of yellowtail flounder larvae in the Middle Atlantic Bight was more than twice that of the combined catch from the Bight and Georges Bank in May 1977.

Spawning begins in late winter or early spring, peaks during mid to late spring and ends by mid summer (Table 3.3.0). By June the distribution of larvae is continuous from Cape Cod to Cape Hatteras but spawning is most concentrated off New Jersey and southern New England in depths between 30 and 80 m (Figure 3.3.11). The near absence of larvae >12 mm off southern New England, where smaller larvae are concentrated, suggests that the young fish are transported away from the area as they develop.

Royce et al. (1959) surmised from plankton samples collected in 1929 that spawning began in early April when bottom temperatures reached 5 to 7°C. Most of the newly hatched specimens in our sampled occurred over similar temperatures. We caught 98% of the larvae <4 mm over bottom temperatures between 4.1 and 8.9°C, which probably agree closely with temperatures where spawning occurred (Smith et al. 1975).

3.3.12 We recently initiated studies on the co-occurrence of fish larvae as a means of investigating subtle temporal and spatial associations within the larval fish community. This multispecies approach to examining plankton data integrates information on individual species (taxa) to produce an overall picture of community structure. It holds promise for providing insight into origins of larvae and interspecific levels of competition within larval assemblages. Kendall (1975) presented preliminary results of our first attempt to numerically classify larvae into co-occurring groups, using data from the R/V Dolphin survey. His analysis considered occurrence but not abundance of larvae. His results showed four recurring groups. More recently, larval data from the R/V Dolphin survey were subjected to a second analysis, known as principal components (M. Kendall 1975). This multivariate program generates a separate correlation matrix that considers both occurrence and abundance for each species include in the analysis. Two or more taxa in the matrix are considered to co-occur if their correlation coefficients each have an absolute value $\geq$0.5000. We included 35

taxa in the analysis. The Bight was divided in the vicinity of Chesapeake Bay into northern and southern subareas. The southern area was further split longitudinally into inshore and offshore sections to isolate warm-temperate and tropical species that frequently occur off North Carolina as a result of Gulf Stream transport. Results of the analysis from each cruise were grouped by season (Table 3.3.1). They clearly show the seasonal succession and times of peak spawning in the Bight. Only two recurring groups were identified during winter; one in the northern subarea, and one in the southern subarea. By spring the winter groups disappeared. Several pairs of larvae occurred in both areas but recurring groups were more common in the southern sector, which extended to Cape Lookout, North Carolina. The relative distribution of pairs in summer resembled the spring results but, again, the constituents changed, and the geographic location of recurring groups was reversed. Three groups were identified in the northern section; one south of Chesapeake Bay. By fall, several pairs occurred in both areas but groups were more prevalent in the southern sector. Personnel at Sandy Hook are attempting to further develop the application of numerical clustering techniques to effectively summarize multispecies survey results. The outcome of this endeavor rests with our success in building an adequate, long term data base.

We measure the volume of plankton collected at each station to obtain gross biomass estimates for those constituents of the plankton that are large enough to be retained in our nets. Since 1972, more detailed studies involving species diversity, abundance and distribution have been carried out at the Center's Laboratory at Narragansett, Rhode Island. During the Dolphin survey, zooplankton abundance levels were lowest during winter; increased during spring, peaked during summer and began to subside in the fall (Figures 3.3.12 and 3.3.13).

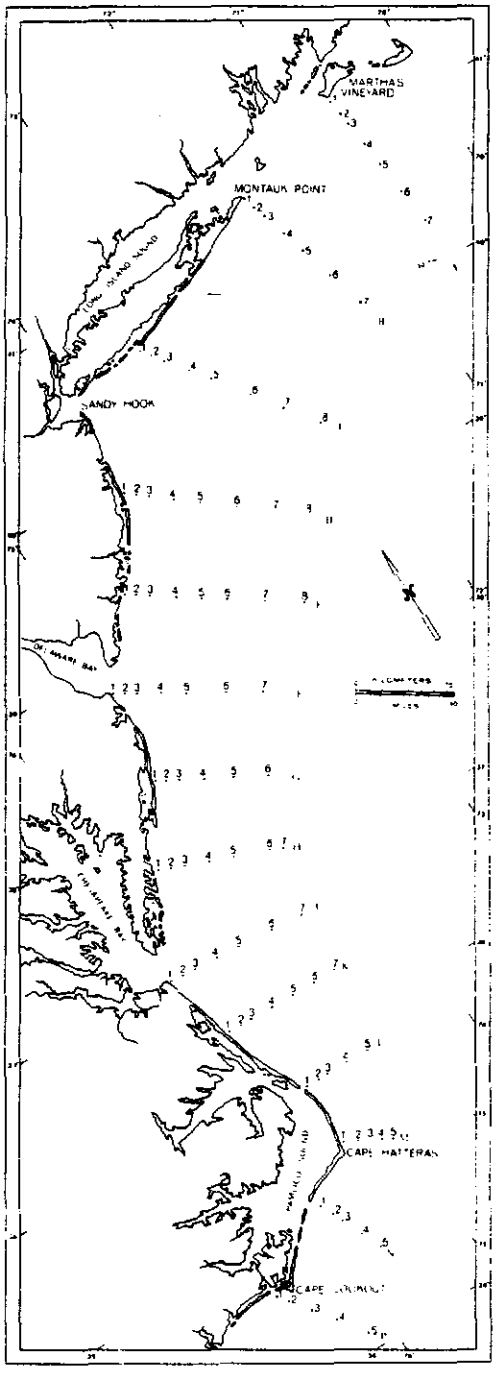

FIGURE 3.2.0 Station plan for R/V Dolphin ichthyoplankton survey of Middle Atlantic Bight.

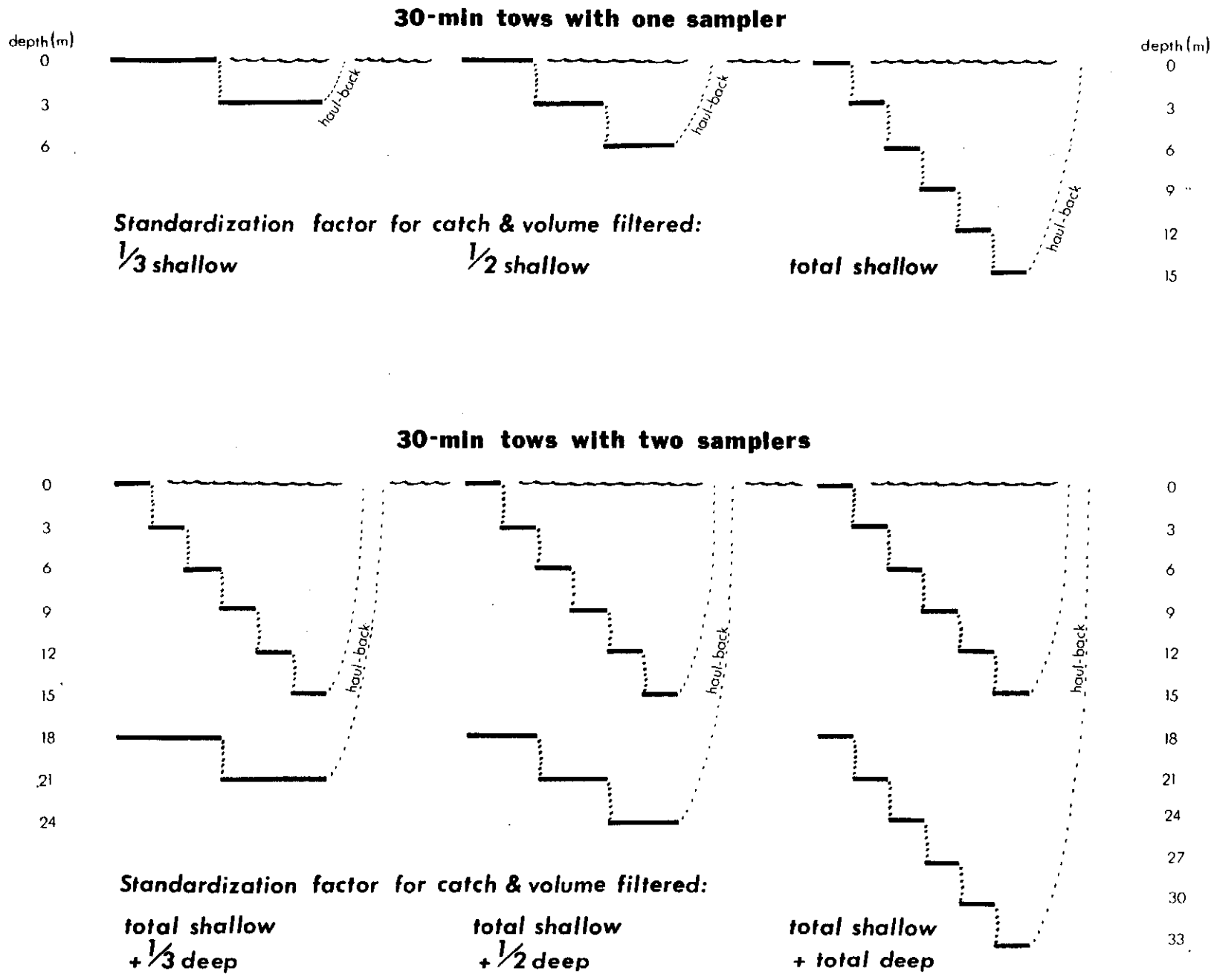

FIGURE 3.2.1 Various sampling schemes used during R/V Dolphin survey. Variations were dictated by water depth. Resultant catches were standarized as described in text (from Berrien et al. 1978).

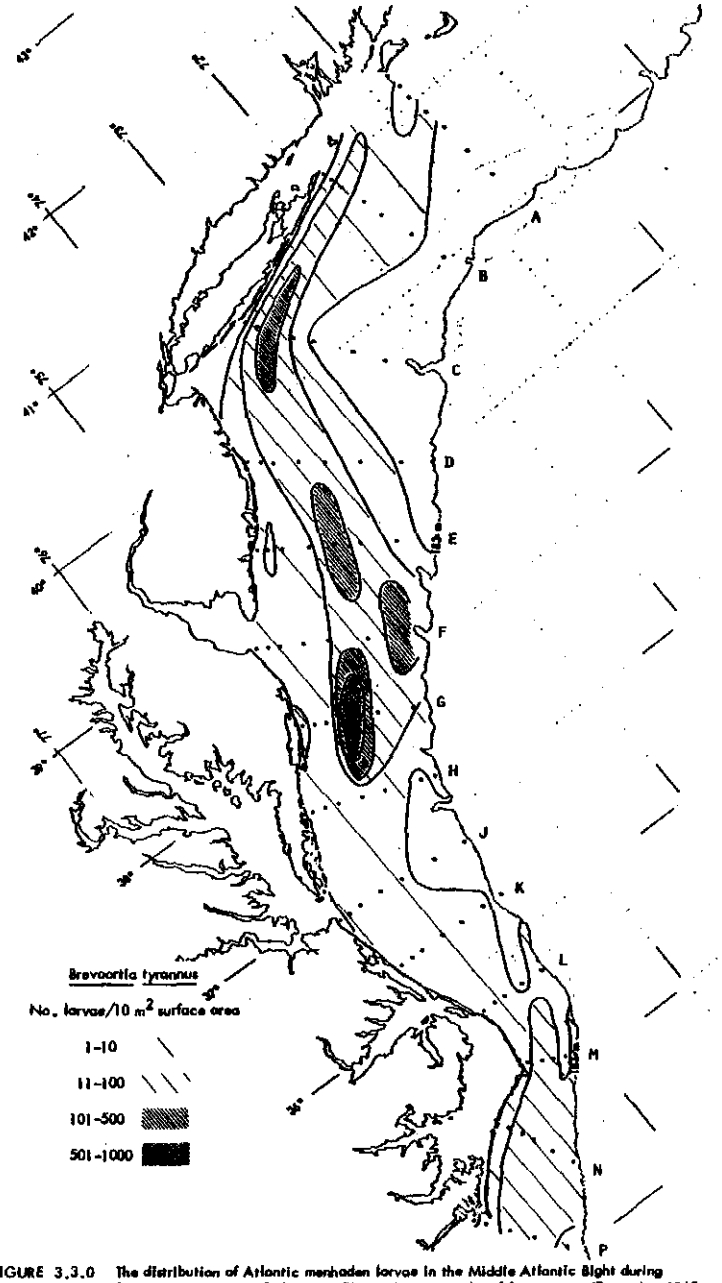

FIGURE 3.3.0 The distribution of Atlantic menhaden larvae in the Middle Atlantic Bight during fall 1965; winter and fall 1966. Figure depicts results of four cruises (December 1965; January, February, September through December 1966).

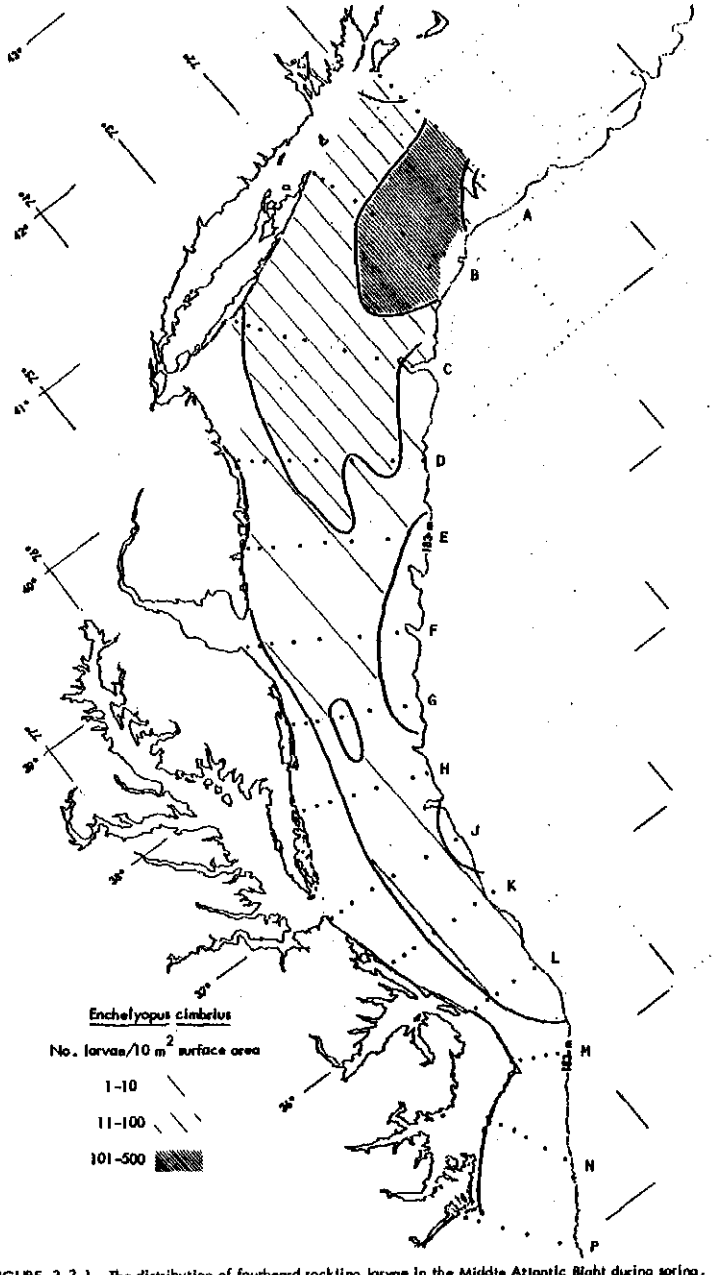

FIGURE 3.3.1 The distribution of fourbeard rockling larvae in the Middle Atlantic Bight during spring, summer and fall 1966. Figure depicts results of five cruises (May through October).

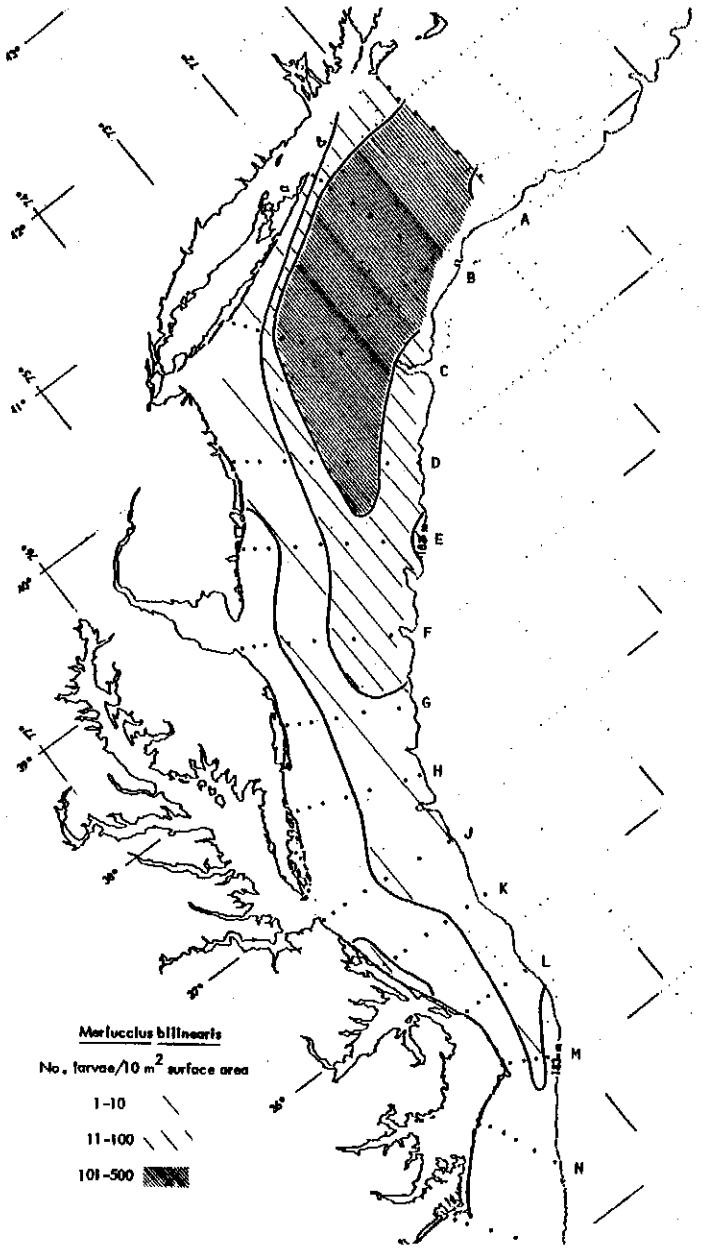

FIGURE 3.3.2 The distribution of silver hake larvae in the Middle Atlantic Bight during fall 1965; summer and fall 1966. Figure depicts results of six cruises (December 1965; June through December 1966).

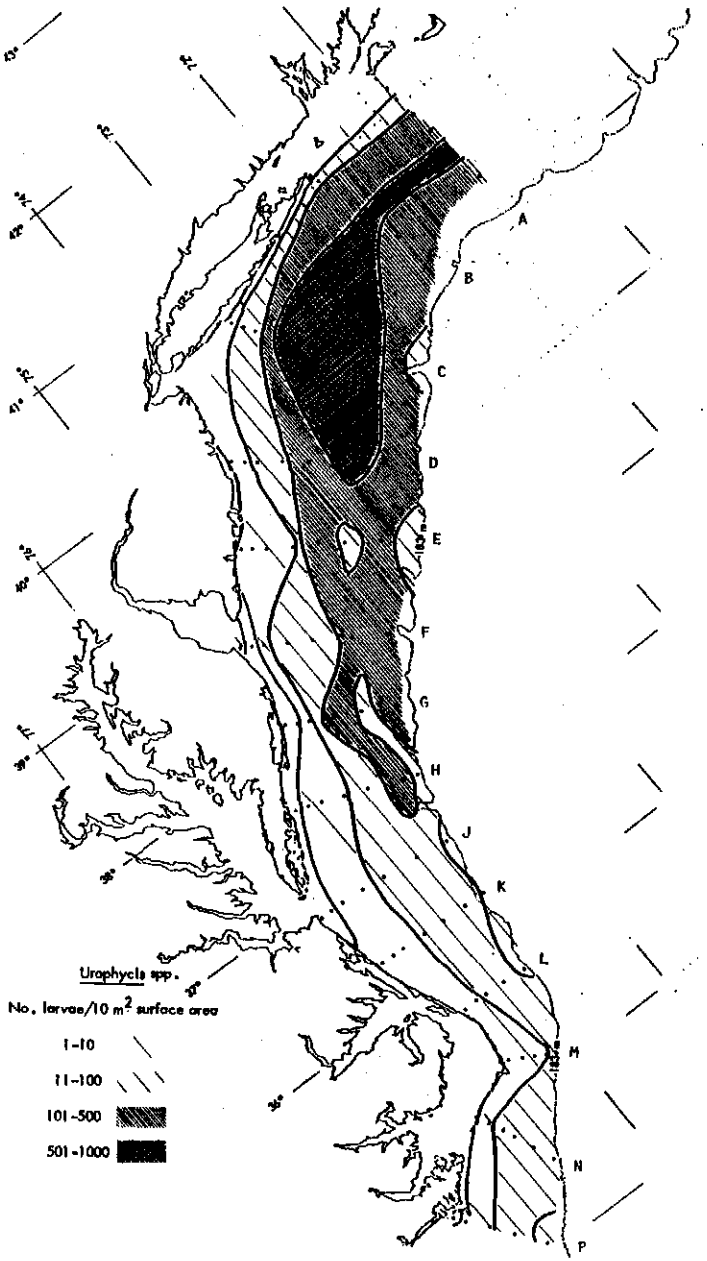

FIGURE 3.3.3 The distribution of hake larvae in the Middle Atlantic Bight during fall 1965; summer and fall 1966. Figure depicts results of five cruises (December 1965; August through December 1966).

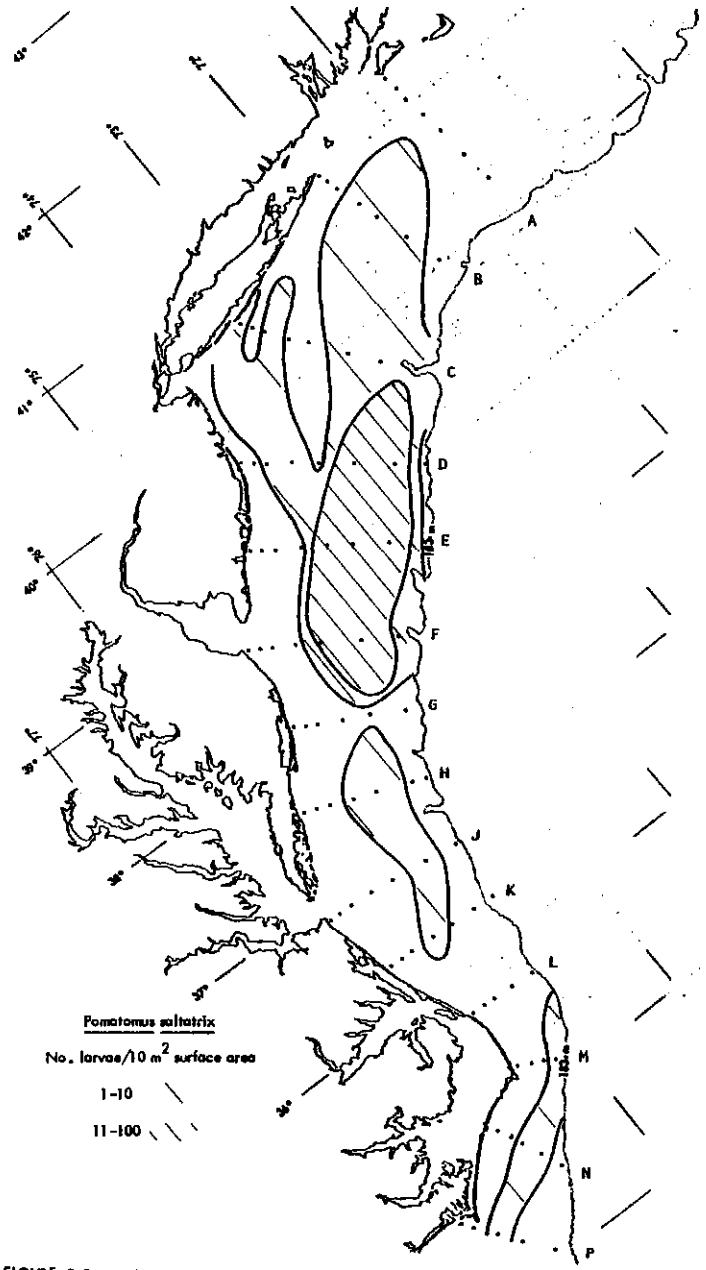

FIGURE 3.3.4 The distribution of bluefish larvae in the Middle Atlantic Bight during spring and summer 1966. Figure depicts results of two cruises (May and August).

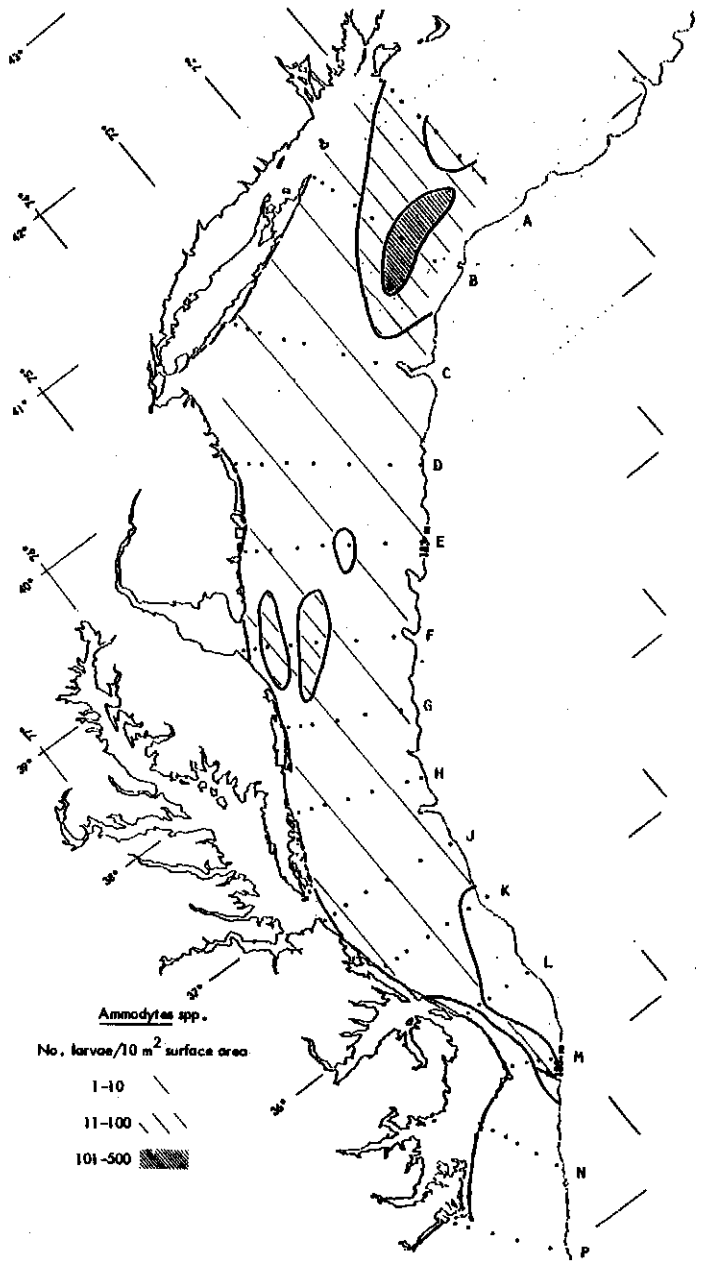

FIGURE 3.3.5 The distribution of sand lance larvae in the Middle Atlantic Bight during winter, spring and fall 1966. Figure depicts results of three cruises (January - February, April, November and December).

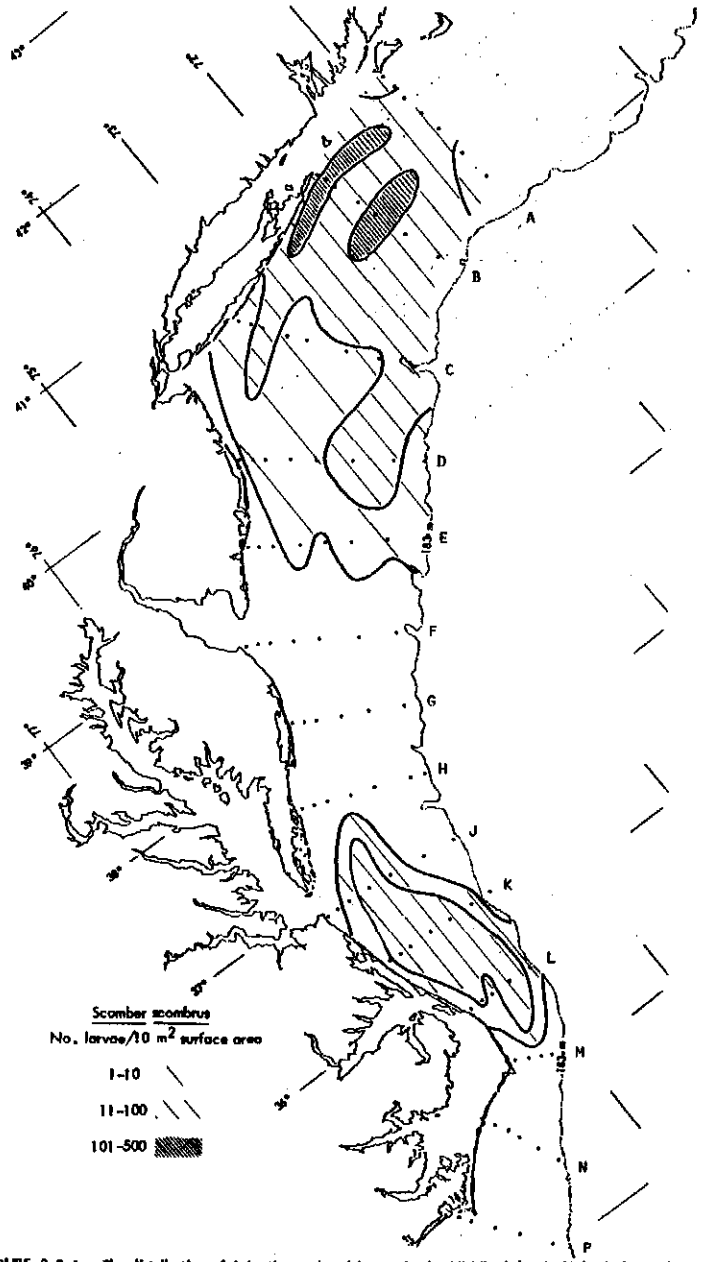

FIGURE 3.3.6 The distribution of Atlantic mackerel larvae in the Middle Atlantic Bight during spring and summer 1966. Figure depicts results of three cruises (May, June and August).

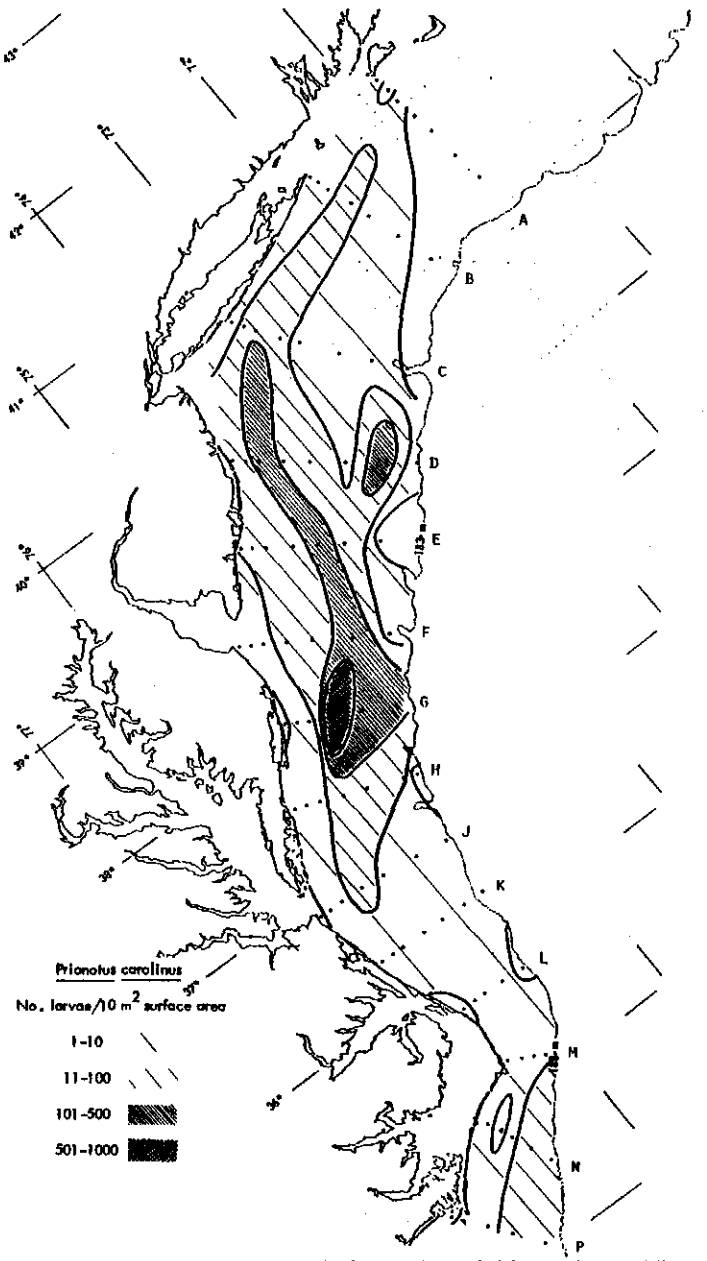

FIGURE 3.3.7 The distribution of northern searobin larvae in the Middle Atlantic Bight during fall 1965; summer and fall 1966. Figure depicts results of six cruises (December 1965; June through December 1966).

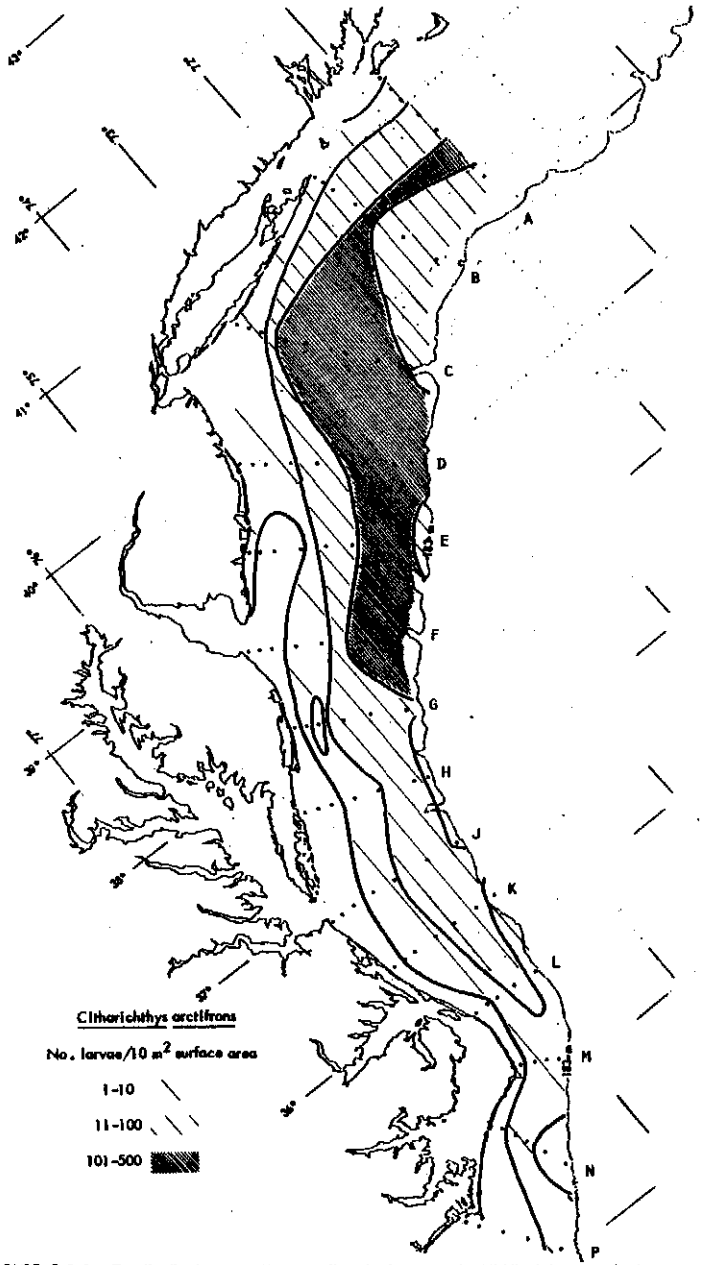

FIGURE 3.3.8 The distribution of Gulf Stream flounder larvae in the Middle Atlantic Bight during fall 1965; spring, summer and fall 1966. Figure depicts results of six cruises (December 1965; May through October 1966).

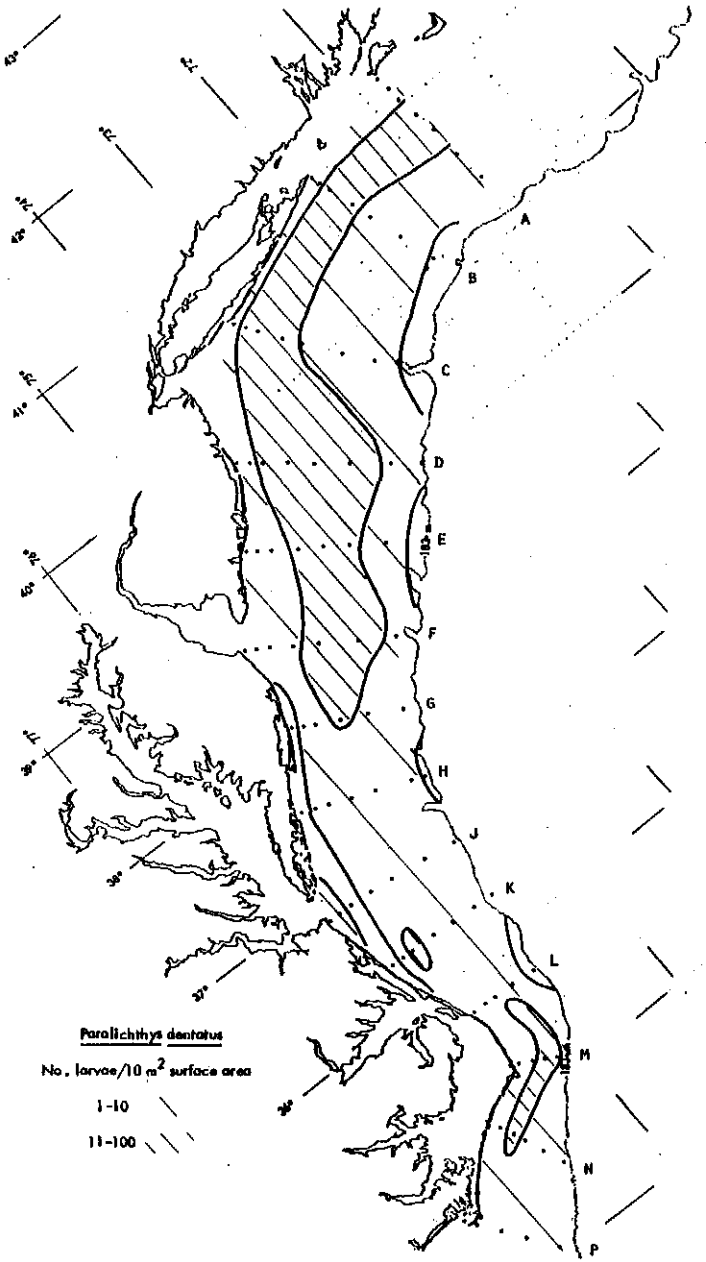

FIGURE 3.3.9 The distribution of summer flounder larvae in the Middle Atlantic Bight during fall and winter 1966. Figure depicts results of four cruises (January – February, September through December).

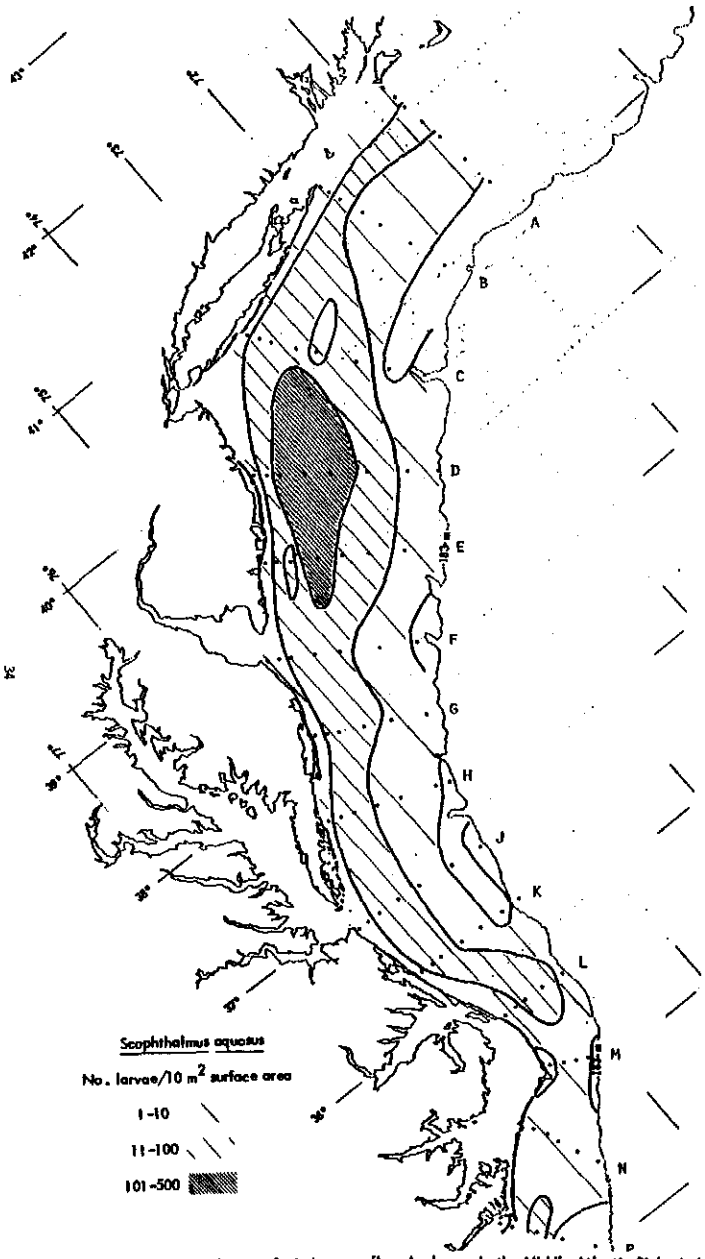

FIGURE 3.3.10 The distribution of windowpane flounder larvae in the Middle Atlantic Bight during fall 1965; spring, summer and fall 1966. Figure depicts results of seven cruises (December 1965; May through December 1966).

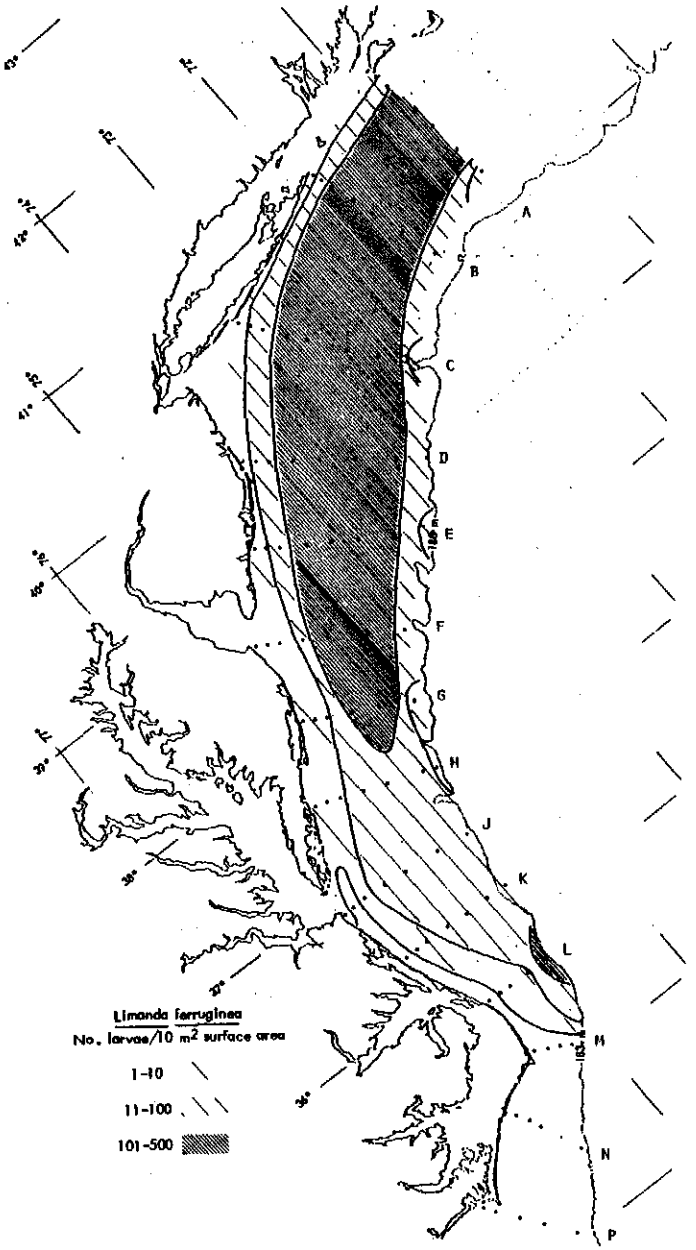

FIGURE 3.3.11 The distribution of yellowtail flounder larvae in the Middle Atlantic Bight during spring and summer 1966. Figure depicts results of four cruises (April, May, June and August).

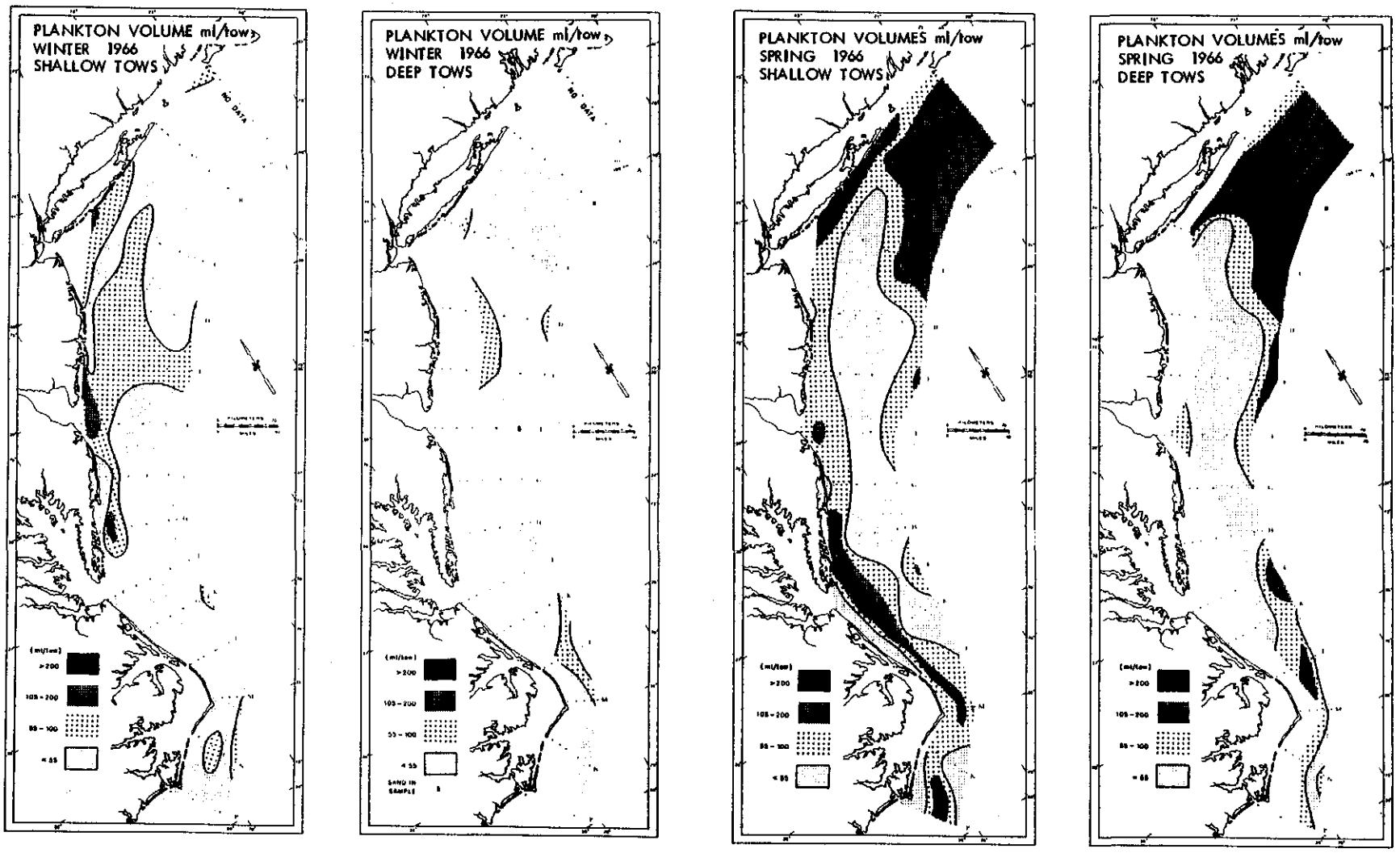

FIGURE 3.3.12 Distribution of zooplankton during winter and spring in Middle Atlantic Bight as determined from step-oblique plankton tows with Gulf V to a maximum depth of 33 m (from Clark et al. 1969).

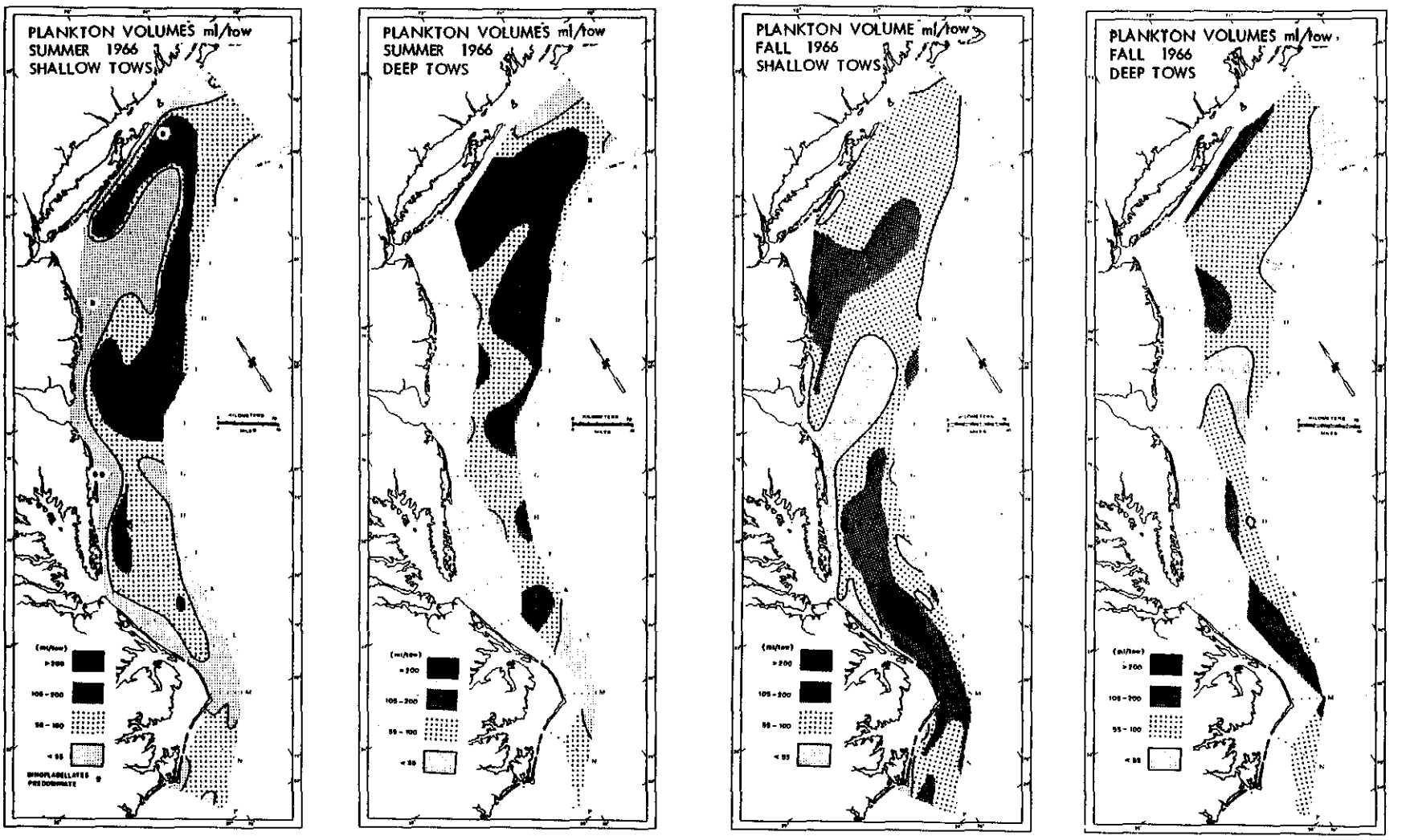

FIGURE 3.3.13 Distribution of zooplankton during summer and fall in Middle Atlantic Bight as determined from step-oblique plankton tows with Gulf V to a maximum depth of 33 m (from Clark et al. 1969).

TABLE 3.2.0 Cruise schedule and sequence of sampling transects during R. V. Dolphin ichthyoplankton survey, 1965-66. Sampling interruptions in excess of 48 hr are shown, whether or not the sampling sequence was affected (from Smith et al. 1975).

Cruise	Sampling dates	Transect or station sampling sequence	No. of stations
D-65-4	Dec. 3-15, 1965	C to P	78
D-66-1	Jan. 25-26, 1966	B, A-1 and -2	86
	Feb. 2-9, 1966	C to P	
D-66-3	Apr. 6-9, 1966	A to D	92
	Apr. 13-16, 1966	E-1 and -2, F to J-7 to -3	
	Apr. 19-21, 1966	J-1 and -2 to P	
	Apr. 22, 1966	E-8 to -3	
D-66-5	May 12-25, 1966	A to P	92
D-66-7	June 17-20, 1966	A to D	92
	June 22-25, 1966	L to P	
	June 25-29, 1966	K to E	
D-66-10	Aug. 5-10, 1966	A to F	92
	Aug. 21-26, 1966	G to P	
D-66-11	Sept. 13-14, 1966	A and B (except B-3)	30
	Sept. 17-18, 1966	B-3, C and D	
D-66-12	Sept. 28-Oct. 6, 1966	M, N, L to F, E-1 to -3, D-1 to -3	92
	Oct. 11-15, 1966	E-4 to -8, F-8 to -4, C to A	
	Oct. 20, 1966	P	
D-66-14	Nov. 9-14, 1966	E to J (except F-7, E-8)	92
	Nov. 15-19, 1966	P to K, F-7, E-8	
	Dec. 1-4, 1966	D to A	

TABLE 3.3.0 Seasonality and location of spawning, and the occurrence of planktonic larvae for commonly occurring coastal marine fishes in the Middle Atlantic Bight (after Colton et al. 1978).

Taxa	Common Name	Major Spawning Area[1]	Month[2] J F M A M J J A S O N D
CLUPEIDAE			
Brevoortia tyrannus	Atlantic menhaden	3D	
Clupea harengus	Atlantic herring	1B,C	
ENGRAULIDAE			
Anchoa hepsetus	striped anchovy	3A	
Engarulis eurystole	silver anchovy	3A	
GADIDAE			
Enchelyopus cimbrius	fourbeard rockling	1B,C	
Gadus morhua	Atlantic cod	1B	
Melanogrammus aeglefinus	haddock	1B	
Merluccius albidus	offshore hake	1C	
Merluccius bilinearis	silver hake	1B,C	
Phycis chesteri	long finned hake	1C	
Urophycis chuss	red hake	1B,C	
Urophycis regius	spotted hake	1B,C	
Urophycis tenuis	white hake	1B,C	
POMATOMIDAE			
Pomatomus saltatrix	bluefish	3B,C	
SCIAENIDAE			
Leistomus xanthurus	spot	2D	
Micropogon undulatus	Atlantic croaker	2A	
Cynoscion regalis	weakfish	1A	
LABRIDAE			
Tautoga onitis	tautog	1A	
Tautogolabrus adspersus	cunner	1A	
AMMODYTIDAE			
Ammodytes sp.	sand lance	1A,B	
SCOMBRIDAE			
Scomber scombrus	Atlantic mackerel	3A,B	
TRIGLIDAE			
Prionotus carolinus	northern searobin	1B	
STROMATEIDAE			
Peprilus triacanthus	butterfish	1B	
BOTHIDAE			
Citharichthys arctifrons	Gulf Stream flounder	1B,C	
Etropus microstomus	smallmouth flounder	2B	
Hippoglossina oblonga	fourspot flounder	1B	
Paralichthys dentatus	summer flounder	3A,B	
Scophthalmus aquosus	windowpane	1B	
PLEURONECTIDAE			
Glyptocephalus cynoglossus	witch flounder	1C	
Hippoglossoides platessoides	American plaice	1B	
Limanda ferruginea	yellowtail flounder	1B	

[1] 1-north of Chesapeake Bay
2-south of Chesapeake Bay
3-entire Bight

A-inner shelf
B-mid shelf
C-outer shelf
D-entire shelf

[2] *Peak spawning

TABLE 3.3.1. Seasonal co-occurrence of larval fishes in subareas of the Middle Atlantic Bight during 1965-66, determined from Principal Components Analysis.

Season	Pairs: Northern	Pairs: Southern, Inshore	Pairs: Southern, Offshore	Groups: Northern	Groups: Southern, Inshore	Groups: Southern, Offshore
Winter (Jan.-Feb.)		*Leiostomus xanthurus* *Paralichthys dentatus*		*Ammodytes* spp. *Gadus morhua* *Pollachius virens* *Clupea harengus*	*Micropogon undulatus* Myctophidae *Bothus* spp. *Paralichthys dentatus*	
Spring (Apr., May, June)	*Clupea harengus* *Ammodytes* spp. *Limanda ferruginea* *Enchelyopus cimbrius* *Limanda ferruginea* *Glyptocephalus cynoglossus* *Liparis* sp. *Pseudopleuronectes americanus* *Glyptocephalus cynoglossus* *Melanogrammus aeglefinus* *Merluccius bilinearis* *Pseudopleuronectes americanus* *Scomber scombrus* *Tautogolabrus adspersus*	*Peprilus triacanthus* *Scophthalmus aquosus* *Peprilus triacanthus* *Scomber scombrus*	*Bothus* spp. *Syacium papillosum* *Symphurus* spp.	*Gadus morhua* *Melanogrammus aeglefinus* *Hippoglossina oblongus*	*Citharichthys arctifrons* *Etropus microstomus* *Peprilus triacanthus* *Brevoortia tyrannus* *Prionotus* spp. *Paralichthys dentatus* *Paralichthys dentatus* *Auxis* sp. *Engraulis eurystole* *Syacium papillosum* *Symphurus* spp. *Bothus* spp.	
Summer (Aug.-Sept.)	Myctophidae *Urophycis* spp. *Peprilus triacanthus* *Citharichthys arctifrons* *Pomatomus saltatrix* *Hippoglossina oblongus* *Hippoglossina oblongus* *Sarda sarda* *Engraulis eurystole* *Prionotus* spp. *Urophycis* spp. *Engraulis eurystole* *Prionotus* spp. *Scophthalmus aquosus*	*Peprilus triacanthus* *Citharichthys arctifrons* *Peprilus triacanthus* *Etropus microstomus* *Tautoga onitis* *Etropus microstomus*		*Urophycis* spp. *Glyptocephalus cynoglossus* *Citharichthys arctifrons* *Merluccius bilinearis* *Enchelyopus cimbrius* *Urophycis* spp. *Citharichthys arctifrons* *Enchelyopus cimbrius* *Urophycis* spp. *Hippoglossina oblongus*		*Engraulis eurystole* *Bothus* spp. *Syacium papillosum*
Fall (Oct., Nov. Dec.)	*Engraulis eurystole* *Paralichthys dentatus* *Enchelyopus cimbrius* *Merluccius bilinearis* *Citharichthys arctifrons* *Urophycis* spp. *Prionotus* sp. *Brevoortia tyrannus* *Peprilus triacanthus* *Scophthalmus aquosus* *Paralichthys dentatus* *Scophthalmus aquosus*	*Citharichthys arctifrons* *Urophycis* spp. *Prionotus* sp. *Brevoortia tyrannus* *Anchoa hepsetus* *Engraulis eurystole* *Anchoa hepsetus* *Syacium papillosum* *Brevoortia tyrannus* *Urophycis* spp. *Brevoortia tyrannus* *Paralichthys dentatus* *Paralichthys dentatus* *Syacium papillosum*	*Syacium papillosum* Myctophidae	*Scophthalmus aquosus* *Paralichthys dentatus* *Gadus morhua* *Urophycis* spp.	*Engraulis eurystole* *Prionotus* sp. *Bothus* spp. *Etropus microstomus* *Symphurus* spp. *Prionotus* sp. *Leiostomus xanthurus* *Etropus microstomus* *Micropogon undulatus* *Symphurus* spp. *Bothus* spp. *Leiostomus xanthurus* *Urophycis* spp. *Etropus microstomus* *Bothus* spp.	*Bothus* spp. *Syacium papillosum* Myctophidae

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4.0 The New York Bight Survey, 1974-76:

4.1 Introduction: In the summer of 1974 we began a series of monthly cruises to investigate the seasonal distribution of fish eggs and larvae in the New York Bight, or that section of the Middle Atlantic Bight between Montauk Point, New York and Atlantic City, New Jersey. The survey placed emphasis on investigating seasonal shifts in the inshore-offshore distribution of eggs and larvae with a view towards making preliminary assessments of how spawning intensity, species diversity (larvae), and the subsequent distribution and abundance of eggs and larvae is influenced by the high pollution levels that exist in the New York Bight apex (Jeffries 1962). This 2-year survey was carried out in conjunction with the AEC's Brookhaven National Laboratory, Upton, New York, which was investigating physical and biological processes in coastal waters to gather background information for locating proposed offshore nuclear power plants.

4.2 Methods: Standard MARMAP plankton tows were made at 19 stations situated in a grid pattern (Figure 4.2.0). We towed 61-cm bongos, fitted with 0.505 and 0.333-mm mesh nets, in a smooth-oblique profile which included the entire water column to a maximum depth of 200 m. (We strive to maintain a 45° wire angle during each tow. The net descends at 50 m/min and ascends at 20 m/min. Vessel speed varies, usually between 1.5 and 3.5 kts). Nets were equipped with flow meters to determine the volume of water filtered on each tow, and bathykymographs were attached to the towing wire just above the bongo to record sampling profiles and maximum depth sampled. For purposes of analysis, we sorted fish eggs and larvae from the 0.505-mm mesh bongo samples and used those from the 0.333-mm mesh net for zooplankton volumetric determinations. Bottle casts were made at each station to collect water samples for salinity observations, nutrient analysis, chlorophyll, and primary productivity determinations. Vertical temperature profiles were recorded with XBT's, which were deployed at each station and between stations, if so desired.

In addition to the bongo tow, at each station we towed a neuston net to sample young stages of fishes that are associated with the sea surface. We began using a neuston net as a supplemental collecting gear in 1967, when we conducted an ichthyoplankton survey in the South Atlantic Bight, from the offings of New River, North Carolina, to Palm Beach

Florida (Clark et al. 1970; Fahay 1975). The neuston net samples larvae and/or juveniles of species more effectively than others simply because the young of some species occur more frequently at the surface than others. Despite the selective nature of the net, it is an excellent sampling gear for establishing the distribution and relative abundance of those species that congregate at the surface, and often samples a higher proportion of large larvae or juveniles than the obliquely towed bongo net (Ahlstrom and Stevens 1976). It is in this context that we utilize the neuston net; namely, to catch late-stage larvae and juveniles, or stages of development that for most species have acquired the agility to escape the more slowly towed bongo net, and to collect specimens of species rarely encountered by the obliquely towed bongo net because they develop at or near the surface. The neuston net used on this series of cruises was described by Bartlett and Haedrich (1968). It consists of a fiberglass frame approximately 1.0 x 0.3 m with encased flotation devices at each end. Our frame was fitted with a 1.8-mm mesh net. We towed the net for 15 min at each station. Towing speed was 5 kts.

4.3 Results: Fifteen cruises were completed during the 2-year period between July 1974 and June 1976 (Table 4.3.0). At the outset cruises were scheduled at monthly intervals. Scheduling conflicts and inclement weather forced some slippage within the intended schedule. The final two cruises in the spring of 1976 were primarily intended to provide information on nutrients that would be useful for planning an ensuing summer cruise by Brookhaven personnel.

4.3.1 Ichthyoplankton: The seasonality of spawning in the New York Bight supports results from the *Dolphin* survey conducted a decade earlier in that seasonal climatic changes are followed closely by changes in species composition of the ichthyoplankton community. A plot of the abundance of fish eggs over time is characterized by seasonal spikes in spring, summer and, to a lesser extent, fall. Larval abundance and species diversity begin to increase in spring, peak during summer and early autumn, and decline sharply in late fall to a low in winter. Based on estimates of egg and larval abundance and species diversity i.e., the number of taxa represented in the larval collections, spawning success was greater in the New York Bight in 1974 than 1975. Data from the two spring cruises in 1976 are inadequate for assessing the initial success

or failure of spawning but, when compared to the same period in 1975, the 1976 results suggest that the magnitude of spawning was considerably reduced (Figure 4.3.0). Patterns of distribution for eggs and larvae collected on each cruise of the survey are shown in Figure 4.3.1.

At the outset of the survey in the summer of 1974 the Gulf Stream flounder, Citharichthys arctifrons, and hakes of the genus Urophycis combined to comprise 60% of a diverse assemblage of larval fish represented by more than 35 taxa. The above two taxa were ubiquitously distributed in the Bight and ranked first and second, respectively, in abundance (Table 4.3.1). The two species continued to dominate catches in August and September, despite a significant but predictable decrease in the abundance of both (Tables 4.3.2 and 4.3.3).

By fall species diversity began to decline within the larval fish community. In October 1974 the pearlside, Maurolicus muelleri, numerically dominated the ichthyoplankton. The pearlside is a deep-water species whose larval distribution on the shelf is usually limited to the extreme outer edge. However, on the October cruise we caught pearlside larvae on nearly half of the stations. Hakes and Gulf Stream flounder remained dominant inside the 50-m contour, although they were less abundant than during the summer (Table 4.3.4). The autumn decline in spawning activity continued into November. Silver hakes, Merluccius bilinearis, and hakes accounted for most of the larval fish but abundance estimates were low (Table 4.3.4).

Larvae of those species found in the New York Bight during summer, and most of these collected in the fall, were absent in the winter months when the species diversity reached its nadir. During winter the larval fish community was overwhelmingly dominated by sand lance, Ammodytes spp. In February they accounted for nearly 60% of the larval fishes. Concentrations of sand lance occurred over depths <70 m. Atlantic cod, Gadus morhua, and pollock, Pollachius virens, larvae were scattered along Long Island and New Jersey, inside the 50-m contour. In March, the end of winter, both species composition and diversity resembled those of February (Table 4.3.5).

With spring warming in April, the species composition again changed and spawning increased. Species diversity began to increase but Atlantic mackerel, Scomber scombrus, and yellowtail flounder, Limanda ferruginea, numerically dominated the ichthyoplankton community. The young flounders dominated in May; mackerel in June (Tables 4.3.6 and 4.3.7). Larvae of the two species were widespread but both were most abundant along the inner half of the shelf where the distribution of flounder larvae had a more seaward component than that of the young mackerel.

Species diversity within the larval fish community during the summer of 1975 resembled that of 1974, climaxing in July and August, when hakes were the numerically dominant taxa. The spring dominants, Atlantic mackerel and yellowtail flounder, subsided to insignificant levels. Perhaps of greater significance, the overall abundance of fish larvae during the summer of 1975 was nearly 85% less than that of the previous summer (Figure 4.3.1). In 1974 the estimated abundance of fish larvae in the New York Bight from July through September was 198.96×10^{10}. For the same period in 1975 it fell to 32.89×10^{10}. The near-absence of Gulf Stream flounder larvae and a sharp decline in the abundance of young hakes accounted for most of the decline. Whereas in July 1974 the larval flounders were the most abundant taxa, in July 1975 they accounted for <1% of the catch (Table 4.3.7). Their numbers increased in August to a level comparable to that of 1974, then declined in September to a level far below that of the previous September. In August 1974 the estimated abundance of hake larvae in the New York Bight was 17.86×10^{10}. In August 1975 it was only 2.39×10^{10} and it remained at relatively low levels into September, the last survey month until the following spring (see Tables 4.3.2 and 4.3.8). A subsequent survey of the entire Middle Atlantic Bight in October-November indicated that the dearth of fish eggs and larvae continued through autumn (see Figure 5.3.0 and Table 5.3.3).

Larval abundance and species diversity in May 1976 resembled that for May 1975 but there was a change in the dominant species between years. In 1975 yellowtail flounder larvae accounted for 78% of the catch. Atlantic mackerel were not represented. In May 1976 mackerel larvae made up 86% of the larvae;

yellowtail flounder only 6.2% (See Tables 4.3.6 and 4.3.9). Both larval abundance and species diversity in June 1976 were below those observed in 1975. This decline can be attributed to: 1) earlier spawning of mackerel in 1976; and 2) a carry over into June of the extremely low level of abundance for yellowtail flounder larvae. The peak abundance of Atlantic mackerel larvae in 1975 occurred in the New York Bight in June. In 1976 it was in May. By June of 1976 the spawning migration of adults had passed through the Bight and our results reflect a sharp decline in larval abundance, probably because most of the larvae that occurred in May had grown large enough to escape the plankton net in June (Table 4.3.9). Judging from the two years of data on yellowtail flounder larvae, we concluded that larval production was exceptionally low.

A shortcoming of plankton surveys that are geographically restricted should be mentioned here. Because the spawning ranges of coastal marine fishes are extensive and subject to annual shifts, results of surveys limited in geographic scope to an area the size of the New York Bight must be cautiously interpreted when evaluating initial spawning success. Without substantiating data from adjacent coastal waters, we could not say with certainty whether the low abundance of larvae of a particular species in the New York Bight is representative of spawning throughout the range of the species in question or simply a geographic shift in spawning to waters within the normal spawning range but outside the Bight. In the above case with the Gulf Stream flounder and hake, our subsequent fall surveys of the entire Middle Atlantic Bight in 1974 and 1975 provided information to suggest that larval production was low for both taxa in 1975 (see section 5.3). We do not have supporting data from subsequent cruises to substantiate our judgment on the 1976 year class of yellowtail flounder but commercial catches and results of research trawl surveys indicate that the adult population has declined sharply since the early 1970's (Sissenwine et al. 1978). Insufficient recruitment of young fish into the adult population might be partly responsible for this decline.

During the 15-cruise survey we collected larvae throughout the New York Bight in all seasons of the year. Larvae occurred at weighted average temperatures between 4 and 19.5°C; weighted average salinities between 31.32 and 35.93 o/oo; and depths between 20 and 300 m. Multiple

regression analysis indicated that the abundance of several taxa was influenced by the above factors. For example, the abundance of larval hakes, Urophycis spp. increased with decreasing depth. The opposite held true for pearlsides, Maurolicus muelleri; namely, abundance increased with increasing depth. Larvae abundance of yellowtail flounder, Limanda ferruginea, and cunner, Tautogolabrus adspersus, increased with increased temperature and, along with Atlantic mackerel, Scomber scombrus, decreased with increasing salinity (Obenchain 1979).

4.3.2 Neuston: The seasonal occurrence of post larvae and juvenile fishes (by family) in neuston collections from the New York Bight survey is shown in Table 4.3.10. The ichthyofauna in neuston collections from the New York Bight is representative of that taken in the northern half of the Middle Atlantic Bight. On an annual basis, hakes of the genus Urophycis predominate, but seasonally other species occur in greater numbers.

Young hakes are caught in the neuston net year-round. We caught them on all 15 cruises in the New York Bight. In 1974 they were ubiquitous in surface waters of the Bight from mid-summer through the fall. They represented 99% of the total neuston catch in both September and October, and 88% of the catch in November. During late winter and early spring 1975, their percent occurrence dropped sharply and their distribution was restricted to the seaward portion of the Bight. In the spring of 1975 hakes were randomly distributed in surface waters throughout the survey area. There were no major concentrations. By summer their numbers increased but a sharp contrast was evident when catches were compared to the 1974 results. The number, percent composition and areal distribution of hakes decreased sharply in July 1975. (As already noted, hakes were less abundant in bongo catches in 1975 than in 1974). This downward trend in abundance in 1975 held through fall for the entire ichthyoplankton community of the Middle Atlantic Bight, as well as the New York Bight. Despite the annual fluctuations in abundance, we attribute the year-round occurrence and the dominance of hakes in the neuston collections to extended spawning, the result of overlap in spawning by the four species of hake that we include in the genus Urophycis (see section 3.3.3).

Juvenile Atlantic mackerel, Scomber scombrus, dominate neuston collections for a short period of time between late spring and early summer. Their earliest occurrence during our survey of the New York Bight was in May 1975. By June, a marked increase occurred. They comprised 93% of the young fishes taken in the neuston net. At this time of year young mackerel occur throughout the New York Bight and it is not uncommon to find concentrations along the outer part of the shelf, well beyond the seaward limits of younger mackerel larvae. Their disappearance is as abrupt as their initial appearance. By summer they disappear from the neuston. In July 1974 we caught three, in 1975, one.

Young bluefish, Pomatomus saltatrix, are part of the neuston during late spring or early summer and again in late summer in the New York Bight. They first occur along the shelf break in spring where surface waters are warmer than 10°C. These fish are spawned south of Cape Hatteras. The distribution of larvae spawned in the New York Bight during summer is variable but usually extends along the New Jersey coast from Barnegat to Sandy Hook, with the center of abundance along the shoreward half of the shelf. By late August there is a marked decrease in their numbers and their distribution becomes more random. During the two summers of the survey we found contrasting differences in their initial occurrence and numbers. In 1974 they first occurred in our neuston collections in July, when they comprised 32% of the total catch. The following year, a single specimen occurred in June. None were taken in July, when the majority occurred in 1974, but they accounted for 15% of the neuston in August, and their occurrence continued into September.

Fourbeard rockling, Enchelyopus cimbrius, most frequently occur at the surface during the spring but they were represented in the neuston on more than half of the cruises in the New York Bight. Although not abundant, we caught the young gadids on all but two stations inside the 50-m contour during the July 1974 cruise. In August only a single specimen was caught and none occurred in September or October. They were again present in November, but in small numbers, and then from February through May (1975), when the center of their distribution was inside 50 m. In June young fourbeard rockling were caught on all of the 19 stations

sampled but the center of their distribution remained along the shoreward half of the Bight. Just as in 1974, their occurrence in the neuston dropped sharply during the summer. None were caught in August and only one in September.

Sand lance, Ammodytes spp., are caught regularly in the neuston net from late fall to spring but they are most numerous after mid winter. They first occurred in the neuston in November. By February they were the numerically dominant taxa in both the neuston and plankton. At this time the center of their distribution extended seaward to the 50-m contour. The numerical dominance continued through the remainder of winter and into early spring. Young sand lance constituted 79 and 85% of the catch from cruises in March and April (1975), respectively. During this time, two areas of abundance occurred in the Bight. One was located in the northwest portion and the other occurred in the southern portion, off Barnegat Inlet, New Jersey. By May their numbers declined and they disappeared from the neuston by late spring.

4.3.3 Community Assemblages: We chose 26 of the most abundant species from the New York Bight survey for community analysis. The analytical method and principal components are described briefly in 3.3.12. As with the analysis of data from the Dolphin survey, we combined results on a seasonal basis. With two years of data for the summer months, we were able to make between year comparisons to look for similarities and differences in co-occurring taxa. Several of the species that co-occurred as pairs or in groups in 1974 summer collections were again correlated in 1975 (Table 4.3.11). For example, larvae of butterfish, Peprilus triacanthus, and Gulf Stream flounder, Citharichthys arctifrons, occurred as a pair in 1974, and within a group in 1975. Other pairings in 1974 and 1975 were: butterfish with silver hake, Merluccius bilinearis, smallmouth flounder, Etropus microstomus, mackerel, Auxis sp., cunner, Tautogolabrus adspersus, and hakes, Urophycis sp.; silver hake with fourspot flounder, Hippoglossina oblongus, and Gulf Stream flounder; and mackerel, Auxis sp., with hakes, Urophycis spp. Except for the Gulf Stream flounder, silver hake pairing, which continued from summer to fall in 1974, there were no

seasonal carry-overs of co-occurring taxa. The number of co-occurring taxa was predictably low in winter and began to increase in spring.

Co-occurrence of larvae in 1966, 1974 and 1975 exhibited both similarities and differences which can be recognized by comparing Tables 3.3.1 and 4.3.11. Unfortunately, the full extent of the co-occurrences cannot be realized because of differences in between-year sampling effort. Despite these differences, several taxa were found to co-occur in all three years. They include: butterfish, Peprilus triacanthus, and Gulf Stream flounder, Citharichthys arctifrons; hakes, Urophycis spp., and Gulf Stream flounder; butterfish and smallmouth flounder, Etropus microstomus; and silver hake, Merluccius bilinearis, and Gulf Stream flounder. More than anything else, these co-occurrences probably reflect the ubiquitous distribution of the principles. We are beginning similar analyses of data collected since 1976 and expect the results to provide an added dimension to the kind of information gleaned from macroscale surveys by producing information on competition and predator-prey relationships during larval development.

4.3.4 Zooplankton: Monthly zooplankton volumes determined from samples taken with the 61-cm bongo, fitted with 0.333-mm mesh, are shown in Table 4.3.12. Seasonal changes in distribution and abundance of zooplankton in the New York Bight during the 2-year survey generally followed the trends outlined in section 2.4 Volumes were greatest during spring and summer, declined in fall, and were lowest in winter. On a given cruise, concentrations of zooplankton were usually greater at shallow inshore stations than at deep offshore stations. Unfortunately, the data set is not complete. We do not have volumetric determinations for the July and August cruises of 1974 and the May and June cruises in 1976. Results of the September cruises in 1974 and 1975, the only month with two years of data, are interesting. The 1975 mean volume of zooplankton was 30% less than 1974. As we pointed out in sections 4.3.1 and 5.3.3, the abundance of fish larvae also declined sharply in 1975. Perhaps the reduced catches of both meroplanktonic invertebrates and meroplanktonic fishes are related. The cause of the apparent decline in zooplankton biomass remains an open question.

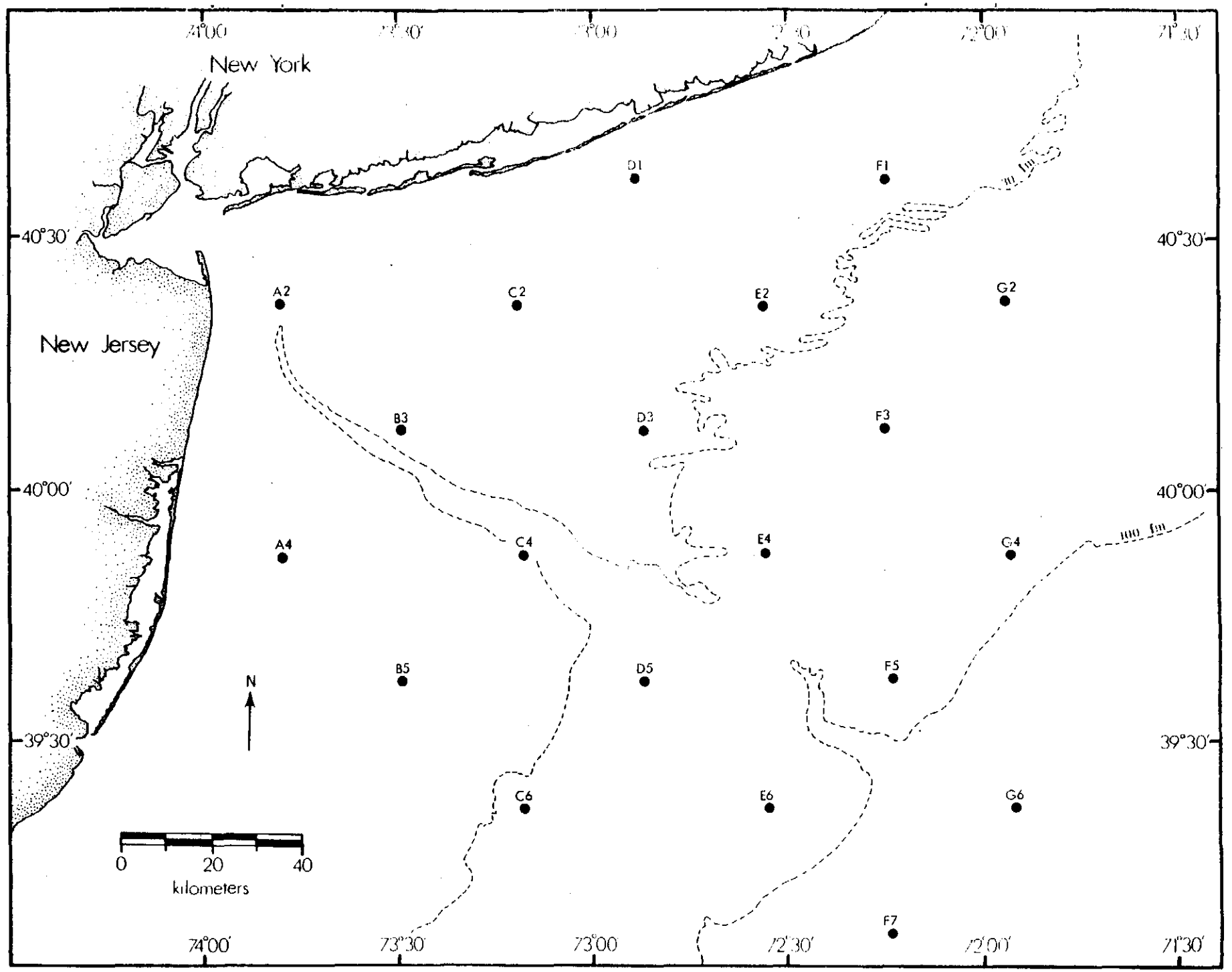

FIGURE 4.2.0 Standard MARMAP grid pattern for plankton tows in the New York Bight during 1974-76 (from Kendall 1978).

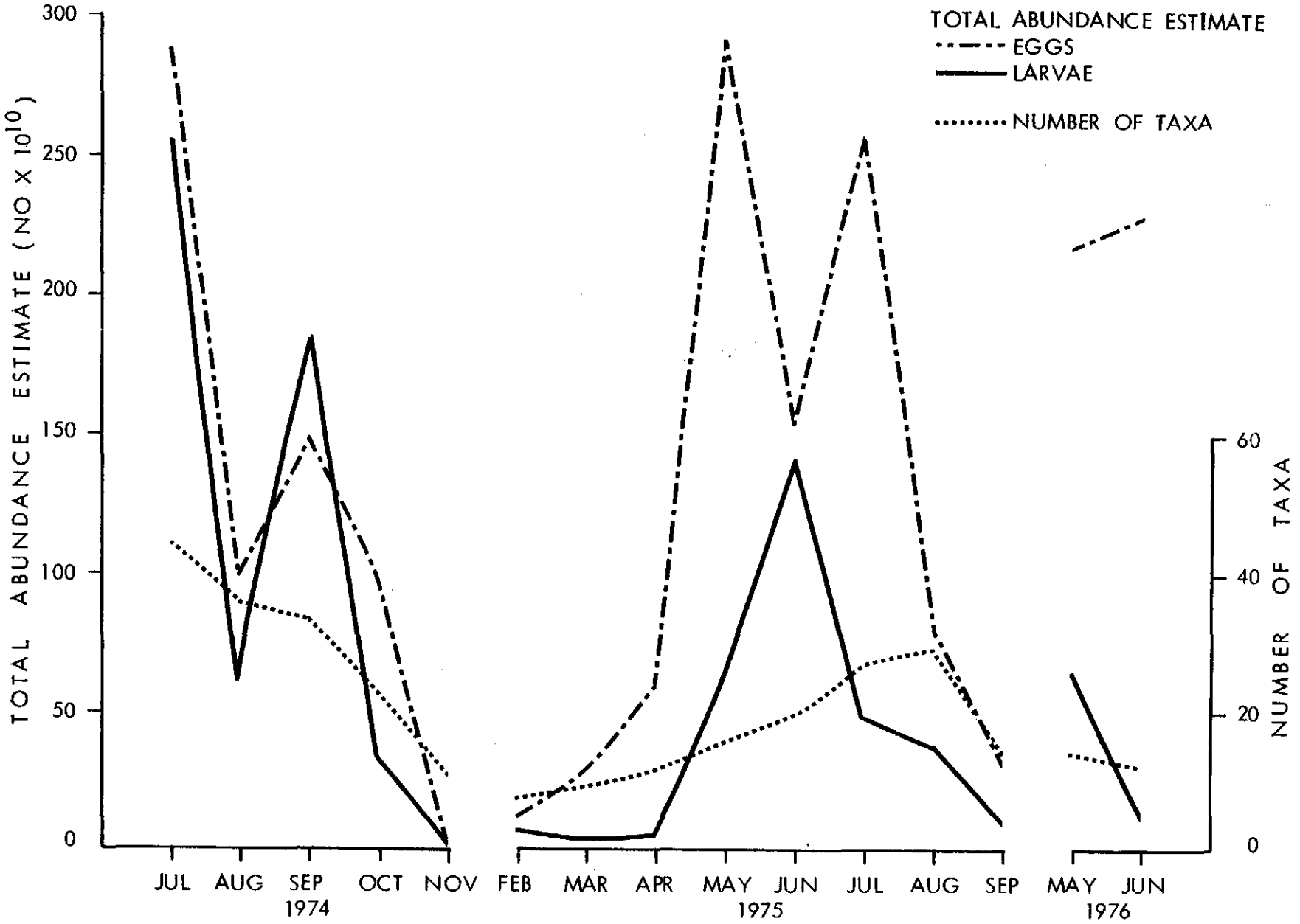

FIGURE 4.3.0. Changes in the abundance of fish eggs and larvae, and the number of taxa represented in monthly catches in the New York Bight, 1974-76.

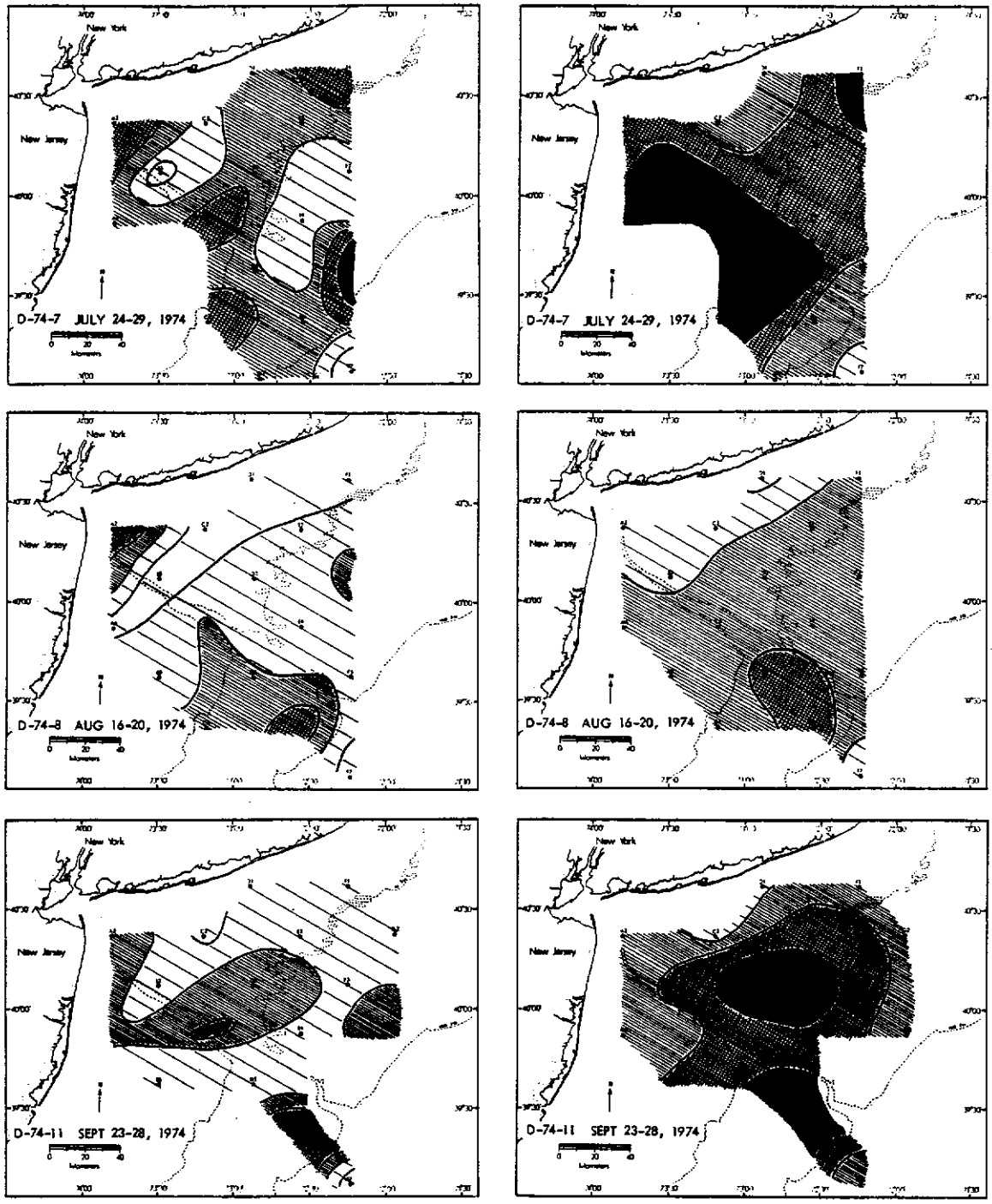

FIGURE 4.3.1. Distribution and abundance of fish eggs (left) and larvae (right) in the New York Bight, 1974-76.

Eggs/10 m^2 surface area: 1-100 ; 101-500 ; 501-1000 ; 1001-5000 ; >5000 .

Larvae/10 m^2 surface area: 1-10 ; 11-100 ; 101-500 ; 501-1000 ; >1000 .

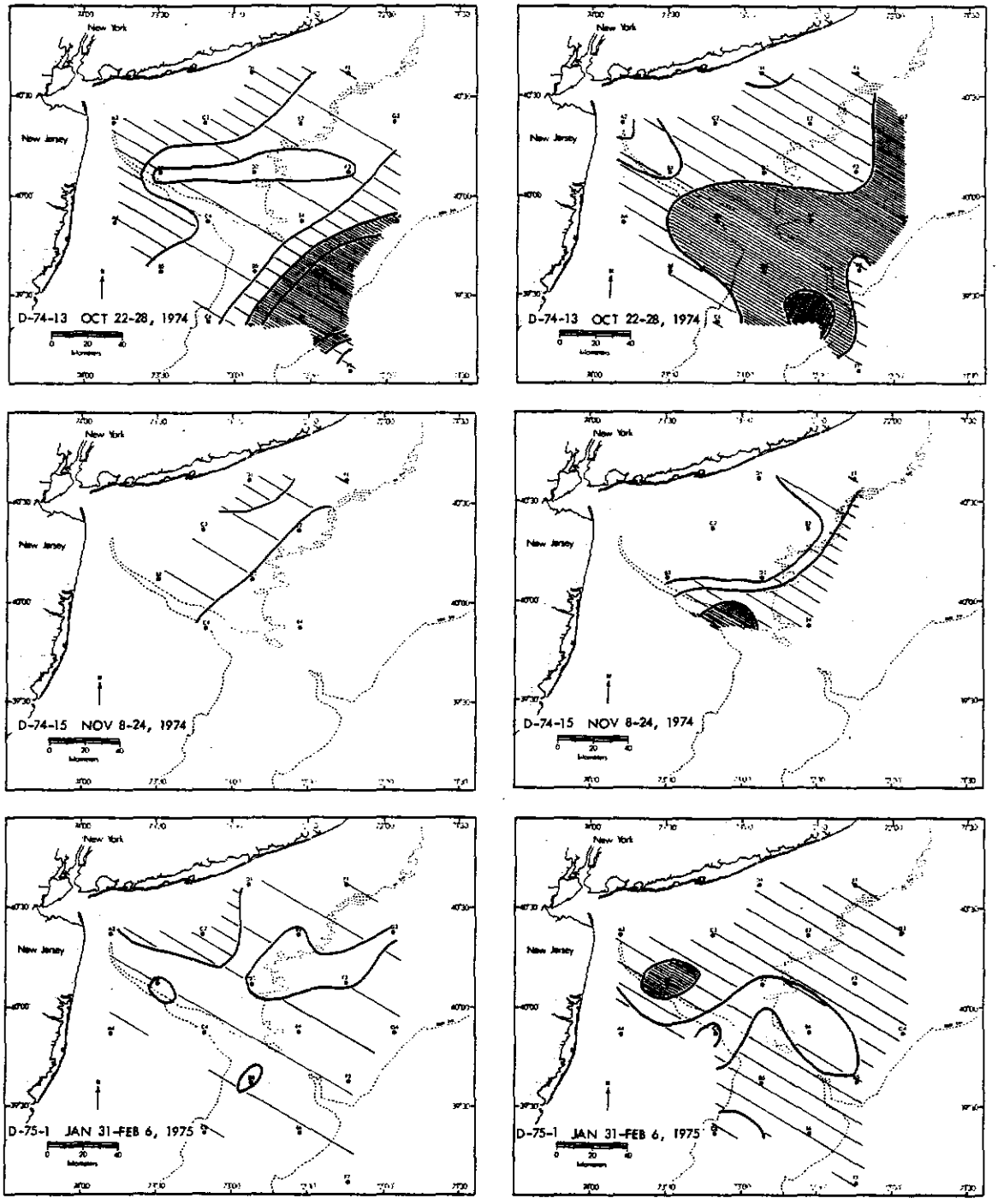

FIGURE 4.3.1. Distribution and abundance of fish eggs (left) and larvae (right) in the New York Bight, 1974-76.

Eggs/10 m^2 surface area: 1-100 ; 101-500 ; 501-1000 ; 1001-5000 ; >5000 .

Larvae/10 m^2 surface area: 1-10 ; 11-100 ; 101-500 ; 501-1000 ; >1000 .

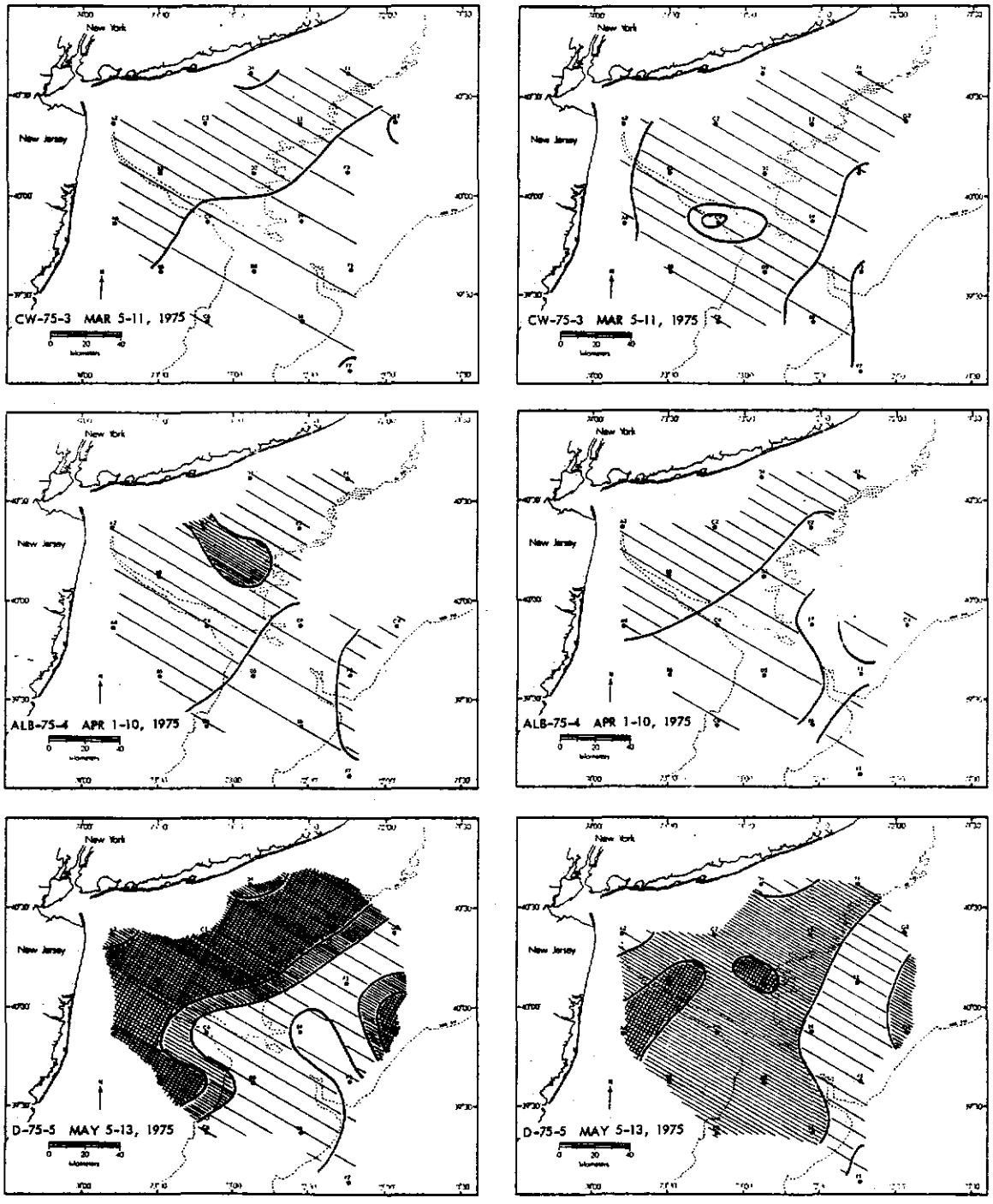

FIGURE 4.3.1. Distribution and abundance of fish eggs (left) and larvae (right) in the New York Bight, 1974-76.

Eggs/10 m^2 surface area: 1-100 ; 101-500 ; 501-1000 ; 1001-5000 ; >5000 .

Larvae/10 m^2 surface area: 1-10 ; 11-100 ; 101-500 ; 501-1000 ; >1000 .

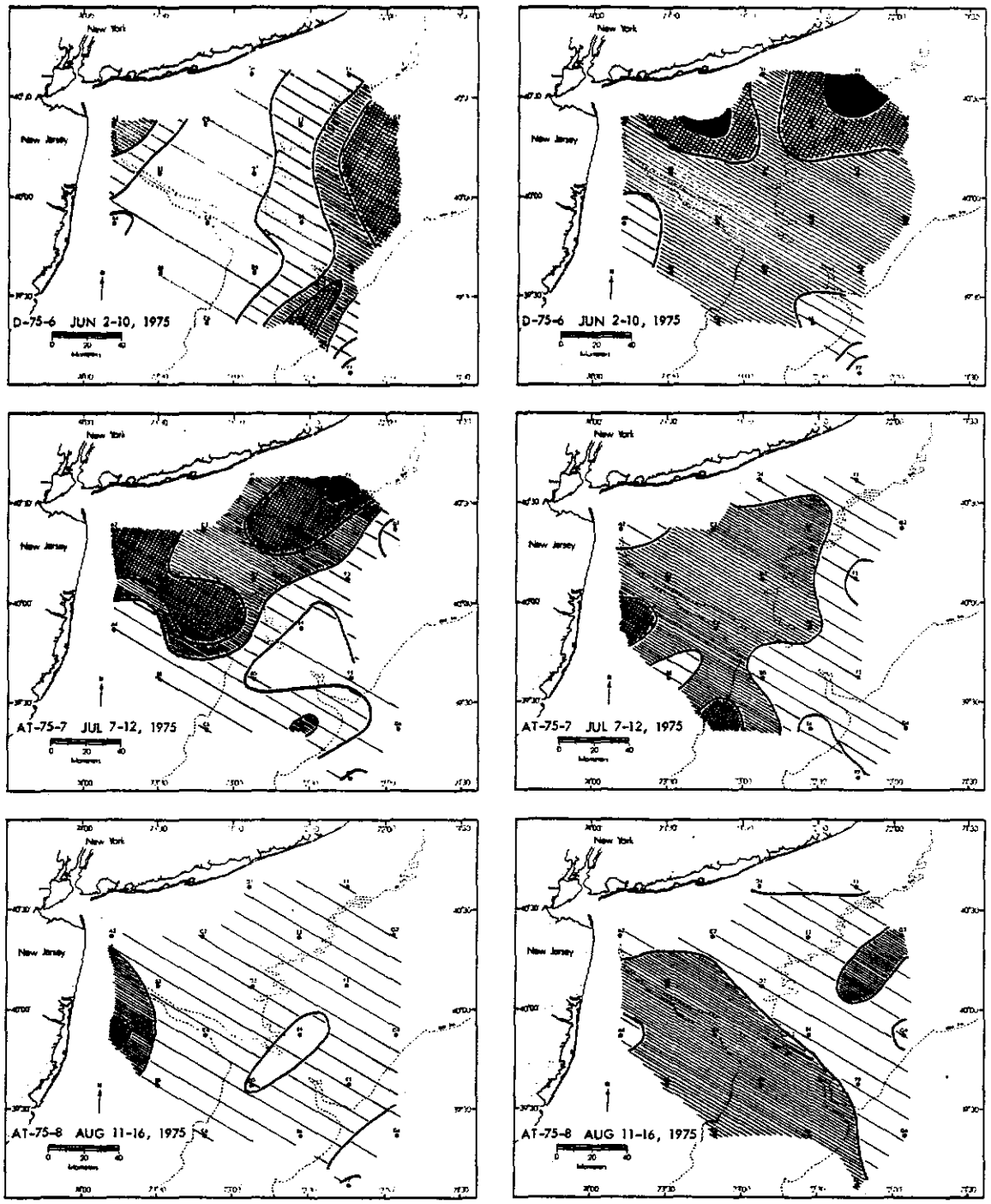

FIGURE 4.3.1. Distribution and abundance of fish eggs (left) and larvae (right) in the New York Bight, 1974-76.

Eggs/10 m^2 surface area: 1-100 ; 101-500 ; 501-1000 ; 1001-5000 ; >5000 .

Larvae/10 m^2 surface area: 1-10 ; 11-100 ; 101-500 ; 501-1000 ; >1000 .

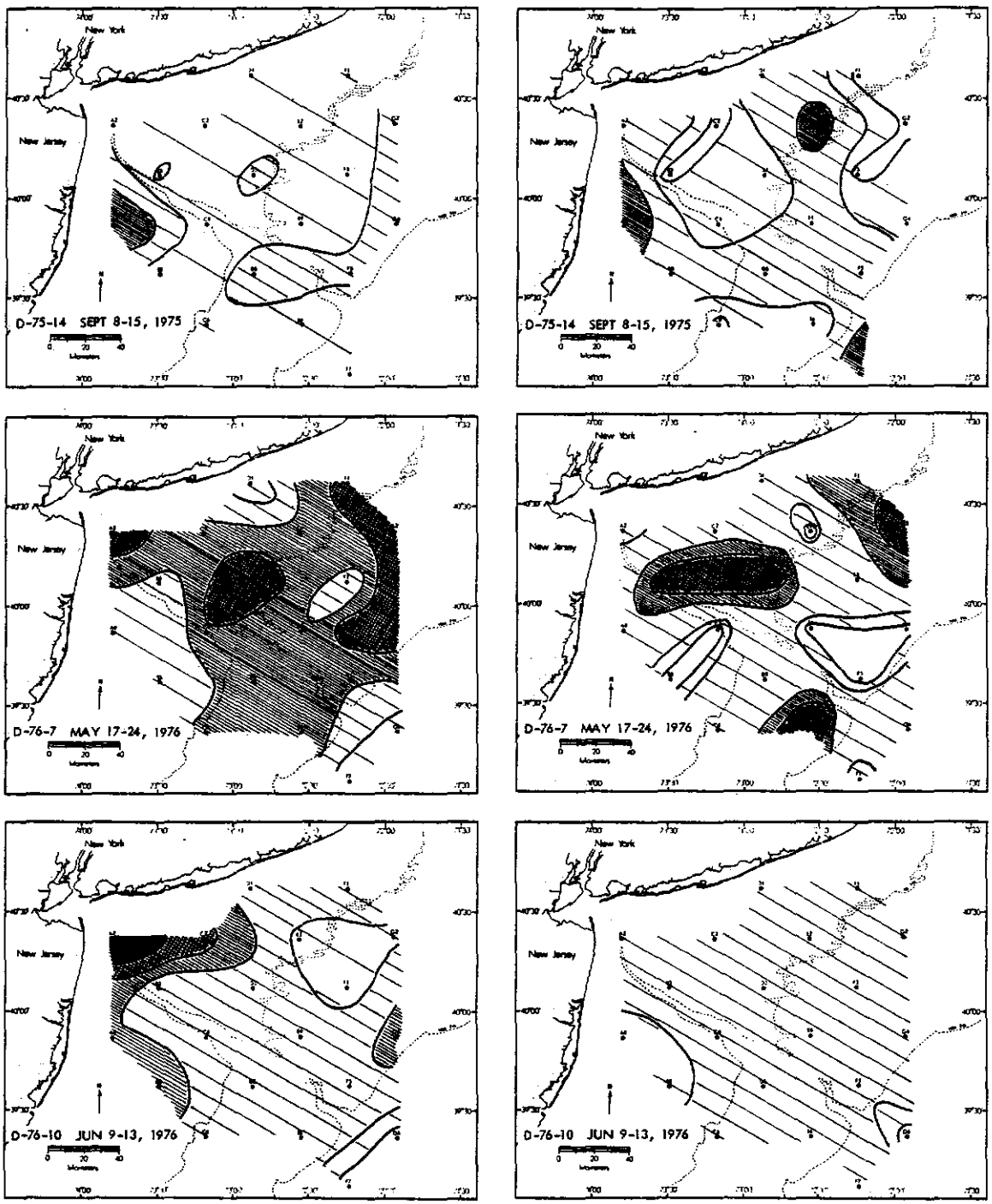

FIGURE 4.3.1. Distribution and abundance of fish eggs (left) and larvae (right) in the New York Bight, 1974–76.

Eggs/10 m^2 surface area: 1–100 ; 101–500 ; 501–1000 ; 1001–5000 ; >5000 .

Larvae/10 m^2 surface area: 1–10 ; 11–100 ; 101–500 ; 501–1000 ; >1000 .

Table 4.3.0. Cruise schedule and station positions for ichthyoplankton survey of New York Bight, July 1974 to June 1976. Station positions were set for the 15-cruise survey.

Vessel	Cruise	Cruise Dates	Sta.	Lat.(N)	Long.(W)	Depth (m)
Delaware II	74-7	7/24-29/74	A2	40°23'	73°49'	27
Delaware II	74-8	8/16-20/74	A4	39°52'	73°49'	26
Delaware II	74-11	9/23-28/74	B3	40°07'	73°30'	40
Delaware II	74-13	10/22-28/74	B5	39°37'	73°30'	37
Delaware II	74-15	11/ 8-24/74	C2	40°23'	73°10'	33
Delaware II	75-1	1/31-2/6/75	C4	39°52'	73°10'	49
Commonwealth	75-3	3/ 5-11/75	C6	39°21'	73°10'	59
Albatross IV	75-4	4/ 1-10/75	D1	40°37'	72°50'	29
Delaware II	75-5	5/ 5-13/75	D3	40°07'	72°50'	49
Delaware II	75-6	6/ 2-10/75	D5	39°37'	72°50'	64
Atlantic Twin	75-7	7/ 7-12/75	E2	40°23'	72°31'	48
Atlantic Twin	75-8	8/11-16/75	E4	39°52'	72°31'	66
Delaware II	75-14	9/ 8-15/75	E6	39°23'	72°31'	124
Delaware II	76-7	5/17-24/76	F1	40°37'	72°11'	49
Delaware II	76-10	6/ 9-13/76	F3	40°07'	72°11'	71
			F5	39°37'	72°11'	128
			F7	39°07'	72°11'	1400
			G2	40°23'	71°50'	71
			G4	39°52'	71°51'	146
			G6*	39°23'	71°51'	800

*Sampled on cruises after June 1975 and 1976.

TABLE 4.3.1 Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the New York Bight during July 1974.

Taxa	July 24-29, 1974 % of Total	Mean No/10m²	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10¹⁰)
ACIPENSERIFORMES							
OSTEICHTHYES	<0.1	0.11	0.48	436	5.8	0/17	0.02
ANGUILLIFORMES	<0.1	0.17	0.72	423	5.8	0/17	0.04
CONGRIDAE	<0.1	0.47	1.32	280	11.7	0/17	0.12
OPHICHTHIDAE	0.3	3.35	11.32	337	23.5	0/17	0.86
Ophichthid leptocephalus	<0.1	0.17	0.72	423	5.8	0/17	0.04
Ophichthus ocellatus	0.1	0.64	2.02	315	11.7	0/17	0.16
Pisodonophis cruentifer	0.1	1.00	4.12	412	5.8	0/17	0.25
ENGRAULIDAE							
Anchoa hepsetus	0.5	5.53	20.01	361	23.5	0/17	1.43
Engraulis eurystole	0.2	2.23	8.71	390	11.7	0/17	0.57
SYNODONTIDAE	0.2	0.23	0.97	421	5.8	0/17	0.05
PARALEPIDIDAE	<0.1	0.23	0.97	421	5.8	0/17	0.05
Notolepis rissoi	0.2	2.00	7.28	364	11.7	0/17	0.51
MYCTOPHIDAE	<0.1	0.35	1.05	300	11.7	0/17	0.09
Ceratoscopelus maderensis	0.1	0.88	2.17	246	17.6	0/17	0.22
LOPHIIDAE							
Lophius americanus	0.3	3.29	3.58	108	58.8	0/17	0.85
GADIDAE							
Brosme brosme	<0.1	0.47	1.32	280	11.7	0/17	0.12
Enchelyopus cimbrius	0.1	1.17	2.37	202	29.4	0/17	0.30
Merluccius albidus	0.3	2.88	8.80	305	11.7	0/17	0.74
Merluccius bilinearis	4.6	45.88	94.35	205	58.8	0/17	11.88
Urophycis sp.	42.1	415.52	1016.78	244	94.1	4/17	107.60
OPHIDIIDAE	0.4	4.47	7.08	158	35.2	0/17	1.15
SYNGNATHIDAE							
Hippocampus erectus	<0.1	0.47	1.12	238	17.6	0/17	0.12
SERRANIDAE							
Centropristis striata	0.3	3.41	6.55	192	41.1	0/17	0.88
BRANCHIOSTEGIDAE							
Lopholatilus chamaeleonticeps	0.1	1.23	4.17	339	11.7	0/17	0.31
POMATOMIDAE							
Pomatomus saltatrix	5.1	50.29	109.55	217	52.9	0/17	13.02
SPARIDAE							
Stenotomus chrysops	<0.1	0.11	0.48	436	5.8	0/17	0.02
SCIAENIDAE	<0.1	0.11	0.48	436	5.8	0/17	0.02
Micropogon undulatus	<0.1	0.35	1.45	414	5.8	0/17	0.09
LABRIDAE							
Tautoga onitis	0.8	8.58	13.01	151	47.0	0/17	2.22
Tautogolabrus adspersus	11.9	117.47	224.70	191	64.7	2/17	30.42
GOBIIDAE	<0.1	0.41	1.17	285	11.7	0/17	0.10
SCOMBRIDAE							
Auxis sp.	1.2	12.17	26.63	218	58.8	0/17	3.15
Sarda sarda	0.5	5.17	8.20	158	52.9	0/17	1.33
STROMATEIDAE							
Peprilus triacanthus	7.6	75.11	66.95	89	82.3	0/17	19.45
TRIGLIDAE							
Prionotus sp.	1.0	10.64	20.03	188	41.1	0/17	2.75
Prionotus carolinus	0.1	1.29	5.33	413	5.8	0/17	0.33
Prionotus evolans	0.1	0.52	2.18	419	5.8	0/17	0.13
BOTHIDAE							
Bothus sp.	0.3	3.29	7.37	224	35.2	0/17	0.85
Citharichthys arctifrons	10.9	107.88	144.06	133	82.3	2/17	27.93
Etropus microstomus	3.9	39.11	99.89	255	29.4	0/17	10.12
Hippoglossina oblonga	4.3	42.76	33.77	79	88.2	0/17	11.07
Scophthalmus aquosus	0.1	1.76	3.75	213	23.5	0/17	0.45
PLEURONECTIDAE							
Glyptocephalus cynoglossus	0.5	5.41	6.14	113	58.8	0/17	1.40
Limanda ferruginea	0.3	3.11	7.23	232	35.2	0/17	0.80

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

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TABLE 4.3.2 Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the New York Bight during August 1974.

Taxa	August 16-20, 1974 % of Total	Mean No/10m²	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10¹⁰)
ANGUILLIFORMES	0.1	0.11	0.48	436	5.8	0/17	0.02
CONGRIDAE	0.2	0.41	1.17	285	11.7	0/17	0.10
OPHICHTHIDAE							
Pisodonophis cruentifer	0.5	1.17	3.26	278	17.6	0/17	0.30
ENGRAULIDAE							
Engraulis eurystole	5.4	12.47	36.58	293	35.2	0/17	3.22
GONOSTOMATIDAE							
Maurolicus mulleri	1.1	2.52	7.50	297	17.6	0/17	0.65
MYCTOPHIDAE							
Ceratoscopelus maderensis	0.1	0.17	0.72	423	5.8	0/17	0.04
Ceratoscopelus warmingi	0.1	0.11	0.48	436	5.8	0/17	0.02
LOPHIIFORMES	0.2	0.35	0.99	282	11.7	0/17	0.09
LOPHIDAE							
Lophius americanus	0.1	0.11	0.48	436	5.8	0/17	0.02
GADIDAE							
Enchelyopus cimbrius	<0.1	0.05	0.24	480	5.8	0/17	0.01
Merluccius albidus	0.6	1.47	4.58	311	11.7	0/17	0.38
Merluccius bilinearis	3.4	7.88	11.86	150	52.9	0/17	2.04
Urophycis sp.	29.6	69.00	87.27	119	82.3	1/17	17.86
OPHIDIIDAE	1.7	3.94	10.81	274	29.4	0/17	1.02
OPHIDIIDAE-ZOARCIDAE	1.8	4.17	9.50	227	17.6	0/17	1.07
CARAPIDAE							
Carapus sp.	0.1	0.17	0.72	423	5.8	0/17	0.04
SERRANIDAE							
Centropristis striata	0.1	0.23	0.97	421	5.8	0/17	0.05
POMATOMIDAE							
Pomatomus saltatrix	0.1	0.11	0.48	436	5.8	0/17	0.02
CARANGIDAE							
Caranx sp.	0.1	0.23	0.97	421	5.8	0/17	0.05
CORYPHAENIDAE							
Coryphaena sp.	0.1	0.11	0.48	436	5.8	0/17	0.02
LABRIDAE							
Tautogolabrus adspersus	4.2	9.82	23.51	239	35.2	0/17	2.54
GOBIIDAE	0.2	0.47	1.32	280	11.7	0/17	0.12
SCOMBRIDAE							
Auxis sp.	1.6	3.64	4.62	126	58.8	0/17	0.94
STROMATEIDAE							
Peprilus triacanthus	3.2	7.52	8.76	116	70.5	1/17	1.94
TRIGLIDAE							
Prionotus sp.	0.1	0.11	0.48	436	5.8	0/17	0.02
CYCLOPTEIIDAE							
Liparis sp.	0.2	0.35	1.45	414	5.8	0/17	0.09
NOMEIDAE	0.1	0.23	0.97	421	5.8	0/17	0.05
BOTHIDAE							
Bothus sp.	1.2	2.82	6.73	238	41.1	1/17	0.73
Citharichthys sp.	31.7	73.76	111.31	150	76.4	2/17	19.10
Citharichthys arctifrons	1.7	4.00	16.49	412	5.8	0/17	1.03
Etropus microstomus	8.0	18.52	32.28	174	47.0	3/17	4.79
Hippoglossina oblonga	1.6	3.70	5.47	147	41.4	0/17	0.95
PLEURONECTIDAE							
Glyptocephalus cynoglossus	0.8	1.94	5.20	268	23.5	0/17	0.50
Limanda ferruginea	0.3	0.76	2.68	352	11.7	0/17	0.19
UNIDENTIFIED	0.2	0.41	1.17	285	11.7	0/17	0.10

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

TABLE 4.3.3 Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the New York Bight during September 1974.

Taxa	September 23-28, 1974 % of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
ENGRAULIDAE	0.6	4.82	13.07	271	29.4	0/17	1.24
Engraulis eurystole	0.5	4.00	8.24	206	29.4	0/17	1.03
GONOSTOMIDAE							
Maurolicus mulleri	0.6	4.47	11.59	259	17.6	0/17	1.15
SYNODONTIDAE	<0.1	0.29	1.21	417	5.8	0/17	0.07
PARALEPIDIDAE							
Notolepis rissoi	0.1	0.76	2.16	284	11.7	0/17	0.19
MYCTOPHIDAE							
Diaphus sp.	<0.1	0.29	1.21	417	5.8	0/17	0.07
LOPHIDAE	0.1	0.58	2.42	417	5.8	0/17	0.15
Lophius americanus	0.1	0.47	1.94	412	5.8	0/17	0.12
GADIDAE	0.1	0.58	1.80	310	11.7	0/17	0.15
Merluccius albidus	0.1	1.00	4.12	412	5.8	0/17	0.25
Merluccius bilinearis	1.9	13.70	20.13	146	64.7	0/17	3.54
Urophycis sp.	32.1	228.64	271.22	118	100.0	4/17	59.20
OPHIDIOIDEI	3.4	24.70	29.08	117	94.1	0/17	6.39
CARAPIDAE	<0.1	0.29	1.21	417	5.8	0/17	0.07
SYNGNATHIDAE							
Hippocampus erectus	<0.1	0.23	0.97	421	5.8	0/17	0.05
SERRANIDAE							
Centropristis striata	0.3	2.70	6.37	235	23.5	0/17	0.69
POMATOMIDAE							
Pomatomus saltatrix	<0.1	0.23	0.97	421	5.8	0/17	0.05
LABRIDAE							
Tautoga onitis	0.1	0.58	2.42	417	5.8	0/17	0.15
SCARIDAE	<0.1	0.35	1.45	414	5.8	0/17	0.09
STROMATIDAE							
Peprilus triacanthus	0.2	1.58	2.67	168	29.4	0/17	0.40
TRIGLIDAE	1.1	8.23	16.36	198	35.2	0/17	2.13
Prionotus carolinus	0.5	4.05	15.49	382	11.7	0/17	1.04
Prionotus evolans	<0.1	0.35	0.99	282	11.7	0/17	0.09
BOTHIDAE	<0.1	0.23	0.97	421	5.8	0/17	0.05
Bothus sp.	0.2	2.05	8.48	413	5.8	0/17	0.53
Citharichthys arctifrons	11.7	83.64	151.86	181	41.1	3/17	21.65
Citharichthys sp.	30.1	214.23	717.23	334	41.1	1/17	55.47
Etropus microstomus	2.3	16.64	30.80	185	47.0	0/17	4.30
Hippoglossina oblonga	1.9	14.11	15.37	108	70.5	0/17	3.65
Paralichthys dentatus	0.1	0.52	1.50	288	11.7	0/17	0.13
Scophthalmus aquosus	0.1	10.41	20.31	195	47.0	0/17	2.69
PLEURONECTIDAE							
Pseudopleuronectes americanus	<0.1	0.29	1.21	417	5.8	0/17	0.07
UNIDENTIFIED	9.2	65.47	261.22	399	23.5	1/17	16.95

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

TABLE 4.3.4 Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the New York Bight during October and November 1974.

Taxa	October 22-28, 1974 % of Total	Mean No/10m²	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10¹⁰)
CLUPEIDAE							
Brevoortia tyrannus	0.7	0.78	2.63	337	10.5	0/19	0.22
ENGARULIDAE							
Engraulis eurystole	0.1	0.15	0.68	453	5.2	0/19	0.04
GONOSTOMATIDAE							
Maurolicus mulleri	40.9	45.31	127.85	282	42.1	3/19	13.17
LOPHIFORMES	0.2	0.21	0.91	433	5.2	0/19	0.06
GADIDAE							
Enchelyopus cimbrius	0.2	0.21	0.91	433	5.2	0/19	0.06
Merluccius albidus	1.1	1.21	3.92	323	10.5	0/19	0.35
Merluccius bilinearis	5.2	5.78	18.99	319	26.3	0/19	1.68
Urophycis sp.	25.7	28.47	43.65	153	84.2	6/19	8.27
OPHIDIOIDEI	2.1	2.36	8.97	380	10.5	0/19	0.68
OPHIDIIDAE-ZOARCIDAE	2.5	2.73	8.84	323	10.5	0/19	0.79
SCIAENIDAE							
Micropogon undulatus	0.1	0.15	0.68	453	5.2	0/19	0.04
AMMODYTIDAE							
Ammodytes sp.	0.2	0.21	0.91	433	5.2	0/19	0.06
GOBIIDAE	1.0	1.05	2.54	241	15.7	0/19	0.30
STROMATEIDAE							
Peprilus triacanthus	0.3	0.31	1.37	441	5.2	0/19	0.09
TRIGLIDAE							
Prionotus sp.	0.2	0.26	1.14	438	5.2	0/19	0.07
BOTHIDAE							
Bothus sp.	0.5	0.57	1.74	305	10.5	0/19	0.16
Citharichthys sp.	10.4	11.47	28.36	247	26.3	0/19	3.33
Citharichthys arctifrons	5.1	5.68	12.17	214	42.1	1/19	1.65
Etropus microstomus	1.2	1.31	4.34	331	10.5	0/19	0.38
Hippoglossina oblonga	0.7	0.73	2.30	315	10.5	0/19	0.21
Paralichthys dentatus	0.3	0.36	1.11	308	10.5	0/19	0.10
Scophthalmus aquosus	1.2	1.31	3.62	276	15.7	1/19	0.38

Taxa	November 8-24, 1974 % of Total	Mean No/10m²	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10¹⁰)
GONOSTOMATEIDAE							
Maurolicus mulleri	2.1	0.50	1.41	282	12.5	0/8	0.06
GADIDAE	6.8	1.62	4.59	283	12.5	0/8	0.19
Gadus morhua	2.1	0.05	1.41	282	12.5	0/8	<0.01
Merluccius bilinearis	52.4	12.50	26.20	209	25.0	1/8	1.51
Urophycis sp.	16.2	3.87	7.29	188	25.0	0/8	0.47
SCORPAENIDAE	1.6	0.37	1.06	286	12.5	0/8	0.04
BOTHIDAE							
Citharichthys arctifrons	4.7	1.12	3.18	283	12.5	0/8	0.13
Citharichthys sp.	4.7	1.12	3.18	283	12.5	0/8	0.13
Etropus microstomus	4.2	1.00	1.85	185	25.0	0/8	0.12
Paralichthys dentatus	3.7	0.87	1.64	188	25.0	0/8	0.10
Scophthalmus aquosus	1.6	0.37	1.06	286	12.5	0/8	0.04

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

TABLE 4.3.5 Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the New York Bight during February and March 1975.

January 31 - February 6, 1975

Taxa	% of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
PARALEPIDIDAE							
Notolepis rissoi	2.3	0.61	1.78	291	11.1	0/18	0.16
Paralepis C. borealis	11.1	2.94	7.19	244	22.2	3/18	0.80
GADIDAE							
Gadus morhua	4.6	1.22	2.46	201	22.2	1/18	0.33
Pollachius virens	18.5	4.88	10.20	209	33.3	4/18	1.34
Merluccius bilinearis	3.6	0.94	2.87	305	11.1	1/18	0.25
AMMODYTIDAE							
Ammodytes sp.	58.6	15.50	24.26	156	61.1	9/18	4.25
GOBIIDAE	1.3	0.33	1.41	427	5.5	0/18	0.09

March 5-11, 1975

Taxa	% of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
PARALEPIDIDAE							
Notolepis rissoi	1.6	0.27	1.17	433	5.5	0/18	0.07
Paralepis C. borealis	5.6	0.88	2.05	232	16.6	1/18	0.24
GADIDAE							
Gadus morhua	13.8	2.33	6.66	285	16.6	0/18	0.64
Merluccius bilinearis	3.3	0.55	1.61	292	11.1	0/18	0.15
Pollachius virens	14.1	2.38	5.91	248	27.7	2/18	0.65
Urophycis sp.	1.6	0.27	1.17	433	5.5	0/18	0.07
AMMODYTIDAE							
Ammodytes sp.	55.1	9.33	12.64	135	61.1	9/18	2.56
BOTHIDAE							
Etropus microstomus	1.6	0.27	1.17	433	5.5	1/18	0.07
Paralichthys dentatus	3.3	0.55	1.61	292	11.1	1/18	0.15

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

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TABLE 4.3.6 Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the New York Bight during April and May 1975.

April 1-10, 1975							
Taxa	% of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
MYCTOPHIDAE	1.5	0.29	1.21	417	5.8	1/17	0.07
Benthosema glaciale	1.8	0.35	1.45	414	5.8	1/17	0.09
GADIDAE							
Gadus morhua	25.2	4.82	10.38	215	35.2	1/17	1.24
Merluccius albidus	1.5	0.29	1.21	417	5.8	1/17	0.07
Pollachius virens	4.3	0.82	2.00	243	17.6	2/17	0.21
AMMODYTIDAE							
Ammodytes sp.	32.5	6.23	10.61	170	47.0	6/17	1.61
CYCLOPTERIDAE							
Liparis sp.	1.8	0.35	1.05	300	11.7	0/17	0.09
PLEURONECTIDAE							
Glyptocephalus cynoglossus	0.9	0.17	0.72	423	5.8	0/17	0.04
Limanda ferruginea	23.0	4.41	8.36	189	29.4	0/17	1.14
Pseudopleuronectes americanus	4.6	0.88	1.72	195	23.5	1/17	0.22
UNIDENTIFIED	2.8	0.52	1.50	288	11.7	1/17	0.13

May 5-13, 1975							
Taxa	% of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
OPHICHTHIDAE							
Myrophis punctatus	0.1	0.26	1.14	438	5.2	0/19	0.07
PARALEPIDIDAE							
Notolepis rissoi	0.1	0.31	1.37	441	5.2	0/19	0.09
MYCTOPHIDAE							
Benthosema glaciale	2.8	6.21	18.40	296	31.5	2/19	1.80
GADIDAE							
Enchelyopus cimbrius	1.6	3.57	5.30	148	42.1	0/19	1.03
Gadus morhua	2.2	4.73	6.61	139	47.3	0/19	1.37
Melanogrammus aeglefinus	6.2	13.63	19.84	145	47.3	1/19	3.96
Merluccius albidus	0.4	0.89	2.92	328	10.5	0/19	0.25
Urophycis sp.	0.2	0.47	2.06	438	5.2	0/19	0.13
POMATOMIDAE							
Pomatomus saltatrix	0.1	0.21	0.91	433	5.2	0/19	0.06
STICHAEIDAE							
Lumpenus lumpretaeformis	0.3	0.73	2.02	276	15.7	0/19	0.21
AMMODYTIDAE							
Ammodytes sp.	0.4	0.78	2.12	271	15.7	0/19	0.22
CYCLOPTERIDAE							
Liparis sp.	0.5	1.15	4.00	347	10.5	0/19	0.33
BOTHIDAE							
Etropus microstomus	1.8	4.00	17.43	435	5.2	1/19	1.16
PLEURONECTIDAE							
Glyptocephalus cynoglossus	2.7	5.89	8.61	146	47.3	0/19	1.71
Limanda ferruginea	78.3	170.89	196.57	115	73.6	12/19	49.67
UNIDENTIFIED	2.1	4.52	10.09	218	31.5	0/19	1.31

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

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TABLE 4.3.7 Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the New York Bight during June and July 1975.

Taxa	June 2-10, 1975 % of Total	Mean No/10m²	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10¹⁰)
OPHICHTHIDAE							
Ophichthus ocellatus	0.1	0.31	1.37	441	5.2	0/19	0.09
CLUPEIFORMES	0.1	0.63	2.75	436	5.2	0/19	0.18
SYNODONTIDAE	0.1	0.31	1.37	441	5.2	0/19	0.09
MYCTOPHIDAE							
Benthosema glaciale	0.8	3.78	8.79	232	21.0	1/19	1.09
LOPHIIDAE							
Lophius americanus	<0.1	0.21	0.91	433	5.2	0/19	0.06
GADIDAE							
Enchelyopus cimbrius	3.1	14.73	17.27	117	73.6	0/19	4.28
Melanogrammus aeglefinus	0.1	2.73	8.66	317	15.7	0/19	0.79
Merluccius albidus	0.4	1.84	4.12	223	26.3	0/19	0.53
Merluccius bilinearis	0.5	2.42	6.30	260	21.0	0/19	0.70
Pollachius virens	0.2	1.05	3.73	355	10.5	0/19	0.30
LABRIDAE							
Tautoga onitis	0.1	0.57	2.52	442	5.2	0/19	0.16
LABRID-SCARID	0.1	0.31	1.37	441	5.2	0/19	0.09
BLENNIDAE	0.1	0.26	1.14	438	5.2	0/19	0.07
SCOMBRIDAE							
Scomber scombrus	63.9	306.63	558.41	182	89.4	10/19	89.12
STROMATEIDAE							
Peprilus triacanthus	0.2	0.89	3.90	438	5.2	0/19	0.25
BOTHIDAE							
Hippoglossina oblonga	0.1	0.31	1.37	441	5.2	0/19	0.09
Scophthalmus aquosus	0.2	0.94	4.12	438	5.2	0/19	0.27
PLEURONECTIDAE							
Glyptocephalus cynoglossus	3.2	15.52	15.06	97	84.2	0/19	4.51
Limanda ferruginea	26.5	127.68	141.15	110	84.2	5/19	37.11

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

Taxa	July 7-12, 1975 % of Total	Mean No/10m²	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10¹⁰)
CONGRIDAE							
Conger oceanicus	0.2	0.26	1.14	438	5.2	1/19	0.07
CLUPEIDAE							
Brevoortia tyrannus	0.1	0.10	0.45	450	5.2	0/19	0.02
ENGRAULIDAE							
Anchoa hepsetus	7.7	13.10	57.12	430	5.2	0/19	3.80
MYCTOPHIDAE	<0.1	0.05	0.22	440	5.2	0/19	<0.01
Benthosema glaciale	1.2	2.00	6.90	345	15.7	1/19	0.58
Ceratoscopelus maderensis	0.1	0.21	0.91	433	5.2	1/19	0.06
LOPHIDAE							
Lophius americanus	0.4	0.73	2.02	276	15.7	0/19	0.21
GADIDAE							
Brosme brosme	<0.1	0.05	0.22	440	5.2	0/19	<0.01
Melanogrammus aeglefinus	0.5	0.84	3.67	436	5.2	0/19	0.24
Merluccius albidus	1.7	2.84	12.38	435	5.2	1/19	0.82
Merluccius bilinearis	2.5	4.21	6.39	151	36.8	0/19	1.22
Urophycis sp.	35.4	60.47	156.48	258	63.1	3/19	17.57
SYNGNATHIDAE	0.1	0.15	0.68	453	5.2	0/19	0.04
POMATOMIDAE							
Pomatomus saltatrix	8.5	14.52	63.31	436	5.2	0/19	4.22
LABRIDAE							
Tautogolabrus adspersus	15.7	26.84	50.00	186	52.6	4/19	7.80
Tautoga onitis							
SCOMBRIDAE							
Sarda sarda	1.6	2.78	6.77	243	21.0	0/19	0.80
Scomber scombrus	0.2	0.31	1.00	322	10.5	0/19	0.09
STROMATEIDAE							
Peprilus triacanthus	4.4	7.47	15.79	211	36.8	0/19	2.17
TRIGLIDAE	0.2	0.36	1.21	336	10.5	0/19	0.10
Prionotus sp.	1.4	2.36	9.85	417	10.5	0/19	0.68
BOTHIDAE							
Citharichthys arctifrons	0.2	0.42	1.30	309	10.5	0/19	0.12
Hippoglossina oblonga	6.9	11.73	21.67	184	52.6	0/19	3.32
Scophthalmus aquosus	1.0	1.68	5.35	318	15.7	0/19	0.48
PLEURONECTIDAE							
Glyptocephalus cynoglossus	2.5	4.26	8.11	190	36.8	1/19	1.23
Limanda ferruginea	7.1	12.05	24.08	199	52.6	1/19	3.50
TETRAODONTIDAE	0.2	0.26	1.14	438	5.2	1/19	0.07
UNIDENTIFIED	0.2	0.42	1.30	309	10.5	0/19	0.12

TABLE 4.3.8 Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the New York Bight during August and September 1975.

August 11-16, 1975

Taxa	% of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
OPHICHTHIDAE							
Pisodonophis cruentifer	0.2	0.25	1.11	444	5.0	0/20	0.07
CLUPEIDAE	0.3	0.35	1.56	445	5.0	0/20	0.10
ENGRAULIDAE							
Anchoa hepsetus	1.2	1.55	6.93	447	5.0	0/20	0.47
Engraulis eurystole	0.3	0.35	1.56	445	5.0	0/20	0.10
PARALEPIDIDAE							
Lestidium atlanticus	0.3	0.35	1.56	445	5.0	0/20	0.10
Notolepis rissoi	0.3	0.35	1.56	445	5.0	0/20	0.10
MYCTOPHIDAE							
Ceratoscopelus maderensis	1.3	1.65	4.91	297	15.0	0/20	0.50
Myctophum affine	0.3	0.35	1.56	445	5.0	0/20	0.10
Myctophum punctatus	0.3	0.35	1.56	445	5.0	0/20	0.10
LOPHIIDAE							
Lophius americanus	0.2	0.30	1.34	446	5.0	0/20	0.09
GADIDAE							
Merluccius bilinearis	5.0	6.25	9.50	152	50.0	1/20	1.91
Urophycis sp.	6.2	7.80	13.62	174	50.0	0/20	2.39
OPHIDIOIDEI	1.6	2.00	6.39	319	15.0	0/20	0.61
OPHIDIIDAE	0.2	0.25	1.11	444	5.0	1/20	0.07
POMATOMIDAE							
Pomatomus saltatrix	0.8	1.00	2.53	253	15.0	0/20	0.30
LABRIDAE	0.3	0.35	1.56	445	5.0	0/20	0.10
Tautogolabrus adspersus	2.5	3.10	7.91	255	20.0	0/20	0.95
GOBIIDAE	0.3	0.35	1.56	445	5.0	0/20	0.10
SCOMBRIDAE							
Auxis sp.	6.7	8.50	18.34	215	25.0	0/20	2.60
STROMATEIDAE							
Peprilus triacanthus	6.4	8.05	15.05	186	60.0	1/20	2.46
BOTHIDAE	1.1	1.40	4.87	347	10.0	0/20	0.42
Citharichthys sp.	44.8	56.55	81.59	144	70.0	5/20	17.33
Etropus microstomus	13.8	17.45	28.91	165	50.0	3/20	5.34
Hippoglossina oblonga	2.3	2.85	5.49	192	30.0	1/20	0.87
Scophthalmus aquosus	0.2	0.20	0.89	445	5.0	0/20	0.06
PLEURONECTIDAE							
Glyptocephalus cynoglossus	1.3	1.70	4.28	251	15.0	0/20	0.52
Limanda ferruginea	1.0	1.25	4.24	339	10.0	0/20	0.38
CYNOGLOSSIDAE							
Symphurus sp.	0.3	0.35	1.56	445	5.0	0/20	0.10
UNIDENTIFIED	0.8	0.95	2.35	247	15.0	0/20	0.29

September 8-15, 1975

Taxa	% of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
ENGRAULIDAE							
Anchoa hepsetus	5.2	1.78	4.64	273	15.7	0/19	0.51
MYCTOPHIDAE							
Benthosema glaciale	6.3	2.15	6.81	317	10.5	0/19	0.62
Ceratoscopelus maderensis	23.5	8.05	28.32	351	15.7	2/19	2.33
GADIDAE							
Urophycis sp.	28.8	9.73	29.69	305	31.5	5/19	2.82
OPHIDIOIDEI	5.5	1.89	7.34	388	10.5	0/19	0.54
LABRIDAE	1.0	0.36	1.60	446	5.2	0/19	0.10
Tautoga onitis	1.9	0.68	2.98	438	5.2	0/19	0.19
TRIGLIDAE	13.2	4.52	19.72	436	5.2	1/19	1.31
Prionotus sp.	0.6	0.21	0.91	436	5.2	0/19	0.06
BOTHIDAE							
Bothus sp.	1.8	0.63	1.89	300	10.5	1/19	0.18
Citharichthys arctifrons	1.6	0.57	1.80	316	10.5	2/19	0.16
Citharichthys sp.	2.6	0.89	3.90	438	5.2	1/19	0.25
Etropus microstomus	7.0	2.42	9.62	397	10.5	1/19	0.70
Hippoglossina oblonga	0.4	0.15	0.68	458	5.2	0/19	0.04

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

TABLE 4.3.9 Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the New York Bight during May and June 1976.

Taxa	May 17-24, 1976 % of Total	Mean No x 10m²	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (No x 10¹⁰)
GONOSTOMATIDAE							
Vinciguerria sp.	0.1	0.35	1.56	447	5.0	0/20	0.10
MYCTOPHIDAE	0.6	1.35	4.65	345	10.0	1/20	0.41
Benthosema glaciale	1.1	2.40	10.73	447	5.0	1/20	0.73
Benthosema suborbitale	0.3	0.70	3.13	447	5.0	0/20	0.21
GADIDAE							
Enchelyopus cimbrius	1.0	2.20	5.10	232	20.0	0/20	0.67
Merluccius bilinearis	0.3	0.70	3.13	447	5.0	0/20	0.21
GASTEROSTEIDAE							
Gasterosteus aculeatus	0.1	0.30	1.34	447	5.0	0/20	0.09
AMMODYTIDAE							
Ammodytes sp.	0.3	0.70	2.17	311	10.0	0/20	0.21
SCOMBRIDAE							
Scomber scombrus	86.1	179.85	335.09	197	45.0	6/20	55.12
CYCLOPTERIDAE							
Liparis sp.	0.2	0.55	1.19	216	20.0	0/20	0.16
BOTHIDAE							
Scophthalmus aquosus	0.9	1.95	7.80	400	15.0	0/20	0.59
PLEURONECTIDAE							
Glyptocephalus cynoglossus	1.1	2.40	6.21	259	20.0	0/20	0.73
Limanda ferruginea	6.2	13.10	27.81	212	45.0	3/20	4.01
UNIDENTIFIED	1.1	2.30	10.28	447	5.0	1/20	0.70

Taxa	June 9-13, 1976 % of Total	Mean No/10m²	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (No x 10¹⁰)
MYCTOPHIDAE							
Benthosema glaciale	11.8	4.90	13.52	276	20.0	2/20	1.50
LOPHIIDAE							
Lophius americanus	2.1	0.90	2.19	244	15.0	0/20	0.27
GADIDAE							
Enchelyopus cimbrius	7.5	3.10	6.28	202	45.0	2/20	0.95
Merluccius bilinearis	15.3	6.35	12.30	193	45.0	1/20	1.94
SYNGNATHIDAE							
Syngnathus fucus	0.4	0.20	0.89	447	5.0	0/20	0.06
LABRIDAE							
Tautogolabrus adspersus	0.8	0.35	1.08	311	10.0	1/20	0.10
SCOMBRIDAE							
Scomber scombrus	43.7	18.05	22.88	126	65.0	8/20	5.53
CYCLOPTERIDAE							
Liparis sp.	0.7	0.30	1.34	447	5.0	0/20	0.09
BOTHIDAE							
Scophthalmus aquosus	0.8	0.35	1.56	447	5.0	0/20	0.10
PLEURONECTIDAE							
Glyptocephalus cynoglossus	1.8	0.75	1.86	248	15.0	0/20	0.22
Limanda ferruginea	14.2	5.90	8.62	146	45.0	1/20	1.80
UNIDENTIFIED	0.3	0.15	0.67	497	5.0	0/20	0.04

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

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Table 4.3.10. Seasonal occurrence of fishes by family collected in neuston samples during the New York Bight survey cruises (1974-1975). Results are combined for the following cruises: July 1974 and 1975, August 1974 and 1975, September 1974 and 1975. Neuston collections from May and June 1976 not included (from Kendall 1978).

	Winter		Spring			Summer			Fall	
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Anguillidae	x	x								
Muraenidae						x				
Ophichthidae							x			
Clupeidae						x		x	x	
Engraulidae					x	x	x	x	x	x
Synodontidae						x	x			
Myctophidae						x	x	x	x	
Antennariidae			x							
Gadidae	x	x	x	x	x	x	x	x	x	x
Ophidiidae								x		
Exocoetidae							x			
Scomberesocidae	x				x		x			
Holocentridae						x		x		
Gasterosteidae					x					
Syngnathidae		x	x	x	x	x	x	x	x	x
Serranidae						x				
Priacanthidae						x				
Pomatomidae					x	x	x	x		
Rachycentridae							x			
Carangidae						x	x	x		
Coryphaenidae						x	x	x		
Gerridae							x			
Mullidae					x					
Chaetodontidae								x		
Pomacentridae						x	x			
Labridae						x	x			
Mugilidae	x			x	x	x				
Dactylopteridae						x				
Uranoscopidae						x				
Blenniidae					x	x				
Cryptacanthodidae	x	x								
Ammodytidae	x	x	x	x	x					
Scombridae				x	x	x	x	x		
Stromateidae			x	x	x	x	x	x	x	
Scorpaenidae								x		
Triglidae						x		x		
Cottidae				x						
Bothidae	x			x		x	x	x	x	
Pleuronectidae				x	x					
Balistidae						x	x	x		
Ostraciidae					x	x				
Tetraodontidae					x	x	x			
Total	7	5	5	9	15	26	20	17	7	3

TABLE 4.3.11. Seasonal co-occurrence of larval fishes in the New York Bight 1974-76, determined from Principal Components Analysis.

Season	1974 Pairs	1974 Groups	1975 Pairs	1975 Groups
Summer (July, Aug., Sept. '74) (July, Aug., Sept. '75)	*Peprilus triacanthus* *Citharichthys arctifrons* *Peprilus triacanthus* *Merluccius bilinearis* *Peprilus triacanthus* *Tautogolabrus adspersus* *Citharichthys arctifrons* *Urophycis* spp.	*Auxis* sp. *Etropus microstomus* *Prionotus* sp. *Peprilus triacanthus* *Auxis* sp. *Peprilus triacanthus* *Urophycis* spp. *Auxis* sp. *Urophycis* spp. Ophidiidae *Citharichthys arctifrons* *Hippoglossina oblongus* *Merluccius bilinearis* *Engraulis eurystole* *Etropus microstomus* *Prionotus* sp.	*Glyptocephalus cynoglossus* *Limanda ferruginea* *Hippoglossina oblongus* *Peprilus triacanthus* *Hippoglossina oblongus* *Urophycis* spp. *Merluccius bilinearis* *Limanda ferruginea* *Sarda sarda* *Tautogolabrus adspersus* *Hippoglossina oblongus* *Merluccius bilinearis*	*Anchoa hepsetus* *Peprilus triacanthus* *Pomatomus saltatrix* *Hippoglossina oblongus* *Merluccius bilinearis* *Urophycis* spp. *Auxis* sp. *Citharichthys arctifrons* *Etropus microstomus* *Hippoglossina oblongus* *Merluccius bilinearis* *Peprilus triacanthus* *Urophycis* spp. *Tautogolabrus adspersus*
Fall (Oct. '74)	*Citharichthys arctifrons* *Merluccius bilinearis* *Maurolicus muelleri* Ophidiidae	None	Not Sampled	
Winter (Jan., Feb., Mar. '75)	Not Sampled		*Ammodytes* spp. *Pollachius virens* *Ammodytes* spp. *Gadus morhua*	None
Spring (Apr., May, June '75) (May, June '76)	Not Sampled		*Gadus morhua* *Limanda ferruginea* *Enchelyopus cimbrius* *Limanda ferruginea*	*Enchelyopus cimbrius* *Glyptocephalus cynoglossus* *Melanogrammus aeglefinus* *Scomber scombrus*

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TABLE 4.3.12. Monthly zooplankton volumes (ml/tow) in New York Bight, determined from plankton samples taken with 61-cm bongo fitted with 0.333-mm mesh net. Data not available for cruises in July and August 1974; May and June 1976.

Station		1974			1975								
Code	Number	Sept.	Oct.	Nov.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	$\bar{x}$
A2	102	-	20	-	35	10	40	60	100	210	35	-	64
A4	104	110	40	-	5	-	30	55	35	190	70	35	63
D3	203	130	60	20	30	40	45	60	30	95	70	60	58
B5	205	65	40	-	-	45	100	25	75	-	-	30	54
C2	302	70	35	30	25	10	60	73	75	90	70	95	58
C4	304	-	33	50	25	40	20	80	45	55	25	50	42
C6	306	-	43	-	-	-	95	65	45	55	30	35	53
D1	401	110	30	110	20	25	40	20	35	70	10	60	48
D3	403	90	33	60	20	75	55	145	70	65	-	50	66
D5	405	45	40	-	15	40	45	95	80	65	55	70	55
E2	502	105	-	35	25	45	60	40	55	50	70	45	53
E4	504	30	30	-	20	-	20	85	-	65	75	55	48
E6	506	35	50	-	-	10	95	95	50	175	-	25	67
F1	601	75	20	30	60	40	75	40	120	90	55	100	64
F3	603	40	-	-	10	35	-	75	130	100	105	55	69
F5	605	-	25	-	5	40	-	85	115	95	20	25	51
F7	607	20	25	-	-	20	60	35	110	15	-	15	38
G2	702	70	45	-	5	60	-	65	95	100	120	-	70
G4	704	35	35	-	5	-	90	150	80	-	15	25	57
G6	706									-	15	-	15
$\bar{x}$		69	35	48	20	36	58	71	75	93	53	49	55

5.0 Semi-Annual MARMAP Surveys of Middle Atlantic Bight:

5.1 Introduction: Ichthyoplankton surveys conducted by the Northeast Fisheries Center since 1972 are part of MARMAP (Marine Resources Monitoring Assessments and Prediction), an integrated program of research activities that uses the multispecies approach to monitor seasonal and annual shifts in the distribution and abundance of living marine resources. Through studies of actual and/or potential production of fish biomass, several interrelated investigations in the Center work within the framework of MARMAP to provide information for managing marine fish stocks. At the outset in 1972, twice-yearly surveys of ichthyoplankton and demersal fish populations were conducted on Georges Bank, the Gulf of Maine, and Scotian Shelf. In 1973 coverage was extended southward to include the Middle Atlantic Bight. This section of the report pertains to fish eggs and larvae collected in the Bight during semi-annual surveys from the fall of 1973 through spring 1976.

5.2 Methods: Sampling gear and techniques are described in section 4.2 This series of cruises "piggybacked" with trawling operations and the plankton stations were selected from the stratified random pattern of trawl stations to provide us with "even" coverage of the Bight. In other words, we tried to achieve the most equal spacing between plankton stations that the randomly stratified trawl stations would allow. The station pattern changes with each cruise but the number of stations selected for ichthyoplankton sampling consistently fell between 75 and 85. Actual sampling success varied, with inclement weather accounting for most of the variation. Cruises were traditionally scheduled for spring and fall. The spring cruise usually began in March, the final month of winter, and in some years extended into April. The autumn cruises began between late September and mid-October and, depending on the starting date, extended into November (Table 5.2.0). This twice-yearly level of sampling intensity provided only baseline data for defining gross features of the areal and temporal distribution of eggs and larvae of a limited number of taxa.

5.3 Results: Because the change in species composition is essentially complete from spring to fall, the results follow a within season presentation for comparative purposes. Data from the three fall cruises are presented, followed by the spring cruise results.

5.3.1 Fall 1973: This cruise involved two vessels. R/V Albatross IV occupied 33 stations in depths >36 m from late September to mid-October. Atlantic Twin, a chartered vessel, surveyed shallow coastal waters during October and the first week of November. She occupied 49 stations (see Figure 5.3.1).

Ichthyoplankton: Species diversity or number of taxa, and the abundance of fish larvae were greater on this cruise than the ensuing fall cruises in 1974 and 1975 (Figure 5.3.0). Although the distribution of eggs was continuous throughout the Bight, several concentrations accounted for most of the catch. The greatest concentration was located south of Block Island, where we caught eggs of an unidentified member(s) of the family Ophidiidae, Urophycis spp., Merluccius bilinearis, and Citharichthys arctifrons. Moderate concentrations of unidentified eggs occurred in the vicinity of Hudson Canyon, off the Delmarva Peninsula, and near Cape Hatteras. Except for those eggs off Cape Hatteras, the major concentrations occurred over depths >50 m (Figure 5.3.2). The distribution of larvae resembled that of eggs. It was continuous throughout the survey area and most of the young fish occurred in depths >30 m off New Jersey and New York. A smaller area of high larval abundance occurred near the shelf break off the outer banks of North Carolina (Figure 5.3.3). Although more than 68 taxa were represented in the larval community, four accounted for 91% of the young fish. Hakes, Urophycis spp., dominated. They made up 60% of the total catch and were the dominant taxa at 38% of the stations (Table 5.3.0). Their distribution extended from the offings of Oregon Inlet, North Carolina, to Block Island, New York, with a large center of abundance blanketing most of the shelf off New Jersey and New York (Figure 5.3.4). It is apparent when Figures 5.3.3 and 5.3.4 are compared that hake larvae accounted for most of the larval fish biomass in the northern part of the survey area. Larvae of the Gulf Stream flounder, Citharichthys arctifrons, ranked second in abundance (Table 5.3.0). They too occurred throughout the survey area but their center of abundance was located off Long Island. The distribution overlapped that of the hakes but the heaviest concentration of flounder larvae stretched along the inner half of the shelf, while hake larvae were most abundant in the outer half of the shelf (Figure 5.3.5). Gadiform larvae belonging to the families Ophidiidae and/or Zoarcidae ranked third in abundance (Table 5.3.0).

Their distribution was continuous from Cape Hatteras to Block Island but, like the hakes and Gulf Stream flounder, they were most abundant in the northern part of the survey area (Figure 5.3.6). The distribution of silver hake, Merluccius bilinearis, larvae extended southward to Maryland. The center of their abundance overlapped that of the above three taxa but they were less concentrated than the above (Figure 5.3.7).

Neuston: The neuston net was used only on the Atlantic Twin and coverage was incomplete (Figure 5.3.8). Fishes (by family) collected at the surface are listed in Table 5.3.1. Although 23 families were represented in the neuston, hakes, Urophycis spp., dominated. The greatest concentration occurred off New Jersey (Figure 5.3.9).

5.3.2 Fall 1974: This fall survey was also divided between two ships but coverage was more synoptic than the previous year. Whereas the 1973 survey required six weeks to complete, this survey was completed in 11 days and sampling intensity was adequate (Figure 5.3.10).

Ichthyoplankton: This survey provided more fish eggs than the previous fall survey but we caught fewer larvae and the number of taxa represented in the larval catch declined (Figure 5.3.0). The distributional pattern of fish eggs was considerably different than the previous fall. Although eggs occurred throughout the Bight, the area of greatest concentration extended from Delaware Bay southward to North Carolina (Figure 5.3.11). In 1973 eggs were concentrated north of Delaware Bay (Figure 5.3.2). The seasonal differences in egg distribution are attributed to a change in the numerically dominant species. Most of the eggs found in the northern part of the Bight in 1973 represented four taxa, Ophidiidae, Urophycis spp., Merluccius bilinearis, and Citharichthys arctifrons. Those eggs collected in the southern half of the Bight in 1974 were mostly searobin, Prionotus sp., eggs.

Forty-eight taxa were represented in the 1974 larval collections, a reduction of 30% from 1973 (Table 5.3.2). Larvae were ubiquitous but patterns of distribution and relative abundance were different from 1973 in that larval concentrations were broken up and scattered throughout the Bight (Figure 5.3.12). The species composition of the numerically dominant larvae also differed. In 1973 four taxa accounted for >90% of the larval fish population. In 1974 the five most abundant species

accounted for only 81% of the catch. Hakes, Urophycis spp., were again the most abundant taxa. They accounted for 28% of the larvae, a significant reduction from the previous year (see Tables 5.3.0 and 5.3.2). The distribution of hake larvae covered most of the shelf but, instead of a single large center of abundance as in 1973, three smaller areas of high abundance occurred, one off Virginia, one south of Long Island, and one south of Block Island (Figure 5.3.13). Searobin larvae ranked second in abundance. The young triglids accounted for nearly 18% of the larvae (Table 5.3.2). Their distribution was widespread but, in contrast to the other dominants, they were most abundant along the inner half of the shelf, with the center of abundance off New Jersey (Figure 5.3.14). The abundance of Gulf Stream flounder, Citharichthys arctifrons, larvae declined from the previous year but their distribution was similar. In the northern part of the Bight larvae occurred over the entire shelf. In the south their distribution was limited to deep water. The center of larval abundance was located midway across the shelf off New Jersey and Long Island (Figure 5.3.15). Atlantic croaker, Micropogon undulatus, larvae ranked fourth in abundance (Table 5.3.2). Whereas the distribution of other numerically dominant larvae included most of the Bight and favored the mid to outer half of the shelf, croaker larvae were much more restricted to immediate coastal waters from Virginia to Cape Hatteras (Figure 5.3.16). Unidentified Ophidiidae-Zoarcidae larvae were moderately abundant (Table 5.3.2). Their distribution extended throughout the Bight but, unlike 1974, when most of the larvae occurred over depths >50 m south of Block Island, their center of abundance on this survey was located in depths <50 m off New Jersey (Figure 5.3.17).

Neuston: Fishes collected by the neuston net are listed in Table 5.3.1. Sampling success was significantly greater north of Delaware Bay than south of the Bay (Figure 5.3.18). When Figures 5.3.18 and 5.3.19 are compared, it is readily apparent that hakes accounted for nearly all of the young fish taken at the surface off New Jersey and Long Island. Of the more than 40,000 fish collected throughout the Bight in the neuston net, 98.1% were young hake.

5.3.3 Fall 1975: The fall survey in 1975 started in mid-October, or more than two weeks later than the 1973 and 1974 surveys. During the three weeks required to complete the survey, R/V Delaware II occupied 83 plankton stations (Figure 5.3.20).

Ichthyoplankton: Abundance of fish eggs and larvae, as well as the number of taxa represented in our larval collections, plummeted in 1975. The catch of fish eggs was 72 and 75% less than in 1973 and 1974, respectively. Although eggs occurred throughout the Bight, their distribution was scattered and concentrations were not encountered (Figure 5.3.21). As for fish larvae, species diversity was reduced by more than half of that observed in 1973 and the overall abundance of larvae in the Middle Atlantic Bight was reduced by 96% (Figure 5.3.0). The distribution of larvae resembled that of eggs. They were scattered throughout the Bight but there were no concentrations (Figure 5.3.22). A myctophid, Ceratoscopelus maderensis, replaced hakes as the most abundant taxon (Table 5.3.3). Myctophids are deep water, oceanic fishes that spawn off the edge of the shelf. Their larvae usually occur only at stations on or near the shelf break, where they are transported by circulation (Figure 5.3.23). Because of their limited distribution on the shelf, it is unusual for a myctophid to numerically dominate the larval fish community in shallow coastal waters. Windowpane, Scophthalmus aquosus, larvae ranked second in abundance (Table 5.3.3). The distribution of the young bothids was restricted to depths <50 m between Chesapeake Bay and Block Island (Figure 5.3.24). Hakes, Urophycis spp., slipped from their position of prominence to the third most abundant taxon and their decline from the two previous fall surveys was drastic. Abundance estimates were off by more than 99% from 1973 estimates, and 98% from 1974 estimates (see Tables 5.3.0, 5.3.2 and 5.3.3). The areal distribution of larvae was not continuous as in 1973 and 1974, but randomly scattered. Most of the larvae occurred in depths >50 m off the Delmarva Peninsula (Figure 5.3.25). Based on these findings, and those for the intensive series of cruises in the New York Bight (see 4.3.1), it would appear that the hakes had an unsuccessful spawning season in the Bight in 1975. Summer flounder, Paralichthys dentatus, larvae ranked fourth. Abundance estimates for this economically important bothid were greater than those of 1973 and 1974, probably because of cruise scheduling. Summer flounders are fall spawners. The delayed start of the 1975 survey, i.e., mid-October as opposed to late September in 1973 and 1974, was more aligned with the occurrence of larvae than the two earlier cruises. Predictably, the distribution of summer flounder larvae was limited to the inner half of the shelf, stretching from the outer banks of North Carolina to Block Island (Figure 5.3.26).

Neuston: Fishes collected at the surface are listed by family in Table 5.3.1. Fish occurred at the surface throughout the Bight but the catch was reduced to a third of the 1974 catch. Of the 15,000 fish collected, 13,000, or 81%, were adult silversides, *Membras martinica*, that were caught at a single station off North Carolina (Figure 5.3.27). Otherwise, hakes, *Urophycis* spp., had the most extensive distribution, but compared to the previous fall, the catch was reduced by 95%. In 1974 we caught more than 40,000 young hakes in the neuston net; in 1975, less than 2,000. This reduction is not surprising since there was such a precipitous decline in the number of small larvae in the plankton. Unfortunately, twice yearly surveys seldom provide answers as to the cause(s) of shifts in abundance.

The Spring Surveys: Sampling success in the spring, as measured by species diversity and abundance of ichthyoplankton, is largely dependent on cruise scheduling. Surveys conducted in March produce a limited number of taxa and abundance estimates are low, except for larval sand lance, *Ammodytes* spp. If cruises extend into April and complete sampling coverage of the Bight is achieved, egg production can increase sharply, and there is usually an increase in species diversity. Abundance estimates of larvae remain low, however, largely because of the predictable decline in the number of young sand lance in the early spring plankton. Most of the taxa represented in March and April larval catches are remnants of late fall or early winter spawning that are transported into the Bight from unknown spawning grounds to the south or east, or they are early representatives of spring spawning. In any case, except for representatives of those few species that spawn in the Bight during winter (see Table 3.3.0), larvae do not occur in significant numbers in March and April.

5.3.4 Spring 1974: This survey began in mid-March, continued through April and ended on 1 May. Despite the extended nature of the cruise, our coverage of the Bight in sampling depths >30 m was incomplete (Figure 5.3.28).

Ichthyoplankton: The significance of cruise scheduling and the seasonal magnitude of spring spawning are readily apparent in the results of this survey. The distribution of eggs was continuous throughout the sampling area. Because the cruise extended through

April, when Atlantic mackerel, Scomber scombrus, and yellowtail flounder, Limanda ferruginea, are spawning in the Bight, we caught more fish eggs on this cruise than either of the ensuing two spring cruises or the three fall surveys (Figure 5.3.0). A large concentration of eggs occurred off Delaware Bay and a second, less dense concentration was situated over shallow coastal waters off northern New Jersey and Long Island (Figure 5.3.29). Specific identifications of fish eggs have not been made but we presume the concentration off Delaware Bay was largely Atlantic mackerel eggs, and the one off New Jersey and New York largely yellowtail flounder eggs.

Forty-one taxa were represented in the larval collections (Table 5.3.4). Although species diversity was relatively high and comparable to that observed in the fall, when we identified 48 taxa, the total abundance of larvae in the spring was only 5% of the fall estimate. Fish larvae occurred throughout that part of the Bight that we surveyed but there were no specific larval concentrations (Figure 5.3.30). Abundance estimates in Table 5.3.4 reflect the scattered distribution of larval fish. Yellowtail flounder larvae were the most abundant but the cruise dates do not coincide with the period of their maximum larval abundance, which usually occurs between mid-May and the end of June. Their distribution was limited to shelf waters off New Jersey and Long Island, mostly over depths <50 m (Figure 5.3.31). Sand lance larvae occurred at all but the most seaward stations north of Chesapeake Bay. Most of the young Ammodytes were mid-way out on the shelf, which is normal for this time of year (Figure 5.3.32). During the height of the spawning season in December and January the larvae are most abundant over depths <50 m.

Three gadids, Atlantic cod, Gadus morhua, fourbeard rockling, Enchelyopus cimbrius, and pollock, Pollachius virens, rounded out the five most abundant taxa. Atlantic cod and pollock are winter spawners. Rockling have an extended spawning season that begins in spring and extends through fall (Figures 5.3.33 and 5.3.34).

Neuston: We towed the neuston net only at inshore stations occupied by Delaware II and Atlantic Twin. Those taxa represented in the catch are listed by family in Table 5.3.1. Fish occurred at the surface throughout the nearshore zone, with concentrations off the eastern

shore of Virginia, Maryland, and New Jersey (Figure 5.3.35). Concentrations off Virginia were largely menhaden, Brevoortia tyrannus; off Maryland, hakes, Urophycis spp.; and off New Jersey, sand lance.

5.3.5 Spring 1975: The survey was conducted during the first half of March. Inclement weather interrupted sampling, eventually influenced the vessel schedule, and finally forced cancellation of continued field work before the survey could be completed (Figure 5.3.36).

Ichthyoplankton: As expected for this time of year, spawning activity in the Bight was at its annual low. Only 15 taxa were represented in the larval collections (Figure 5.3.0). Fish eggs and larvae were scattered throughout that part of the Bight that we surveyed but we did not find concentrations of either (Figures 5.3.37 and 5.3.38).

Sand lance larvae accounted for 80% of the catch and comprised more than 50% of the larvae collected at nearly a third of the stations (Table 5.3.5). Consequently, their distributional pattern is similar to that for the entire assemblage of larvae shown in Figure 5.3.38). The young sand lance occurred at all but the most seaward stations from Virginia to New Jersey. They were most abundant mid-way out on the shelf from northern Virginia to southern New Jersey, and in the northeast corner of the survey area, off Block Island (Figure 5.3.39).

Neuston: Fishes represented in neuston collections are listed in Table 5.3.1. Their distribution at the surface resembled that for larvae collected in the obliquely-towed plankton net in that they occurred throughout that part of the Bight that we surveyed but, except for two small areas, they were not concentrated (Figure 5.3.40). Sand lances were numerically dominant. Their distribution at the surface differed from that determined from plankton samples in that it was limited to that part of the Bight off New Jersey and Long Island (Figure 5.3.41). They occurred in plankton samples as far south as Virginia. Fourbeard rockling occurred at the surface, mostly at stations over depths >50 m (Figure 5.3.42). Young pollock were collected off New Jersey and Long Island (Figure 5.3.43).

5.3.6 Spring 1976: The spring 1976 survey was completed in March. It included the entire Middle Atlantic Bight (Figure 5.3.44). Fish eggs and larvae were predictably scarce but species diversity within the larval collections was unusually high for March (Figure 5.3.0). Despite the diverse catch of larvae, many of the taxa were represented by only 2 or 3 specimens. Just as in the spring of 1975 when the survey was completed in March, we found eggs scattered throughout the Bight but there were no areas of high egg density. Winter spawning had run its course; spring spawning had not commenced (Figure 5.3.45).

Because of the presence of sand lance larvae, there were several areas where larvae were moderately abundant (Figure 5.3.46). Otherwise, those taxa represented in the plankton collections occurred at low levels of abundance and we did not figuratively show their distributions (see Table 5.3.6).

Neuston: Fishes collected at the surface are listed in Table 5.3.1. The areal extent of their distribution is shown in Figure 5.3.47. As expected, sand lances dominated the neuston collections. Their distribution at the surface blanketed all of the shelf north of Chesapeake Bay except for a thin margin along the shelf break. They were most abundant off New Jersey and south of Rhode Island over depths >50 m (Figure 5.3.48). Young hakes also occurred at the surface throughout most of the Bight. Their center of occurrence was off the outer banks of North Carolina. It should be noted that hakes did not significantly contribute to the abundance of larvae in the plankton samples (see Table 5.3.6). Young menhaden, *Brevoortia tyrannus*, occurred at inshore stations off Virginia and North Carolina. They represented spawning that took place during the previous fall.

5.3.7 Zooplankton: Estimates of zooplankton, which include fish eggs and larvae, reflect the "patchy" distribution of planktonic organisms, and generally correspond to observations from earlier *Dolphin* cruises in spring and fall (see Figures 3.3.12 and 3.3.13). There is, however, one exception. In the spring of 1976 plankton biomass reached bloom proportions in the New York Bight apex and southward along the New Jersey coast. Volumes in this area represent the highest recorded on our surveys of the Middle Atlantic Bight. The

bloom was attributed to the dinoflagellate, *Ceratium tripos*. Even though *Ceratium* is small enough to pass readily through the 0.333-mm mesh of the 61-cm bongo, the single-celled organisms were so dense that they clogged the nets. When the bongo was retrieved and hosed down, the deck area around the net was awash with the tiny, rust-colored organisms that had passed through the meshes. Even so, enough were retained to account for the exceptionally high plankton volumes that we encountered at about 12 stations in the spring of 1976 (Table 5.3.7). During the summer anoxic conditions off the New Jersey coast caused extensive mortalities to benthic organisms. Decaying *C. tripos* contributed to the anoxia (Steimle 1977).

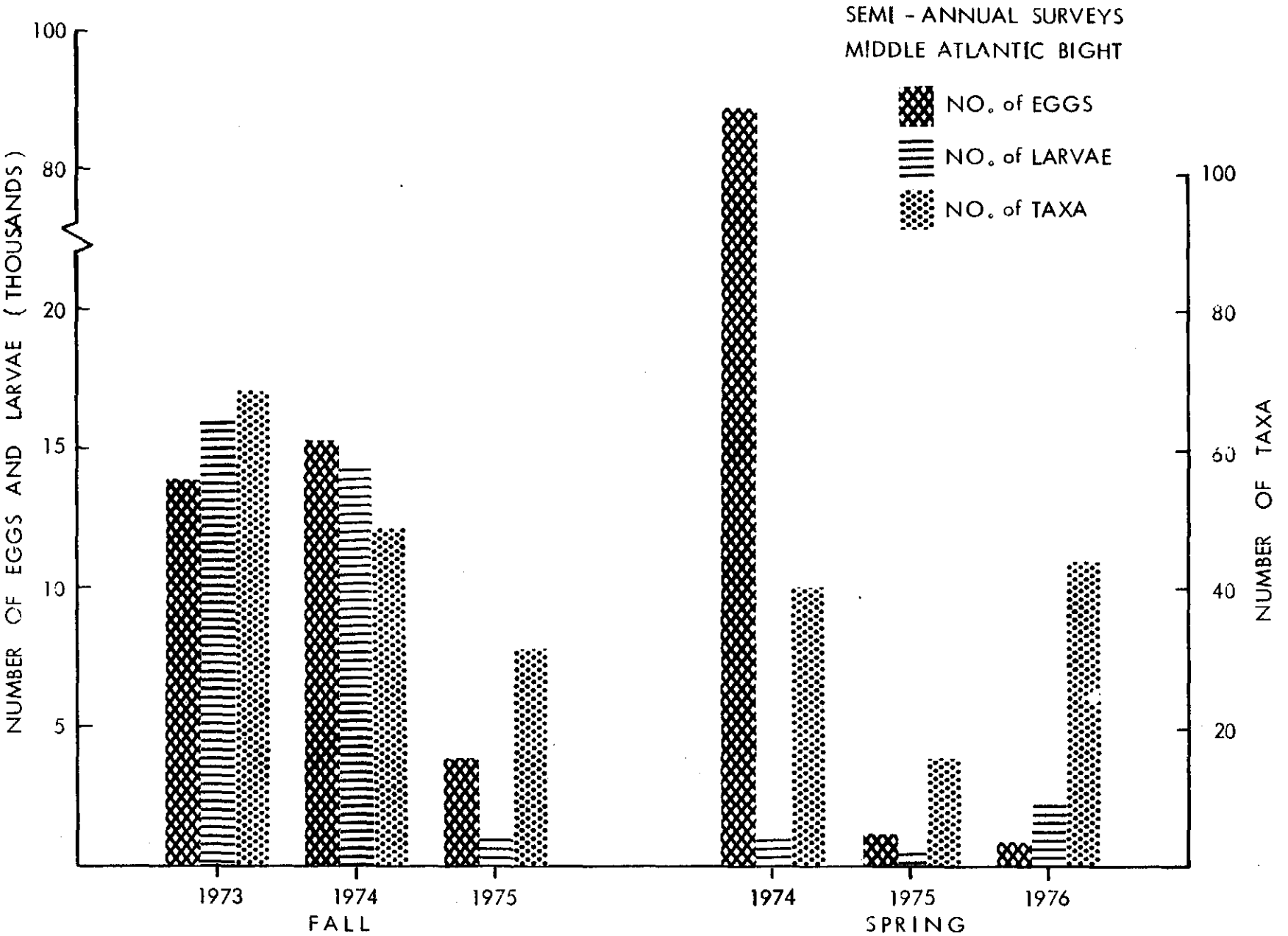


FIGURE 5.3.0. Relative abundance of fish eggs and larvae and the number of taxa represented in plankton samples from semi-annual surveys of the Middle Atlantic Bight, 1973-76.

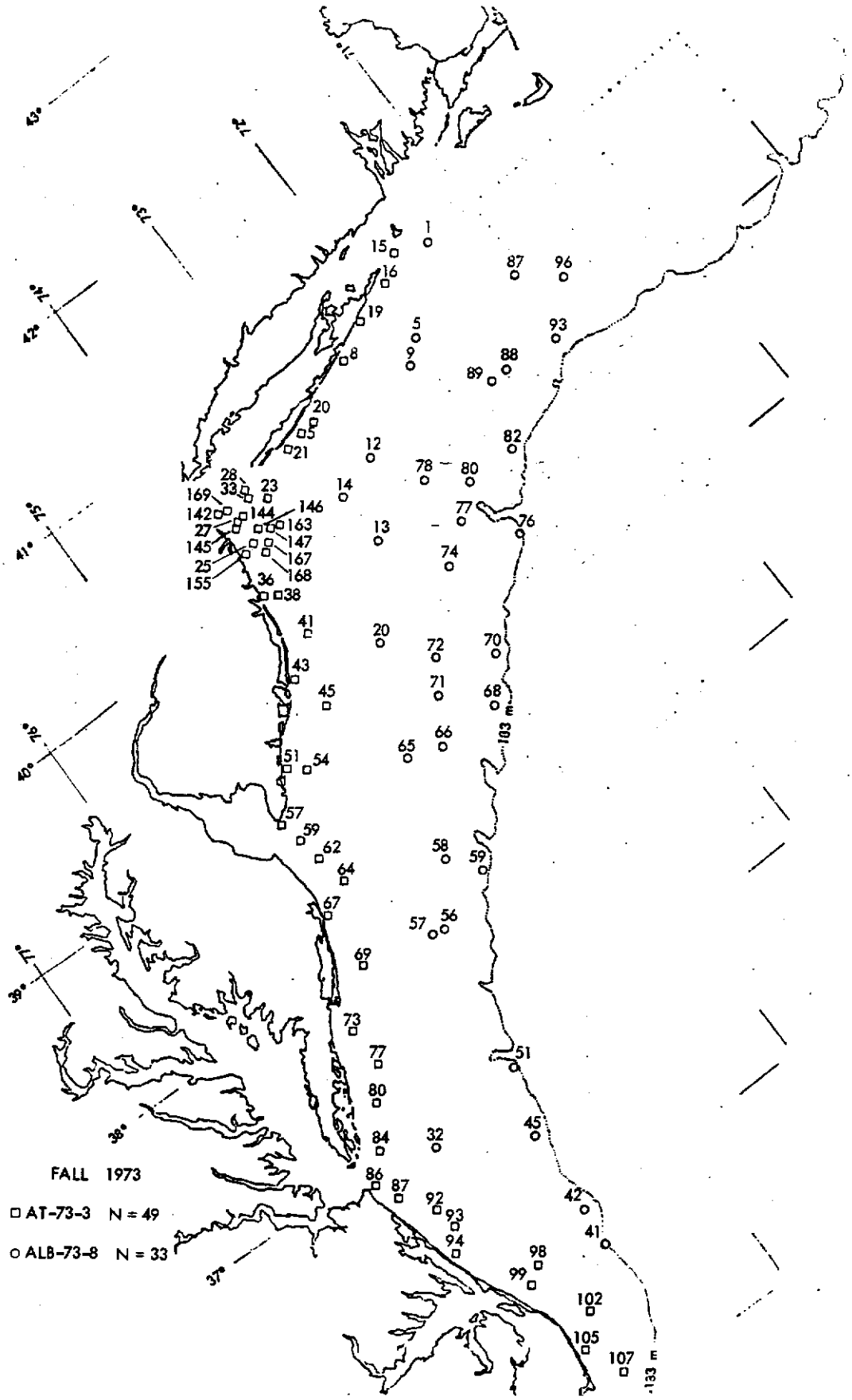


FIGURE 5.3.1. Plankton stations occupied on MARMAP survey of Middle Atlantic Bight, fall 1973.

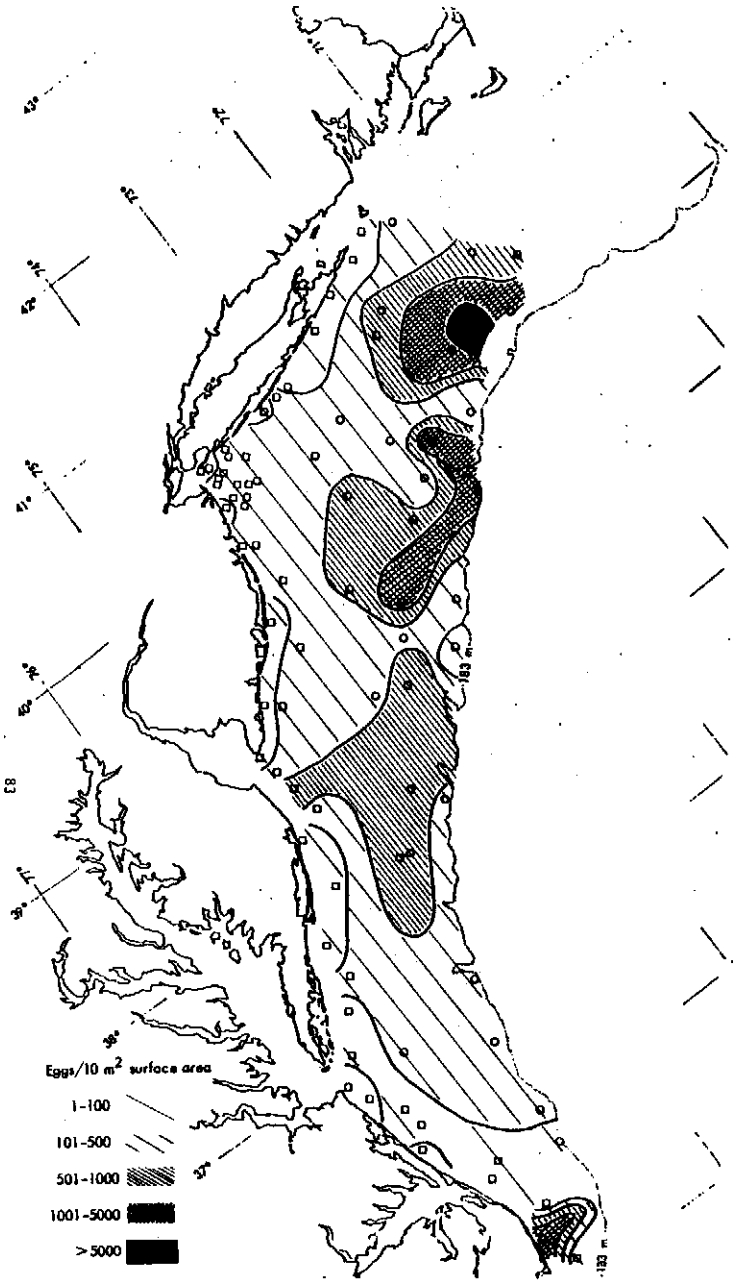


FIGURE 5.3.2. Distribution and abundance of fish eggs in Middle Atlantic Bight, fall 1973.

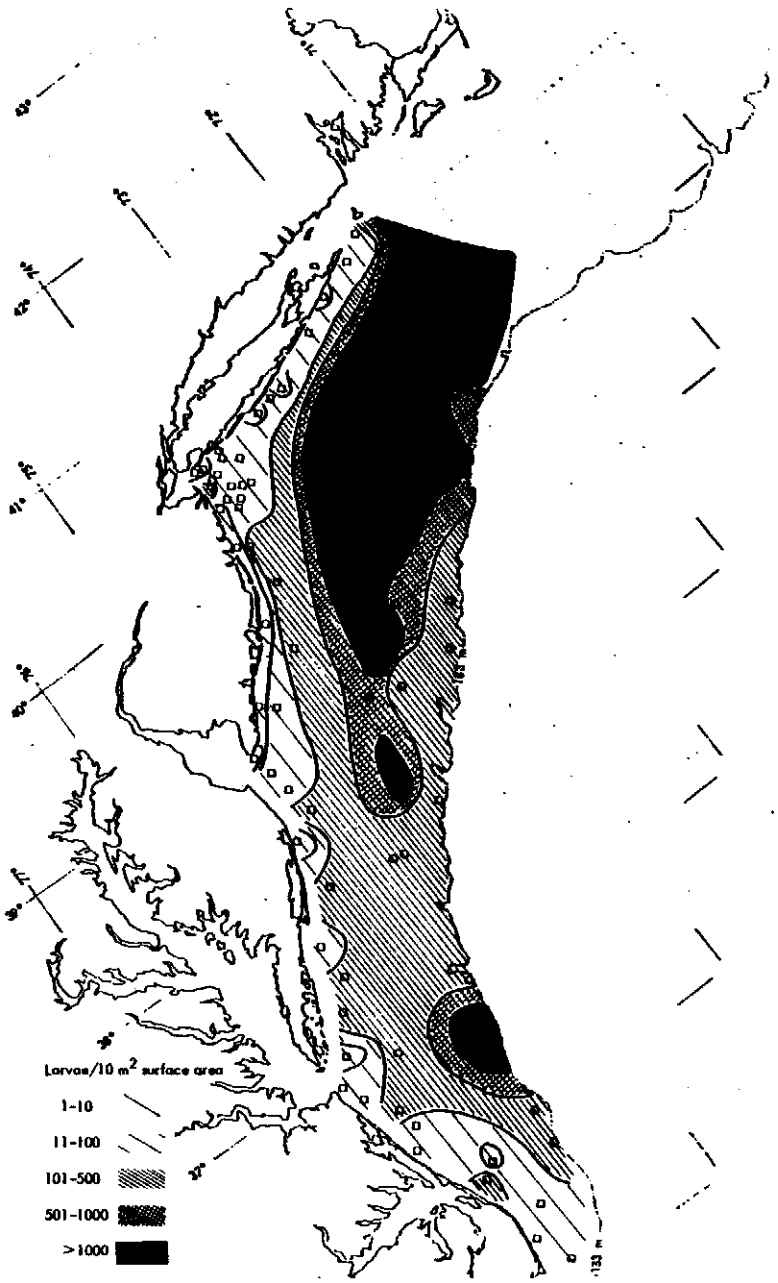


FIGURE 5.3.3. Distribution and abundance of fish larvae in Middle Atlantic Bight, fall 1973.

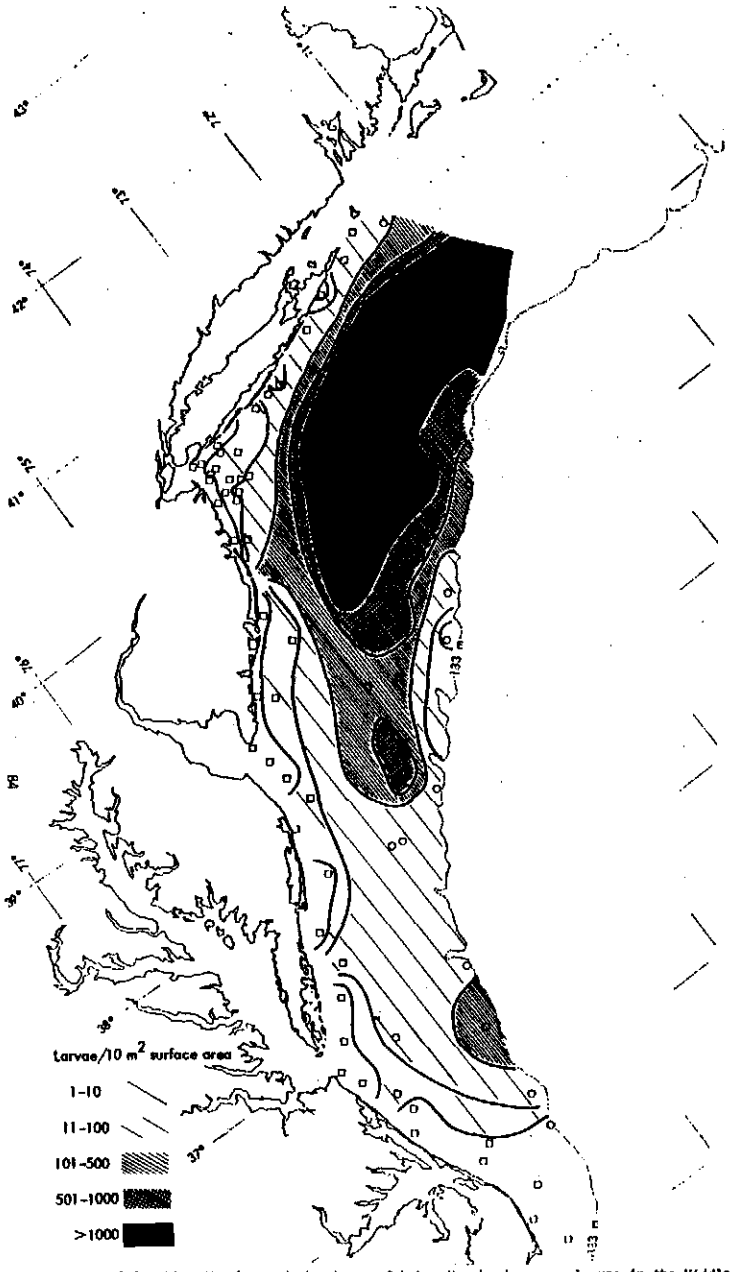


FIGURE 5.3.4. Distribution and abundance of hake, Urophycis spp., larvae in the Middle Atlantic Bight, fall 1973.

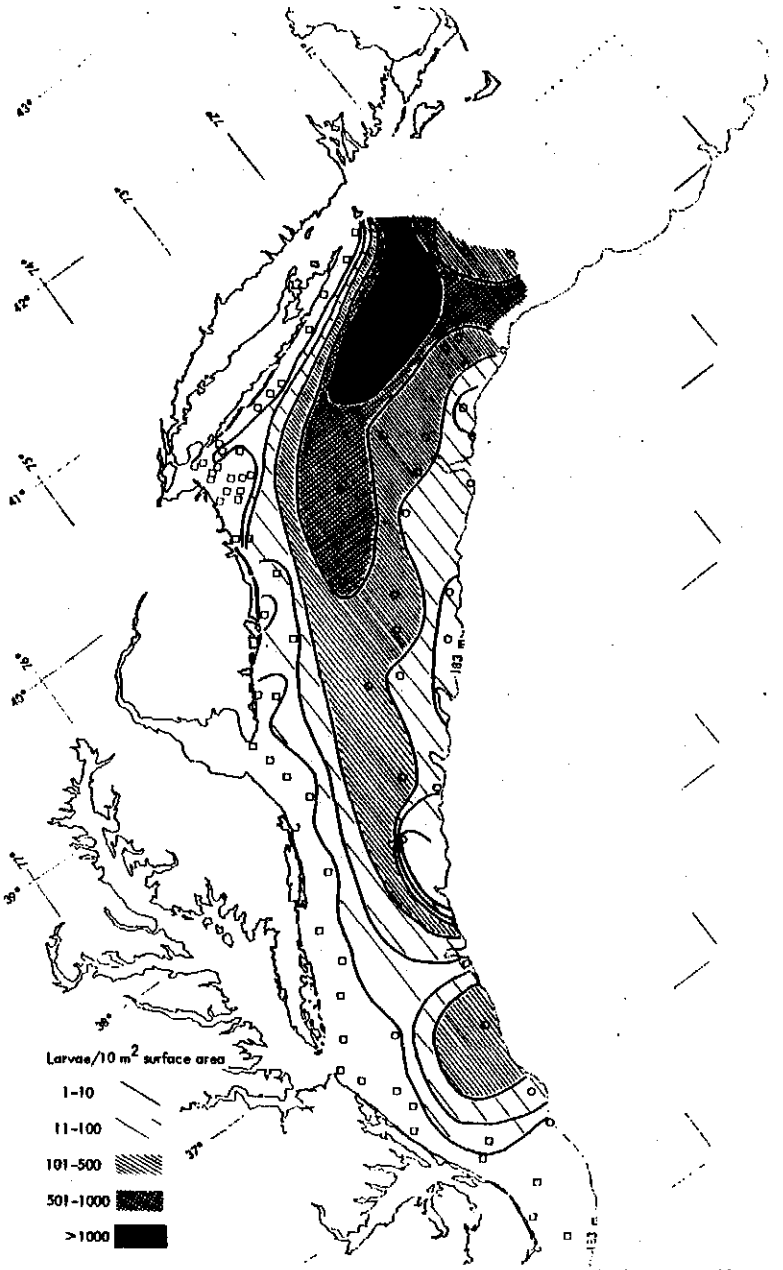


FIGURE 5.3.5. Distribution and abundance of Gulf Stream flounder, Citharichthys arctifrons, larvae in the Middle Atlantic Bight, fall 1973.

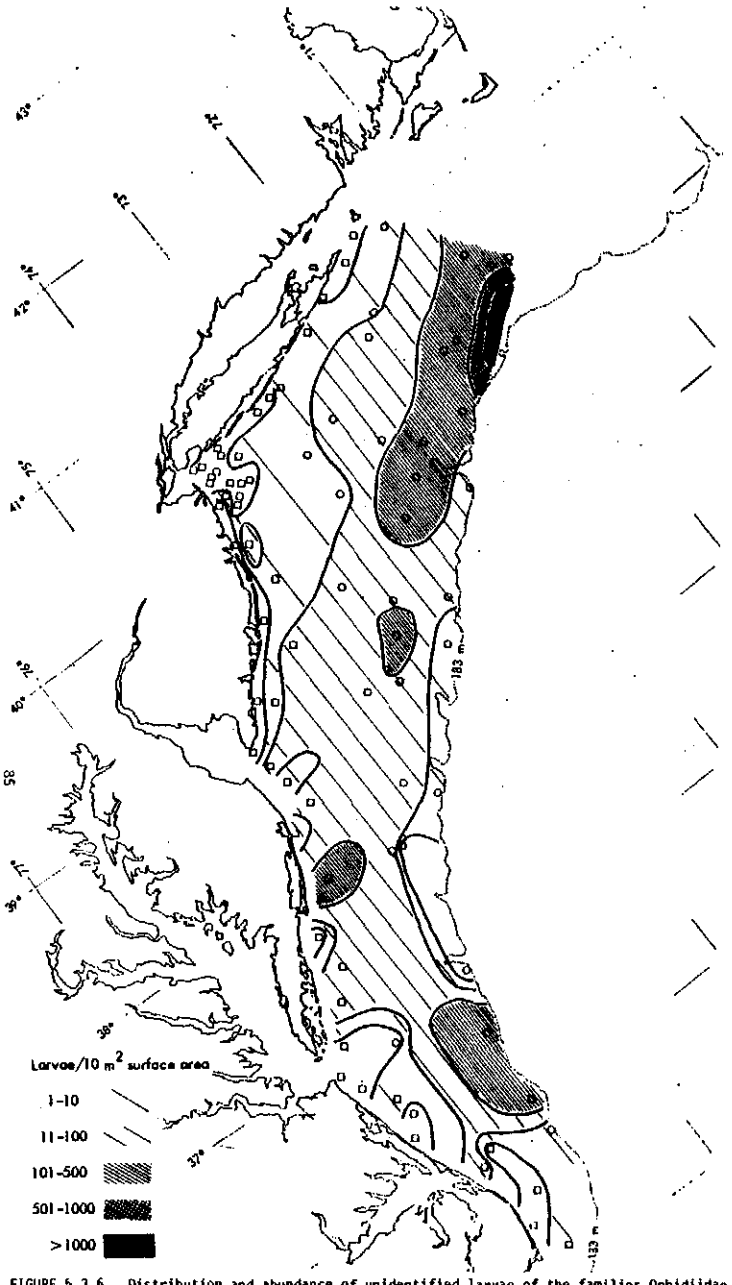


FIGURE 5.3.6. Distribution and abundance of unidentified larvae of the families Ophidiidae and/or Zoarcidae in the Middle Atlantic Bight, fall 1973.

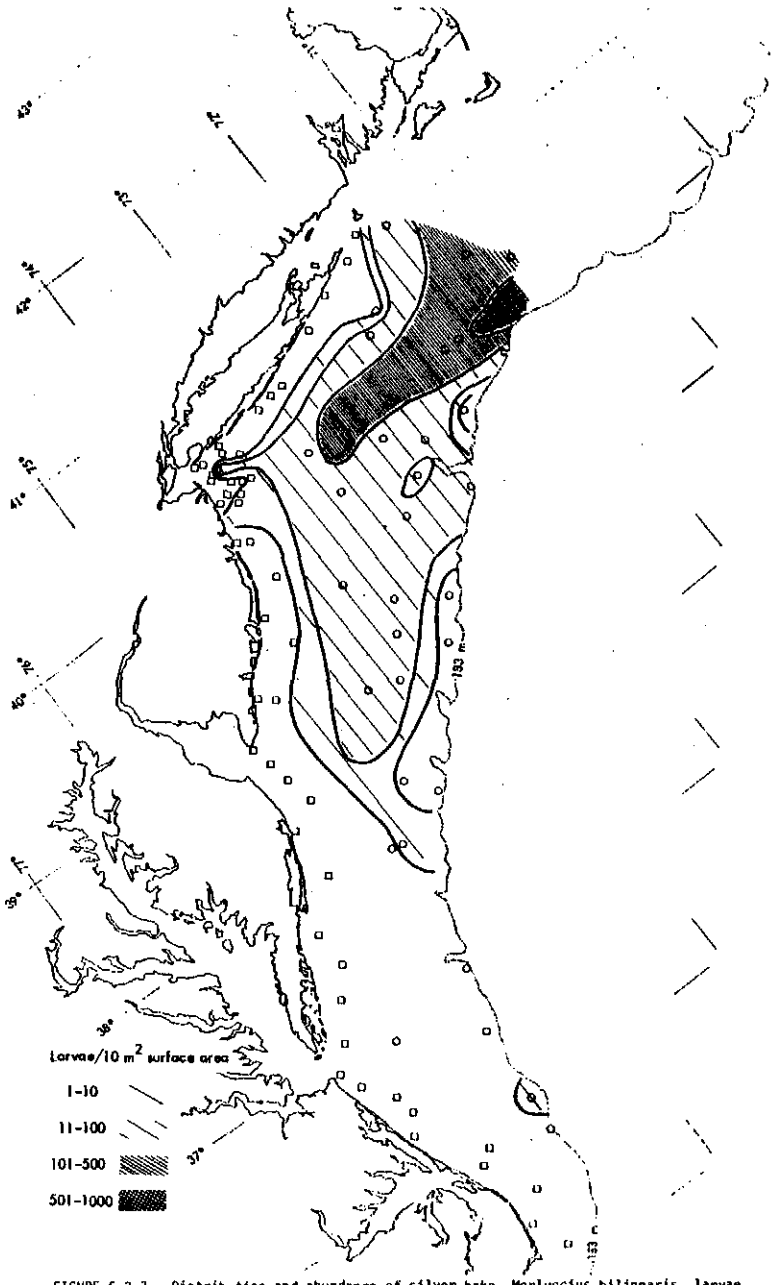


FIGURE 5.3.7. Distribution and abundance of silver hake, Merluccius bilinearis, larvae in the Middle Atlantic Bight, fall 1973.

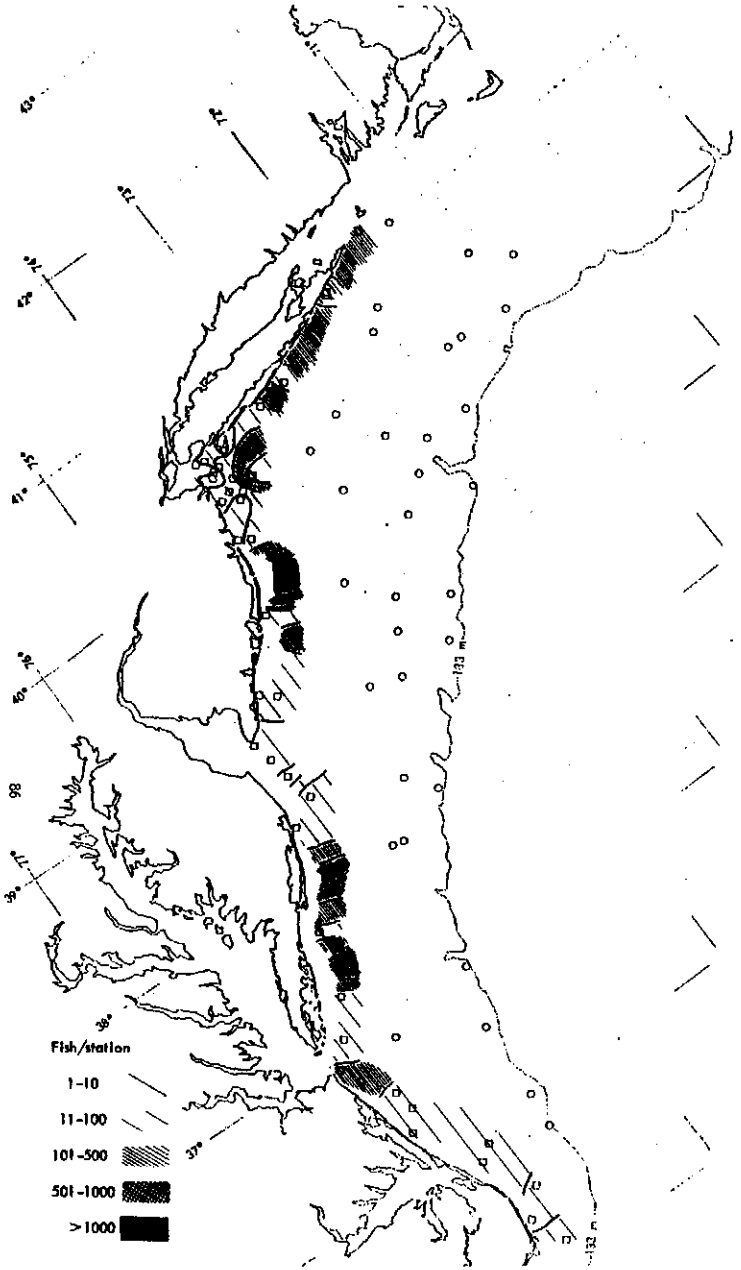


FIGURE 5.3.8. Occurrence of young-of-the-year fishes at the surface in the Middle Atlantic Bight, fall 1973.

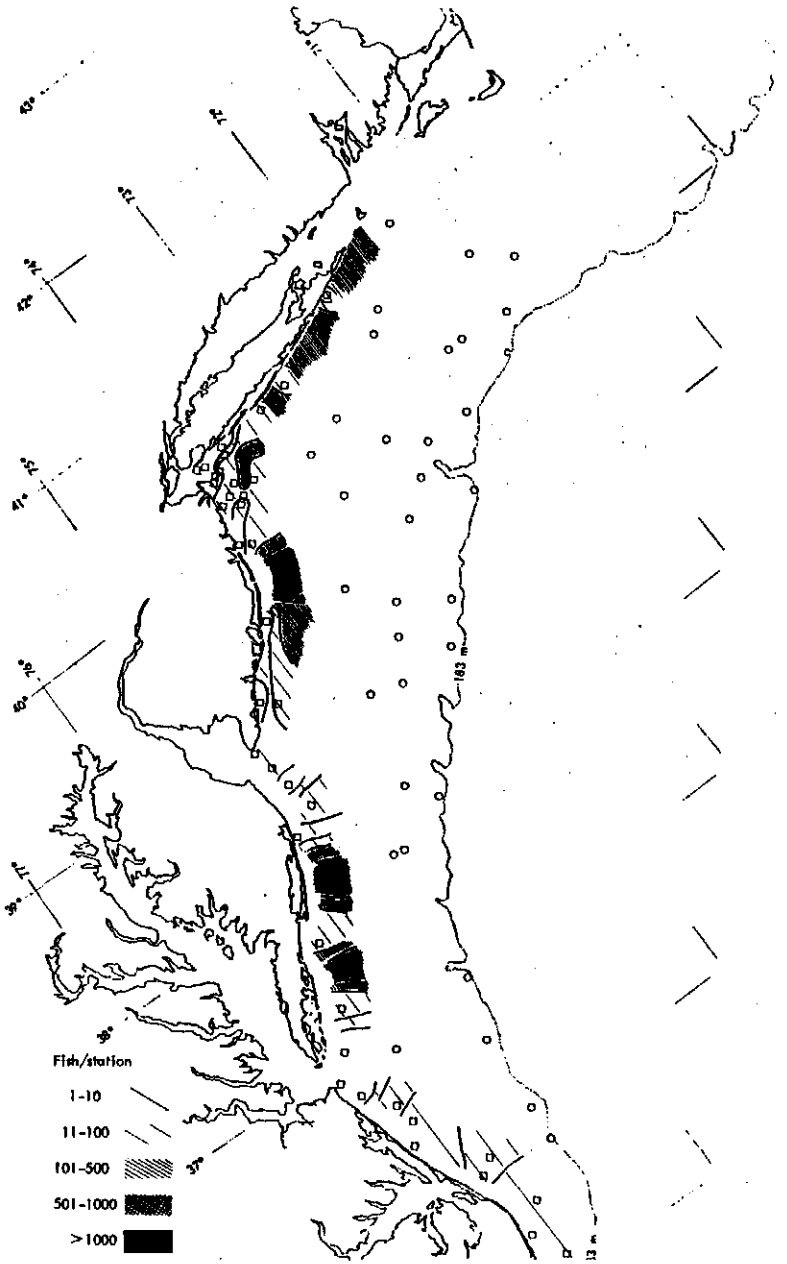


FIGURE 5.3.9. Occurrence of young-of-the-year hakes, Urophycis spp., in surface waters of the Middle Atlantic Bight, fall 1973.

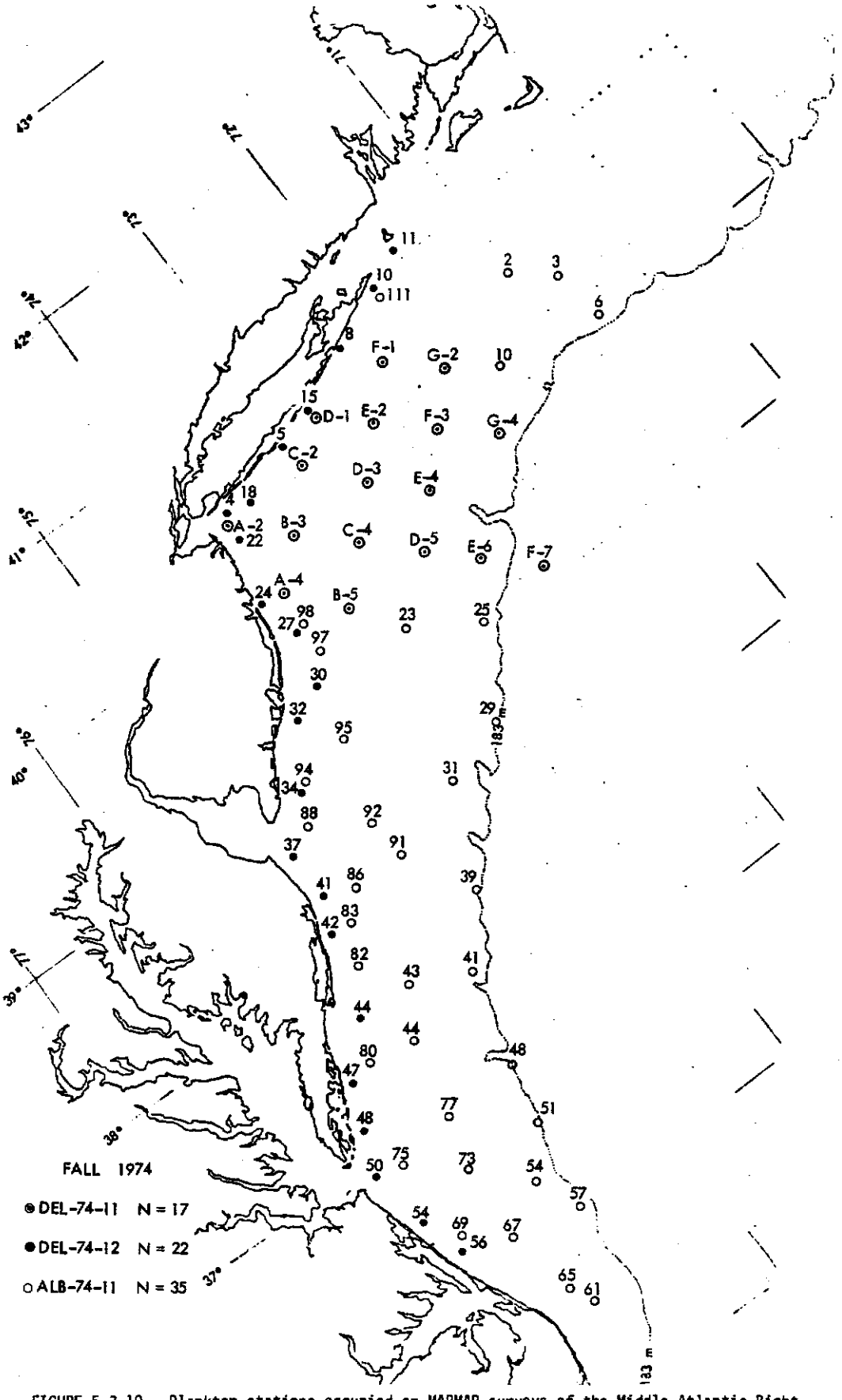


FIGURE 5.3.10. Plankton stations occupied on MARMAP surveys of the Middle Atlantic Bight, fall 1974.

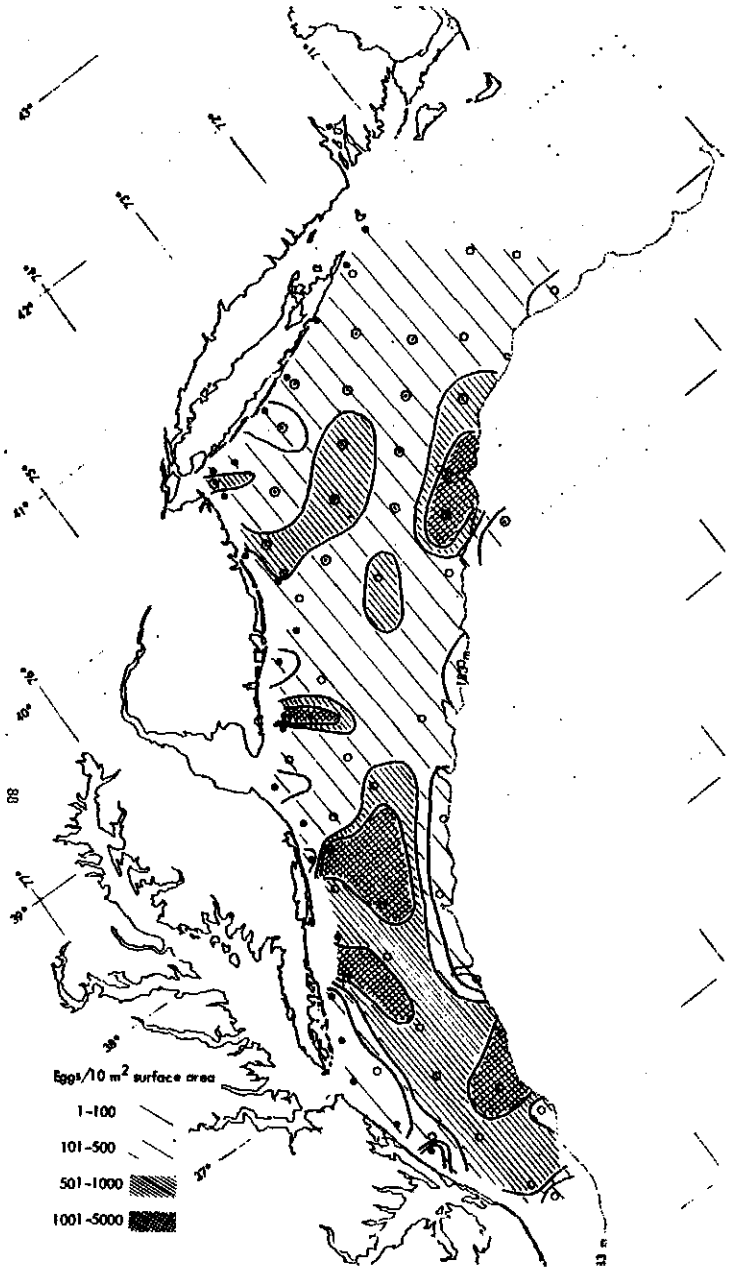


FIGURE 5.3.11. Distribution and abundance of fish eggs in the Middle Atlantic Bight, fall 1974.

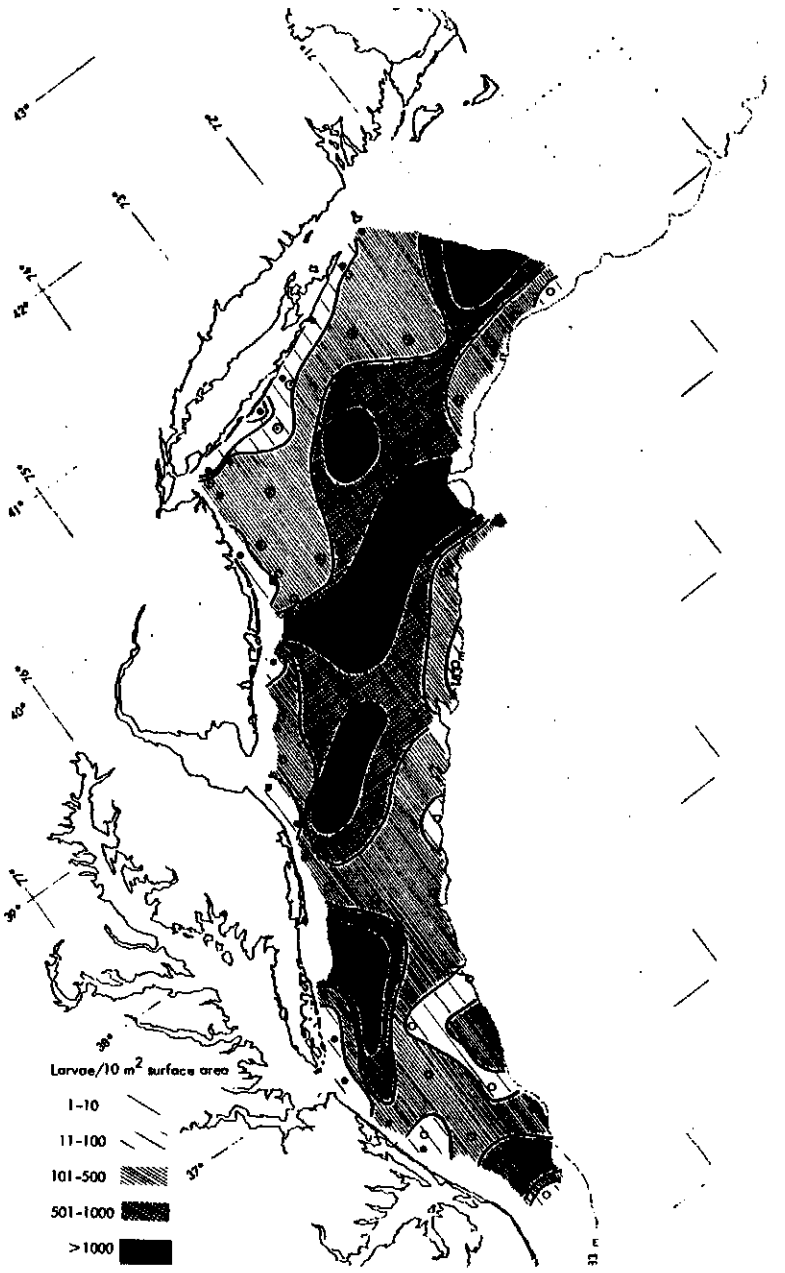


FIGURE 5.3.12. Distribution and abundance of fish larvae in the Middle Atlantic Bight, fall 1974.

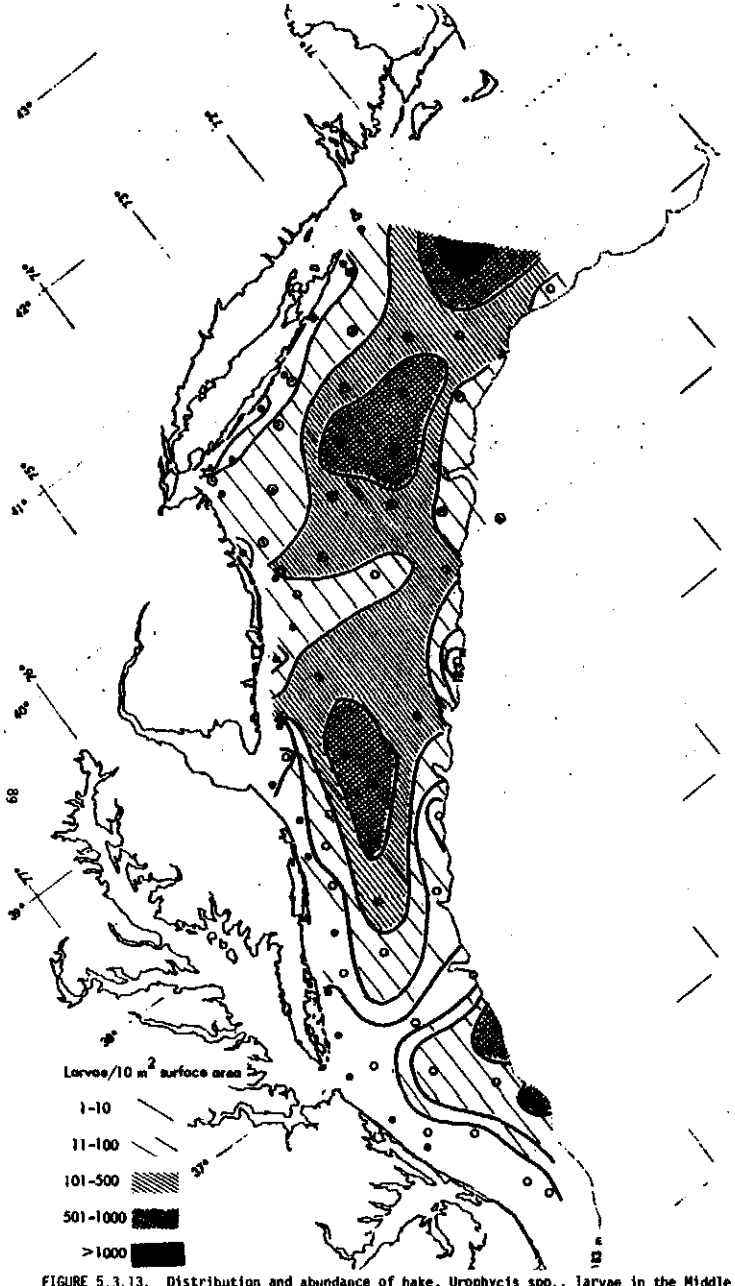


FIGURE 5.3.13. Distribution and abundance of hake, Urophycis spp., larvae in the Middle Atlantic Bight, fall 1974.

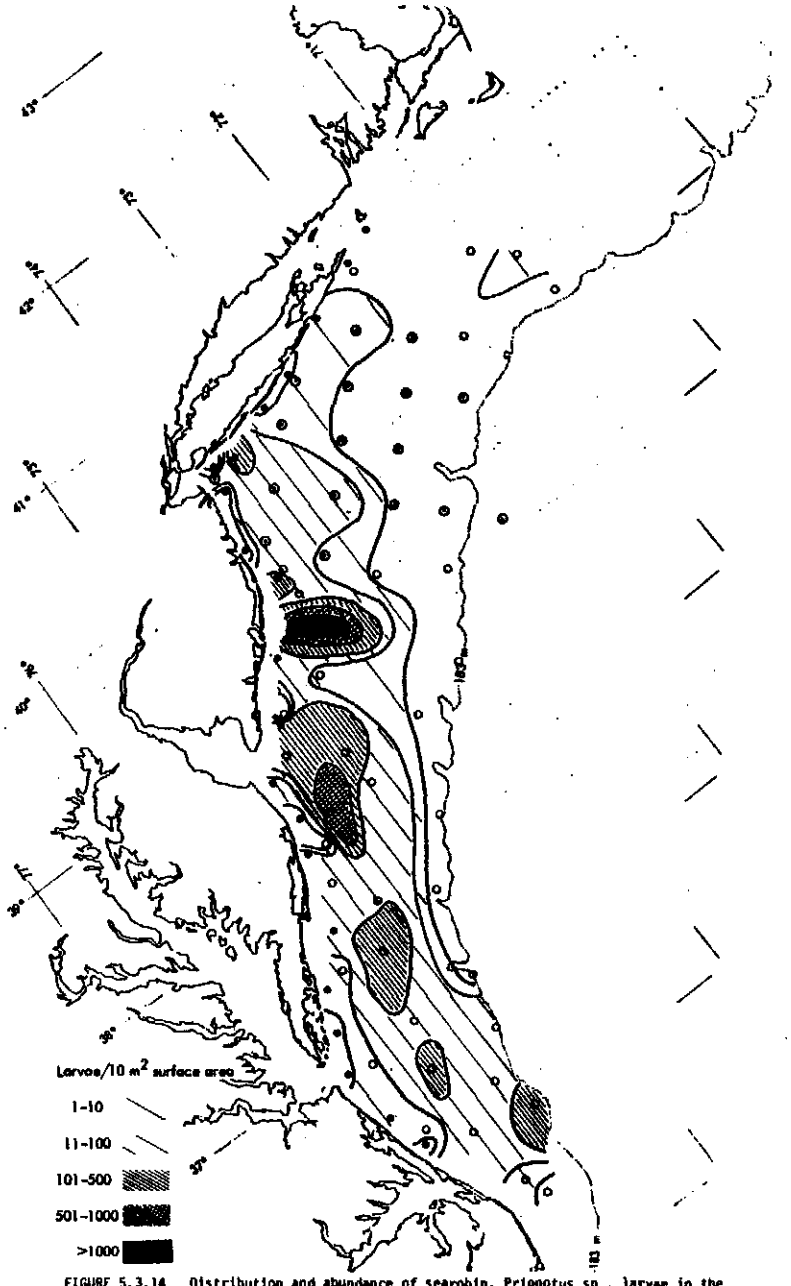


FIGURE 5.3.14. Distribution and abundance of searobin, Prionotus sp., larvae in the Middle Atlantic Bight, fall 1974.

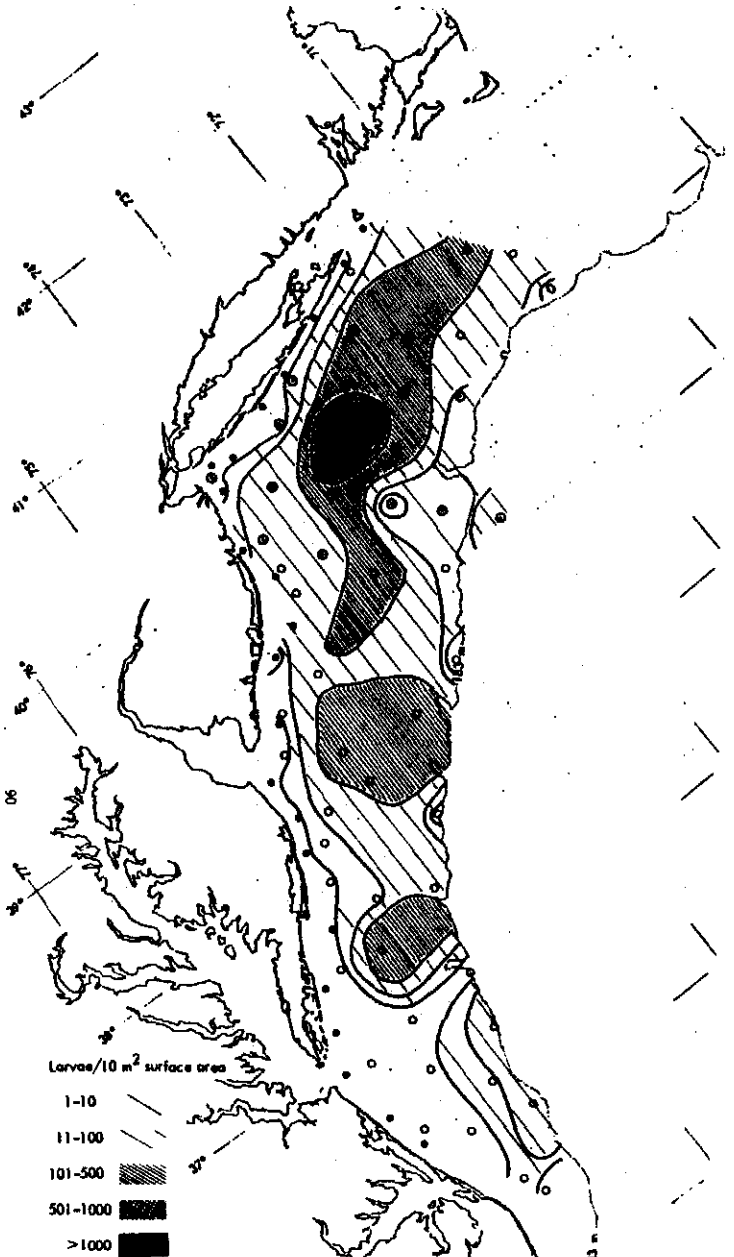


FIGURE 5.3.15. Distribution and abundance of Gulf Stream flounder, Citharichthys arctifrons, larvae in the Middle Atlantic Bight, fall 1974.

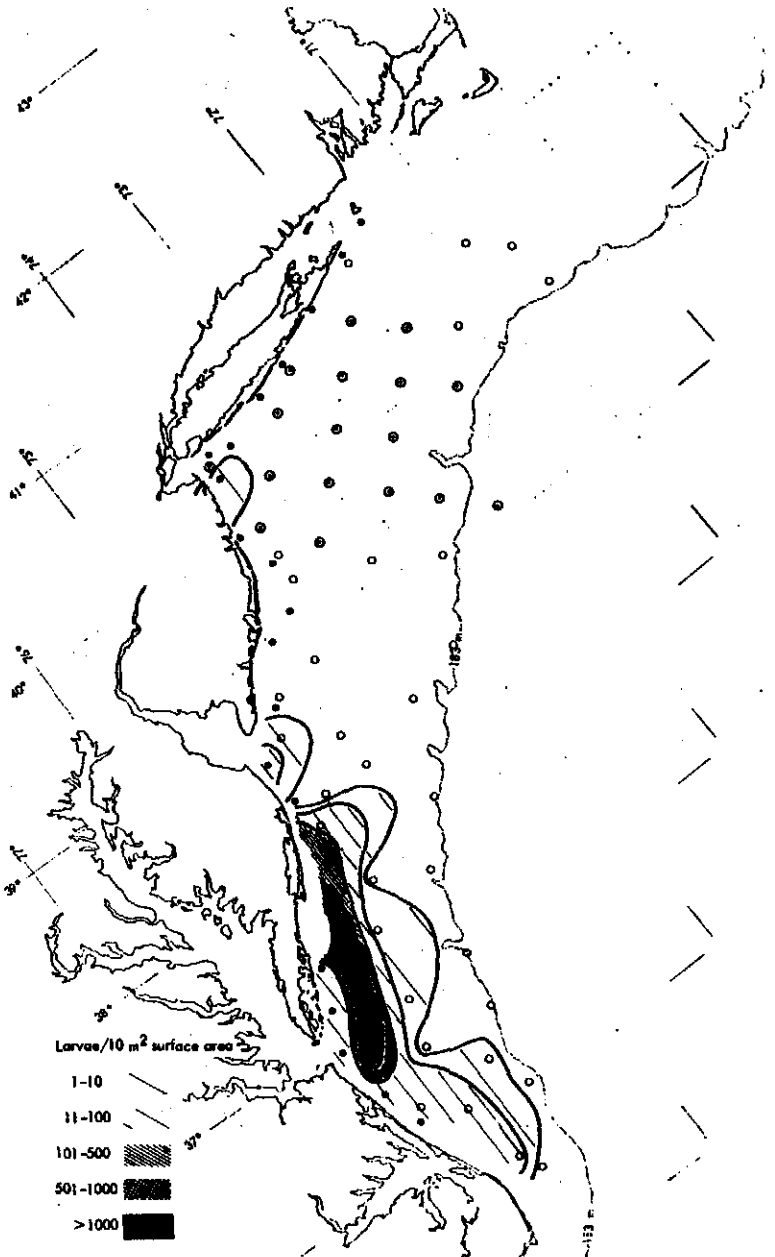


FIGURE 5.3.16. Distribution and abundance of Atlantic croaker, Micropogon undulatus, larvae in the Middle Atlantic Bight, fall 1974.

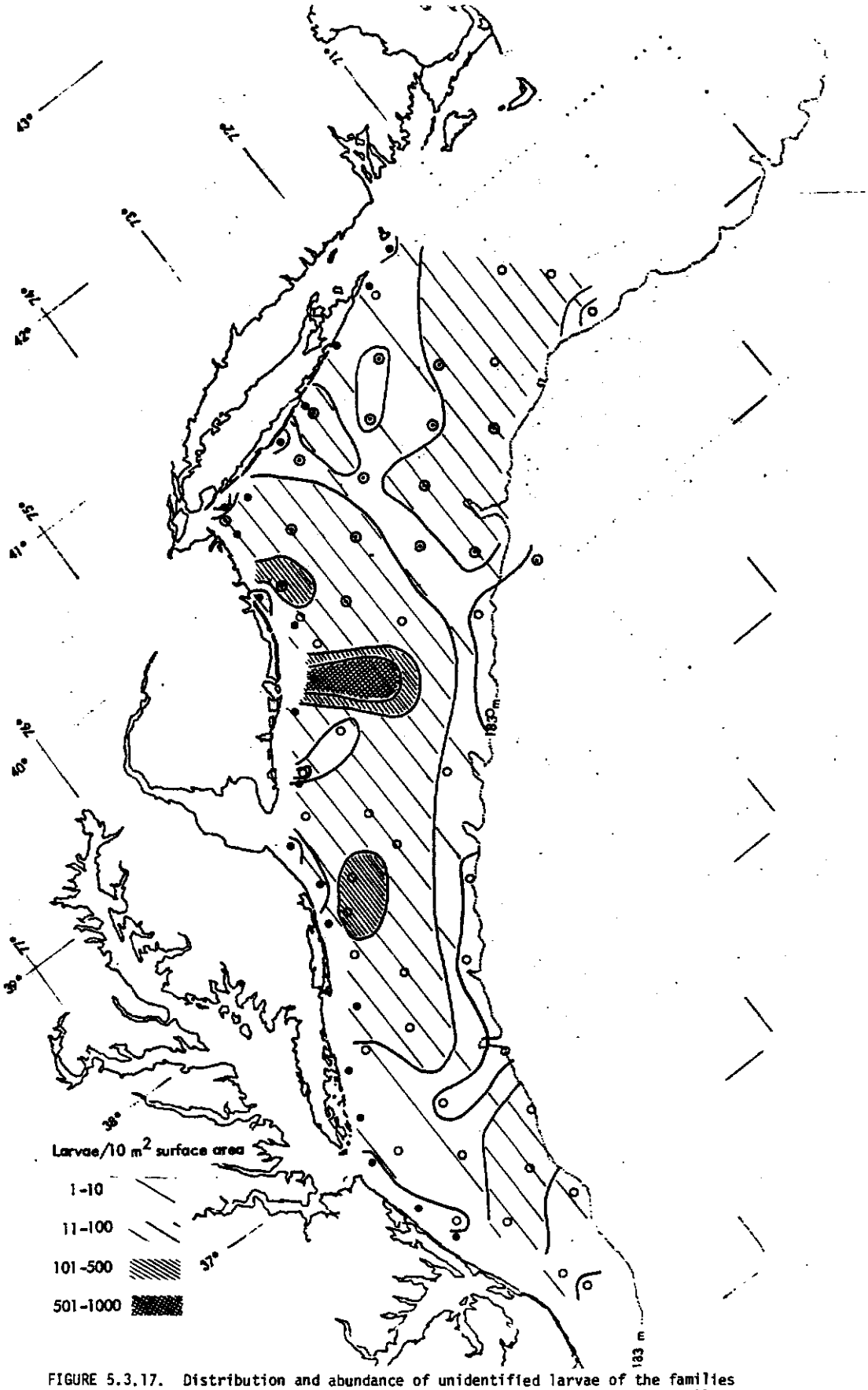


FIGURE 5.3.17. Distribution and abundance of unidentified larvae of the families Ophidiidae and/or Zoarcidae in the Middle Atlantic Bight, fall 1974.

FIGURE 5.3.18. Occurrence of young fishes at the surface in the Middle Atlantic Bight, fall 1974.

FIGURE 5.3.19. Occurrence of young hake, Urophycis spp., in surface waters of the Middle Atlantic Bight, fall 1974.

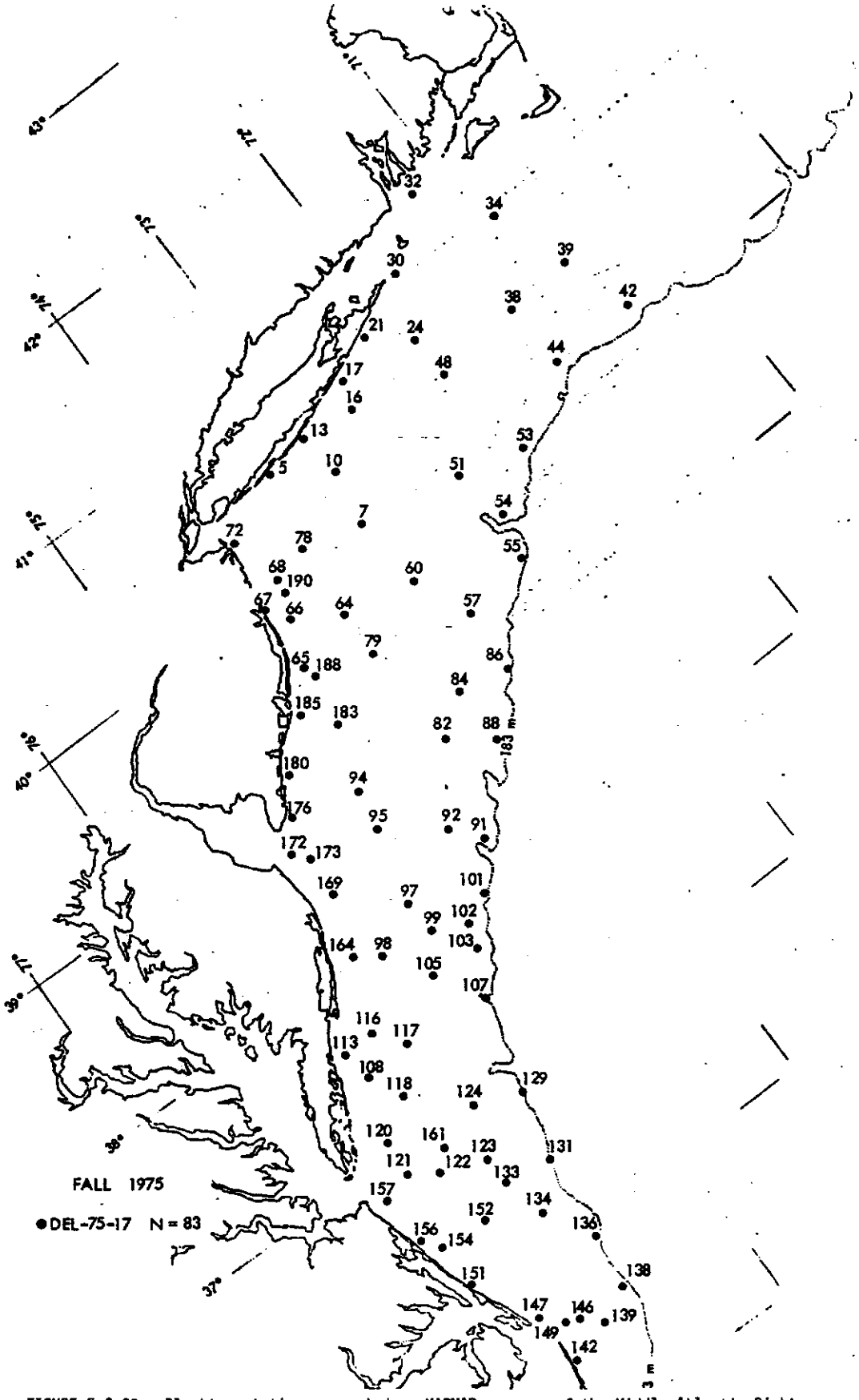


FIGURE 5.3.20. Plankton stations occupied on MARMAP surveys of the Middle Atlantic Bight, fall 1975.

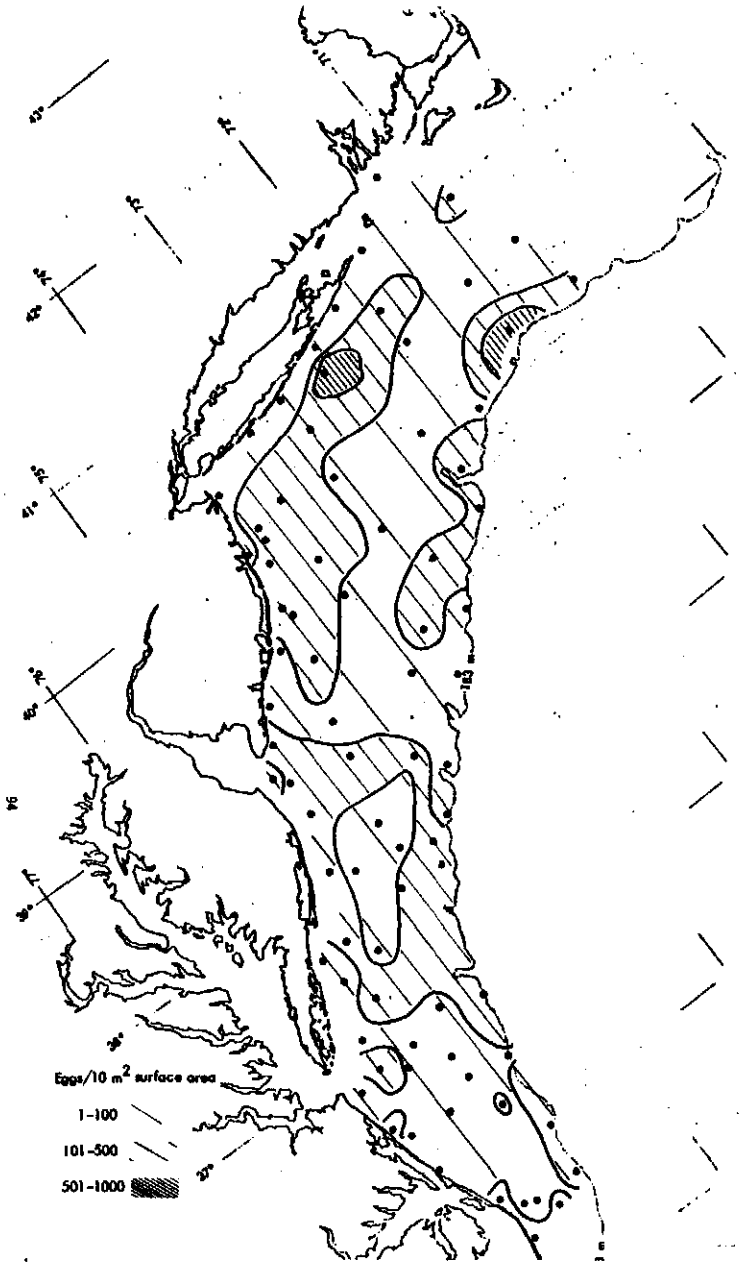


FIGURE 5.3.21. Distribution and abundance of fish eggs in the Middle Atlantic Bight, fall 1975.

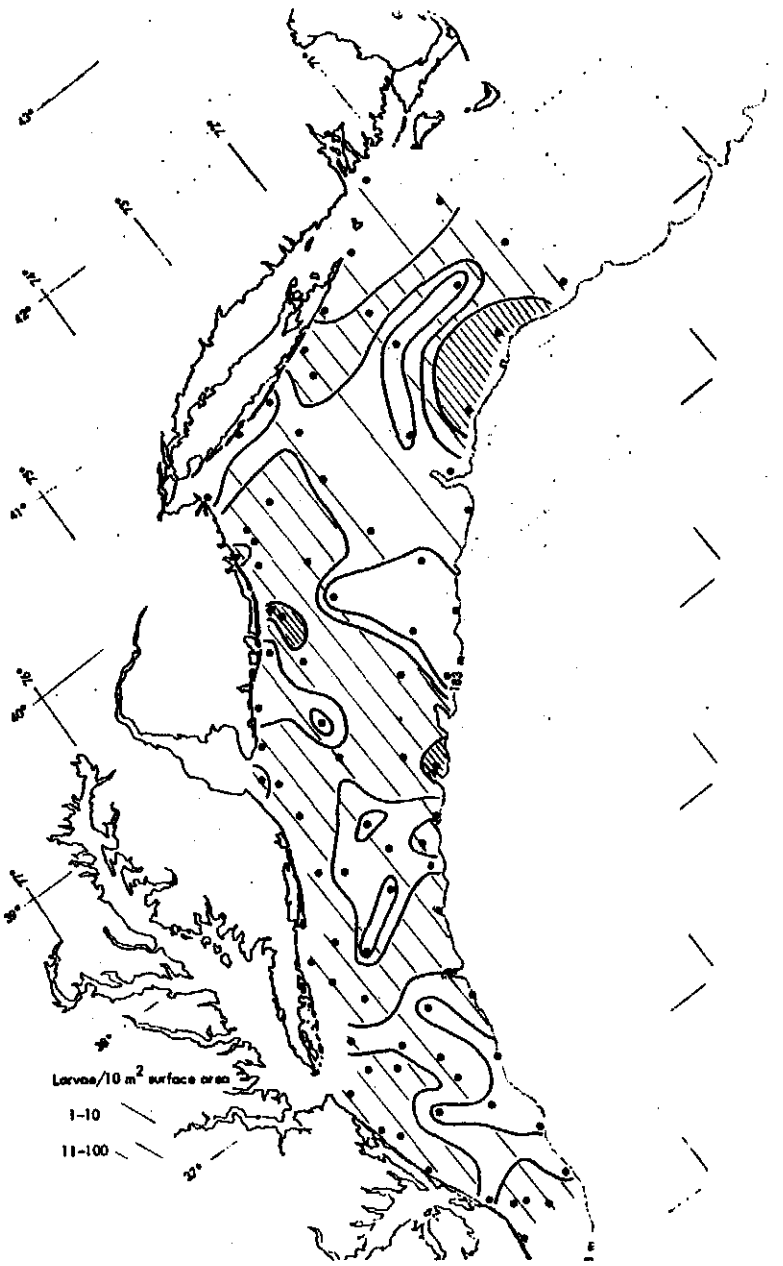


FIGURE 5.3.22. Distribution and abundance of fish larvae in the Middle Atlantic Bight, fall 1975.

FIGURE 5.3.23. Distribution and abundance of Ceratoscopelus maderensis, larvae in the Middle Atlantic Bight, fall 1975.

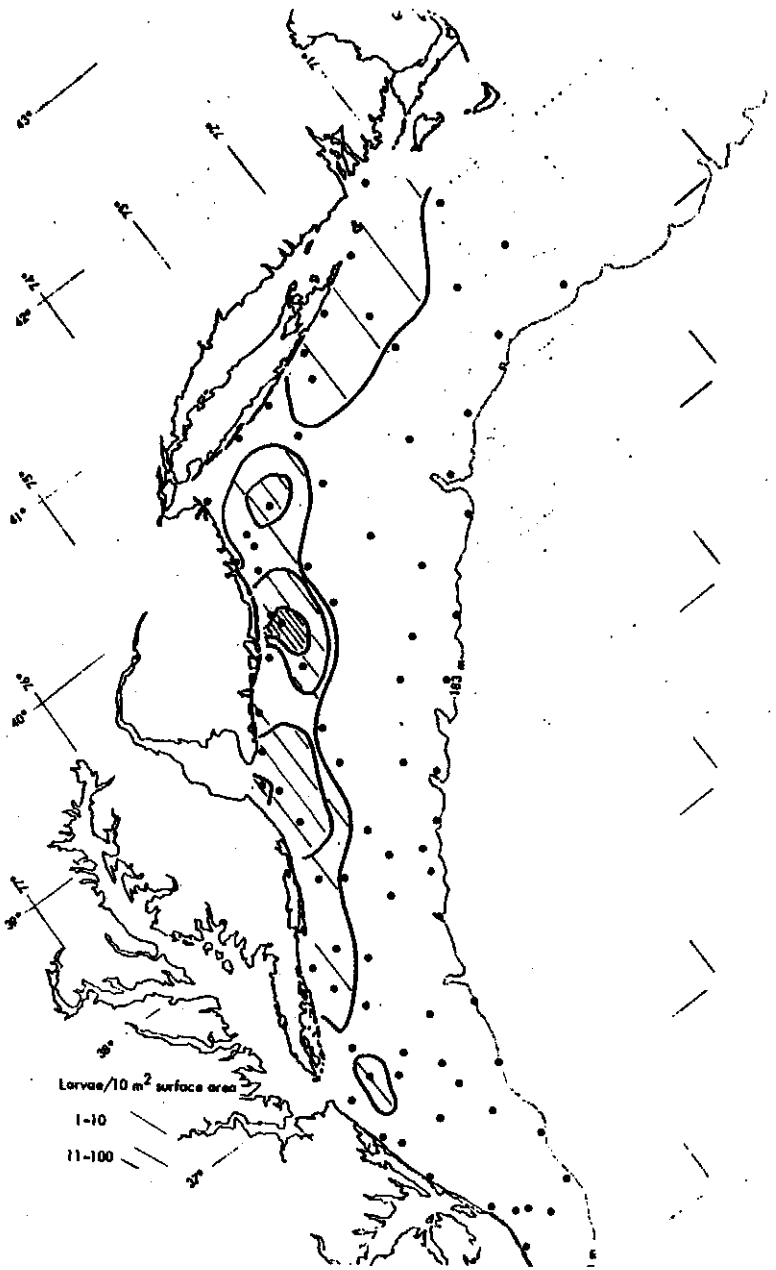


FIGURE 5.3.24. Distribution and abundance of windowpane, Scophthalmus aquosus, larvae in the Middle Atlantic Bight, fall 1975.

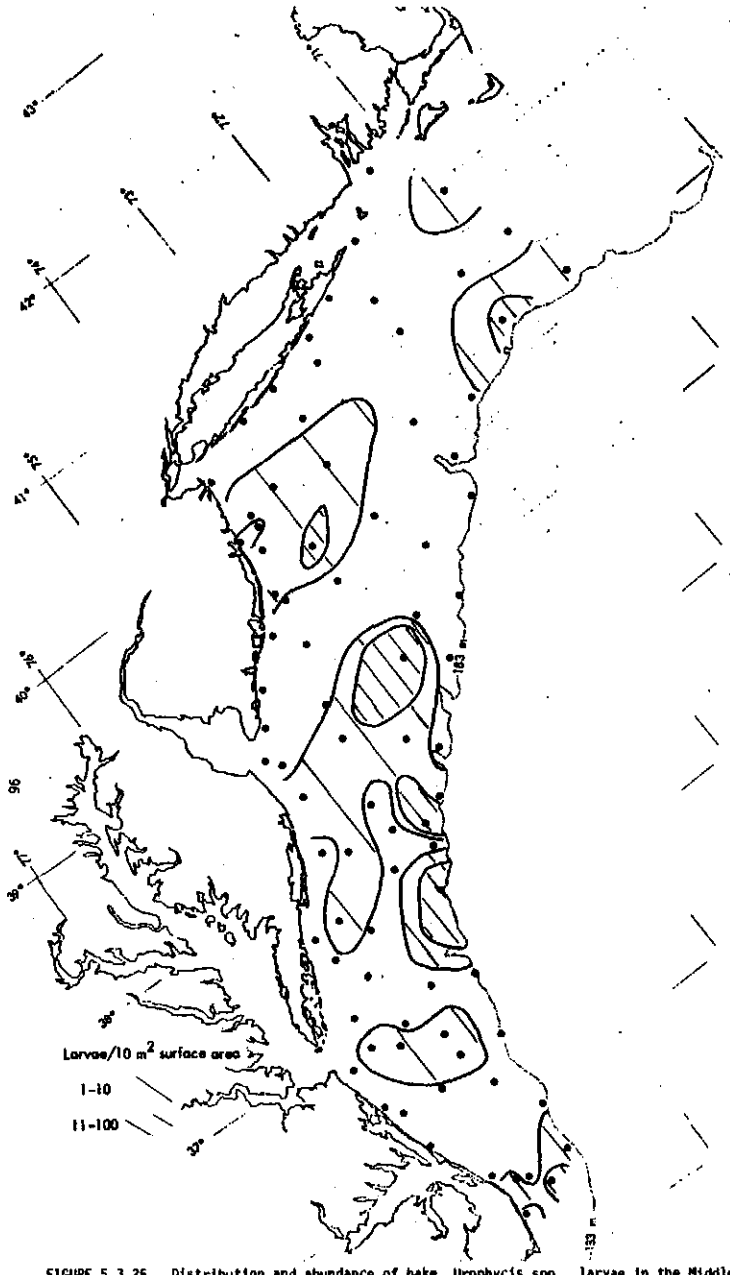


FIGURE 5.3.25. Distribution and abundance of hake, Urophycis spp., larvae in the Middle Atlantic Bight, fall 1975.

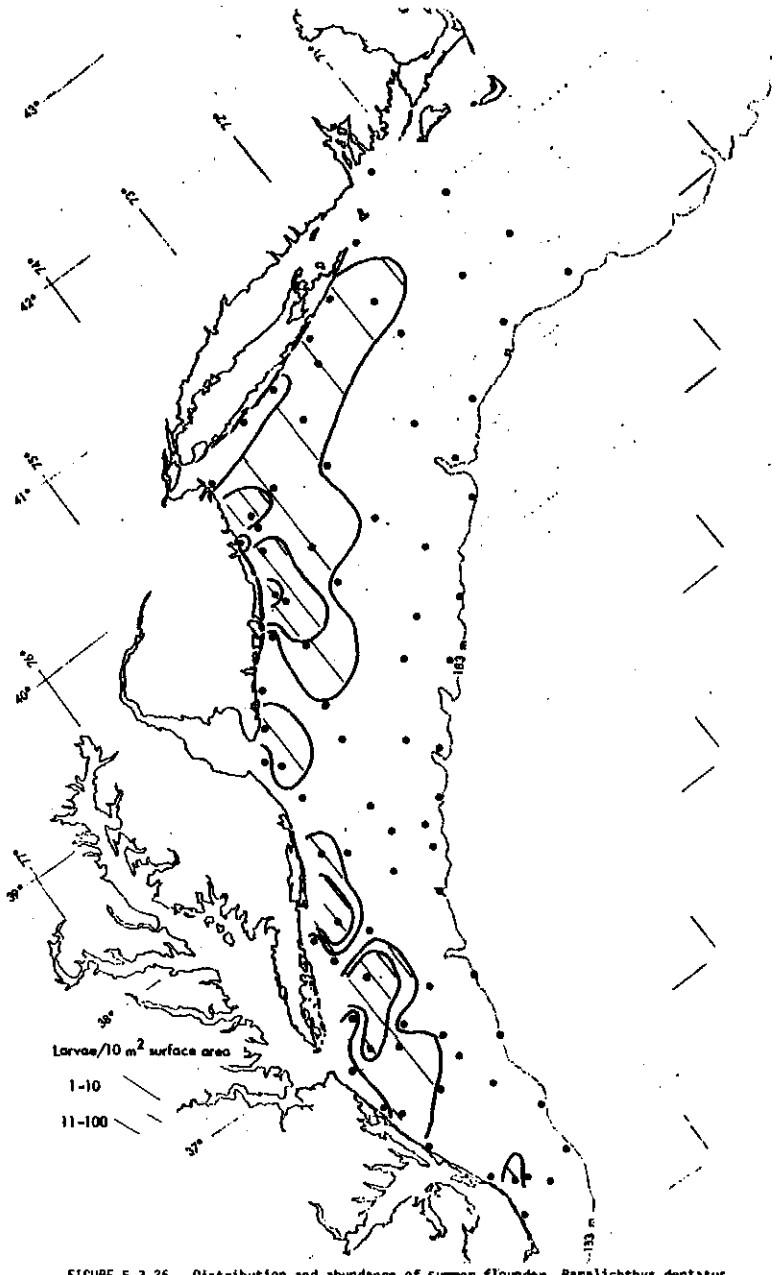


FIGURE 5.3.26. Distribution and abundance of summer flounder, Paralichthys dentatus, larvae in the Middle Atlantic Bight, fall 1975.

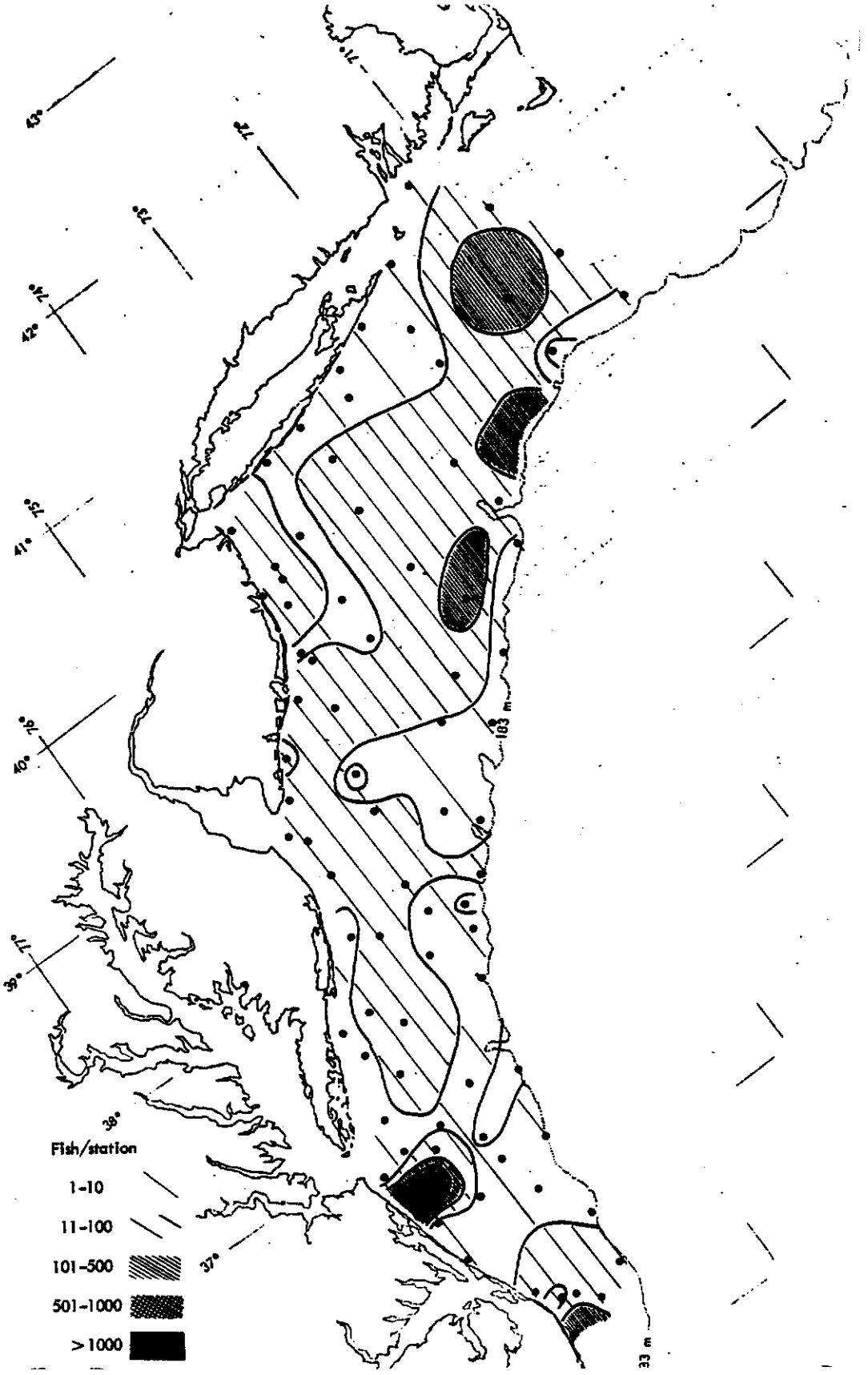


FIGURE 5.3.27. Occurrence of young-of-the-year fishes at the surface in the Middle Atlantic Bight, fall 1975.

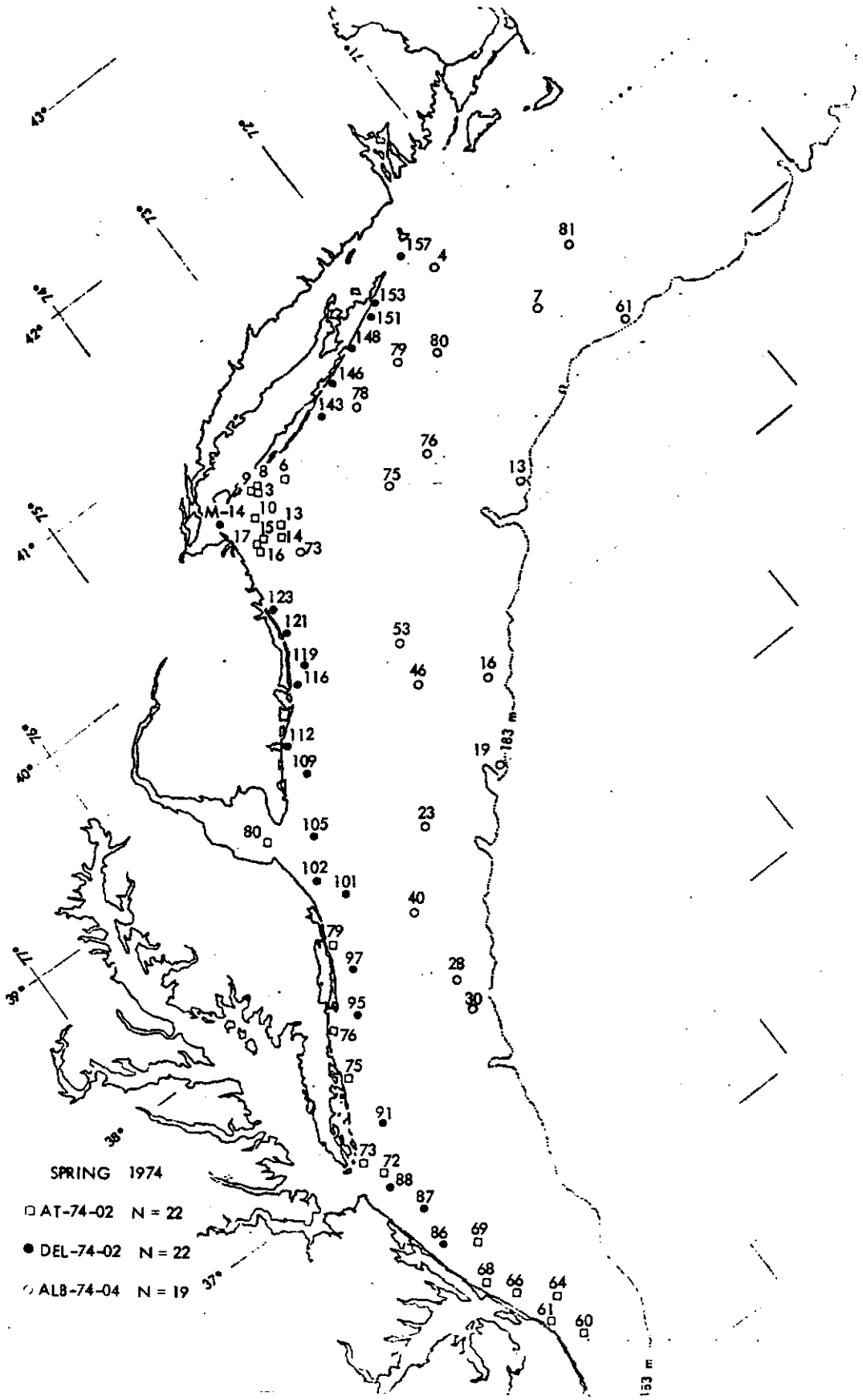


FIGURE 5.3.28. Plankton stations occupied on MARMAP survey in Middle Atlantic Bight, spring 1974.

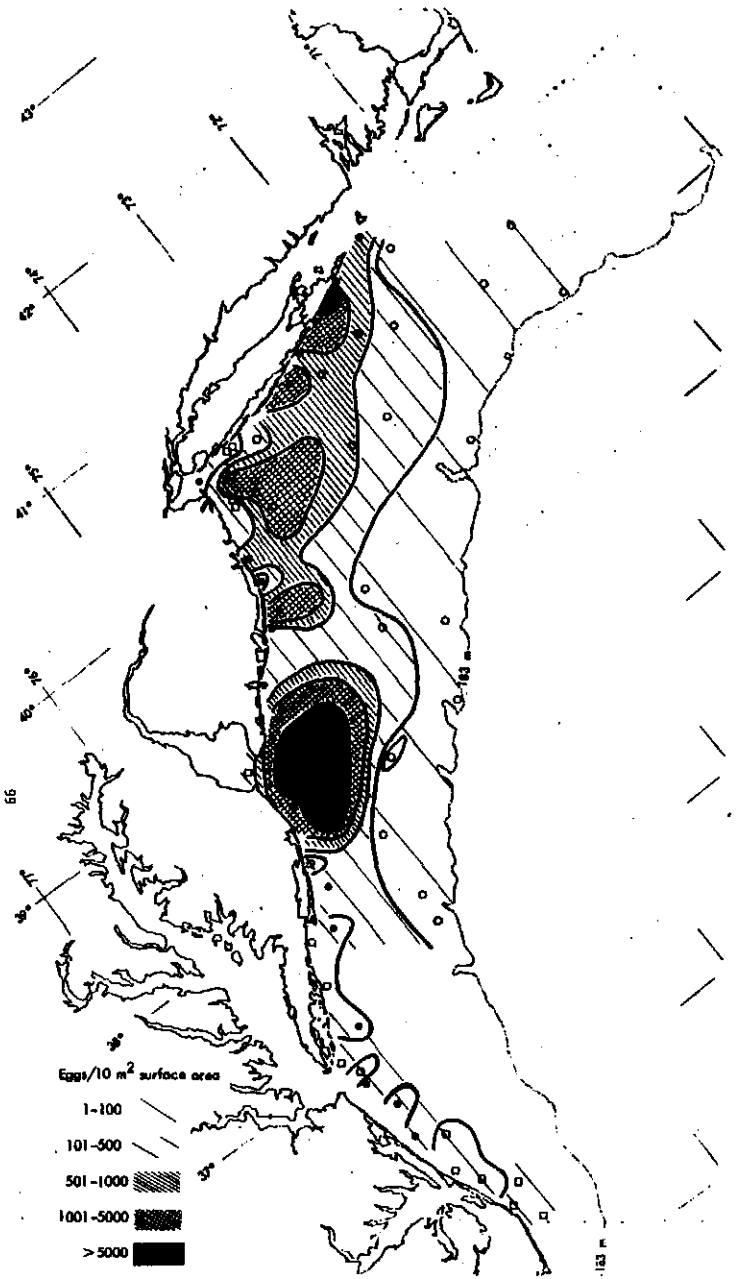


FIGURE 5.3.29. Distribution and abundance of fish eggs in Middle Atlantic Bight, spring 1974.

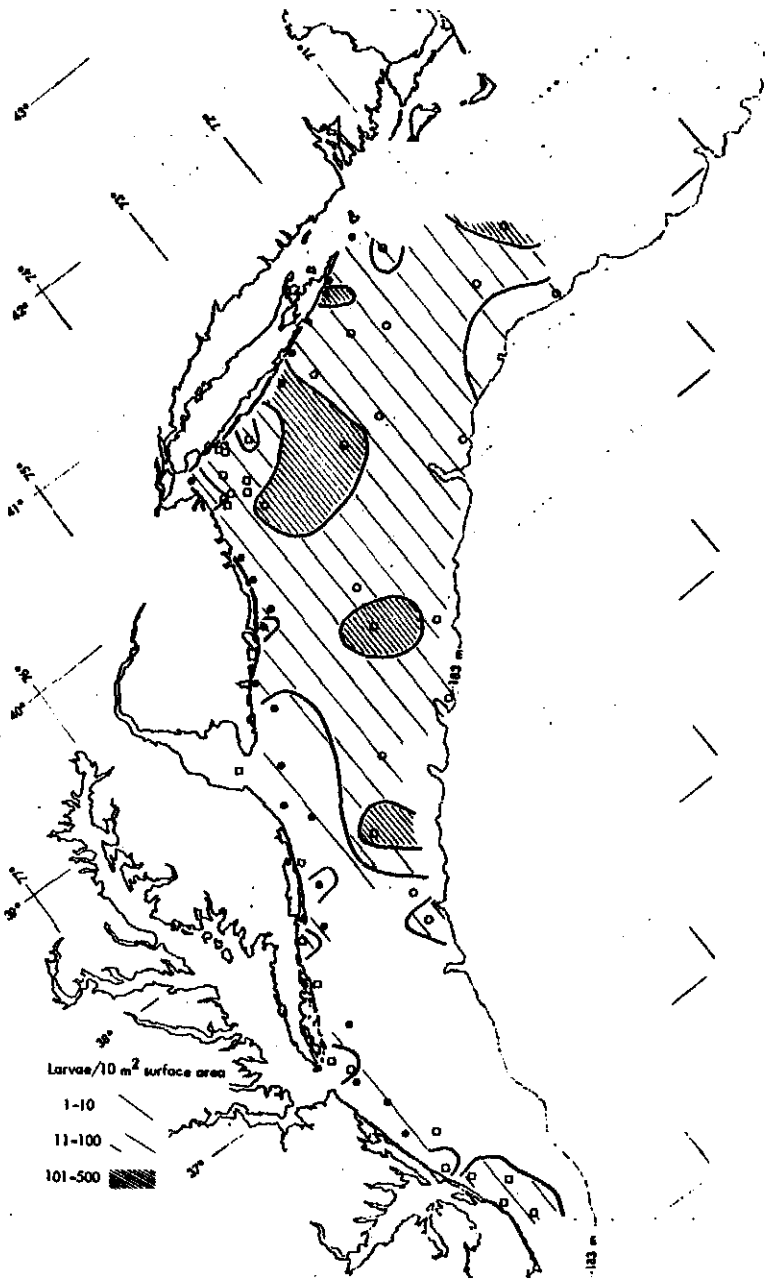


FIGURE 5.3.30. Distribution and abundance of fish larvae in Middle Atlantic Bight, spring 1974.

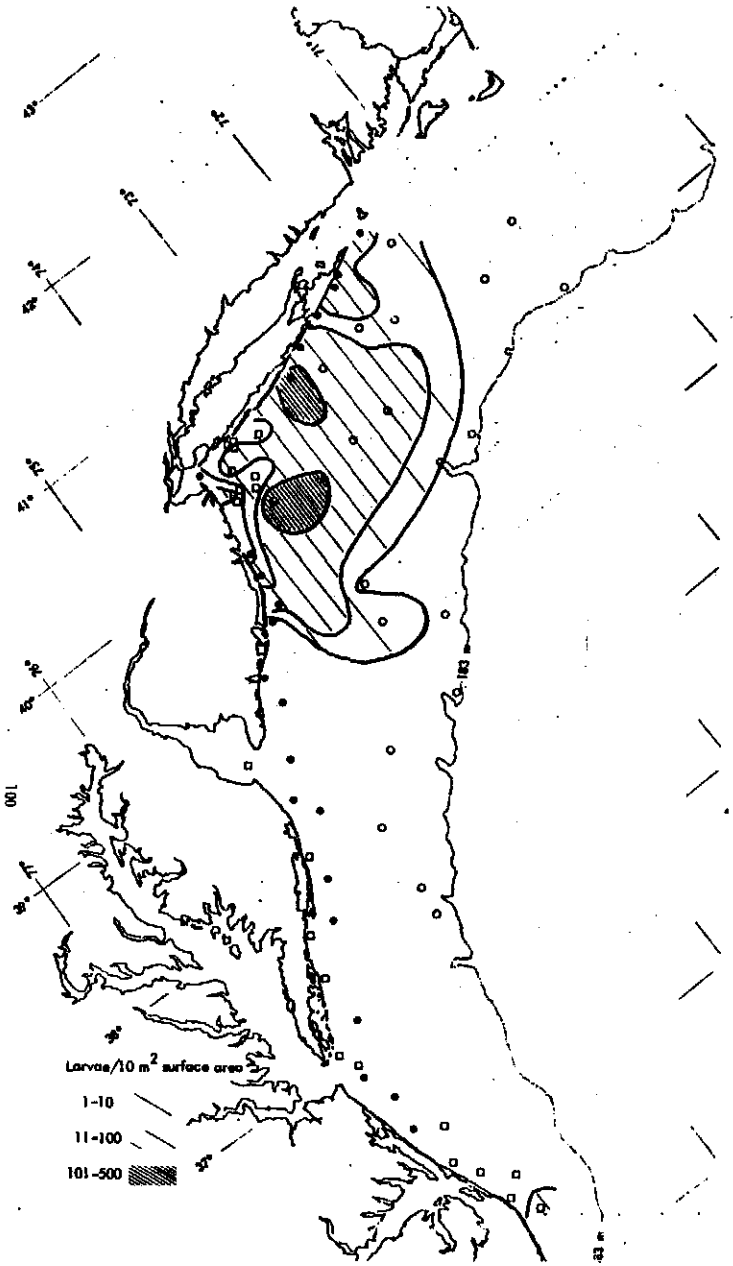


FIGURE 5.3.31. Distribution and abundance of yellowtail flounder, Limanda ferruginea, larvae in the Middle Atlantic Bight, spring 1974.

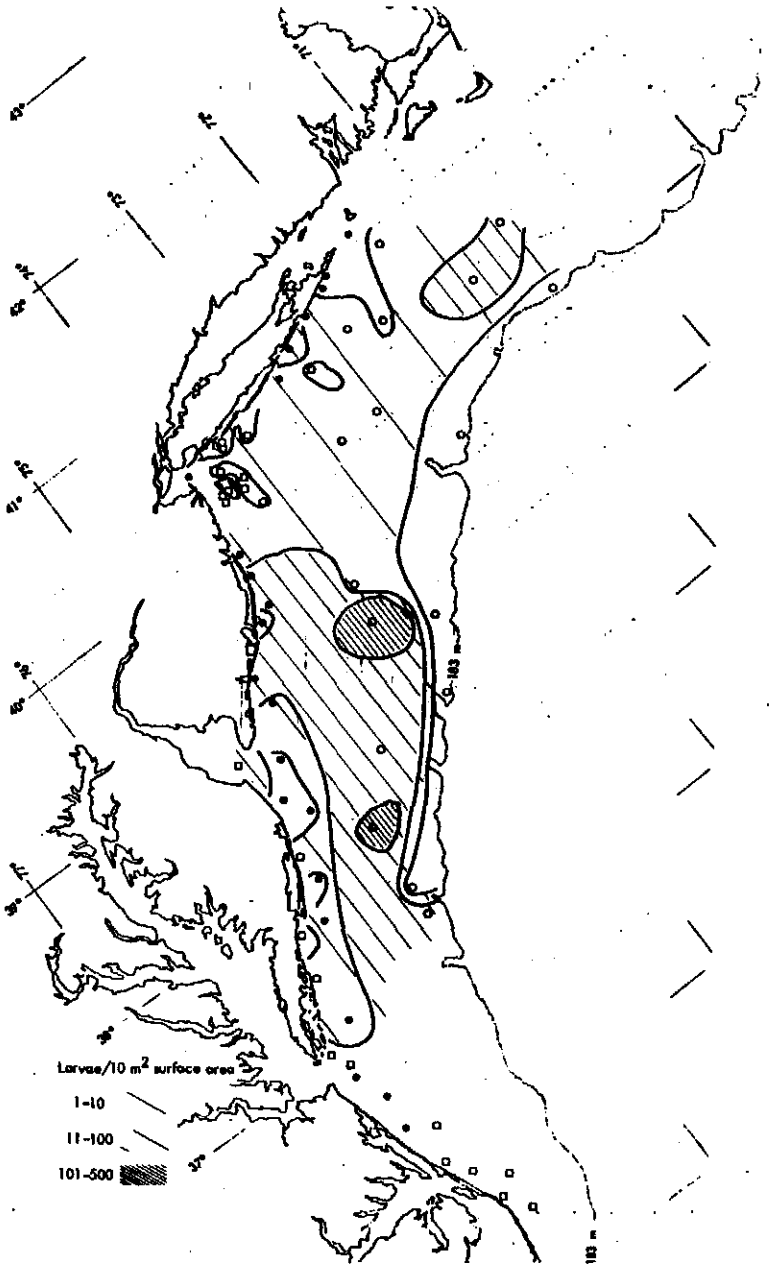


FIGURE 5.3.32. Distribution and abundance of sand lance, Ammodytes spp., larvae in the Middle Atlantic Bight, spring 1974.

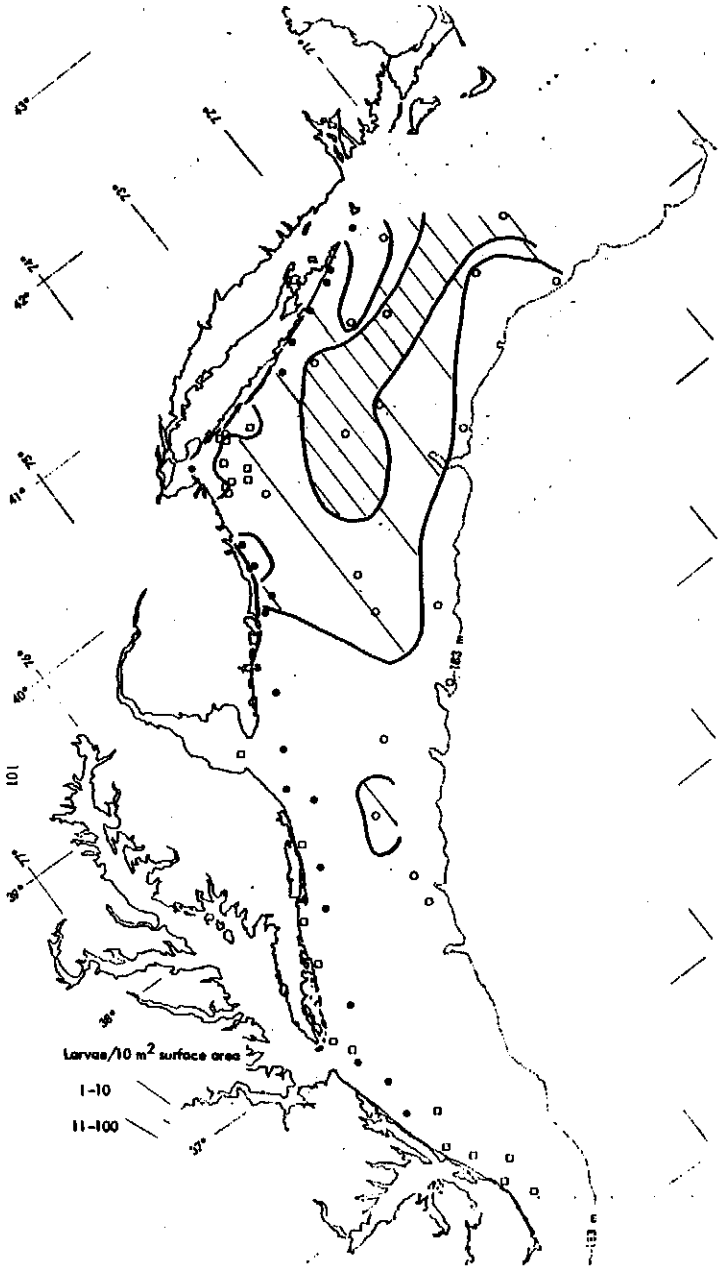


FIGURE 5.3.33. Distribution and abundance of Atlantic cod, Gadus morhua, larvae in the Middle Atlantic Bight, spring 1974.

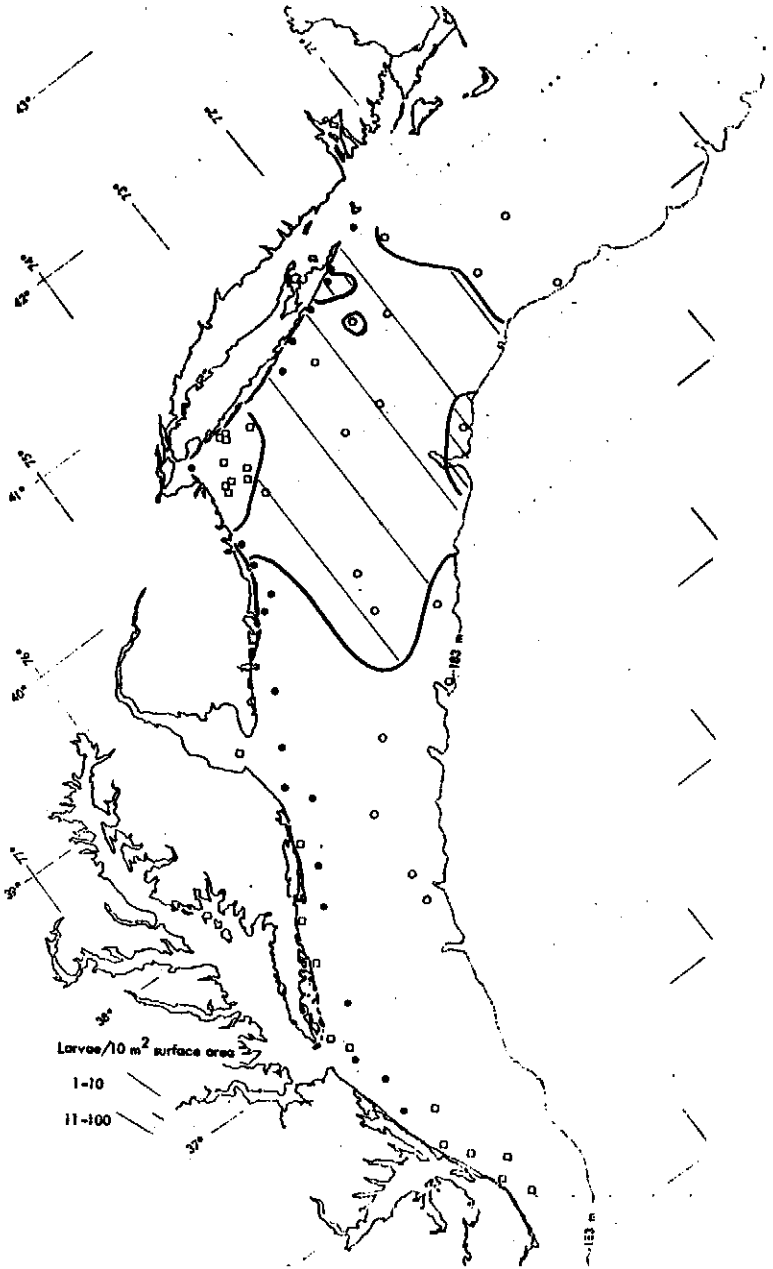


FIGURE 5.3.34. Distribution and abundance of fourbeard rockling, Enchelyopus cimbrius, larvae in the Middle Atlantic Bight, spring 1974.

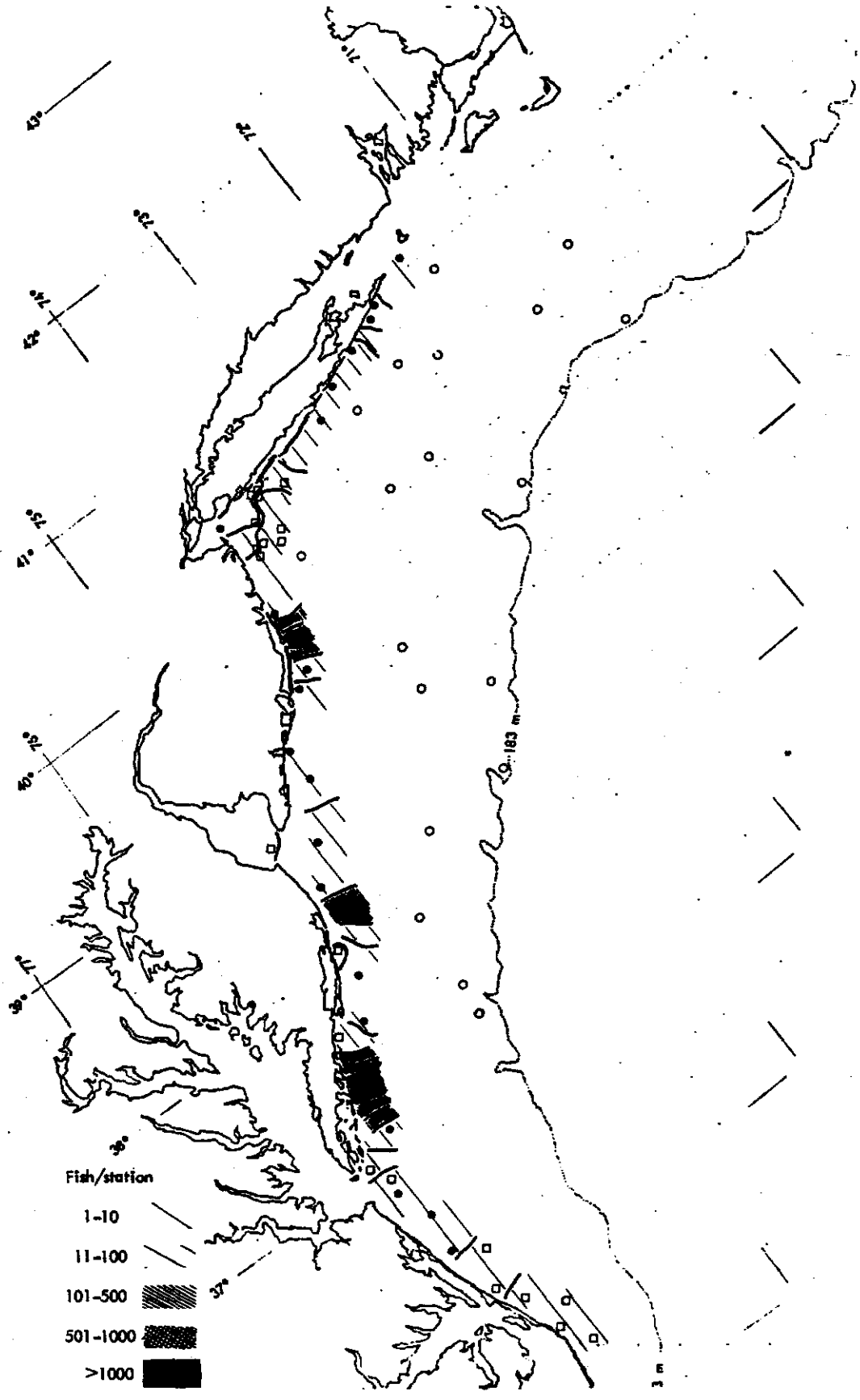


FIGURE 5.3.35. Occurrence of young-of-the-year fishes collected at the surface in the Middle Atlantic Bight, spring 1974.

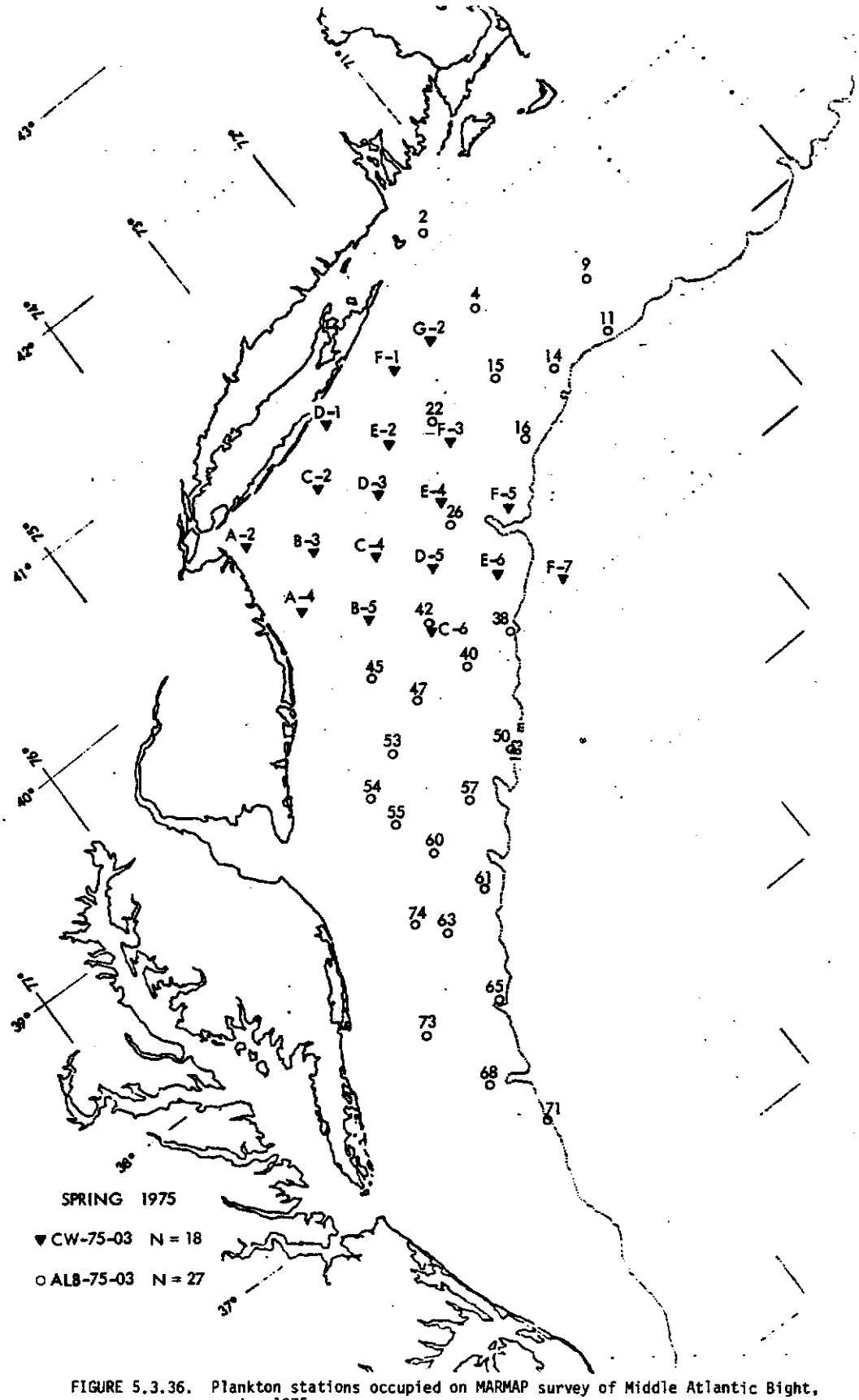


FIGURE 5.3.36. Plankton stations occupied on MARMAP survey of Middle Atlantic Bight, spring 1975.

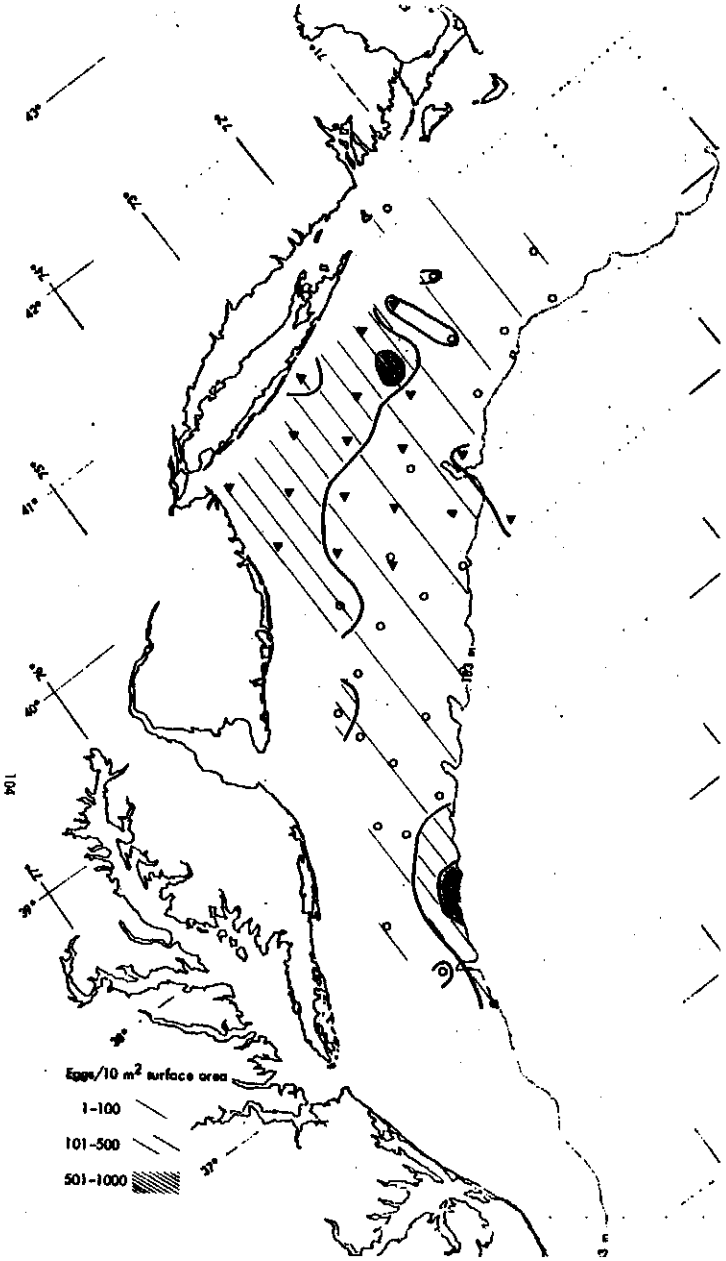


FIGURE 5.3.37. Distribution and abundance of fish eggs in Middle Atlantic Bight, spring 1975.

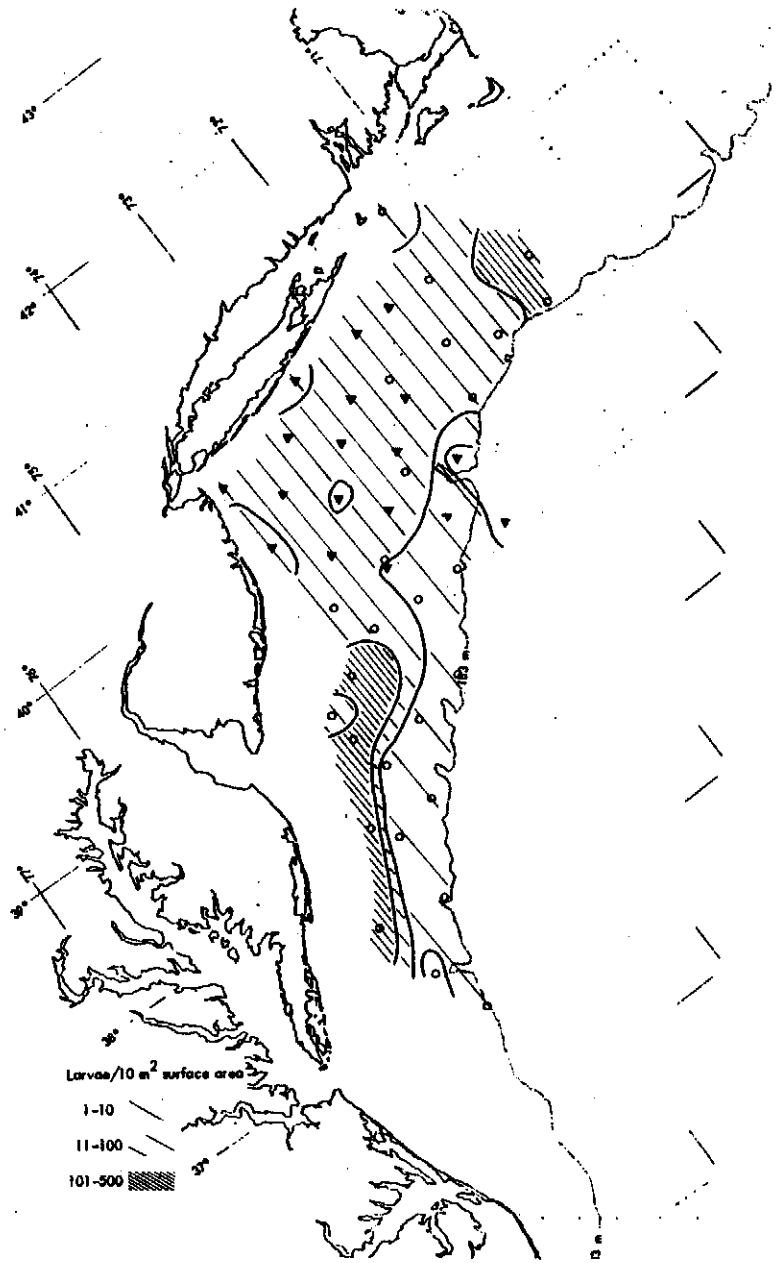


FIGURE 5.3.38. Distribution and abundance of fish larvae in Middle Atlantic Bight, spring 1975.

FIGURE 5.3.39. Distribution and abundance of sand lance, Ammodytes spp., larvae in the Middle Atlantic Bight, spring 1975.

FIGURE 5.3.40. Occurrence of young-of-the-year fishes collected at the surface in the Middle Atlantic Bight, spring 1975.

FIGURE 5.3.41. Occurrence of young-of-the-year sand lance, *Ammodytes* spp., in surface waters of the Middle Atlantic Bight, spring 1975.

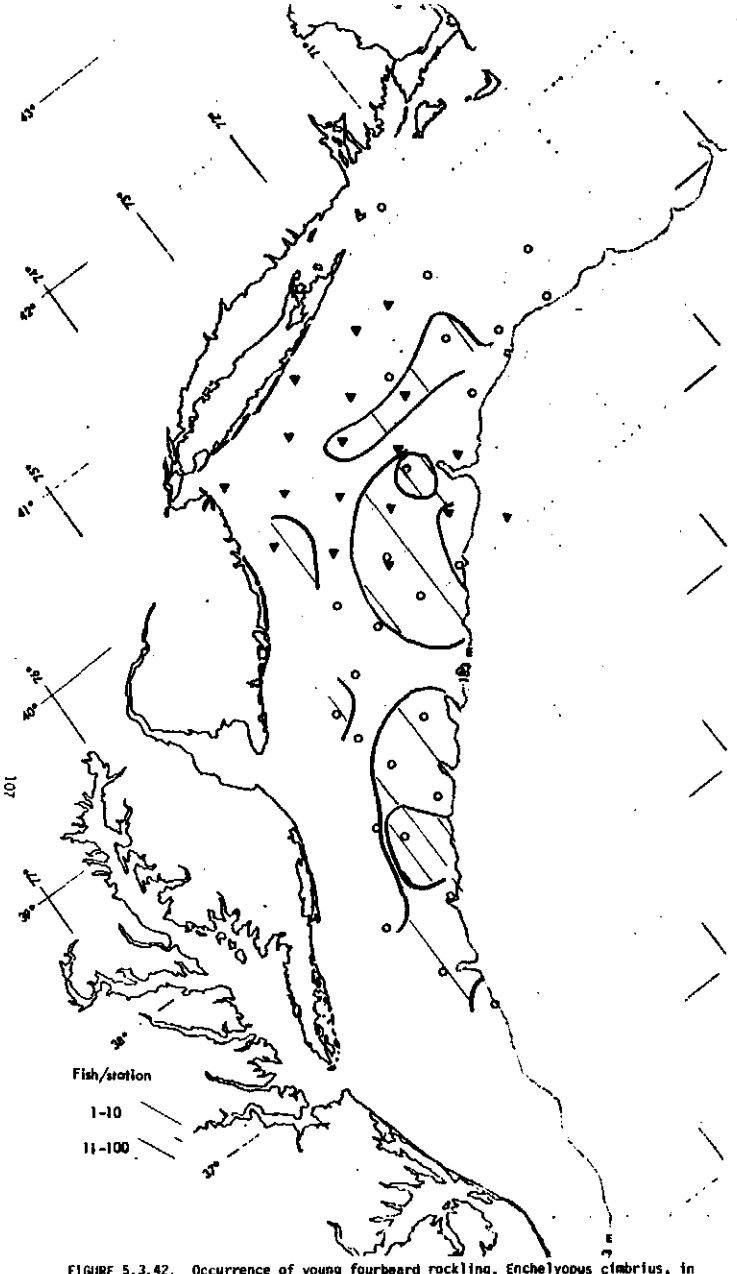


FIGURE 5.3.42. Occurrence of young fourbeard rockling, Enchelyopus cimbrius, in surface waters of the Middle Atlantic Bight, spring 1975.

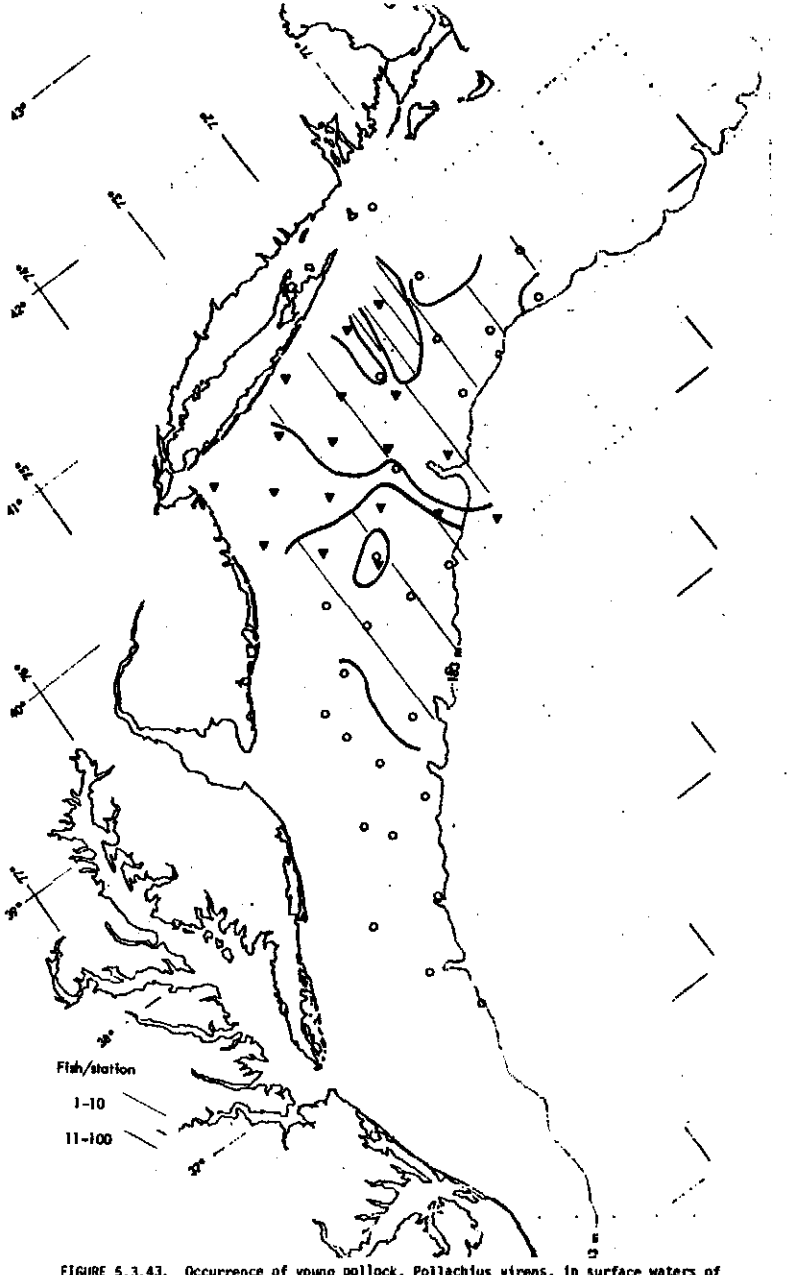


FIGURE 5.3.43. Occurrence of young pollock, Pollachius virens, in surface waters of the Middle Atlantic Bight, spring 1975.

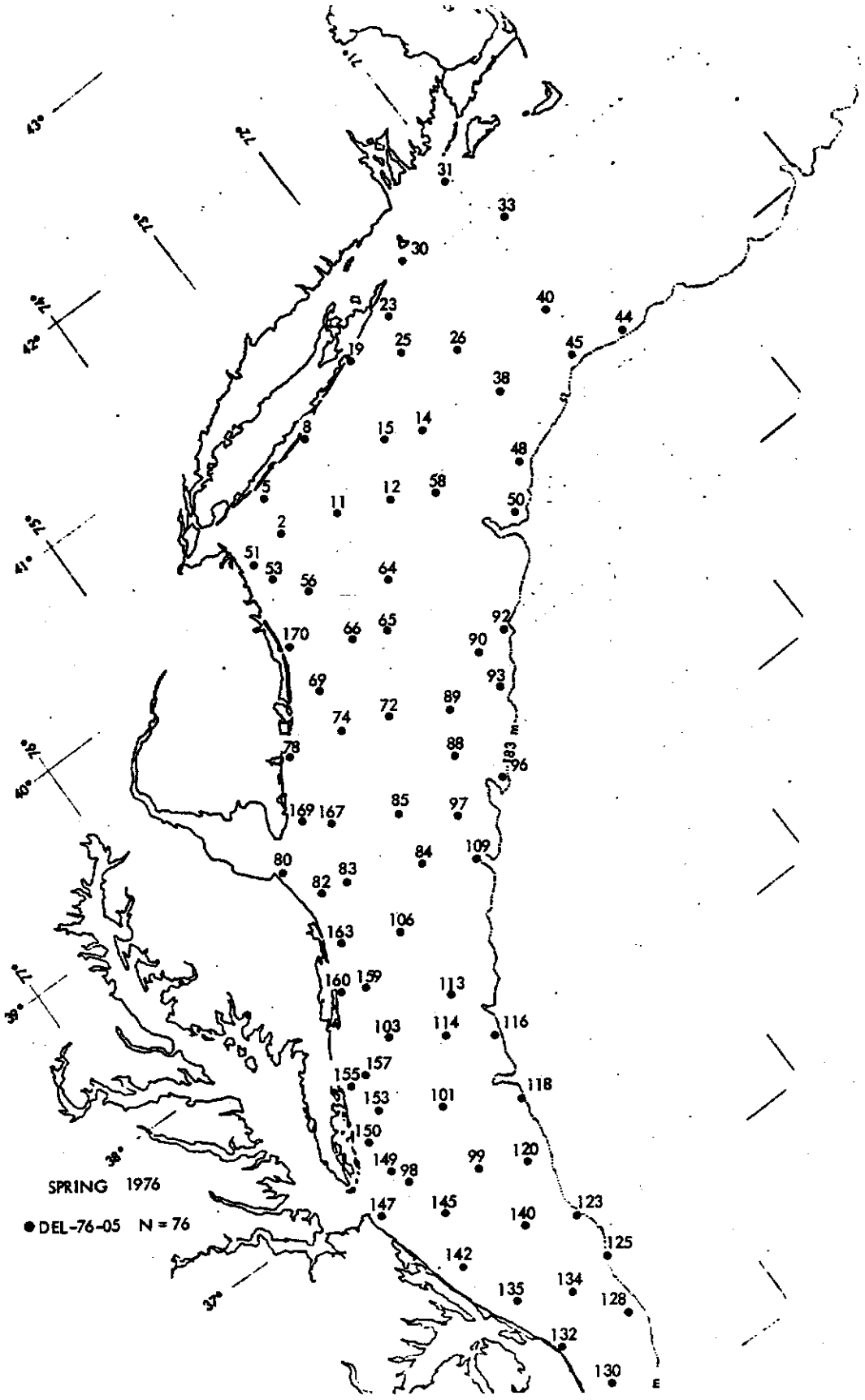


FIGURE 5.3.44. Plankton stations occupied on MARMAP survey of the Middle Atlantic Bight, spring 1976.

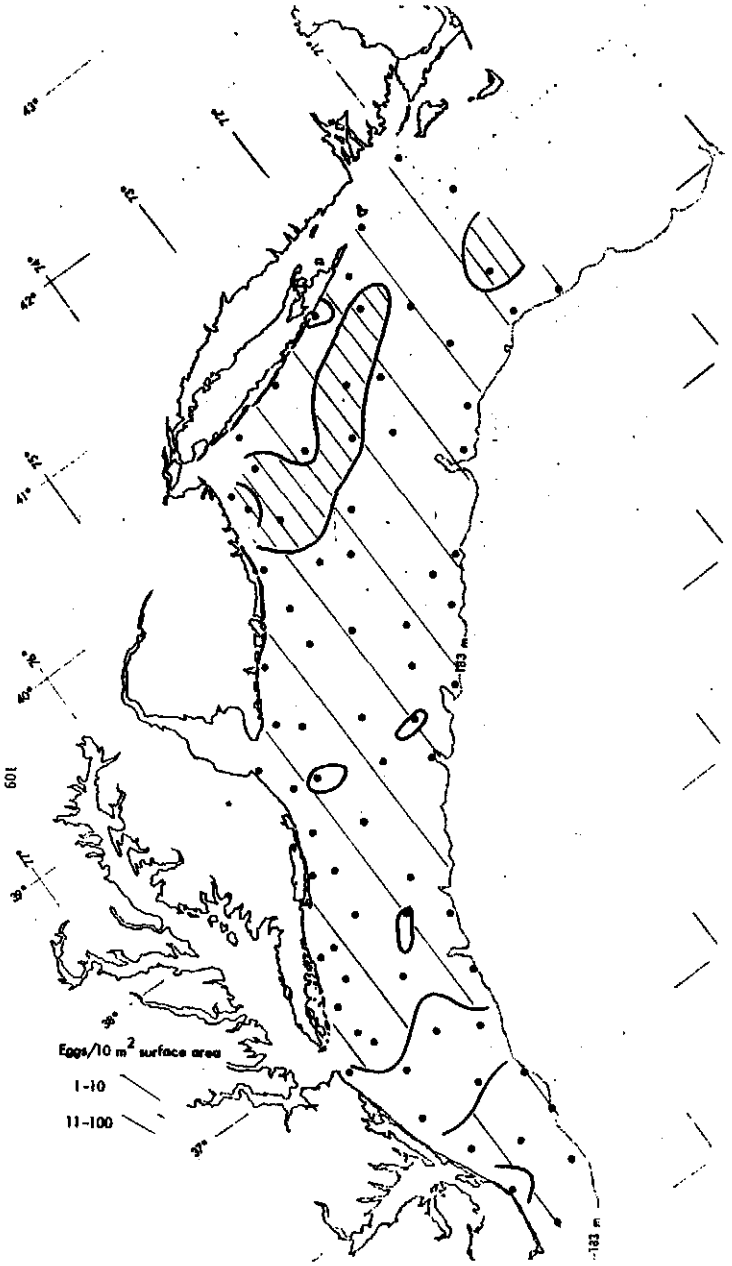


FIGURE 5.3.45. Distribution and abundance of fish eggs in the Middle Atlantic Bight, spring 1976.

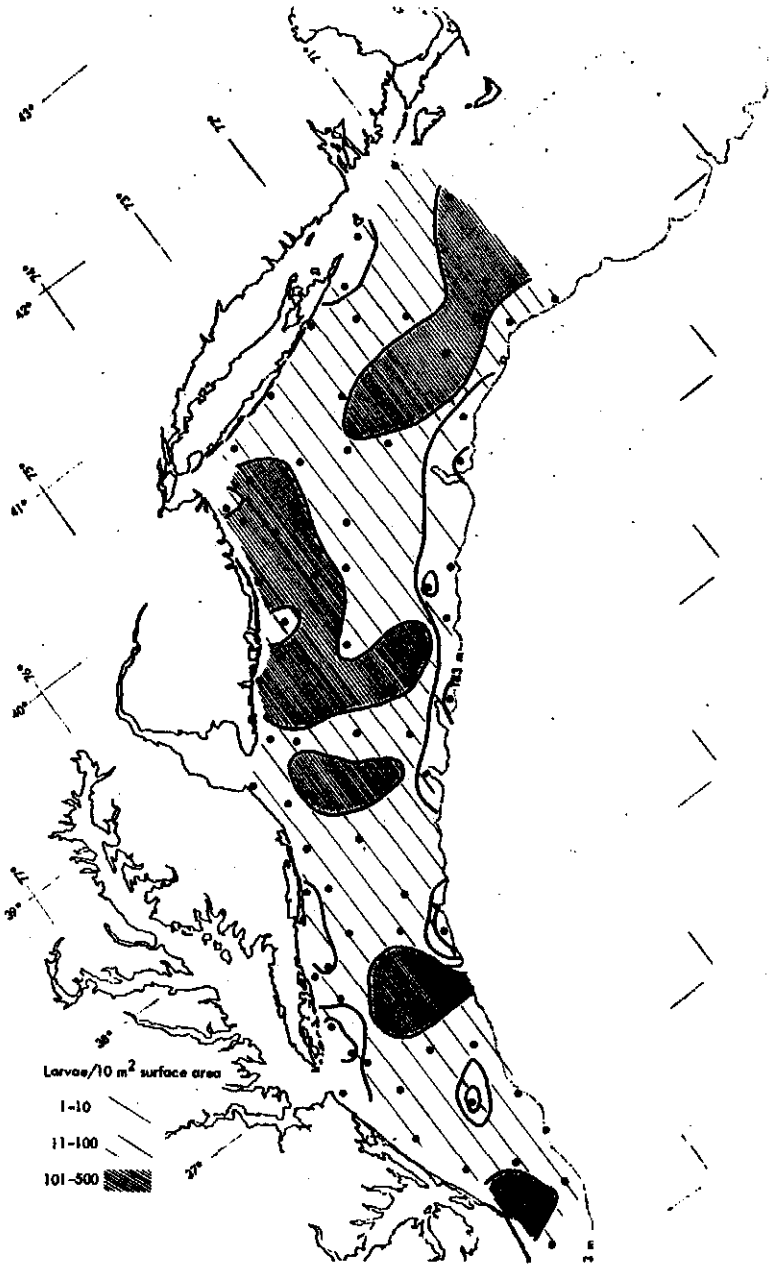


FIGURE 5.3.46. Distribution and abundance of fish larvae in the Middle Atlantic Bight, spring 1976.

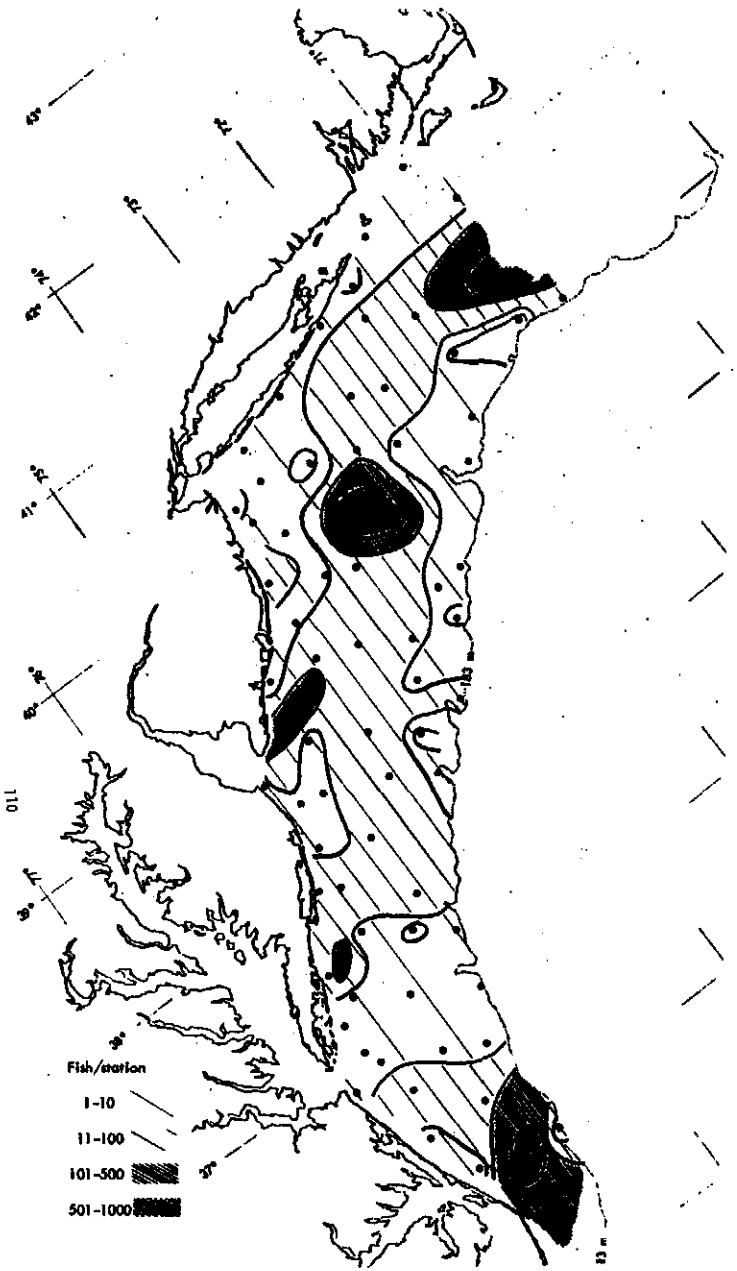


FIGURE 5.3.47. Occurrence of young-of-the-year fishes at the surface in the Middle Atlantic Bight, spring 1976.

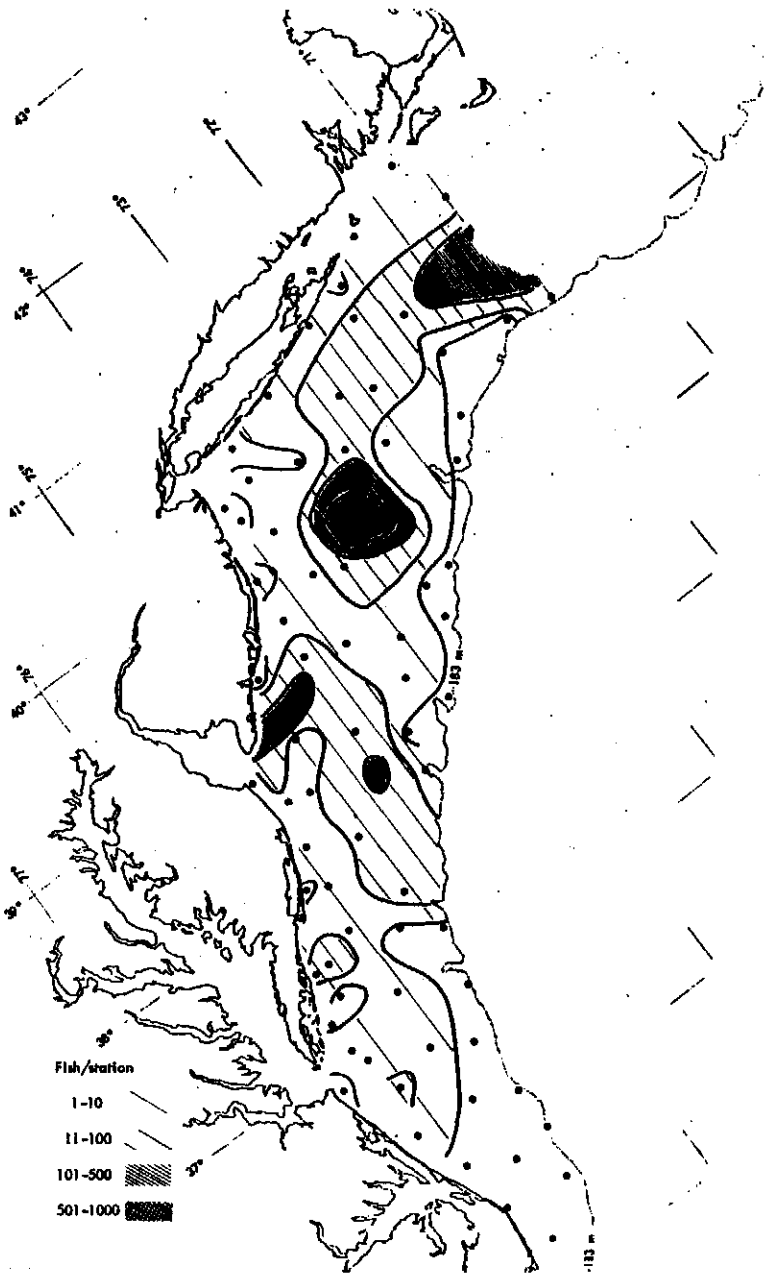


FIGURE 5.3.48. Occurrence of young-of-the-year sand lance, *Ammodytes* spp., in surface waters of the Middle Atlantic Bight, spring 1976.

Table 5.2.0. Station coordinates for semi-annual ichthyoplankton surveys in Middle Atlantic Bight, fall 1973 through spring 1976

Spring 1974				
Cruise	Sta.	Da/Mo	Lat.(N)	Long.(W)
AT-74-02	3	2/4	40°30'	73°39'
	6	2/4	40°28'	73°23'
	8	2/4	40°34'	73°37'
	9	2/4	40°32'	73°39'
	10	2/4	40°23'	73°44'
	13	2/4	40°17'	73°36'
	14	2/4	40°13'	73°41'
	15	3/4	40°17'	73°48'
	16	3/4	40°14'	73°53'
	17	3/4	40°17'	73°52'
	60	18/4	35°31'	75°19'
	61	18/4	35°41'	75°27'
	64	19/4	35°45'	75°17'
	66	19/4	35°56'	75°31'
	68	19/4	36°06'	75°38'
	69	19/4	36°19'	75°33'
	72	20/4	36°56'	75°47'
	73	20/4	37°03'	75°51'
	75	20/4	37°31'	75°36'
	76	20/4	37°46'	75°31'
	79	21/4	38°12'	75°08'
	80	21/4	38°51'	75°03'
DEL-74-02	86	25/4	36°24'	75°45'
	87	25/4	36°38'	75°41'
	88	25/4	36°50'	75°49'
	91	26/4	37°10'	75°35'
	95	26/4	37°44'	75°14'
	97	26/4	37°59'	75°05'
	101	26/4	38°22'	74°49'
	102	26/4	38°32'	74°57'
	105	27/4	38°44'	74°47'
	109	27/4	39°02'	74°33'
	112	27/4	39°14'	74°33'
	116	27/4	39°29'	74°14'
	119	27/4	39°33'	74°03'
	121	28/4	39°45'	74°04'
	123	28/4	39°54'	74°01'
	M-14	29/4	40°28'	73°58'
	143	29/4	40°39'	72°55'
	146	30/4	40°46'	72°42'
	148	30/4	40°50'	72°24'
	151	30/4	40°54'	72°09'
	153	30/4	40°58'	72°04'
	157	30/4	41°06'	71°40'
ALB-74-04	4	13/3	40°53'	71°32'
	7	14/3	40°21'	71°11'
	13	14/3	39°38'	72°00'
	16	15/3	38°51'	73°05'
	19	15/3	38°25'	73°23'
	23	15/3	38°24'	74°08'
	28	16/3	37°35'	74°35'
	30	16/3	37°23'	74°35'
	40	19/3	38°02'	74°30'
	46	20/3	39°04'	73°30'
	53	21/3	39°19'	73°29'
	61	29/3	39°59'	70°40'
	73	1/4	40°07'	73°38'
	75	1/4	40°06'	72°48'
	76	1/4	40°05'	72°26'
	78	2/4	40°32'	72°40'
	79	2/4	40°36'	72°11'
	80	2/4	40°29'	71°57'
	81	2/4	40°31'	70°41'

Spring 1975				
Cruise	Sta.	Da/Mo	Lat.(N)	Long.(W)
CW-75-03	A-2	5/3	40°22'	73°48'
	B-3	5/3	40°07'	73°30'
	A-4	5/3	39°52'	73°48'
	B-5	6/3	39°37'	73°30'
	C-6	6/3	39°22'	73°10'
	D-5	6/3	39°37'	72°50'
	E-6	6/3	39°22'	72°31'
	F-7	6/3	39°07'	72°11'
	F-5	6/3	39°37'	72°11'
	E-4	7/3	39°52'	72°31'
	D-3	7/3	40°07'	72°50'
	C-4	7/3	39°52'	73°10'
	C-2	7/3	40°22'	73°10'
	F-1	10/3	40°37'	72°11'
	G-2	10/3	40°22'	71°51'
	F-3	10/3	40°07'	72°11'
	E-2	10/3	40°22'	72°31'
	D-1	11/3	40°37'	72°50'
ALB-75-03	2	4/3	41°03'	71°17'
	4	5/3	40°37'	71°26'
	9	5/3	40°19'	70°41'
	11	5/3	40°01'	70°48'
	14	6/3	40°05'	71°16'
	15	6/3	40°13'	71°40'
	16	6/3	39°52'	71°45'
	22	7/3	40°16'	72°12'
	26	7/3	39°45'	72°34'
	38	10/3	39°05'	72°43'
	40	10/3	39°03'	73°08'
	42	11/3	39°23'	73°10'
	45	10/3	39°21'	73°43'
	47	11/3	39°06'	73°32'
	50	13/3	38°33'	73°14'
	53	13/3	38°56'	73°55'
	54	13/3	38°49'	74°14'
	55	13/3	38°37'	74°12'
	57	15/3	38°29'	73°42'
	60	15/3	38°22'	74°09'
	61	15/3	38°00'	74°01'
	63	15/3	37°57'	74°25'
	65	16/3	37°28'	74°24'
	68	16/3	37°09'	74°49'
	71	16/3	36°45'	74°39'
	73	16/3	37°34'	74°56'
	74	17/3	38°07'	74°32'

Spring 1976				
Cruise	Sta.	Da/Mo	Lat.(N)	Long.(W)
DEL-76-05	2	4/3	40°17'	73°37'
	5	4/3	40°31'	73°31'
	8	5/3	40°39'	73°01'
	11	5/3	40°12'	73°11'
	12	5/3	40°04'	72°48'
	14	5/3	40°16'	72°19'
	15	5/3	40°20'	72°35'
	19	6/3	40°50'	72°28'
	23	6/3	40°56'	72°00'
	25	6/3	40°41'	72°03'
	26	6/3	40°30'	71°45'
	30	6/3	41°05'	72°41'
	31	7/3	41°17'	71°01'
	33	7/3	40°53'	71°51'
	38	8/3	40°10'	71°42'
	40	8/3	40°22'	71°04'
	44	8/3	39°59'	70°44'
	45	8/3	40°04'	71°09'
	48	9/3	39°45'	71°54'
	50	9/3	39°34'	72°11'
	51	10/3	40°15'	73°53'
	53	10/3	40°07'	73°52'
	56	11/3	39°56'	73°39'
	58	11/3	39°56'	72°30'
	64	12/3	39°41'	73°14'
	65	12/3	39°28'	73°24'
	66	12/3	39°33'	73°38'
	69	12/3	39°27'	74°03'
	72	12/3	39°06'	73°47'
	74	13/3	39°07'	74°11'
	78	13/3	39°15'	74°34'
	80	14/3	38°45'	75°02'
	82	14/3	38°30'	74°54'
	83	14/3	38°28'	74°43'
	84	14/3	38°20'	74°13'
	85	14/3	38°36'	74°08'
	88	14/3	38°40'	73°33'
	89	14/3	38°53'	73°23'
	90	15/3	39°04'	72°58'
	92	15/3	39°05'	72°42'
	93	15/3	38°49'	73°00'
	96	15/3	38°26'	73°22'
	97	15/3	38°26'	73°48'
	98	17/3	36°54'	75°37'
	99	17/3	36°48'	75°12'
	101	18/3	37°08'	75°06
	103	18/3	37°38'	75°07'
	106	18/3	38°03'	74°37'
	109	18/3	38°09'	73°53'
	113	19/3	37°37'	74°37'
	114	19/3	37°26'	74°47'
	116	19/3	37°17'	74°32'
	118	19/3	36°53'	74°39'
	120	19/3	36°35'	74°52'
	123	20/3	36°12'	74°47'
	125	20/3	35°54'	74°49'
	128	20/3	35°35'	74°56'
	130	20/3	35°18'	75°18'
	132	21/3	35°38'	75°26'
	134	21/3	35°51'	75°08'
	135	21/3	35°59'	75°30'
	140	21/3	36°18'	75°10'
	142	21/3	36°21'	75°40'
	145	22/3	36°38'	75°32'
	147	22/3	36°50'	75°56'
	149	22/3	37°01'	75°44'
	150	22/3	37°13'	75°42'
	153	22/3	37°19'	75°29'
	155	22/3	37°32'	75°35'
	157	22/3	37°33'	75°24'
	159	23/3	37°56'	75°03'
	160	23/3	38°00'	75°14'
	163	23/3	38°13'	74°59'
	167	23/3	38°45'	74°33'
	169	23/3	38°53'	74°43'
	170	24/3	39°44'	74°01

Table 5.2.0. (continued)

Fall 1973				
Cruise	Sta.	Da/Mo	Lat.(N)	Long.(W)
AT-73-3	5	27/9	40°36'	71°58'
	8	27/9	40°51'	72°12'
	15	3/10	41°06'	71°41'
	16	3/10	40°59'	71°52'
	19	3/10	40°52'	72°23'
	20	3/10	40°39'	72°57'
	21	4/10	40°36'	73°19'
	23	4/10	40°24'	73°37'
	25	4/10	40°16'	73°52'
	27	4/10	40°23'	73°49'
	28	4/10	40°34'	73°45'
	33	5/10	40°28'	73°41'
	36	7/10	39°59'	74°03'
	38	8/10	39°52'	73°55'
	41	8/10	39°39'	73°56'
	43	8/10	39°30'	74°16'
	45	8/10	39°16'	74°11'
	51	9/10	39°09'	74°40'
	54	9/10	39°01'	74°34'
	57	9/10	38°52'	74°56'
	59	9/10	38°44'	74°54'
	62	10/10	38°36'	74°54'
	64	10/10	38°24'	74°53'
	67	10/10	38°16'	75°05'
	69	10/10	37°56'	75°03'
	73	11/10	37°41'	75°27'
	77	11/10	37°26'	75°25'
	80	11/10	37°14'	75°37'
	84	13/10	37°01'	75°45'
	86	14/10	36°52'	75°57'
	87	14/10	36°46'	75°51'
	92	14/10	36°34'	75°41'
	93	14/10	36°23'	75°38'
	94	14/10	36°19'	75°47'
	98	15/10	35°56'	75°19'
	99	15/10	35°52'	75°27'
	102	15/10	35°00'	75°13'
	105	16/10	35°26'	75°24'
	107	16/10	35°11'	75°18'
	142	31/10	40°31'	73°56'
	144	31/10	40°24'	73°48'
	145	31/10	40°23'	73°52'
	146	31/10	40°20'	73°44'
	147	31/10	40°16'	73°39'
	155	2/11	40°15'	73°37'
	163	5/11	40°15'	73°36'
	167	6/11	40°12'	73°45'
	168	6/11	40°17'	73°48'
	169	7/11	40°28'	73°50'
ALB-73-8	1	26/9	40°59'	71°21'
	5	27/9	40°36'	71°58'
	9	27/9	40°29'	72°08'
	12	28/9	40°13'	72°46'
	13	28/9	39°48'	73°09'
	14	28/9	40°08'	73°08'
	20	29/9	39°20'	73°32'
	32	30/9	36°51'	75°25'
	41	1/10	35°48'	74°50'
	42	1/10	36°01'	74°50'
	45	2/10	36°34'	74°47'
	51	2/10	36°58'	74°37'
	56	3/10	37°48'	74°26'
	57	3/10	37°51'	74°32'
	58	3/10	38°08'	74°10'
	59	3/10	37°57'	73°57'
	65	4/10	38°44'	73°54'
	66	4/10	38°40'	73°36'
	68	4/10	38°40'	73°11'
	70	4/10	38°53'	72°54'
	71	4/10	38°54'	73°27'
	72	5/10	39°06'	73°17'
	74	5/10	39°27'	72°48'
	76	5/10	39°22'	72°16'
	77	5/10	39°38'	72°34'
	78	5/10	39°56'	72°35'
	80	5/10	39°11'	72°20'
	82	6/10	39°45'	71°53'
	87	7/10	40°32'	71°05'
	88	7/10	40°10'	71°36'
	89	7/10	40°10'	71°44'
	93	7/10	40°06'	71°10'
	96	8/10	40°21'	70°50'

Fall 1974				
Cruise	Sta.	Da/Mo	Lat.(N)	Long.(W)
DEL-74-11	C-2	24/9	40°23'	73°10'
	D-1	24/9	40°37'	72°50'
	E-2	25/9	40°23'	72°31'
	F-1	25/9	40°37'	72°11'
	G-2	25/9	40°23'	71°51'
	F-3	25/9	40°07'	72°11'
	G-4	25/9	39°52'	71°51'
	F-7	26/9	39°07'	72°11'
	E-6	26/9	39°23'	72°31'
	D-5	26/9	39°37'	72°50'
	E-4	26/9	39°52'	72°31'
	D-3	27/9	40°07'	72°50'
	C-4	27/9	39°52'	73°10'
	B-5	27/9	39°37'	73°30'
	A-4	27/9	39°52'	73°48'
	B-3	28/9	40°07'	73°30'
	A-2	28/9	40°22'	73°48'
DEL-74-12	4	28/9	40°33'	73°30'
	5	28/9	40°37'	73°12'
	8	29/9	40°49'	72°23'
	10	29/9	40°58'	71°55'
	11	29/9	41°06'	71°36'
	15	30/9	40°41'	72°51'
	18	30/9	40°26'	73°37'
	22	30/9	40°19'	73°51'
	24	30/9	39°57'	73°58'
	27	30/9	39°41'	73°55'
	30	1/10	39°23'	74°04'
	32	1/10	39°18'	74°20'
	34	1/10	38°56'	74°39'
	37	1/10	38°41'	74°58'
	41	1/10	38°24'	74°58'
	42	2/10	38°11'	75°05'
	44	2/10	37°47'	75°16'
	47	2/10	37°26'	75°35'
	48	2/10	37°11'	75°43'
	50	2/10	36°56'	75°51'
	54	3/10	36°32'	75°47'
	56	3/10	36°15'	75°43'
ALB-74-11	2	23/9	40°33'	71°04
	3	23/9	40°21'	70°46'
	6	24/9	40°01'	70°44'
	10	24/9	40°11'	71°33'
	23	26/9	39°20'	73°19'
	25	26/9	39°05'	72°48'
	29	26/9	38°34'	73°11'
	31	26/9	38°23'	73°42'
	39	27/9	37°52'	74°04'
	41	27/9	37°31'	74°27'
	43	27/9	37°42'	74°51'
	44	27/9	37°23'	75°02'
	48	28/9	36°55'	74°37'
	51	28/9	36°35'	74°43'
	54	28/9	36°19'	74°59'
	57	29/9	36°03'	74°49'
	61	29/9	35°34'	75°10'
	65	29/9	35°43'	75°15'
	67	29/9	36°10'	75°20'
	69	30/9	36°20'	75°39'
	73	30/9	36°38'	75°20'
	75	30/9	36°52'	75°40'
	77	30/9	36°56'	75°11'
	80	1/10	37°28'	75°24'
	82	1/10	37°56'	75°04'
	83	1/10	38°11'	74°54'
	86	1/10	38°29'	74°45'
	88	1/10	38°45'	74°46'
	91	2/10	38°20'	74°21'
	92	2/10	38°34'	74°22'
	94	2/10	38°58'	73°38'
	95	2/10	39°02'	74°09'
	97	2/10	39°32'	73°52'
	98	2/10	39°41'	73°52'
	111	4/10	40°53'	71°56'

Fall 1975				
Cruise	Sta.	Da/Mo	Lat.(N)	Long.(W)
DEL-75-17	5	15/10	40°34'	73°25'
	7	16/10	40°01'	73°05'
	10	16/10	40°22'	73°00'
	13	16/10	40°38'	73°03'
	16	16/10	40°36'	72°38'
	17	17/10	40°44'	72°33'
	21	17/10	40°52'	72°13'
	24	17/10	40°40'	71°58'
	30	17/10	41°02'	71°45'
	32	18/10	41°21'	71°18'
	34	18/10	40°57'	70°55'
	38	18/10	40°29'	71°14'
	39	18/10	40°30'	70°44'
	42	20/10	40°05'	70°33'
	44	20/10	40°03'	71°14'
	48	21/10	40°25'	71°56'
	51	21/10	39°54'	72°19'
	53	21/10	39°49'	71°49'
	54	22/10	39°34'	72°14'
	55	22/10	39°18'	72°18'
	57	22/10	39°14'	72°50'
	60	22/10	39°35'	73°01'
	64	23/10	39°41'	73°36'
	65	23/10	39°34'	74°03'
	66	23/10	39°48'	73°55'
	67	23/10	39°57'	74°03'
	68	23/10	40°03'	73°50'
	72	23/10	40°24'	73°56'
	78	24/10	40°08'	73°33'
	79	27/10	39°19'	73°37'
	82	27/10	38°45'	73°34'
	84	28/10	38°57'	73°16'
	86	28/10	38°51'	72°54'
	88	28/10	38°33'	73°16'
	91	28/10	38°10'	73°46'
	92	28/10	38°20'	73°58'
	94	29/10	38°49'	74°18'
	95	29/10	38°34'	74°22'
	97	29/10	38°08'	74°30'
	98	29/10	37°58'	74°52'
	99	29/10	37°55'	74°34'
	101	29/10	37°54'	74°00'
	102	29/10	37°49'	74°15'
	103	29/10	37°40'	74°16'
	105	30/10	37°41'	74°40'
	107	30/10	37°24'	74°28'
	108	30/10	37°27'	75°25'
	113	31/10	37°39'	75°23'
	116	31/10	37°38'	75°13'
	117	31/10	37°29'	75°05'
	118	31/10	37°15'	75°19'
	120	31/10	37°06'	75°37'
	121	31/10	36°52'	75°39'
	122	31/10	36°46'	75°26'
	123	31/10	36°40'	75°07'
	124	1/11	36°58'	74°57'
	129	1/11	36°50'	74°38'
	131	1/11	36°27'	74°46'
	133	1/11	36°29'	75°07'
	134	2/11	36°14'	75°01'
	136	2/11	35°56'	74°48'
	138	2/11	35°37'	74°52'
	139	2/11	35°31'	75°08'
	142	2/11	35°27'	75°27'
	146	3/11	35°37'	75°15'
	147	3/11	35°45'	75°29'
	149	3/11	35°38'	75°22'
	151	3/11	36°10'	75°41'
	152	3/11	36°21'	75°24'
	154	3/11	36°27'	75°44'
	156	3/11	36°31'	75°48'
	157	4/11	36°54'	75°49'
	161	5/11	37°52'	75°18'
	164	5/11	38°03'	75°01'
	169	6/11	38°26'	74°53'
	172	6/11	38°44'	74°58'
	173	6/11	38°42'	74°51
	176	6/11	38°54'	74°44'
	180	6/11	39°08'	74°39'
	183	7/11	39°11'	74°08'
	185	7/11	39°22'	74°20'
	188	7/11	39°29'	74°01'
	190	7/11	39°58'	73°51'

TABLE 5.3.0. Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the Middle Atlantic Bight, fall 1973.

September 26 to November 7, 1973

Taxa	% of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
CONGRIDAE	<0.1	0.34	2.75	811	2.4	0/76	2.98
OPHICHTHIDAE	<0.1	0.30	1.08	361	7.3	0/76	2.60
CLUPEIFORMES	<0.1	0.17	1.02	602	3.7	0/76	1.49
CLUPEIDAE	<0.1	0.19	1.14	601	3.7	0/76	1.67
Brevoortia tyrannus	0.1	0.93	5.28	528	8.5	0/76	9.02
ENGRAULIDAE	<0.1	0.18	1.39	773	2.4	0/76	1.58
Anchoa hepsetus	0.9	7.00	39.61	565	19.5	0/76	60.36
Anchoa mitchilli	0.1	0.71	3.69	519	8.5	2/76	6.14
Anchoa sp.	0.1	0.59	2.21	374	8.5	1/76	5.14
Engraulis eurystole	0.6	4.47	13.89	310	18.3	0/76	38.60
STERNOPTYCHIDAE							
Cyclothone sp.	0.1	0.43	2.41	562	4.9	0/76	3.72
SYNODONTIDAE	0.1	0.68	3.07	451	6.1	0/76	5.86
Saurida brasiliensis	0.1	0.48	2.39	498	6.1	0/76	4.00
Synodus poeyi	<0.1	0.06	0.57	872	1.2	0/76	0.57
PARALEPIDIDAE	0.1	0.69	2.64	383	8.5	0/76	6.05
MYCTOPHIDAE	<0.1	0.11	0.72	616	2.4	0/76	1.02
Ceratoscopelus maderensis	0.5	3.57	12.74	357	15.9	0/76	30.88
Ceratoscopelus warmingi	0.1	0.85	5.67	668	6.1	0/76	7.35
Diaphus sp.	0.1	0.43	2.70	630	4.9	0/76	3.53
Lampanyctus sp.	<0.1	0.14	0.76	543	3.7	0/76	0.84
LOPHIFORMES	<0.1	0.31	1.39	450	4.9	0/76	2.70
LOPHIDAE							
Lophius americanus	0.2	1.48	5.00	338	12.2	0/76	12.09
GADIDAE	<0.1	0.01	0.11	871	1.2	0/76	0.09
Merluccius bilinearis	4.0	30.39	90.44	297	33.0	0/76	261.52
Urophycis spp.	60.0	423.70	76.12	191	67.1	29/76	3952.41
OPHIDIIDAE-ZOARCIDAE	6.5	49.67	143.80	289	58.5	1/76	413.11
CARAPIDAE							
Carapus sp.	<0.1	0.02	0.22	871	1.2	0/76	0.19

TABLE 5.3.0 (continued)

Taxa	% of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
	September 26 to November 7, 1973						
EXOCOETIDAE	<0.1	0.02	0.22	872	1.2	0/76	0.19
ATHERINIDAE							
Menidia menidia	<0.1	0.21	1.61	769	2.4	0/76	1.86
SYNGNATHIDAE	<0.1	0.15	0.74	474	4.9	0/76	1.40
Hippocampus erectus	<0.1	0.03	0.25	646	2.4	1/76	0.28
SERRANIDAE							
Anthias nicholsi	<0.1	0.05	0.45	871	1.2	0/76	0.47
Centropristis striata	0.1	0.48	1.60	334	12.2	0/76	4.19
Liopropoma sp.	<0.1	0.06	0.47	716	2.4	0/76	0.59
PRIACANTHIDAE	<0.1	0.01	0.11	871	1.2	0/76	0.09
APOGONIDAE	<0.1	0.02	0.22	871	1.2	0/76	0.19
Howella sherborni	<0.1	0.03	0.34	871	1.2	0/76	0.28
BRANCHIOSTEGIDAE							
Lophatilus chamaeleonticeps	<0.1	0.05	0.45	872	1.2	0/76	0.47
CARANGIDAE	<0.1	0.25	1.13	453	6.1	0/76	2.14
Naucrates ductor	<0.1	0.21	1.37	655	2.4	0/76	1.86
Vomer setapinnis	<0.1	0.02	0.22	871	1.2	0/76	0.19
LUTJANIDAE	<0.1	0.14	1.26	872	1.2	0/76	1.21
GERREIDAE	<0.1	0.02	0.22	871	1.2	0/76	0.19
SCIAENIDAE							
Leiostomus xanthurus	<0.1	0.02	0.22	871	1.2	0/76	0.19
Micropogon undulatus	0.8	6.43	18.96	294	23.2	3/76	55.43
POMACENTRIDAE	<0.1	0.07	0.68	871	1.2	0/76	0.65
LABRIDAE	<0.1	0.10	0.66	632	2.4	0/76	0.84
LABRID-SCARID	0.1	0.53	2.38	442	8.5	0/76	4.65
BLENNIDAE	<0.1	0.06	0.34	517	3.7	0/76	0.56
CALLIONYMIDAE	<0.1	0.02	0.22	871	1.2	0/76	0.19
GOBIIDAE	0.6	4.89	9.88	201	47.6	6/76	41.76
ACANTHURIDAE	<0.1	0.07	0.51	646	2.4	0/76	0.65

TABLE 5.3.0 (continued)

Taxa	September 26 to November 7, 1973 % of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
TRICHIURIDAE	<0.1	0.03	0.34	873	1.2	0/76	0.37
STROMATEIDAE							
Peprilus triacanthus	0.1	0.94	3.57	377	12.2	0/76	8.18
ARIOMMIDAE							
Ariomma sp.	<0.1	0.06	0.57	872	1.2	0/76	0.57
SCORPAENIDAE	<0.1	0.27	1.06	386	7.3	0/76	2.42
TRIGLIDAE							
Prionotus sp.	1.6	11.96	4.21	286	27.0	4/76	103.04
BOTHIDAE	<0.1	0.06	0.57	882	1.2	0/76	0.59
Bothus sp.	0.2	1.72	4.45	259	19.5	0/76	14.88
Citharichthys arctifrons	20.5	157.69	405.89	257	42.7	1/76	1359.29
Etropus microstomus	0.7	5.14	15.45	300	30.5	1/76	44.36
Hippoglossina oblongus	1.1	8.64	16.05	185	33.0	0/76	74.49
Paralichthys dentatus	0.1	0.50	1.90	380	9.6	0/76	4.28
Scophthalmus aquosus	0.6	4.25	10.42	245	35.4	8/76	36.27
Syacium papillosum	0.1	1.05	3.27	312	11.0	0/76	9.11
CYNOGLOSSIDAE							
Symphurus sp.	<0.1	0.03	0.25	647	2.4	0/76	0.37
BALISTIDAE	<0.1	0.09	0.61	667	2.4	0/76	0.84
TETRAODONTIDAE	<0.1	0.06	0.57	872	1.2	0/76	0.56
UNIDENTIFIED	0.2	1.19	3.73	314	12.2	0/76	10.32

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

TABLE 5.3.1. Occurrence of fishes by family collected in neuston samples during the semi-annual cruises of Middle Atlantic Bight (1973-1976).

	Spring			Fall		
	1974	1975	1976	1973	1974	1975
Elopidae	X					
Anguillidae	X	X	X			
Ophichthidae					X	
Clupeidae	X		X	X	X	X
Engraulidae	X	X	X	X	X	X
Synodontidae			X		X	X
Myctophidae			X		X	X
Gadidae	X	X	X	X	X	X
Ophidiidae				X	X	
Carapidae		X				
Exocoetidae			X	X	X	
Belonidae				X	X	X
Atherinidae	X		X	X	X	X
Holocentridae					X	
Gasterosteidae	X					
Syngnathidae	X	X	X	X	X	X
Pomatomidae	X		X	X	X	
Carangidae	X			X	X	X
Coryphaenidae					X	
Gerreidae				X	X	X
Sparidae	X		X	X		
Sciaenidae			X	X	X	
Mullidae	X		X			
Chaetodontidae					X	
Pomacentridae						X
Scaridae			X	X		
Mugilidae	X	X	X			
Uranoscopidae				X	X	X
Blennidae	X		X	X	X	X
Cryptacanthodidae		X	X			X
Ammodytidae	X	X	X			X
Gobiidae	X		X	X	X	X
Scombridae		X	X			
Stromateidae	X		X	X	X	
Scorpaenidae			X	X	X	X
Triglidae				X	X	
Cottidae	X		X			
Bothidae	X		X	X	X	X
Pleuronectidae	X					
Balistidae	X		X	X	X	X
Tetraodontidae	X		X	X	X	X
	22	9	26	23	27	20

TABLE 5.3.2. Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the Middle Atlantic Bight, fall 1974.

Taxa	September 23 to October 2, 1974 % of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
CARAPIDAE	0.1	0.07	0.58	830	1.4	0/74	0.65
OPHICHTHIDAE							
Pisodonophis cruentifer	0.1	0.14	1.16	830	1.4	0/74	1.30
CLUPEIDAE	0.1	0.04	0.35	873	1.4	0/74	0.37
Brevoortia tyrannus	0.1	0.04	0.35	873	1.4	0/74	0.37
ENGRAULIDAE	2.4	12.63	68.17	540	35.1	1/74	117.46
Anchoa hepsetus	0.5	2.58	9.00	349	18.9	0/74	23.99
Engraulis eurystole	1.6	8.42	23.56	280	52.7	1/74	78.31
MAUROLICIDAE							
Maurolicus muelleri	0.3	1.27	5.74	452	8.1	0/74	11.81
SYNODONTIDAE	0.1	0.31	1.44	465	5.4	0/74	2.88
PARALEPEDIDAE	0.3	1.36	5.09	374	10.8	0/74	12.65
MYCTOPHIDAE	0.1	0.15	0.87	581	4.1	0/74	1.40
Diaphus sp.	0.1	0.09	0.62	692	2.7	0/74	0.84
LOPHIFORMES							
LOPHIDAE							
Lophius americanus	0.1	0.46	1.91	415	6.8	0/74	4.28
GADIDAE							
Enchelyopus cimbrius	0.1	0.03	0.23	773	1.4	0/74	0.28
Merluccius bilinearis	1.4	7.09	22.59	319	27.0	0/74	65.94
Urophycis spp.	28.5	147.54	286.43	194	75.7	16/74	1372.12
SERRANIDAE	0.1	0.03	0.23	773	1.4	0/74	0.28
OPHIDIIDAE-ZOACHIDAE	6.6	33.96	118.01	347	75.7	0/74	315.83
SYNGNATHIDAE	0.1	0.07	0.34	491	4.1	0/74	0.65
SERRANIDAE							
Centropristis striata	0.3	1.61	4.65	289	21.6	0/74	14.97
POMATOMIDAE							
Pomatomus saltatrix	0.1	0.15	0.87	581	4.1	0/74	1.40
CARANGIDAE	0.1	0.23	1.58	685	2.7	0/74	2.14
LUTJANIDAE	0.1	0.26	2.21	850	1.4	0/74	2.42

TABLE 5.3.2 (continued)

Taxa	September 23 to October 2, 1974 % of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
SPARIDAE	0.1	0.15	1.28	852	1.4	0/74	1.40
SCIAENIDAE							
Larimus fasciatus	0.1	0.11	0.65	594	2.7	0/74	1.02
Micropogon undulatus	12.27	63.67	302.65	476	27.0	10/74	591.67
Menticirrhus saxatilis	0.1	0.01	0.12	116	1.4	0/74	0.09
LABRID-SCARID	0.1	0.15	0.90	601	2.7	0/74	1.40
URANOSCOPIDAE	0.1	0.15	0.73	489	4.1	0/74	1.40
BLENNIIDAE	0.1	0.27	1.38	510	4.1	0/74	2.51
CALLIONYMIDAE	0.1	0.15	1.28	853	1.4	0/74	1.40
GOBIIDAE	0.7	3.68	13.33	362	20.3	2/74	34.22
TRICHIURIDAE	0.1	0.15	0.87	581	4.1	0/74	1.40
SCOMBRIDAE							
Auxis sp.	0.1	0.08	0.70	871	1.4	0/74	0.74
STROMATEIDAE							
Peprilus triacanthus	0.2	0.86	2.10	244	18.9	0/74	8.00
SCORPAENIDAE	0.1	0.07	0.42	594	2.7	0/74	0.65
TRIGLIDAE							
Prionotus sp.	17.74	82.23	296.10	360	56.8	9/74	764.74
BOTHIDAE	0.1	0.15	0.77	514	4.1	0/74	1.40
Bothus sp.	0.3	1.43	4.64	325	14.9	0/74	13.30
Citharichthys arctifrons	16.2	83.81	334.54	399	54.1	3/74	779.43
Etropus microstomus	5.2	27.08	71.66	265	55.4	1/74	251.84
Hippoglossina oblongus	1.8	9.05	35.90	397	36.5	0/74	84.17
Paralichthys dentatus	1.0	0.57	2.04	357	10.8	0/74	5.30
Scophthalmus aquosus	0.9	4.65	11.90	256	31.1	1/74	43.25
Syacium papillosun	0.2	1.03	6.83	663	5.4	0/74	9.58
Cyclopsetta fimbriata	0.1	0.08	0.70	871	1.4	0/74	0.74
CYNOGLOSSIDAE							
Symphurus sp.	0.1	0.09	0.47	526	4.1	0/74	0.84
BALISTIDAE	0.1	0.05	0.47	367	1.4	0/74	0.47
UNIDENTIFIED	3.8	19.68	133.55	679	41.9	1/74	183.02

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

TABLE 5.3.3. Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the Middle Atlantic Bight, fall 1975.

	October 15 to November 7, 1975						
Taxa	% of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
CLUPEIFORMES	0.8	0.19	1.10	578	3.6	0/83	1.82
CLUPEIDAE	0.8	0.19	1.10	578	3.6	0/83	1.82
Brevoortia tyrannus	5.9	1.38	7.01	508	12.0	0/83	13.25
ENGRAULIDAE	0.7	0.16	1.43	892	1.2	0/83	1.54
Anchoa hepsetus	0.7	0.17	0.64	376	8.4	2/83	1.63
Engraulis eurystole	1.4	0.32	1.79	559	7.2	1/83	3.07
STERNOPTYCHIDAE							
Cyclothone sp.	0.3	0.07	0.66	941	1.2	0/83	0.67
SYNODONTIDAE	0.1	0.02	0.22	1095	2.4	0/83	0.19
PARALEPEDIDAE							
Notolepis rissoi	0.5	0.12	0.77	643	2.4	0/83	1.15
MYCTOPHIDAE							
Ceratoscopelus maderensis	25.7	6.01	27.69	461	10.8	7/83	57.70
GADIDAE							
Enchelyopus cimbrius	0.1	0.02	0.22	1095	1.2	0/83	0.19
Merluccius albidus	0.8	0.18	1.65	914	1.2	0/83	1.73
Merluccius bilinearis	5.0	1.17	8.19	700	6.0	3/83	11.23
Urophycis spp.	11.3	2.64	6.08	230	32.5	12/83	25.34
OPHIDIIDAE-ZOARCIDAE	1.9	0.45	1.23	274	14.5	0/83	4.32
ATHERINIDAE							
Menidia menidia	1.8	0.41	3.22	786	2.4	1/83	3.94
Menidia beryllina	0.1	0.01	0.11	1090	1.2	0/83	1.00
SYNGNATHIDAE	0.2	0.04	0.24	610	2.4	0/83	0.38
SCIAENIDAE							
Bairdiella chrysura	0.1	0.01	0.11	1090	1.2	0/83	0.10
Micropogon undulatus	6.2	1.45	5.64	389	15.7	3/83	13.92
BLENNIIDAE	0.1	0.02	0.15	770	2.4	0/83	0.19
GOBIIDAE	1.4	0.34	1.61	474	7.2	0/83	3.26
STROMATEIDAE							
Peprilus triacanthus	0.3	0.06	0.39	657	2.4	0/83	0.58

TABLE 5.3.3 (continued)

Taxa	October 15 to November 7, 1975 % of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.	Dom.	Abundance Estimate (Nox10^{10})
TRIGLIDAE							
Prionotus sp.	0.6	0.13	0.84	645	3.6	0/83	1.25
BOTHIDAE							
Bothus sp.	0.6	0.13	0.85	655	2.4	0/83	1.25
Citharichthys arctifrons	0.6	0.13	0.73	561	3.6	0/83	1.25
Etropus microstomus	0.6	0.14	0.54	389	7.2	0/83	1.25
Paralichthys dentatus	9.1	2.13	5.14	241	27.7	3/83	20.45
Scophthalmus aquosus	21.9	5.13	20.42	398	28.9	14/83	49.25
Cyclopsetta fimbriata	0.2	0.05	0.44	878	1.2	0/83	0.48
CYNOGLOSSIDAE							
Symphurus sp.	0.2	0.05	0.35	692	2.4	0/83	0.48
UNIDENTIFIED	0.8	0.18	1.65	914	1.2	0/83	1.73

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

TABLE 5.3.4. Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the Middle Atlantic Bight, spring 1974.

Taxa	March 12 to May 1, 1974 % of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
ANGUILLIDAE							
Anguilla rostrata	0.4	0.13	1.02	781	1.6	0/62	1.14
CLUPEIDAE							
Etrumeus teres	1.5	0.43	1.83	424	.0	2/62	3.78
ENGRAULIDAE	2.0	0.77	3.76	488	6.4	2/62	6.78
SYNOPONTIDAE	0.1	0.03	0.25	846	1.6	0/62	0.26
PARALEPEDIDAE							
Notolepis rissoi	0.1	0.03	0.25	846	1.6	0/62	0.26
Paralepis coregonoides	1.4	0.41	1.75	427	6.4	1/62	3.61
MYCTOPHIDAE							
Benthosema glaciale	0.1	0.03	0.25	846	1.6	0/62	0.26
Ceratoscopelus warmingi	0.1	0.03	0.25	846	1.6	0/62	0.26
Hygophum sp.	1.4	0.40	1.95	486	4.8	0/62	3.52
Myctophum punctatus	0.1	0.03	0.25	846	1.6	0/62	0.26
LOPHIIDAE							
Lophius americanus	0.2	0.06	0.36	593	3.2	0/62	0.53
GADIDAE							
Enchelyopus cimbrius	4.4	1.29	2.61	202	25.8	0/62	11.35
Gadus morhua	7.3	2.13	5.89	276	32.2	2/62	18.75
Melanogrammus aeglefinis	0.6	0.18	1.17	647	3.2	0/62	1.58
Merluccius bilinearis	0.7	0.21	1.04	496	4.8	0/62	1.85
Pollachius virens	3.1	0.90	4.69	521	9.6	2/62	7.92
Urophycis spp.	0.4	0.13	0.50	381	9.7	2/62	1.14
OPHIDIIDAE-ZOARCIDAE	0.1	0.03	0.25	846	1.6	0/62	0.26
SYNGNATHIDAE	0.1	0.03	0.25	846	1.6	0/62	0.26
SPARIDAE	0.4	0.13	0.74	565	3.2	0/62	1.14
BLENNIDAE	0.2	0.05	0.38	762	1.6	0/62	0.44
STICHAEIDAE							
Lumpenus lumpretaeformis	0.8	0.23	0.80	347	8.1	0/62	2.02
PHOLIDAE							
Pholis gunnellus	0.2	0.06	0.51	846	1.6	0/62	0.53

TABLE 5.3.4 (continued)

Taxa	March 12 to May 1, 1974 % of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
CRYPTACANTHODIDAE							
Cryptacanthodes maculatus	0.2	0.05	0.38	762	1.6	0/62	0.44
AMMODYTIDAE							
Ammodytes spp.	31.3	91.50	24.72	270	53.2	17/62	80.52
GOBIIDAE	0.1	0.03	0.25	846	1.6	0/62	0.26
SCOMBRIDAE							
Scomber scombrus	0.2	0.05	0.38	762	1.6	1/62	0.44
STROMATEIDAE	0.1	0.03	0.25	846	1.6	0/62	0.26
Peprilus triacanthus	0.1	0.03	0.25	846	1.6	1/62	0.26
CUTTIDAE	0.2	0.06	0.51	846	1.6	0/62	0.53
Myoxocephalus aenaeus	0.5	0.15	1.02	681	3.2	0/62	1.32
Myoxocephalus sp.	0.6	0.16	0.77	482	4.8	0/62	1.41
CYCLOPTERIDAE							
Liparis sp.	0.6	0.16	0.68	426	6.4	0/62	1.41
BOTHIDAE							
Bothus sp.	0.1	0.03	0.25	846	1.6	0/62	0.26
Paralichthys dentatus	0.3	0.10	0.76	762	1.6	0/62	0.88
Scophthalmus aquosus	0.1	0.02	0.13	635	1.6	0/62	1.76
PLEURONECTIDAE	0.9	0.27	2.16	800	1.6	1/62	2.38
Glyptocephalus cynoglossus	1.9	0.55	1.88	342	9.7	2/62	4.84
Limanda ferruginea	35.7	10.40	25.00	240	40.0	10/62	91.52
Pseudopleuronectes americanus	0.1	0.03	0.25	846	3.2	1/62	0.26
UNIDENTIFIED	1.0	0.29	0.95	327	9.7	2/62	2.55

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

TABLE 5.3.5. Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the Middle Atlantic Bight, spring 1975.

Taxa	March 4 to March 16, 1975 % of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.	Dom.	Abundance Estimate (Nox10^{10})
CONGRIDAE	0.4	0.18	0.86	478	4.4	1/45	1.13
OPHICHTHIDAE	0.4	0.16	1.04	652	2.2	1/45	1.01
PARALEPEDIDAE	0.4	0.16	1.04	652	2.2	0/45	1.01
Notolepis rissoi	0.5	0.22	1.04	474	4.4	2/45	1.09
Paralipis coregonoides	1.8	0.73	1.94	265	13.3	3/45	4.60
MYCTOPHIDAE	0.3	0.13	0.89	688	2.2	0/45	0.82
GADIDAE							
Enchelyopus cimbrius	0.1	0.04	0.30	745	2.2	0/45	0.25
Gadus morhua	3.7	1.56	3.63	233	20.0	1/45	9.83
Melanogrammus aeglefinus	0.6	0.27	1.07	398	6.7	1/45	1.70
Pollachius virens	8.9	3.71	9.83	265	28.9	4/45	23.37
OPHIDIIDAE-ZOARCIDAE	0.2	0.07	0.45	639	2.2	1/45	0.44
CRYPTACANTHODIDAE							
Cryptacanthodes maculatus	0.2	0.07	0.45	639	2.2	0/45	0.44
AMMODYTIDAE							
Ammodtyes spp.	80.2	33.31	73.43	220	57.7	23/45	209.85
BOTHIDAE							
Paralichthys dentatus	1.1	0.47	1.52	323	8.8	3/45	2.96
PLEURONECTIDAE							
Glyptocephalus cynoglossus	0.3	0.13	0.89	688	2.2	1/45	0.82

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

TABLE 5.3.6. Species composition, frequency of occurrence and abundance estimates for larval fishes collected in the Middle Atlantic Bight, spring 1976.

	March 5-24, 1976						
Taxa	% of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
ANGUILLIDAE							
Anguilla rostrata	0.2	0.10	0.62	592	4.0	0/76	0.99
CONGRIDAE	<0.1	0.02	0.22	872	1.3	0/76	0.24
OPHICHTHIDAE							
Myrophis punctatus	0.1	0.03	0.34	873	1.3	0/76	0.37
Ophichthus ophis	0.1	0.03	0.34	873	1.3	0/76	0.37
Pisodonophis cruentifer	0.1	0.06	0.57	872	1.3	0/76	0.62
CLUPEIDAE	5.2	3.26	25.62	785	5.3	2/76	30.67
Clupea harengus	<0.1	0.02	0.22	872	1.3	0/76	0.24
Etrumeus teres	0.7	0.46	3.35	729	4.0	1/76	4.33
ENGRAULIDAE							
Anchoa mitchilli	0.8	0.52	3.81	725	4.0	2/76	4.94
GONOSTOMATIDAE							
Gonostoma elongatum	0.1	0.06	0.57	871	1.3	0/76	0.62
Maurolicus muelleri	1.7	1.03	5.50	530	5.3	2/76	9.77
Vinciguerri lucetia	0.2	0.13	0.80	612	2.6	0/76	1.24
SYNODONTIDAE	0.1	0.03	0.34	871	1.3	0/76	0.36
CHLOROPHTHALMIDAE							
Chlorophthalmus agassizi	0.1	0.05	0.45	871	1.3	0/76	0.50
PARALEPIDIAE							
Notolepis rissoi	0.1	0.06	0.57	872	1.3	0/76	0.62
Paralepis coregonoides	0.3	0.15	0.98	621	2.6	2/76	1.49
MYCTOPHIDAE							
Benthosema glaciale	0.2	0.11	1.03	871	1.3	0/76	1.11
LOPHIFORMES	0.1	0.07	0.68	871	1.3	0/76	0.74
LOPHIDAE							
Lophius americanus	0.2	0.11	0.76	646	2.6	0/76	1.11
GADIDAE							
Enchelyopus cimbrius	0.1	0.03	0.34	871	1.3	0/76	0.37
Gadus morhua	1.0	0.88	3.31	375	10.5	0/76	5.81
Merluccius bilinearis	0.1	0.07	0.51	646	2.6	0/76	0.73
Pollachius virens	0.5	0.34	1.44	423	7.9	0/76	3.40
Urophycis spp.	0.1	0.06	0.41	624	2.6	0/76	0.62

TABLE 5.3.6 (continued)

Taxa	March 5-24, 1976 % of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
SYNGNATHIDAE							
Syngnathus fuscus	<0.1	0.02	0.22	871	1.3	0/76	0.24
SERRANIDAE	0.1	0.06	0.57	871	1.3	0/76	0.67
SPARIDAE	0.1	0.03	0.34	871	1.3	0/76	0.37
SCIAENIDAE	1.3	0.78	6.42	814	3.9	1/76	7.42
LABRIDAE	0.1	0.07	0.68	871	1.3	0/76	0.74
PHOLIDAE							
Pholis gunnellus	0.1	0.03	0.25	646	2.6	0/76	0.37
AMMODYTIDAE							
Ammodytes spp.	83.8	52.92	61.12	115	75.0	56/76	497.46
GOBIIDAE	0.3	0.18	1.10	599	3.9	0/76	1.73
STROMATEIDAE							
Peprilus triacanthus	0.1	0.03	0.34	871	1.3	0/76	0.37
SCORPAENIDAE							
Scorpaena plumieri	0.1	0.07	0.68	871	1.3	0/76	0.74
TRIGLIDAE							
Prionotus sp.	0.1	0.03	0.34	871	1.3	0/76	0.37
COTTIDAE							
Myoxocephalus sp.	<0.1	0.02	0.22	872	1.3	0/76	0.24
CYCLOPTERIDAE							
Liparis sp.	<0.1	0.02	0.22	872	1.3	0/76	0.24
BOTHIDAE							
Citharichthys arctifrons	0.2	0.10	0.66	631	2.6	0/76	0.99
Hippoglossina oblongus	0.1	0.03	0.25	646	2.6	0/76	0.37
Paralichthys dentatus	1.2	0.72	2.66	367	9.2	1/76	6.81
Scophthalmus aquosus	<0.1	0.02	0.22	871	1.3	0/76	0.24
PLEURONECTIDAE							
Pseudopleuronectes americanus	0.1	0.05	0.32	612	2.6	0/76	0.50

TABLE 5.3.6 (continued)

Taxa	March 5-24, 1976 % of Total	Mean No/10m^2	S.D.	C.V. (%)	% Occur.[1]	Dom.[2]	Abundance Estimate (Nox10^{10})
CYNOGLOSSIDAE							
Symphurus sp.	0.1	0.03	0.34	871	1.3	0/76	0.37
TETRAODONTIDAE	0.1	0.06	0.57	871	1.3	0/76	0.62
UNIDENTIFIED	0.3	0.15	0.96	612	2.6	0/76	1.49

1/ Occur: Frequency of occurrence converted to percent.

2/ Dom: Dominance index represents the number of samples in which the species (taxa) constituted 50% or more of larvae at a station.

TABLE 5.3.7. Zooplankton volumes (ml/tow) collected by 61-cm bongos fitted with 0.333 mesh in Middle Atlantic Bight.

Fall 1973			Fall 1974			Fall 1975			Spring 1974[1/]			Spring 1975			Spring 1976		
Cruise	Sta.	Vol.	Cruise	Sta.	Vol.	Cruise	Sta.	Vol.	Cruise	Sta.	Vol.	Cruise	Sta.	Vol.	Cruise	Sta.	Vol.
AL73-08	1	65	DL74-11	A-2	-	DL75-17	5	0	AT74-02	3	30	AL75-03	4	34	DL76-05	2	340
	5	-		A-4	110		7	40		6	40		9	26		5	630
	9	50		B-3	130		10	20		8	50		15	122		8	35
	12	55		B-5	65		12	0		9	35		16	31		11	491
	13	80		C-2	70		13	100		10	25		22	60		12	70
	14	65		C-4	-		16	30		13	70		26	70		14	30
	20	80		C-6	-		17	50		14	40		40	88		15	40
	32	150		D-1	110		21	20		15	95		42	40		19	10
	41	20		D-3	90		24	40		16	50		45	164		23	10
	42	150		D-5	45		30	20		17	60		47	122		25	20
	45	40		D-7	-		32	30		60	120		50	21		26	10
	51	20		E-2	105		34	70		61	15		53	40		30	20
	56	20		E-4	30		38	20		64	35		54	343		31	20
	57	60		E-6	35		39	30		66	40		55	100		33	20
	58	70		F-1	75		42	30		68	20		57	48		38	30
	59	15		F-3	40		44	60		69	50		60	95		40	20
	65	30		F-5	-		48	20		72	60		61	50		44	20
	66	115		F-7	20		51	20		73	40		63	66		45	50
	68	20		G-2	70		53	40		75	20		65	45		48	30
	70	50		G-4	35		54	20		76	35		68	12		50	20
	71	130	DL74-12	4	96		55	20		79	20		71	137		51	40
	72	40		5	78		57	20		80	60		73	44		53	20
	74	75		8	103		60	80	DL74-02	86	20		74	85		56	170
	76	40		10	64		64	40		87	30		A-2	10		58	20
	77	80		11	54		65	40		88	60		A-4	-		64	115
	78	85		15	28		66	50		91	65		B-3	40		65	205
	80	70		18	117		67	60		95	10		B-5	45		66	445
	82	75		22	101		68	40		97	5		C-2	10		69	160
	87	120		24	98		72	80		101	70		C-4	40		72	100
	88	120		27	53		78	50		102	40		C-6	-		74	10
	89	90		30	98		79	60		105	50		D-1	25		78	10
	93	110		32	58		82	30		109	30		D-3	75		80	50
	96	125		34	99		84	30		112	15		D-5	40		82	10
AT73-03	5	30		37	21		86	10		116	15		D-7	-		83	10
	8	65		41	8		88	10		119	100		E-2	45		84	140
	15	45		42	51		91	80		121	30		E-4	-		85	120
	16	60		44	87		92	40		123	30		E-6	10		88	20
	19	10		47	20		94	30		14	10		F-1	40		89	50
	20	45		50	46		95	40		143	60		F-3	35		90	10
	21	70		54	64		97	40		146	20		F-5	40		92	20
	23	110		56	42		98	20		148	50		F-7	20		93	40
	25	190	AL74-11	2	112		99	20		151	40		G-2	60		96	30
	27	60		3	26		101	40		153	50		G-4	-		97	60
	28	45		6	52		102	40		157	90					98	20
	33	250		10	25		103	30								99	20
	36	25		23	94		107	20								101	110
	38	90		25	12		108	10								103	30
	41	210		29	35		113	20								106	20
	43	10		31	38		116	20								109	30
	45	65		39	14		117	60								113	20
	51	10		41	35		118	40								114	25
	54	130		43	47		120	40								116	20
	57	10		44	55		121	40								118	60
	59	55		48	25		122	20								120	10
	62	30		51	40		123	20								123	40
	64	60		54	48		124	30								125	20
	67	70		57	66		129	80								128	20
	69	130		61	22		131	20								130	70
	73	60		65	63		133	20								132	40
	77	70		67	60		134	20								134	20
	80	100		69	138		136	40								140	10
	84	10		73	92		138	40								142	40
	86	70		75	88		139	40								145	40
	87	60		77	70		142	40								147	10
	92	150		80	54		146	60								149	5
	93	110		82	85		147	40								153	20
	94	30		83	129		149	70								155	130
	98	45		86	34		151	70								156	20
	99	40		88	76		152	40								157	25
	102	40		91	70		154	40								159	20
	105	35		92	84		156	80								160	110
	107	10		94	64		157	40								163	40
	142	20		95	39		161	20								167	30
	144	100		97	60		164	140								169	20
	145	100		98	71		169	40								170	50
	146	155		111	64		172	40									
	147	50					173	30									
	155	30					176	60									
	163	75					180	80									
	167	140					183	100									
	168	20					185	120									
	169	30					188	100									
							190	60									

1/ volumetric data for 19 stations occupied on AL-74-04 not available

6.0 Vertical Distribution and Diel Movements of Coastal Marine Fish Larvae:

6.1 Introduction: Our ichthyoplankton surveys comprise the most comprehensive data base on seasonality, distribution, and abundance of fish eggs and larvae collected in the Middle Atlantic Bight. Despite their significance to our understanding of the early life history of coastal fishes, we found it necessary to augment the surveys with micro-distribution studies to investigate the role of circulation in dispersing young fishes during planktonic development. To this end we conducted a series of studies using a free-drifting parachute drogue. Our primary objectives were to determine whether larval fishes undergo diel migrations, whether the migrations are repetitious in time and extent, and how they interact with circulation to affect dispersion.

6.2 Methods: After selecting a target species, we used our survey data to choose the most likely area for finding a concentration of larvae. The specific site was determined at the outset of each cruise by making a series of trial tows and immediately examining the catch. When a suitable patch of larvae was located, we deployed a free-drifting parachute drogue similar to that described by Volkmann et al. (1956).

Each study in the series of cruises lasted three days, or 72 h. Samples were taken at 3-h intervals with an array of four 20-cm bongos fitted with 0.505-mm mesh nets. Each tow lasted 15 min. Towing speed was 5 kts. Readings obtained from digital flowmeters were used to calculate the amount of water sampled by one side of each bongo. With the exception of the surface-sampling net, the bongos were attached to the towing wire to sample at depths where temperature changes were greatest. Bathykymographs were attached above two of the three subsurface nets to monitor sampling depth profiles. Temperature and salinity observations were recorded prior to each tow.

6.3 Results: Two of the four cruises in the series produced informative results for several species. A spring cruise in 1972 to study yellowtail flounder and Atlantic mackerel was, perhaps, the most successful. The study site was 98 km south of Montauk Point, New York (Figure 6.3.0).

6.3.1 Spring 1972-Vertical Distribution of Larval Yellowtail Flounder, Limanda ferruginea, Atlantic mackerel, Scomber scombrus, and Associated Species: Surface temperature averaged 15°C, bottom temperature 5.7°C, during the

study. A thermal gradient of about 5°C was setting up between 10 and 20 m and a second, weaker gradient occurred between 30 and 40 m. Salinity increased from 31.3 o/oo at the surface to 32.8 o/oo near bottom (Figure 6.3.1). We sampled at surface, 8, 20 and 48 m. The drogue drifted in a sluggish manner, following an erratic course that repeatedly crossed its own path. In three days it travelled a net distance of only 5.4 km, never straying more than 7.2 km from the point of deployment. Because the direction of drift shifted at approximately 6-h intervals, we concluded that tidal currents were largely accountable for its movements (Figure 6.3.0).

Analysis of variance indicated that we stayed with the same patch of yellowtail flounder larvae. Mean differences in size and number of larvae collected daily were not significant but there was a highly significant difference between means of day and night catches, and between catches with depth. We attributed these differences to evening shifts in the distribution of most larvae towards the surface where two nets fished. These diel movements were repetitious in time and extent. Differences in mean catches within day and night catches, and with depth at a given time during each day were not significantly different (Table 6.3.0). During the 3-day study we caught only two larvae at the surface during daylight. Larvae began to ascend at about sunset and were most concentrated near the surface at 2200 h. Larvae disappeared from the surface between 0400 and 0700 h.

The amplitude of the vertical movements were size-dependent. Small, recently hatched larvae remained at mid-depths during day and night. Intermediate-sized larvae moved toward the surface at night from mid depths. Large larvae moved throughout the water column. At night they were near the surface; during the day, near bottom (Figure 6.3.2). We believe this repetitious behavior plays a major role in determining the extent of horizontal displacement during larval development. Wind is one of the most important driving forces behind circulation in the Middle Atlantic Bight and, of course, has its greatest influence on surface and near-surface water. Although yellowtail flounder larvae were not at the surface during daylight, 44% of our night catches were collected by the surface net. During hours of darkness, wind-driven surface currents

influenced their horizontal displacement. However, we concluded from the performance of the drogue that passive transport was not significant during daylight hours, which at the time accounted for 15 h/day (Smith et al. 1978).

Weighted mean capture depths of Atlantic mackerel larvae indicate that the young scombrids are deeper in the water during daylight than at night. Catch rates by each of the four nets support the weighted mean data. Night catches at the surface were greater than daytime catches at the surface on all three days, while the catch at 20 m was consistently greater during daytime than at night. The catch rate at 8 m was not consistent. During the first two days night catches were greater than daytime catches, but on the third day the situation was reversed.

Small larvae ($\leq$4.9 mm) tended to occur at greater depths than large larvae ($\geq$5.0 mm) at all times. Larvae $\leq$4.9 mm were at weighted mean capture depths between 5.5 and 14.0 m; those $\geq$5.0 mm between 2.5 and 7.0 m. During the 3-day study there was a general upward trend in mean capture depth of both size groups. We attributed this trend to abating south to southeast winds and moderating sea conditions.

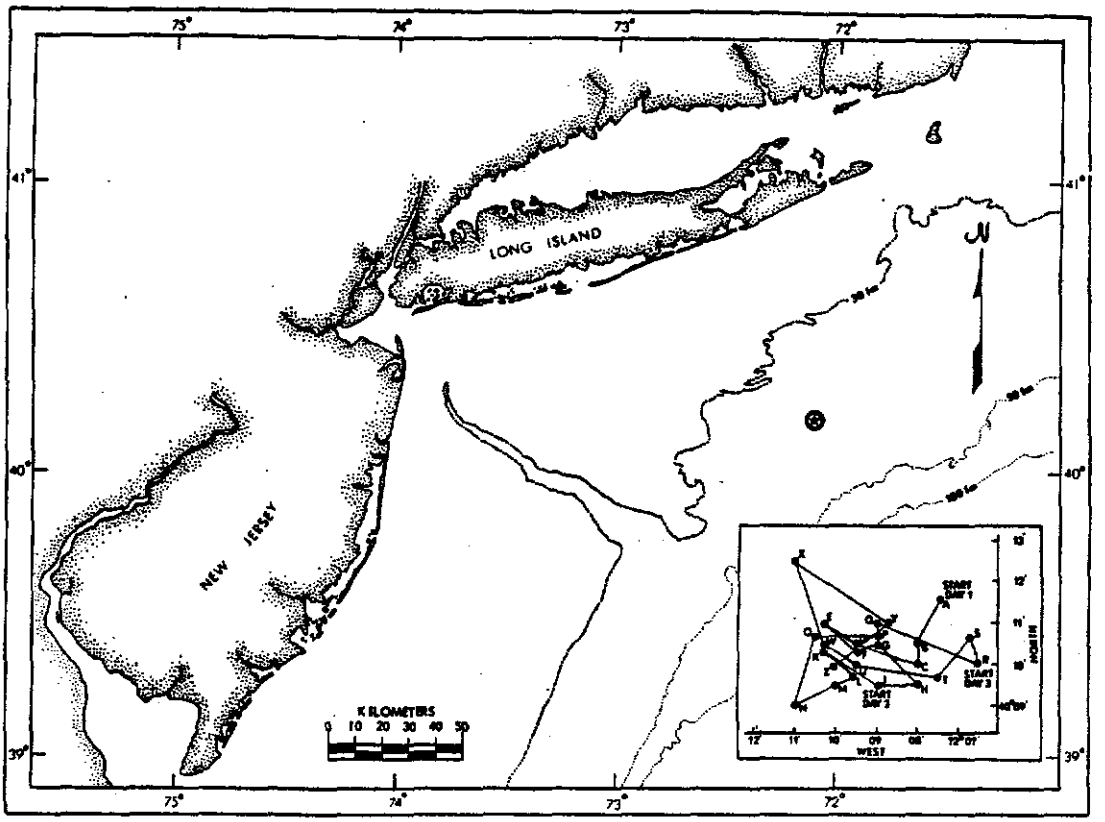
Finally, we caught two other species in sufficient numbers to plot their distribution with time and depth. The day-night patterns in the vertical distribution of both four-beard rockling, *Enchelyopus cimbrius*, and witch flounder, *Glyptocephalus cynoglossus*, were similar. Both species were most abundant at 22-m depths during daylight tows and at 8 m at night. Thus their distribution during both periods was deeper than that of yellowtail flounder and Atlantic mackerel (Figure 6.3.3).

6.3.2 Summer 1974-Vertical Distribution of Larval bluefish, *Pomatomus saltatrix*, and Associated Species:

Results: During the summer of 1974 we completed another in this series of cruises with bluefish as the target species. We found a patch of young bluefish on July 18 about 95 km east of Ocean City, Maryland where water depth was 57 m (Figure 6.3.0). Sampling procedures were the same as those used to study yellowtail flounder larvae

except that nets fished at surface, 4, 15 and 30 m. For analytical purposes day tows, and those taken at night, were considered replicates.

Wind was from the southwest at speeds up to 25 kts during the first two days. After shifting to the northwest on the third day, it slacked off and continued to shift to the north, northeast , and finally southeast. Despite the brisk, predominantly southwest winds the drogue drifted a straight-line distance of 25 km in a westerly direction. The rotary path of the drogue suggests that it was propelled by tidal circulation (Figure 6.3.0). Average temperature and salinity profiles for the 3-day experiment are shown in Figure 6.3.4. Larvae of the following six taxa were present in sufficient numbers to be included in an analysis of variance: bluefish, frigate mackerel (Sarda sarda), butterfish (Peprilus triacanthus), hakes (Urophycis spp.), Gulf Stream flounder (Citharichthys arctifrons), and fourspot flounder (Hippoglossina oblongus). Distribution with depth was significantly different for all six, and for each species the depth distribution during daylight was significantly different from that at night. Unlike the yellowtail flounder study when we stayed with the same patch of larvae for the 3 days, daily differences in the catches of bluefish, frigate mackerel, and fourspot flounder indicate that the drogue did not stay with the initial concentrations of these larvae or that their behavior i.e., distribution with depth, changed daily (Table 6.3.2). Despite these differences, bluefish and frigate mackerel were most abundant at depths <10 m, while the other four species were most abundant at 15 m (Kendall 1978). Although we sampled little more than half the water column, it appears from the meager catches in the 30-m net that the sampling regime included the depth distribution of the principal species (Figure 6.3.4).



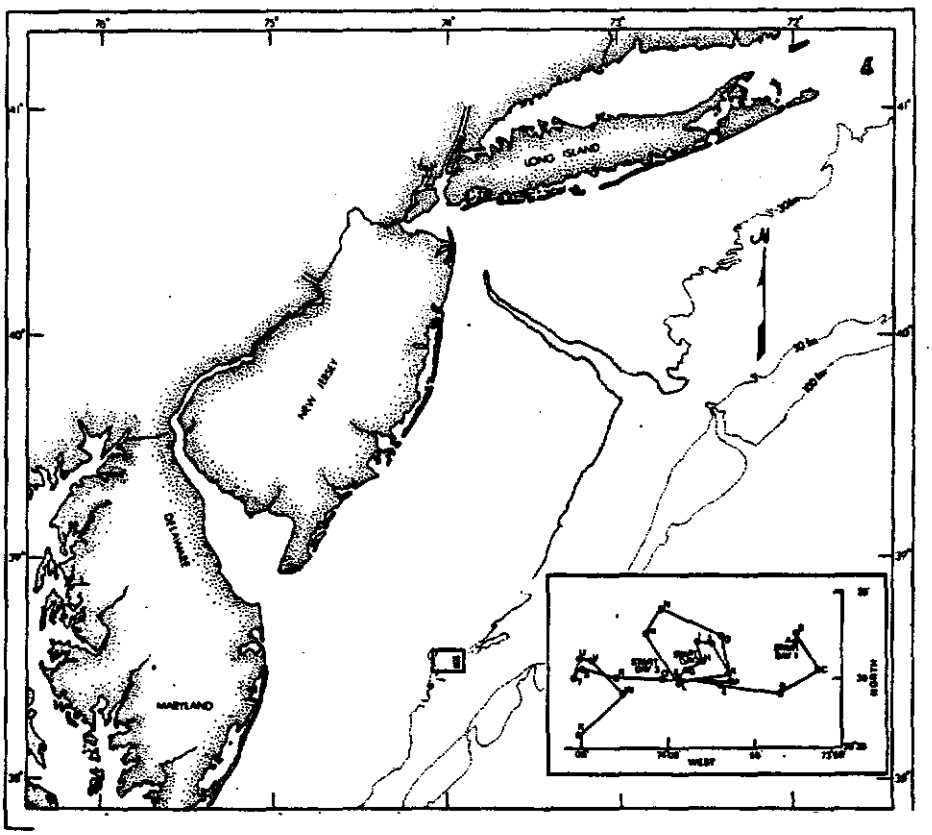


FIGURE 6.3.0. Sites of 72-h studies of diel movements and vertical distribution of larval fishes in the Middle Atlantic Bight, spring 1972 and summer 1974 (⊗ upper map; □ lower map). Inserts show theoretical track of drogue and its position at 3-hr sampling intervals during each study.

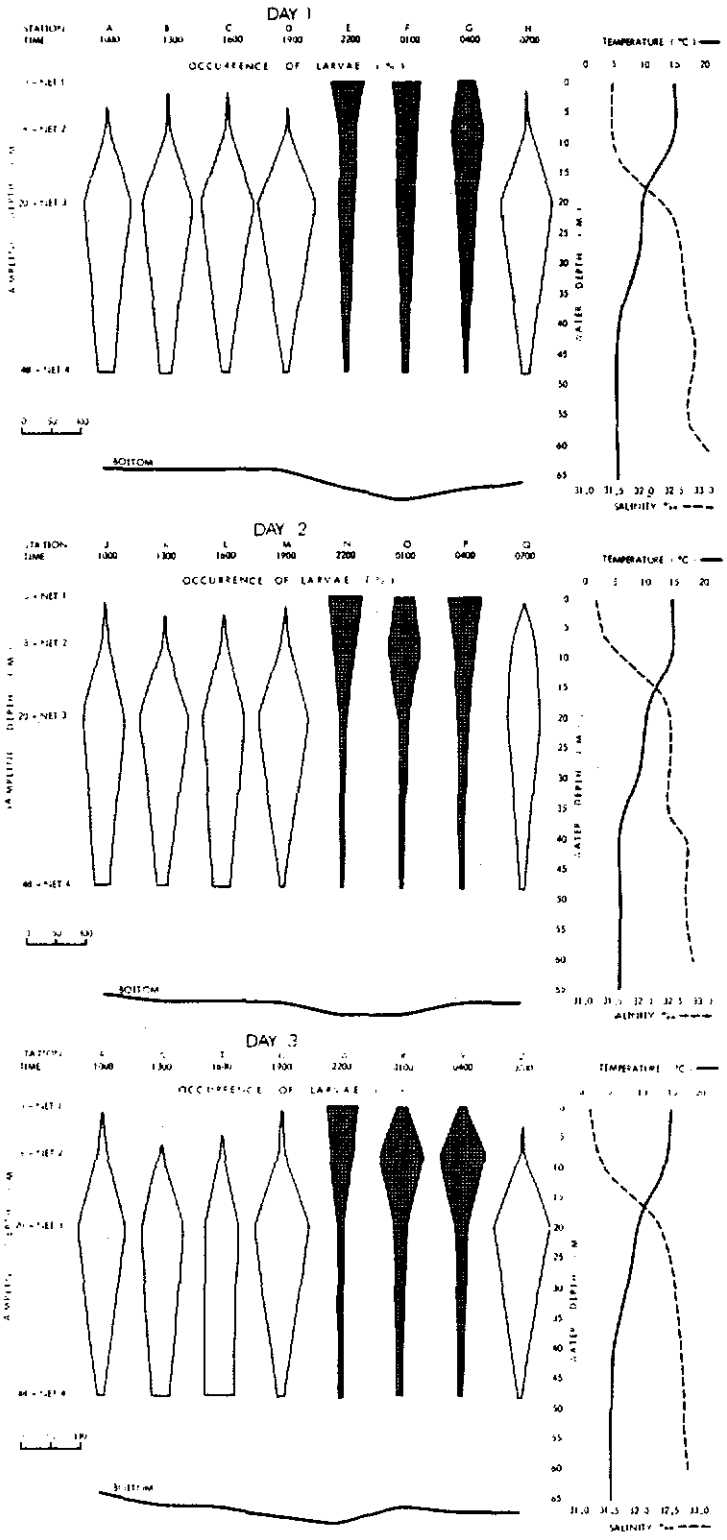


FIGURE 6.3.1. Vertical distribution of yellowtail flounder, Limanda ferruginea, larvae at 3-hr intervals, based on percent contribution in each of four nets. Mean temperature and salinity profiles during each day of the 3-day study are shown at right (From Smith et al. 1978).

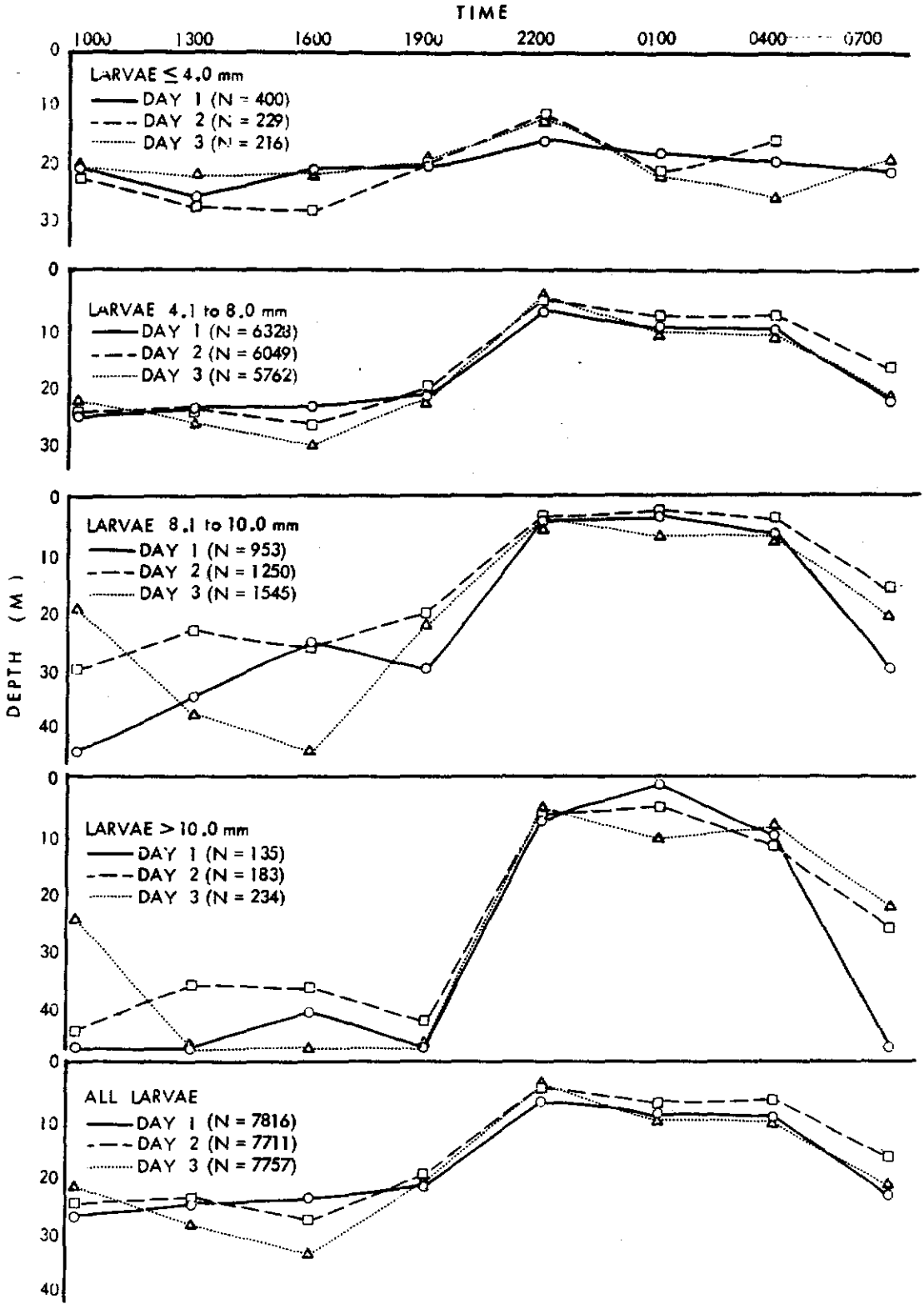


FIGURE 6.3.2. Mean depth of occurrence of yellowtail flounder, Limanda ferruginea, larvae grouped by size. Samples were taken at 3-h intervals for 3 days. Water depth ranged from 63 to 68 m (from Smith et al. 1978).

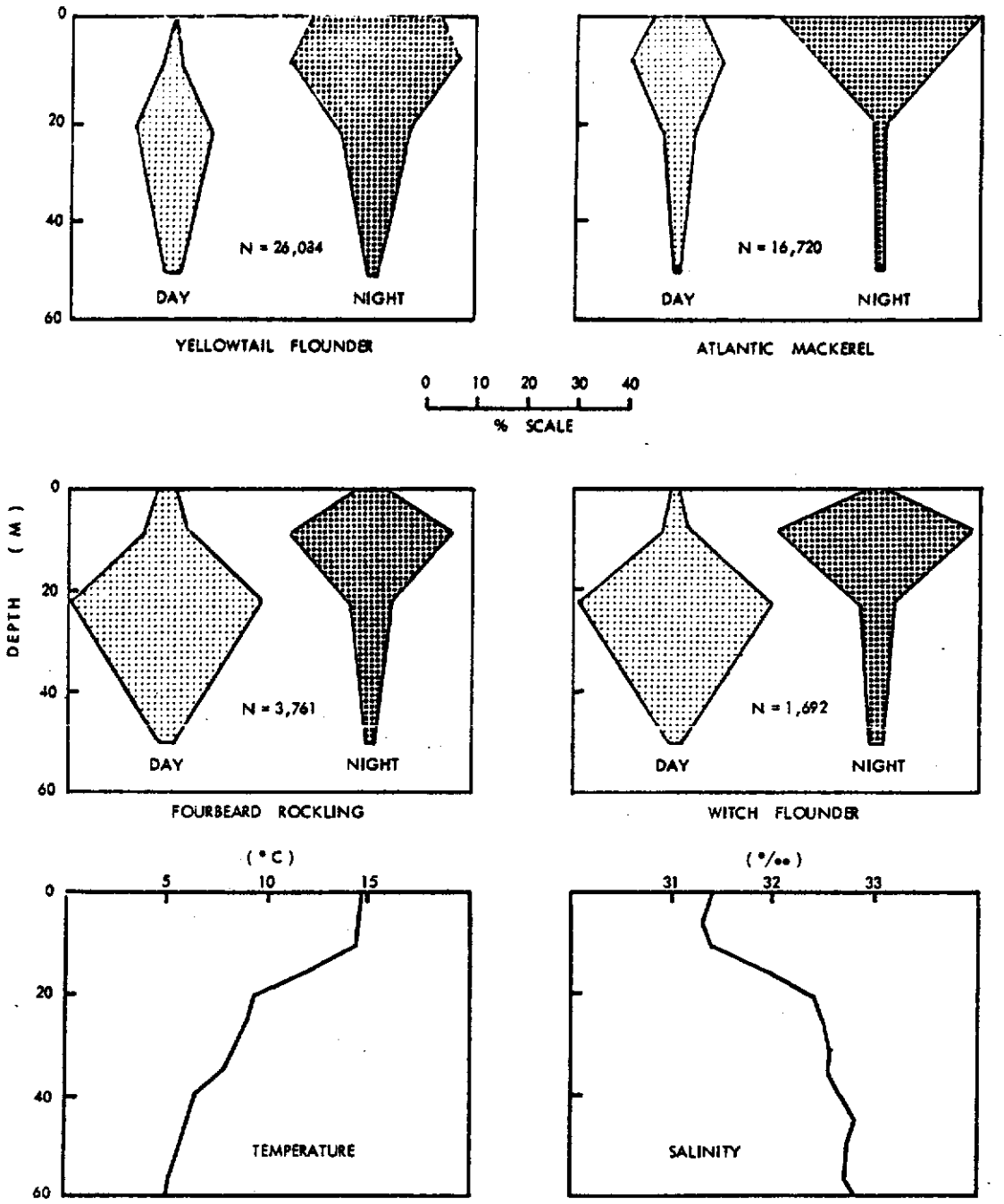


FIGURE 6.3.3. Day-night profiles of vertical distribution of fish larvae that commonly occur in the Middle Atlantic Bight in spring. Profiles determined from discrete depth tows made 98 km south of Montauk Point during 72-h period, June 15 to 18, 1972 (From Kendall, 1978).

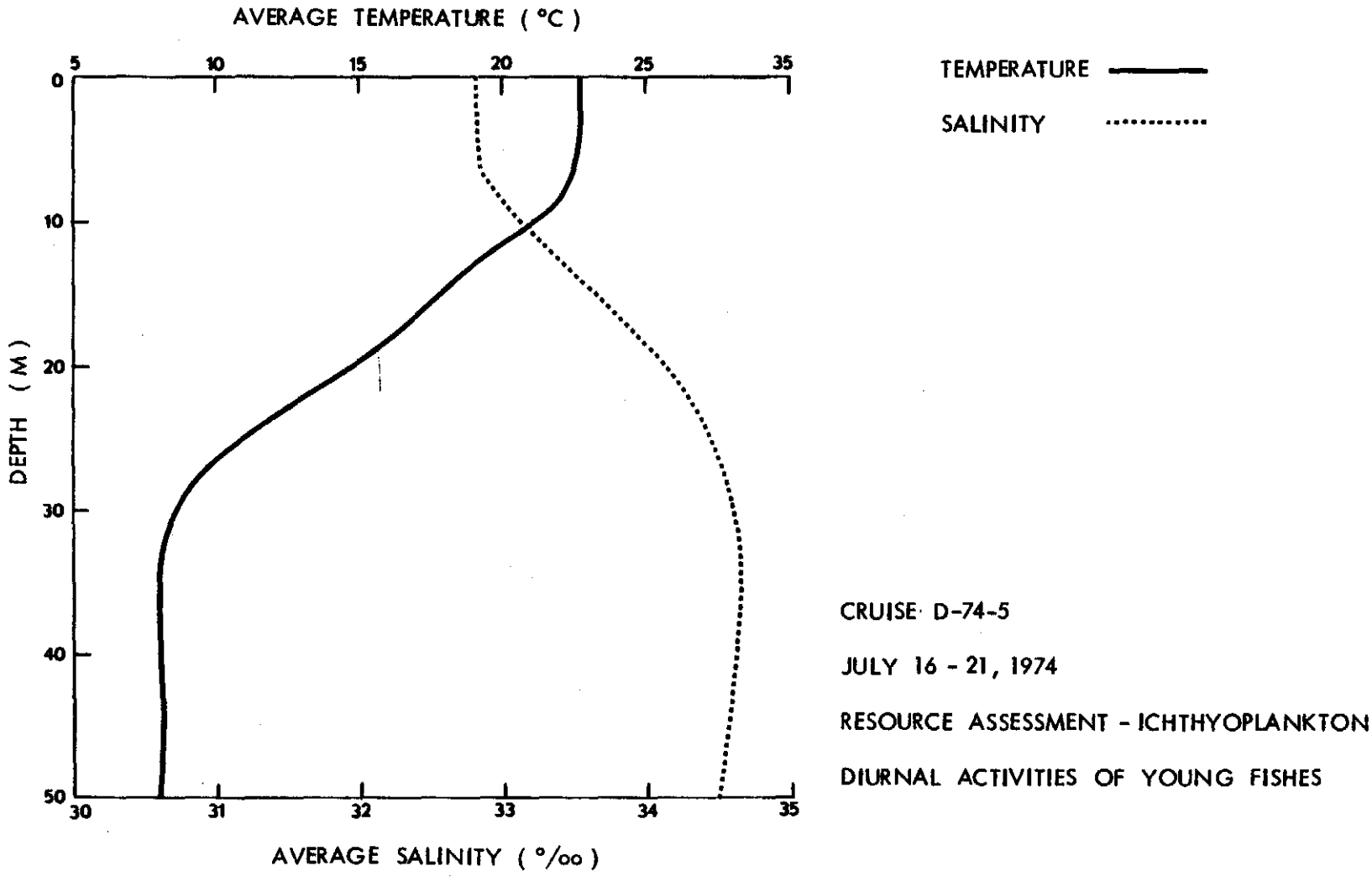


FIGURE 6.3.4. Average temperature and salinity profile during 72-h study of diurnal movements of larval bluefish, Pomatomus saltatrix, and associated species.

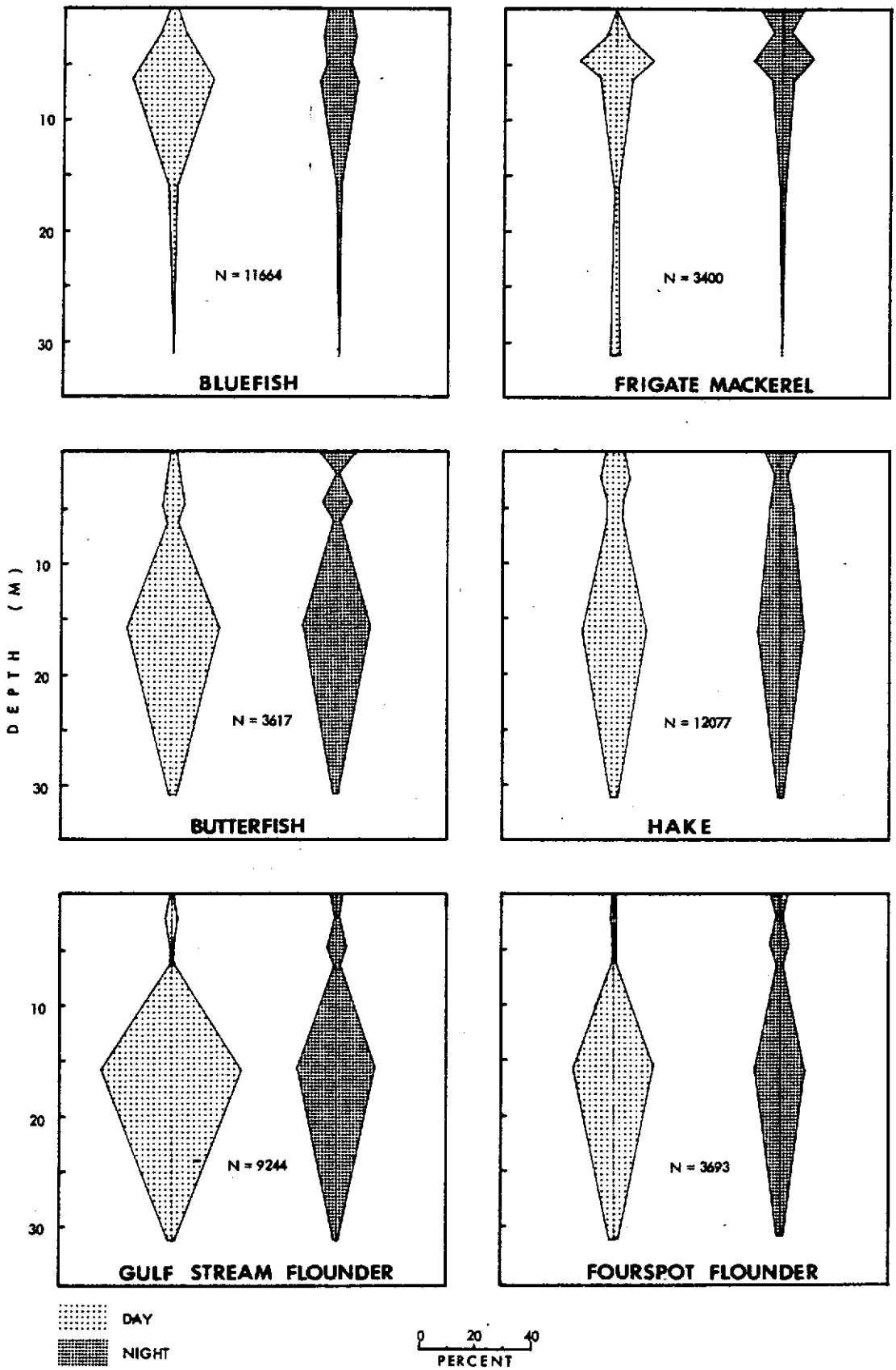


FIGURE 6.3.5. Day-night profiles of vertical distribution of fish larvae that commonly occur in the Middle Atlantic Bight in summer. Profiles determined from discrete depth tows made 95 km east of Ocean City, Md., during 72-h period, July 18-21, 1974 (from Kendall 1978).

TABLE 6.3.0. Analysis of variance of data pertaining to diel movements of yellowtail flounder larvae. Variables include days, time (day vs night), capture depth, and length of larvae, grouped into size categories of ≤4.0, 4.1 to 8.0, 8.1 to 10.0 and >10 mm. Data were transformed to $\log_{10}$ (x+1) and pertain to 3 day tows and 3 night tows taken during each day of the 3-day study (from Smith et al. 1978).

Source of variation	d.f.	S. S.	M. S.	F
1 (days)	2	0.21	0.11	0.93
2 (day-night)	1	23.83	23.83	208.40**
3 (depth)	3	16.81	5.60	48.99**
4 (size of larvae)	3	73.49	24.50	214.53**
1,2	2	0.23	0.11	1.01
1,3	6	1.79	0.30	2.61*
1,4	6	1.45	0.24	2.11
2,3	3	43.63	14.54	127.18**
2,4	3	3.94	1.31	11.47**
3,4	9	14.86	1.65	14.44**
1,2,3	6	2.20	0.37	3.21**
1,2,4	6	0.45	0.07	0.66
1,3,4	18	2.37	0.13	1.15
2,3,4	9	13.13	1.46	12.76**
1,2,3,4	18	2.80	0.15	1.36
within replicates	192	21.95	0.11	
total	287	223.14		

*P ≤ 0.05

**P ≤ 0.01

TABLE 6.3.1. Distribution of larvae and analysis of variance for fish larvae that commonly occur in the Middle Atlantic Bight during summer (from Kendall 1978).

Mean Numbers of Larvae Per Tow

	Overall	Light Condition		Depth				Days		
		Day	Night	0-m	4-m	15-m	30-m	1	2	3
Bluefish	91.9	103.1	80.7	97.8	241.1	23.9	4.7	53.5	125.4	96.8
Hake	118.0	117.2	118.8	107.4	91.4	251.6	21.7	120.8	111.7	121.5
Gulf Stream flounder	87.4	100.2	74.5	15.8	27.0	292.2	14.4	50.9	101.8	109.3
Fourspot flounder	37.3	37.3	37.4	13.5	15.1	112.6	8.3	22.9	30.8	58.3
Butterfish	36.8	35.2	38.2	21.1	27.8	92.2	5.9	30.3	39.4	40.5
Frigate mackerel	33.9	29.3	38.5	31.6	93.8	7.9	2.3	18.4	47.6	35.7

F Values

	Days	Diel	Depth	Days-Diel	Days-Depth	Diel-Depth	Days-Diel-Depth
Bluefish	14.169**	4.075*	93.356**	7.167**	6.502**	24.820**	5.344**
Hake	0.258	0.002	60.224**	0.842	1.510	4.732**	4.311**
Gulf Stream flounder	2.119	1.037	29.399**	0.285	2.152	4.186*	0.151
Fourspot flounder	16.229**	0.001	89.113**	0.320	19.514**	12.367**	0.399
Butterfish	0.868	0.179	30.183**	1.198	1.407	3.878**	0.756
Frigate mackerel	4.110*	1.219	25.197**	0.121	2.488*	3.168*	0.311

* $P \leq 0.05$
** $P \leq 0.01$

7.0 Discussion: The data summarized in this report represent more than a decade of research on the early life history of coastal fishes in the Middle Atlantic Bight. They clearly show both differences and similarities in the spawning habits and the subsequent distribution of eggs and larvae over time. Since the Dolphin survey in 1965-66, much of the research in NMFS has turned toward fisheries management, an endeavor which must include scientific inputs that will allow managers to predict the size of incoming year classes. This forecasting capability will be realized when we understand the intricate network of biological and environmental factors that affect recruitment processes. Although we are not yet there, the studies summarized in this report provided excellent background information to build upon. They formed the basis for planning subsequent research that is now ongoing, and for measuring the influence of man's activities on the early life history of coastal fishes in the Bight. We have learned through these endeavors that: 1) the Middle Atlantic Bight is an important spawning area for a diverse assemblage of coastal fishes. Spawning goes on year-round but most fishes spawn on a seasonal basis. On a small scale, the duration of spawning and the geographic occurrence of spawning products vary annually between and within species but on a large scale they are strikingly similar. The abundance of both eggs and larvae varies within a season and from year to year. Our data on hakes and Gulf Stream flounder exemplify the above. 2) Because of the annual shifts in distribution, and despite the fluctuations in abundance, fish eggs and larvae can be found throughout the Bight from the breaker zone to the shelf edge. There is no single area or areas that the coastal marine fish community uses for spawning. The entire continental shelf provides habitat for planktonic eggs to develop and for larvae to grow and metamorphose. 3) Predicting the potential impact of natural and man-induced mortality requires a time series of information on the broad-scale distribution and abundance of marine organisms. Only large-scale surveys conducted at frequent intervals of time and designed to cover entire distributional ranges can provide such information. 4) Marine fish produce massive quantities of eggs, which are spawned over large areas. Spawning areas shift during the season. Most coastal fishes that spawn at sea do not seek a particular site but the general spawning area and time can be predicted with the data at hand. 5) Spawning is influenced by environmental factors. Temperature, in particular, seems important. Spring spawning progresses northward as waters warm. Fall spawning progresses southward as coastal waters cool. Circulation plays an important role in the passive transport of egg and larvae. It is clear to us from our vertical distribution studies that researchers must investigate the diel movements of larvae before hypothesizing on how circulation

affects the distribution and survival of young fishes. 6) Fishes which differ in both habits and economic significance when mature, occur together as larvae. In many instances they compete for survival. Eggs and larvae are vulnerable to their environment. Natural mortality is greatest during the initial stages of development. Because of extensive early mortality through natural causes, the effects of man-induced factors on the relatively few survivors that will be recruited into the year class must be understood.

Acknowledgments:

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APPENDIX TABLE 3.3.0. Eggs and larvae of fishes from R.V. Dolphin survey. Under date, D=day and M=month (from Berrien et al. 1978).

CRUISE DATE 065 4 1965 STA. D M SPECIES ANALYZED	LARVAE NUMBER TOTAL	LARVAE NUMBER MEAS.	LARVAE LENGTHS (MM) MEAN	LARVAE LENGTHS (MM) RANGE	LARVAE LENGTHS (MM) MEAS.	NO. EGGS	LARVAE NUMBER TOTAL	LARVAE NUMBER MEAS.	LARVAE LENGTHS (MM) MEAN	LARVAE LENGTHS (MM) RANGE	LARVAE LENGTHS (MM) MEAS.	NO. EGGS	NO. PER 10M² LARVAE	NO. PER 10M² EGGS
C 1 C3 12	SAMPLING DEPTH 0- 6M													
MERLUCCIUS BILINEARIS	1					0							0.1	0.0
PARALICHTHYS DENTATUS	1	1	5.2		SL	0							0.1	0.0
SCOPHTHALMUS AQUOSUS	5	2	4.2	4.1- 4.2	SL								0.6	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
C 2 C3 12	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	1	1	18.7		TL								0.3	
ENCHELYOPUS CIMBRIUS	1	1	5.0		SL	0							0.3	0.0
UROPHYCIS SP.	1	1	4.3		NL								0.3	
PARALICHTHYS DENTATUS	2	2	7.7	6.4- 9.1	SL	0							0.6	0.0
SCOPHTHALMUS AQUOSUS	8	8	6.5	4.9- 9.7	SL								2.4	
C 3 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS							1	1	17.9		TL		0.3	
ENCHELYOPUS CIMBRIUS	2	2	8.0	6.3- 9.6	SL	0						0	0.7	0.0
GADUS MORHUA						147						57	0.0	63.1
MERLUCCIUS BILINEARIS						0	1	1	6.0		NL	0	0.3	0.0
PARALICHTHYS DENTATUS	2	2	10.8	10.1-11.5	SL	0	2	2	8.6	8.2- 9.1	SL	0	1.3	0.0
SCOPHTHALMUS AQUOSUS	2	2	6.5	6.4- 6.6	SL		27	18	6.9	3.6-32.1	SL		9.6	
C 4 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	1	1	3.7		SL	0						0	0.3	0.0
GADUS MORHUA	10	8	5.3	3.5- 6.5	SL	16	2	2	4.5	4.3- 4.6	SL	38	3.7	17.5
UROPHYCIS SP.							9	9	6.2	2.8-11.1	NL		3.0	
MERLUCCIUS BILINEARIS	2	2	4.6	4.2- 5.0	NL	0	17	17	8.5	3.2-53.0	NL	0	6.3	0.0
ETRUMEUS MICROSTOMUS							1	1	5.9		SL		0.3	
PARALICHTHYS DENTATUS	4	4	7.2	6.4- 8.0	SL	0	13	13	7.2	4.9- 9.4	SL	0	5.5	0.0
SCOPHTHALMUS AQUOSUS	8	6	5.2	4.5- 6.5	SL		16	16	5.2	3.7- 6.2	SL		7.7	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED							UNIDENTIFIED							
C 5 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS SP.	1	1	2.2		NL		4	4	4.6	3.9- 5.1	NL		1.6	
MERLUCCIUS BILINEARIS	13	11	6.1	4.3- 7.8	NL	0	20	15	8.3	3.7-38.5	NL	0	10.6	0.0
PARALICHTHYS DENTATUS	1	1	8.8		SL	0	2	2	9.5	8.9-10.2	SL	0	1.0	0.0
C 6 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS SP.	4	4	5.6	4.5- 7.2	NL								1.3	
MERLUCCIUS BILINEARIS	6	6	8.3	7.0- 8.9	NL	0	27	27	7.4	4.4- 5.6	NL	0	10.8	0.0
PARALICHTHYS DENTATUS	2	2	7.7	7.3- 8.2	SL	0	2	2	8.6	7.9- 9.3	SL	0	1.3	0.0
SCOPHTHALMUS AQUOSUS							1	1	4.3		SL		0.3	
C 7 D4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS SP.	5	4	6.6	5.7- 7.2	NL		2	2	5.9	5.5- 6.3	NL		2.2	
MERLUCCIUS BILINEARIS						0	26	25	7.7	4.6- 9.9	NL	0	8.7	0.0
CITHARICHTHYS ARCTIFRONS							2	2	6.7	5.5- 7.8	SL		0.7	
PARALICHTHYS DENTATUS	1	1	7.5		SL	0	2	2	8.2	7.8- 8.6	SL	0	1.0	0.0
C 8 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS SP.	1	1	6.9		NL								0.3	
C 1 C5 12	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	6	6	18.7	15.4-23.8	TL								0.7	
PARALICHTHYS DENTATUS	2	2	8.8	8.3- 9.4	SL	0							0.2	0.0
SCOPHTHALMUS AQUOSUS	39	38	4.4	2.7- 8.6	SL								4.7	
ADDITIONAL LARVAE CAUGHT GOBIIDAE														
D 2 C5 12	SAMPLING DEPTH 0- 9M													
BREVOORTIA TYRANNUS	1	1	20.2		TL								0.2	
PARALICHTHYS DENTATUS	1	1	8.7		SL	0							0.2	0.0
SCOPHTHALMUS AQUOSUS	68	68	4.9	3.3- 6.7	SL								12.4	
D 3 C5 12	SAMPLING DEPTH 0-15M													
GADUS MORHUA	16	14	4.6	3.4- 6.8	SL	92							4.8	27.9
UROPHYCIS SP.	4	3	6.3	3.9-10.9	NL								1.2	
MERLUCCIUS BILINEARIS	1	1	4.2		NL	0							0.3	0.0
PARALICHTHYS DENTATUS	14	14	6.0	3.8-11.2	SL	0							4.2	0.0
SCOPHTHALMUS AQUOSUS	171	50	4.2	3.1- 5.3	SL								51.8	

TABLE 3. (continued)

CRUISE DATE 065 4 1965 STA. D 4 SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
D 4 C5 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
BREVOORTIA TYRANNUS						1	1 16.9		TL		0.2	
CLUPEA HARENGUS HARENGUS	1	1 27.7		TL							0.3	
ENGRAULIS EURYSTOLE	1	1 37.3		TL							0.3	
GADUS MORHUA	3	3 5.5	4.9- 6.5	SL	0	13	13 4.4	3.2- 5.3	SL	50	3.0	8.1
UROPHYCIS SP.	7	5 4.7	3.2- 7.3	NL		6	5 3.7	3.1- 4.4	NL		3.1	
MERLUCCIUS BILINEARIS	1				0					0	0.3	0.0
CITHARICHTHYS ARCTIFRONS						1	1 5.8		SL		0.2	
PARALICHTHYS DENTATUS	37	36 6.6	4.5- 9.6	SL	0	19	19 5.7	3.4- 8.9	SL	0	14.4	0.0
SCOPHTHALMUS AQUOSUS	191	50 4.8	3.0- 6.1	SL		203	50 4.5	3.0- 7.8	SL		51.5	
D 5 C5 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
GADUS MORHUA	5	4 4.4	3.5- 5.8	SL	55	19	17 4.2	3.3- 5.3	SL	77	7.8	42.2
UROPHYCIS SP.	6	6 4.3	3.9- 5.1	NL		9	5 4.6	2.8- 8.0	NL		4.8	
MERLUCCIUS BILINEARIS	3	3 4.4	3.7- 5.1	NL	0					0	1.0	0.0
PARALICHTHYS DENTATUS	38	38 6.3	3.8- 8.4	SL	0	53	51 5.9	3.9- 7.4	SL	0	29.1	0.0
SCOPHTHALMUS AQUOSUS	155	50 4.7	2.9- 7.7	SL		218	50 4.1	2.7- 6.9	SL		119.2	
ADDITIONAL LARVAE CAUGHT						UNIDENTIFIED						
D 6 C5 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
GADUS MORHUA	2	2 5.5	5.2- 5.8	SL	0	9	8 5.3	4.4- 6.8	SL	0	3.6	0.0
UROPHYCIS SP.	2	2 3.7	3.6- 3.9	NL		4	4 5.4	3.9- 6.9	NL		1.9	
MERLUCCIUS BILINEARIS	10	8 3.7	3.1- 5.0	NL	0	28	27 3.9	2.4- 5.1	NL	0	12.3	0.0
CITHARICHTHYS ARCTIFRONS	2	2 4.6	3.1- 6.1	SL							0.7	
PARALICHTHYS DENTATUS	40	40 6.4	3.1- 8.0	SL	0	25	25 5.9	3.8- 7.7	SL	0	20.3	0.0
SCOPHTHALMUS AQUOSUS	56	53 4.1	2.8- 5.7	SL		139	50 4.1	2.9- 5.7	SL		63.1	
ADDITIONAL LARVAE CAUGHT						UNIDENTIFIED						
D 7 C6 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
UROPHYCIS SP.	1	1 6.1		NL							0.3	
MERLUCCIUS BILINEARIS	3	3 24.5	10.6-33.2	NL	0	2	2 36.5	20.5-52.5	NL	0	1.6	0.0
CITHARICHTHYS ARCTIFRONS	1	1 8.1		SL		2	2 7.4	6.4- 8.3	SL		1.0	
PARALICHTHYS DENTATUS	3	3 7.0	6.4- 8.3	SL	0					0	1.0	0.0
SCOPHTHALMUS AQUOSUS	3	2 4.9	4.5- 5.3	SL		7	5 4.3	4.0- 4.7	SL		3.2	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
D 8 C6 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENGRAULIS EURYSTOLE	1	1 20.6		TL							0.3	
DIAPHUS SP.	1	1 9.5		SL		1	1 9.3		SL		0.6	
UROPHYCIS SP.						3	3 10.5	7.5-15.9	NL		1.0	
MERLUCCIUS BILINEARIS	2	2 11.1	9.2-13.1	NL	0	1	1 14.5		NL	0	0.9	0.0
BETHUS OCELLATUS						5	5 8.8	7.9-10.6	SL		1.7	
CITHARICHTHYS ARCTIFRONS	3	3 8.6	7.1- 9.8	SL		4	4 7.6	6.8- 8.6	SL		2.2	
ADDITIONAL LARVAE CAUGHT						CALLICHYMIDAE						
						UNIDENTIFIED						
E 1 C7 12	SAMPLING DEPTH 0- 6M											
GADUS MORHUA	1	1 3.9		SL	0						0.1	0.0
SCOPHTHALMUS AQUOSUS	29	23 5.1	2.9-14.1	SL							3.5	
E 2 C7 12	SAMPLING DEPTH 0- 6M											
CLUPEA HARENGUS HARENGUS	1	1 13.7		TL							0.1	
GADUS MORHUA	1	1 3.5		SL	0						0.1	0.0
PARALICHTHYS DENTATUS	3	3 7.3	5.9- 8.2	SL	0						0.4	0.0
SCOPHTHALMUS AQUOSUS	119	50 4.2	3.1- 6.1	SL							14.4	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE											
	UNIDENTIFIED											
E 3 C7 12	SAMPLING DEPTH 0- 6M											
GADUS MORHUA					4						0.0	0.5
PARALICHTHYS DENTATUS	1	1 5.5		SL	0						0.1	0.0
SCOPHTHALMUS AQUOSUS	30	19 4.6	3.5- 6.2	SL							3.6	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
E 4 C6 12	SAMPLING DEPTH 0-15M											
GADUS MORHUA	6	6 5.7	3.7- 7.0	SL	22						1.8	6.7
UROPHYCIS SP.	7	4 4.6	3.9- 5.6	NL							2.1	
MERLUCCIUS BILINEARIS	2	2 6.2	5.3- 7.1	NL	0						0.6	0.0
PARALICHTHYS DENTATUS	38	38 5.8	3.4- 8.6	SL	0						11.5	0.0
SCOPHTHALMUS AQUOSUS	474	50 4.4	3.0- 5.8	SL							143.6	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE											
E 5 C6 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
UROPHYCIS SP.	1	1 4.4		NL							0.3	
MERLUCCIUS BILINEARIS					0	1	1 3.0		NL	0	0.3	0.0
PARALICHTHYS DENTATUS	10	10 5.3	3.2- 6.7	SL	0	15	15 5.6	4.0- 7.6	SL	0	8.0	0.0
SCOPHTHALMUS AQUOSUS	38	31 3.6	2.7- 4.8	SL							12.7	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE					UNIDENTIFIED						

CRUISE DATE 065 4 1965 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	NO. PER 10M^2 LARVAE	 EGGS
E 6 06 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
GADUS MORHUA					1					0	0.0	0.3
UROPHYCIS SP.						1 1	4.2		NL		0.2	
MERLUCCIUS BILINEARIS	3 3	3.4	2.7- 4.2	NL	0	3 3	3.7	3.4- 3.9	NL	0	1.4	0.0
CITHARICHTHYS ARCTIFRONS	1 1	5.6		SL							0.3	
PARALICHTHYS DENTATUS	6 6	6.0	3.4- 7.2	SL	0	7 7	6.0	4.7- 8.2	SL	0	3.0	0.0
SCOPHTHALMUS AQUOSUS	7 7	4.5	3.0- 6.1	SL		7 5	4.6	3.6- 6.0	SL		3.3	
E 7 06 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LOPHIUS AMERICANUS	1 1	6.8		TL							0.3	
UROPHYCIS SP.	2 2	6.3	4.2- 8.5	NL		1 1	6.4		NL		0.9	
MERLUCCIUS BILINEARIS	2 2	9.4	8.5-10.4	NL	0	4 4	7.6	5.2-10.8	NL	0	1.9	0.0
CITHARICHTHYS ARCTIFRONS	1 1	10.0		SL		3 3	9.1	8.2-10.1	SL		1.3	
PARALICHTHYS DENTATUS					0	2 2	9.4	8.7-10.1	SL	0	0.7	0.0
E 8 06 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CERATOSCOPELUS MADERENSIS	1 1	14.1		SL							0.3	
GADUS MORHUA	2				0					0	0.7	0.0
PARALICHTHYS DENTATUS					0	2 1	8.4		SL	0	0.7	0.0
SCOPHTHALMUS AQUOSUS	1										0.3	
ADDITIONAL LARVAE CAUGHT GOBIIDAE												
F 1 09 12	SAMPLING DEPTH 0- 9M											
BREVOORTIA TYRANNUS	2 2	30.0	29.4-30.6	TL							0.4	
ANCHOA MITCHILLI	39 39	28.7	14.6-45.9	TL							7.1	
SCOPHTHALMUS AQUOSUS	1 1	7.7		SL							0.2	
ADDITIONAL LARVAE CAUGHT SYNGNATHIDAE												
F 2 09 12	SAMPLING DEPTH 0- 9M											
BREVOORTIA TYRANNUS	1 1	28.3		TL							0.2	
ANCHOA MITCHILLI	10 10	28.4	21.4-32.1	TL							1.8	
PARALICHTHYS DENTATUS	1 1	13.5		SL	0						0.2	0.0
SCOPHTHALMUS AQUOSUS	3 3	10.4	7.7-12.0	SL							0.5	
ADDITIONAL LARVAE CAUGHT SYNGNATHIDAE												
F 3 09 12	SAMPLING DEPTH 0-15M											
GADUS MORHUA	1				0						0.3	0.0
PARALICHTHYS DENTATUS	2 2	9.6	9.0-10.3	SL	0						0.6	0.0
SCOPHTHALMUS AQUOSUS	16 15	4.6	2.7- 6.0	SL							4.8	
F 4 10 12	SAMPLING DEPTH 0-15M											
BREVOORTIA TYRANNUS	1 1	21.0		TL							0.3	
GADUS MORHUA	11 11	3.8	3.0- 4.5	SL	141						3.3	42.7
MERLUCCIUS BILINEARIS	1 1	4.5		NL	0						0.3	0.0
PARALICHTHYS DENTATUS	20 20	6.3	3.9- 7.7	SL	0						6.1	0.0
SCOPHTHALMUS AQUOSUS	212 50	4.3	2.8- 5.4	SL							64.2	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED												
F 5 10 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
GADUS MORHUA	1 1	3.9		SL	36	9 7	4.6	4.2- 4.9	SL	39	3.3	23.8
MERLUCCIUS BILINEARIS					0	2 2	3.3	2.8- 3.8	NL	0	0.7	0.0
PARALICHTHYS DENTATUS	1 1	4.2		SL	0	14 14	5.2	3.8- 8.1	SL	0	5.0	0.0
SCOPHTHALMUS AQUOSUS	4 3	3.5	2.8- 4.7	SL		15 13	4.1	2.7- 5.9	SL		6.2	
F 6 10 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
UROPHYCIS SP.	4 4	5.7	4.3- 7.2	NL							1.3	
MERLUCCIUS BILINEARIS					0	2 2	4.8	3.9- 5.8	NL	0	0.7	0.0
CITHARICHTHYS ARCTIFRONS	1 1	8.7		SL		1 1	6.5		SL		0.6	
PARALICHTHYS DENTATUS					0	2 2	8.5	8.0- 9.0	SL	0	0.7	0.0
SCOPHTHALMUS AQUOSUS						4 4	5.4	4.2- 7.7	SL		1.3	
F 7 10 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
UROPHYCIS SP.	2 2	6.4	4.7- 8.2	NL							0.7	
MERLUCCIUS BILINEARIS	2 2	9.8	6.0-13.6	NL	0	7 6	7.3	3.8-11.0	NL	0	2.9	0.0
CITHARICHTHYS ARCTIFRONS	1 1	7.4		SL		3 3	8.7	7.2-10.4	SL		1.3	
PARALICHTHYS DENTATUS	1 1	6.9		SL	0	1 1	7.4		SL	0	0.6	0.0
G 1 11 12	SAMPLING DEPTH 0- 3M											
ANCHOA MITCHILLI	9 9	40.4	33.1-45.6	TL							0.5	
SCOPHTHALMUS AQUOSUS	7 7	4.3	2.6- 6.5	SL							0.4	
ADDITIONAL LARVAE CAUGHT SYNGNATHIDAE												
G 2 11 12	SAMPLING DEPTH 0- 3M											
PARALICHTHYS DENTATUS	2 2	4.7	4.4- 5.0	SL	0						0.1	0.0
SCOPHTHALMUS AQUOSUS	47 47	4.0	2.4- 5.6	SL							2.8	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED												

CRUISE DATE C65 4 1965 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE		NO. MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE		NO. MEAS.	NO. EGGS	NO. PER 10M^2 LARVAE	EGGS
G 3 10 12 SAMPLING DEPTH C- 6M														
BREVOORTIA TYRANNUS	6	6	11.8	10.6-13.7	TL								0.7	
GADUS MORHUA						1							0.0	0.1
PARALICHTHYS DENTATUS	7	7	6.3	3.7- 7.5	SL	0							0.8	0.0
SCOPHTHALMUS AQUOSUS	19	19	4.3	3.2- 6.8	SL								2.3	
G 4 10 12 SAMPLING DEPTH 0-15M														
BREVOORTIA TYRANNUS	2	2	12.3	10.2-14.4	TL								0.6	
GADUS MORHUA	1	1	5.6		SL	3							0.3	0.9
UROPHYCIS SP.	3	3	10.6	5.8-14.8	NL								0.9	
PARALICHTHYS DENTATUS	6	6	5.5	4.7- 7.5	SL	0							1.8	0.0
SCOPHTHALMUS AQUOSUS	27	27	5.0	2.9- 6.4	SL								8.2	
ADDITIONAL LARVAE CAUGHT GOBIIDAE														
G 5 10 12 SAMPLING DEPTH 0-15M							SAMPLING DEPTH 18-33M							
GADUS MORHUA	8	7	5.1	4.1- 7.5	SL	0						0	2.7	0.0
UROPHYCIS SP.	1	1	4.3		NL								0.3	
PARALICHTHYS DENTATUS	2	1	5.2		SL	0						0	0.7	0.0
SCOPHTHALMUS AQUOSUS	7	7	5.6	4.2- 6.4	SL		4	4	4.7	4.2- 5.2	SL		3.4	
G 6 10 12 SAMPLING DEPTH 0-15M							SAMPLING DEPTH 18-33M							
GADUS MORHUA	3	3	6.0	5.2- 7.2	SL	0						0	1.0	0.0
UROPHYCIS SP.	2	2	3.8	3.5- 4.2	NL								0.7	
MERLUCCIUS BILINEARIS	1	1	4.3		NL	0	1	1	6.8		NL	0	0.6	0.0
CITHARICHTHYS ARCTIFRONS	3	3	6.7	6.3- 7.2	SL								1.0	
PARALICHTHYS DENTATUS	8	8	6.6	4.4- 8.0	SL	0						0	2.7	0.0
SCOPHTHALMUS AQUOSUS	3	3	4.5	4.1- 5.0	SL								1.0	
H 1 11 12 SAMPLING DEPTH 0- 6M														
ANCHOA MITCHILLI	1	1	29.0		TL								0.1	
ENGRAULIS EURYSTOLE	1	1	36.7		TL								0.1	
MICROPOGON UNDULATUS	2	2	7.3	6.9- 7.7	SL								0.2	
SCOPHTHALMUS AQUOSUS	3	3	3.6	3.2- 4.2	SL								0.4	
H 2 11 12 SAMPLING DEPTH 0- 6M														
PARALICHTHYS DENTATUS	3	3	4.6	3.2- 5.5	SL	0							0.4	0.0
SCOPHTHALMUS AQUOSUS	19	18	3.4	2.5- 4.4	SL								2.3	
H 3 11 12 SAMPLING DEPTH 0- 6M														
BREVOORTIA TYRANNUS	2	2	12.1	10.2-14.0	TL								0.2	
GADUS MORHUA						4							0.0	0.5
UROPHYCIS SP.	1	1	4.8		NL								0.1	
PARALICHTHYS DENTATUS	17	16	6.4	5.1- 7.7	SL	0							2.1	0.0
SCOPHTHALMUS AQUOSUS	8	8	3.6	2.5- 4.6	SL								1.0	
H 4 11 12 SAMPLING DEPTH 0-15M														
BREVOORTIA TYRANNUS	2	2	11.8	10.9-12.8	TL								0.6	
UROPHYCIS SP.	1	1	4.2		NL								0.3	
PARALICHTHYS DENTATUS	4	4	7.3	6.6- 8.3	SL	0							1.2	0.0
SCOPHTHALMUS AQUOSUS	1	1	4.7		SL								0.3	
H 5 11 12 SAMPLING DEPTH 0-15M							SAMPLING DEPTH 18-24M							
UROPHYCIS SP.	1	1	4.7		NL								0.3	
PARALICHTHYS DENTATUS	10	10	6.3	4.8- 8.3	SL	0	1	1	7.1		SL	0	3.2	0.0
SCOPHTHALMUS AQUOSUS	5	5	4.4	3.3- 5.8	SL		4	4	5.2	4.4- 5.7	SL		2.2	
H 6 11 12 SAMPLING DEPTH 0-15M							SAMPLING DEPTH 18-33M							
SYMBOLOPHORUS VERANYI							1	1	8.9		SL		0.3	
MERLUCCIUS BILINEARIS	3	3	8.8	4.3-17.7	NL	0	3	3	5.0	4.5- 5.3	NL	0	1.9	0.0
CITHARICHTHYS ARCTIFRONS	1	1	7.0		SL		3	3	10.6	8.1-12.0	SL		1.3	
PARALICHTHYS DENTATUS	3	3	4.8	3.5- 6.2	SL	0	3	3	8.3	7.7- 8.9	SL	0	1.9	0.0
SCOPHTHALMUS AQUOSUS	1	1	5.0		SL								0.3	
ADDITIONAL LARVAE CAUGHT ANGUILLA ROSTRATA														
H 7 11 12 SAMPLING DEPTH 0-15M							SAMPLING DEPTH 18-33M							
J 1 12 12 SAMPLING DEPTH 0- 3M														
ANCHOA MITCHILLI	6	6	49.4	31.4-63.5	TL								0.4	
MICROPOGON UNDULATUS	2	2	8.3	7.8- 8.8	SL								0.1	
ADDITIONAL LARVAE CAUGHT GOBIIDAE														

CRUISE DATE D65 4 1965 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER $10M^2$ LARVAE	EGGS
J 2 12 12	SAMPLING DEPTH 0- 3M													
BREVOORTIA TYRANNUS	1	1	17.4		TL								0.1	
PARALICHTHYS DENTATUS	1	1	8.6		SL	0							0.1	0.0
SCOPHTHALMUS AQUOSUS	1	1	4.0		SL								0.1	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
	GOBIIDAE													
J 3 12 12	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	5	5	16.5	13.7-18.9	TL								0.6	
SCOPHTHALMUS AQUOSUS	1	1	2.6		SL								0.1	
J 4 12 12	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	1	1	10.1		TL								0.1	
UROPHYCIS SP.	5	5	6.5	4.5- 7.9	NL								0.6	
PARALICHTHYS DENTATUS	12	12	5.4	4.1- 7.3	SL	0							1.5	0.0
SCOPHTHALMUS AQUOSUS	3	3	4.3	3.4- 5.2	SL								0.4	
J 5 12 12	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	2	2	15.7	15.6- 15.8	TL								0.6	
MERLUCCIUS BILINEARIS	1	1	6.8		NL	0							0.3	0.0
PARALICHTHYS DENTATUS	1	1	5.6		SL	0							0.3	0.0
J 6 12 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
UROPHYCIS SP.							2	2	12.3	4.7-20.0	NL		0.3	
MERLUCCIUS BILINEARIS						0	2	2	7.3	5.8- 8.9	NL	0	0.3	0.0
J 7 11 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
K 1 12 12	SAMPLING DEPTH 0- 3M													
SCOPHTHALMUS AQUOSUS	3	3	3.0	2.7- 3.5	SL								0.2	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
K 2 12 12	SAMPLING DEPTH 0- 6M													
K 3 13 12	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	1	1	15.1		TL								0.3	
MICROPOGON UNDULATUS	1	1	4.9		SL								0.3	
PARALICHTHYS DENTATUS	27	27	4.5	3.4- 8.5	SL	0							8.2	0.0
SCOPHTHALMUS AQUOSUS	8	8	3.0	2.7- 3.6	SL								2.4	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
K 4 13 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
BREVOORTIA TYRANNUS	7	7	15.3	13.7-19.5	TL		3	3	13.6	11.4-15.0	TL		2.7	
UROPHYCIS SP.	20	11	10.6	6.7-20.6	NL		5	5	15.5	10.6-18.2	NL		6.9	
ETROPUS MICROSTOMUS	1	1	10.9		SL		2	2	9.4	7.7-11.1	SL		0.6	
PARALICHTHYS DENTATUS	11	11	6.5	4.8- 7.6	SL	0	4	4	6.2	5.4- 7.5	SL	0	4.0	0.0
SCOPHTHALMUS AQUOSUS							1	1	10.1		SL		0.2	
K 5 13 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
BREVOORTIA TYRANNUS	3	3	14.1	13.4-15.1	TL								1.0	
ENGRAULIS EURYSTOLE							6	4	36.1	32.5-39.0	TL		1.0	
SYNGLOLOPHCRUS VERANYI	1	1	9.8		SL								0.3	
UROPHYCIS SP.	4	4	10.2	7.0-13.8	NL		7	6	13.8	5.9-22.5	NL		2.4	
MICROPOGON UNDULATUS	1	1	5.5		SL		1	1	8.7		SL		0.5	
PARALICHTHYS DENTATUS	1	1	6.3		SL	0	12	12	7.7	6.3-10.9	SL	0	2.3	0.0
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
K 6 13 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
LOPHIUS AMERICANUS							1	1	3.0		TL		0.3	
UROPHYCIS SP.	6	6	7.3	6.1- 9.9	NL								2.0	
MERLUCCIUS BILINEARIS	2	2	7.4	6.0- 8.9	NL	0	2	2	7.5	6.3- 8.8	NL	0	1.3	0.0
PARALICHTHYS DENTATUS	6	6	7.3	6.5- 8.9	SL	0	3	3	8.6	7.9- 9.3	SL	0	2.8	0.0
K 7 13 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
PARALICHTHYS DENTATUS						0	1	1	5.6		SL	0	0.3	0.0
L 1 13 12	SAMPLING DEPTH 0- 6M													
ELOPS SAURUS	1	1	32.8		NL								0.1	
BREVOORTIA TYRANNUS	1	1	15.2		TL								0.1	
LEIOSTOMUS XANTHURUS	1	1	11.9		SL								0.1	
MICROPOGON UNDULATUS	1	1	5.8		SL								0.1	
PARALICHTHYS DENTATUS	1	1	13.1		SL	0							0.1	0.0
SCOPHTHALMUS AQUOSUS	6	6	3.5	2.5- 4.8	SL								0.7	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													

CRUISE DATE 1965 4 1965 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER LARVAE	NO. PER 10M² EGGS
L 2 13 12	SAMPLING DEPTH 0- 6M													
UROPHYCIS SP.	1	1	3.3		NL								0.1	
LEIOSTOMUS XANTHURUS	3	3	11.5	11.5-11.6	SL								0.4	
PARALICHTHYS DENTATUS	44	44	4.7	3.0-12.5	SL	0							5.3	0.0
SCOPHTHALMUS AQUOSUS	1	1	3.1		SL								0.1	
L 3 13 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ELOPS SAURUS							1	1	33.2		NL		0.2	
BREVOORTIA TYRANNUS	1	1	18.3		TL		7	7	12.5	9.1-15.9	TL		1.5	
ENGRAULIS EURYSTOLE							3	3	24.4	23.1-25.9	TL		0.5	
UROPHYCIS SP.	5	3	11.7	2.0-29.1	NL		17	8	6.6	4.8- 8.2	NL		4.3	
LEIOSTOMUS XANTHURUS	1	1	9.5		SL		2	2	6.1	2.8- 9.4	SL		0.6	
MICROPOGON UNDULATUS	2	2	6.5	6.2- 6.8	SL		20	20	6.7	4.9- 8.4	SL		3.8	
CITHARICHTHYS ARCTIFRONS	1	1	9.5		SL								0.3	
PARALICHTHYS DENTATUS	4	4	8.2	4.8- 9.6	SL	0	36	36	6.7	4.4-12.1	SL	0	7.0	0.0
SCOPHTHALMUS AQUOSUS	1	1	3.1		SL								0.3	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE						SYNODONTIDAE GOBIIDAE UNIDENTIFIED							
L 4 14 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS SP.	2	2	2.6	2.3- 3.0	NL		1	1	4.5		NL		0.9	
MERLUCCIUS BILINEARIS						0	1	1	4.1		NL	0	0.3	0.0
LEIOSTOMUS XANTHURUS							1	1	5.3		SL		0.3	
ETROPUS MICROSTOMUS	1	1	6.7		SL								0.3	
PARALICHTHYS DENTATUS	1	1	6.0		SL	0						0	0.3	0.0
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE						PARALEPIDIDAE GOBIIDAE							
L 5 14 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
LEIOSTOMUS XANTHURUS	1	1	3.9		SL								0.3	
PARALICHTHYS DENTATUS						1						0	0.0	0.3
ADDITIONAL LARVAE CAUGHT							SYNODONTIDAE							
M 1 14 12	SAMPLING DEPTH 0- 3M													
BREVOORTIA TYRANNUS	18	18	18.4	12.3-21.3	TL								1.1	
MICROPOGON UNDULATUS	2	2	8.4	8.0- 8.9	SL								0.1	
PARALICHTHYS DENTATUS	5	5	8.2	3.4-12.0	SL	0							0.3	0.0
SCOPHTHALMUS AQUOSUS	5	5	2.9	2.7- 3.2	SL								0.3	
ADDITIONAL LARVAE CAUGHT	SPARIDAE													
M 2 14 12	SAMPLING DEPTH 0- 9M													
BREVOORTIA TYRANNUS	79	36	14.2	10.1-18.4	TL								14.4	
LEIOSTOMUS XANTHURUS	2	2	9.2	9.2- 9.3	SL								0.4	
MICROPOGON UNDULATUS	5	5	8.7	7.3-11.1	SL								0.9	
PARALICHTHYS DENTATUS	15	13	3.4	2.9- 4.1	SL	8							2.7	1.5
SCOPHTHALMUS AQUOSUS	9	8	3.3	2.8- 4.5	SL								1.6	
ADDITIONAL LARVAE CAUGHT	SPARIDAE													
M 3 14 12	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	181	77	10.6	5.1-16.3	TL								54.8	
ENGRAULIS EURYSTOLE	4												1.2	
UROPHYCIS SP.	21	11	7.8	2.9-11.0	NL								6.4	
LEIOSTOMUS XANTHURUS	3	3	6.2	4.2- 7.6	SL								0.9	
MICROPOGON UNDULATUS	5	5	7.9	7.3- 8.7	SL								1.5	
PARALICHTHYS DENTATUS	69	69	3.8	2.7- 6.4	SL	9							20.9	2.7
SCOPHTHALMUS AQUOSUS	10	10	3.6	3.1- 4.5	SL								3.0	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE UNIDENTIFIED													
M 4 14 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
BREVOORTIA TYRANNUS	5	5	12.8	9.5-14.2	TL		1	1	11.9		TL		1.7	
ENGRAULIS EURYSTOLE	1	1	12.1		TL		1	1	13.3		TL		0.5	
UROPHYCIS SP.	9	5	5.3	3.2- 9.7	NL								2.9	
LEIOSTOMUS XANTHURUS	2	2	4.1	4.0- 4.3	SL		35	35	7.0	5.1-10.9	SL		6.3	
MICROPOGON UNDULATUS							11	11	5.9	3.7- 7.0	SL		1.8	
BOTHUS OCELLATUS	1												0.3	
ETROPUS MICROSTOMUS							1	1	4.7		SL		0.2	
PARALICHTHYS DENTATUS	4	4	6.6	4.6-10.8	SL	2	31	31	6.5	3.6-10.9	SL	0	6.2	0.6
SCOPHTHALMUS AQUOSUS							1	1	4.5		SL		0.2	
ADDITIONAL LARVAE CAUGHT	BREGMACEROTIDAE SPARIDAE						SYNODONTIDAE OPHIDIIDAE CARAPIDAE SPARIDAE UNIDENTIFIED							

CRUISE DATE DES 4 1965 STA. D M SPECIES ANALYZED N 5 14 12	********** LARVAE ********** NUMBER TOTAL MEAS. SAMPLING DEPTH 0-15M	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS. SAMPLING DEPTH 18-33M	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M 2 LARVAE	EGGS
OPHICHTHUS GOMESI						2 2	26.0	20.5-31.5	TL		0.7	
OPHICHTHUS OCELLATUS						2 2	21.5	18.5-24.5	TL		0.7	
BREVOORTIA TYRANNUS	57 32	7.5	3.5-10.3	TL		4 4	9.7	7.8-11.5	TL		19.0	
ETRUMEUS SADINA	7 7	11.1	8.1-13.8	TL		4 4	11.9	10.6-14.0	TL		3.4	
ENGRAULIS EURYSTOLE	5 5	4.3	3.7- 5.4	TL		1 1	7.7		TL		1.8	
BENTHOSEMA SUBORBITALE						2 2	5.3	4.7- 5.9	SL		0.7	
CERATOSCOPELUS MADERENSIS	1 1	8.8		SL							0.3	
CERATOSCOPELUS WARMINGI	3 3	4.7	4.4- 5.2	SL							1.0	
DIAPHUS SP.						3 3	6.4	7.2-10.3	SL		1.0	
LAMPANYCTUS ALATUS OR PHOTONOTUS	7 7	4.6	3.5- 6.6	SL							2.3	
LAMPANYCTUS ATER						1 1	5.4		SL		0.3	
MYCTOPHUM SP.	1 1	7.3		SL							0.3	
MYCTOPHUM AFFINE	1 1	4.6		SL							0.3	
BENCHELYCPUS CIMBRIUS	3 3	2.2	1.8- 2.5	SL	0					0	1.0	0.0
UROPHYCIS SP.	93 23	3.1	1.7- 7.7	NL		9 9	3.8	2.7- 4.9	NL		21.0	
UROPHYCIS FLORIDANUS	3 2	3.5	3.0- 4.1	NL							1.0	
HEMANTHIAS VIVANUS	2 2	4.5	4.0- 5.0	SL							0.7	
LEIOSTOMUS XANTHURUS	431 78	4.1	2.4- 7.5	SL		83 82	4.4	2.8- 6.6	SL		157.0	
MICROPOGON UNDULATUS	72 70	3.7	2.4- 5.7	SL		27 27	4.0	2.9- 6.1	SL		30.6	
PEPRILUS TRIACANTHUS	1 1	3.4		SL		3 3	4.0	3.4- 4.7	SL		1.3	
PRIONOTUS CAROLINUS	6 6	5.2	4.0- 6.0	SL		3 3	6.6	6.3- 6.9	SL		2.8	
BOTHUS OCELLATUS	62 25	4.6	2.7- 7.9	SL		7 7	7.9	4.6-17.3	SL		20.9	
ETROPUS MICROSTOMUS	58 58	4.0	2.1- 9.7	SL		25 25	3.7	2.1- 6.6	SL		25.7	
PARALICHTHYS DENTATUS	2 2	3.1	3.0- 3.2	SL	0	5 5	4.2	3.4- 5.7	SL	0	2.3	0.0
SYACIUM PAPILLOSUM	2 2	6.8	6.6- 7.0	SL							0.7	
SYMPHURUS SP.	10 10	6.3	3.9- 9.6	SL		6 6	5.0	4.7-13.2	SL		5.0	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE STOMIATIDAE SYNODONTIDAE PARALEPIDIDAE MYCTOPHIDAE BREGMACEROTIDAE OPHIDIIDAE CARAPIDAE FISTULARIIDAE SERRANIDAE CARANGIDAE SPARIDAE LABRIDAE OR SCARIDAE CALLIONYMIDAE GOBIIDAE ACANTHURIDAE STROMATEIDAE SCORPAENIDAE UNIDENTIFIED						VINCIGUERRIA SP. STOMIATIDAE SYNODONTIDAE CHLOROPHTHALMIDAE PARALEPIDIDAE MYCTOPHIDAE BREGMACEROTIDAE OPHIDIIDAE CARAPIDAE SERRANIDAE SPARIDAE CHAETODONTIDAE LABRIDAE OR SCARIDAE MUGILIDAE CALLIONYMIDAE GOBIIDAE GEMPYLIDAE SCORPAENIDAE TRIGLIDAE UNIDENTIFIED						

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N 1 15 12	SAMPLING DEPTH 0- 6M										
BREVOORTIA TYRANNUS	5 5	15.3	12.5-19.0	TL						0.6	
LAMPANYCTUS ALATUS OR PHOTONOTUS	1 1	4.2		SL						0.1	
LAMPANYCTUS ATER	1 1	3.8		SL						0.1	
UROPHYCIS SP.	4 3	2.8	2.4- 3.2	NL						0.5	
HEMANTHIAS VIVANUS	1 1	3.6		SL						0.1	
LEIOSTOMUS XANTHURUS	47 45	4.8	2.8- 7.8	SL						5.7	
MICROPOGON UNDULATUS	15 15	4.0	2.8- 5.8	SL						1.8	
PEPRILUS TRIACANTHUS	3 3	3.8	3.5- 4.5	SL						0.4	
PRIONOTUS CAROLINUS	2 2	6.8	5.5- 8.2	SL						0.2	
BOTHUS OCELLATUS	1 1	3.7		SL						0.1	
ETROPUS MICROSTOMUS	5 5	4.3	2.4- 5.9	SL						0.6	
PARALICHTHYS DENTATUS	5 5	3.4	3.1- 3.7	SL	8					0.6	1.0
SCOPHTHALMUS AQUOSUS	5 5	3.3	2.8- 3.9	SL						0.6	
SYMPHURUS SP.	2 2	4.2	3.6- 4.8	SL						0.2	
ADDITIONAL LARVAE CAUGHT	BREGMACEROTIDAE OPHIDIIDAE CARAPIDAE SERRANIDAE APOGONIDAE SPARIDAE CALLIONYMIDAE GOBIIDAE UNIDENTIFIED										

CRUISE DATE D65 4 1965 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER $10M^2$ LARVAE	EGGS
N 2 15 12	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	206	81	6.2	2.9-15.2	TL								62.4	
ENGRAULIS EURYSTOLE	5	5	4.9	4.2- 5.5	TL								1.5	
UROPHYCIS SP.	19	14	6.0	2.2-15.7	NL								5.8	
LEIOSTOMUS XANTHURUS	83	83	4.7	3.0- 9.4	SL								25.1	
MICROPOGON UNDULATUS	66	65	4.8	2.8-10.6	SL								20.0	
PRIONOTUS CAROLINUS	6	6	5.4	3.7- 7.5	SL								1.8	
BOTHUS OCELLATUS	4	4	8.4	4.2-18.5	SL								1.2	
ETROPUS MICROSTOMUS	3	3	7.8	6.4-10.3	SL								0.9	
PARALICHTHYS DENTATUS	44	43	4.7	3.0-10.0	SL	1							13.3	0.3
SCOPHTHALMUS AQUOSUS	6	6	3.8	2.5- 5.2	SL								1.8	
SYMPHURUS SP.	1	1	12.4		SL								0.3	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE SYNODONTIDAE BREGMACEROTIDAE OPHIDIIDAE SERRANIDAE SPARIDAE CALLIONYMIDAE GOBIIDAE GEMPYLIDAE UNIDENTIFIED													
N 3 15 12	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	10	10	8.2	4.9-11.2	TL								3.0	
ENGRAULIS EURYSTOLE	2	2	17.7	15.5-20.0	TL								0.6	
CERATOSCOPELUS MADERENSIS	1	1	11.1		SL								0.3	
CERATOSCOPELUS WARMINGI	1	1	5.3		SL								0.3	
DIAPHUS SP.	1	1	6.1		SL								0.3	
UROPHYCIS SP.	7	7	3.7	2.9- 5.0	NL								2.1	
LEIOSTOMUS XANTHURUS	56	55	4.6	2.7- 7.3	SL								17.0	
MICROPOGON UNDULATUS	23	23	3.8	2.5-10.4	SL								7.0	
PEPRILUS TRIACANTHUS	1	1	5.5		SL								0.3	
PRIONOTUS CAROLINUS	7	7	5.4	5.0- 5.8	SL								2.1	
BOTHUS OCELLATUS	3	2	12.2	5.2-19.2	SL								0.9	
ETROPUS MICROSTOMUS	8	8	5.3	4.6- 7.1	SL								2.4	
PARALICHTHYS DENTATUS	6	6	5.0	3.2- 7.9	SL	2							1.8	0.6
SCOPHTHALMUS AQUOSUS	2	2	4.5	3.1- 5.8	SL								0.6	
SYMPHURUS SP.	2	2	7.5	6.5- 8.4	SL								0.6	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE SYNODONTIDAE BREGMACEROTIDAE OPHIDIIDAE SERRANIDAE SPARIDAE LABRIDAE OR SCARIDAE BLENNIIDAE CALLIONYMIDAE GOBIIDAE TRIGLIDAE UNIDENTIFIED.													

CRUISE DATE 065 4 1965 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M^2 LARVAE	EGGS
N 4 15 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
AHLIA EGMONTIS	1	1	71.0		TL								0.3	
OPHICHTHUS MELANOPORUS	1	1	31.5		NL								0.3	
OPHICHTHUS OCELLATUS	4	4	33.7	27.0-43.0	TL		1	1	33.5		TL		1.5	
BREVOORTIA TYRANNUS	36	32	7.5	4.1-12.7	TL		21	21	9.1	5.0-11.7	TL		17.8	
ETRUMEUS SADINA	5	5	7.3	6.0-10.0	TL		2	2	10.2	9.5-10.9	TL		2.2	
ENGRAULIS EURYSTOLE	1	1	4.6		TL		4	4	20.4	18.6-22.1	TL		1.6	
CERATOSCOPELUS WARMINGI	2	2	5.6	5.2- 6.0	SL		1	1	5.0		SL		0.9	
LAMPANYCTUS ALATUS OR PHOTONOTUS							1	1	6.3		SL		0.3	
UROPHYCIS SP.	7	3	3.3	2.6- 3.7	NL		69	18	4.1	3.1- 5.3	NL		25.1	
SERRANIDAE													0.0	
HEMANTHIAS VIVANUS	2	2	3.0	2.8- 3.2	SL		3	3	3.1	2.4- 3.7	SL		1.6	
LEIOSTOMUS XANTHURUS	39	39	3.6	2.5- 7.6	SL		208	201	4.5	2.7- 8.0	SL		81.0	
MICROPOGON UNDULATUS	41	40	3.2	2.5- 4.4	SL		133	132	3.8	2.5- 8.6	SL		56.6	
PEPRILUS TRIACANTHUS							3	3	3.6	3.2- 4.1	SL		1.0	
PRIONOTUS CAROLINUS							24	24	5.5	3.7- 8.0	SL		8.0	
BOTHUS OCELLATUS	1	1	11.4		SL		6	6	6.5	3.3- 8.9	SL		2.3	
ETROPUS MICROSTOMUS	12	12	6.0	4.7- 7.6	SL		158	25	4.9	2.9- 9.4	SL		56.3	
PARALICHTHYS DENTATUS	5	5	4.3	3.8- 4.8	SL	5	4	4	4.8	3.2- 7.3	SL	0	2.8	1.7
SCOPHTHALMUS AQUOSUS							2	1	4.2		SL		0.7	
SYACIUM PAPILLOSUM	1	1	10.0		SL								0.3	
SYNPHURUS SP.	2	2	4.2	4.2- 4.2	SL								0.7	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE						SYNODONTIDAE							
	PARALEPIDIDAE						BREGMACEROTIDAE							
	LOPHIIFORMES						OPHIDIIDAE							
	BREGMACEROTIDAE						SPARIDAE							
	OPHIDIIDAE						MUGILIDAE							
	SYNGNATHIDAE						CALLIONYMIDAE							
	SERRANIDAE						GOBIIDAE							
	CARANGIDAE						STROMATEIDAE							
	SPARIDAE						UNIDENTIFIED							
	LABRIDAE OR SCARIDAE													
	GOBIIDAE													
	SCORPAENIDAE													
	TRIGLIDAE													
	UNIDENTIFIED													
N 5 15 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS	172	49	8.2	3.9-11.2	TL		49	45	8.6	5.3-12.7	TL		67.9	
ETRUMEUS SADINA	1	1	12.0		TL		2	2	13.1	13.0-13.3	TL		1.0	
ENGRAULIS EURYSTOLE	1	1	18.2		TL		7	6	13.7	9.3-22.6	TL		2.6	
LAMPANYCTUS ALATUS OR PHOTONOTUS	2	2	4.9	4.7- 5.1	SL								0.7	
UROPHYCIS SP.	231	36	3.7	1.9- 6.9	NL		58	7	4.4	1.9- 6.3	NL		88.6	
SERRANIDAE													0.0	
LEIOSTOMUS XANTHURUS	206	105	4.7	2.8- 9.5	SL		109	106	4.3	2.7- 7.6	SL		98.1	
MICROPOGON UNDULATUS	14	12	3.9	2.5- 5.4	SL		50	48	4.2	2.7- 8.6	SL		20.9	
PEPRILUS TRIACANTHUS	5	5	3.9	2.9- 4.5	SL		1	1	4.5		SL		1.8	
PRIONOTUS CAROLINUS	10	10	3.9	2.7- 5.5	SL		1	1	5.7		SL		3.3	
BOTHUS OCELLATUS	5	5	3.5	2.5- 5.1	SL		3	3	4.9	3.2- 6.2	SL		2.5	
CYCLOPSETTA FIMBRIATA	1	1	6.1		SL								0.3	
ETROPUS MICROSTOMUS	50	48	5.2	3.1-10.0	SL		117	25	4.7	3.0- 9.3	SL		54.0	
PARALICHTHYS DENTATUS	12	12	3.5	2.9- 5.2	SL	6	11	11	4.6	3.2- 7.3	SL	1	7.3	2.1
SCOPHTHALMUS AQUOSUS							1	1	4.9		SL		0.3	
SYACIUM PAPILLOSUM							1	1	8.2		SL		0.3	
SYNPHURUS SP.							1	1	3.9		SL		0.3	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE						VINCIGUERRIA SP.							
	SYNODONTIDAE						STOMIATIDAE							
	OPHIDIIDAE						SYNODONTIDAE							
	SYNGNATHIDAE						PARALEPIDIDAE							
	SERRANIDAE						BREGMACEROTIDAE							
	SPARIDAE						OPHIDIIDAE							
	LABRIDAE OR SCARIDAE						SERRANIDAE							
	MUGILIDAE						CARANGIDAE							
	CALLIONYMIDAE						SPARIDAE							
	GOBIIDAE						LABRIDAE OR SCARIDAE							
	ACANTHURIDAE						CALLIONYMIDAE							
	STROMATEIDAE						GOBIIDAE							
	SCORPAENIDAE						TRICHIURIDAE							
	UNIDENTIFIED						STROMATEIDAE							
							SCORPAENIDAE							
							UNIDENTIFIED							
P 1 15 12	SAMPLING DEPTH 0- 3M													
MICROPOGON UNDULATUS	1	1	8.4		SL								0.1	
PARALICHTHYS DENTATUS						5							0.0	0.3
SCOPHTHALMUS AQUOSUS	1	1	3.0		SL								0.1	
ADDITIONAL LARVAE CAUGHT	SPARIDAE													
	CALLIONYMIDAE													

CRUISE DATE DES 4 1965 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER $10M^2$ LARVAE	EGGS
P 2 15 12	SAMPLING DEPTH 0- 6M											
ANCHOA HEPSETUS	1	1	47.6		TL						0.1	
LEIOSTOMUS XANTHURUS	1	1	7.3		SL						0.1	
MICROPOGON UNDULATUS	4	4	9.3	8.7-10.0	SL						0.5	
BOTHUS OCELLATUS	1	1	13.6		SL						0.1	
SCOPHTHALMUS AQUOSUS	2	1	2.8		SL						0.2	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA SPARIDAE UNIDENTIFIED											
P 3 15 12	SAMPLING DEPTH 0-15M											
ELOPS SAURUS	2	2	28.9	28.8-29.1	NL						0.6	
OPHICHTHUS MELANOPORUS	1	1	30.2		NL						0.3	
ENGRAULIS EURYSTOLE	2	1	29.1		TL						0.6	
LAMPANYCTUS ALATUS OR PHOTONCTUS	1										0.3	
MYCTOPHUM AFFINE	1	1	4.4		SL						0.3	
UROPHYCIS SP.	2	2	5.6	5.3- 5.9	NL						0.6	
HEMANTHIAS VIVANUS	2	2	3.4	3.3- 3.5	SL						0.6	
LEIOSTOMUS XANTHURUS	21	21	7.2	4.2- 9.5	SL						6.4	
MICROPOGON UNDULATUS	2	2	5.3	5.1- 5.6	SL						0.6	
PRIONOTUS CAROLINUS	2	2	5.3	4.9- 5.8	SL						0.6	
BOTHUS OCELLATUS	3	3	9.2	4.7-17.3	SL						0.9	
ETROPUS MICROSTOMUS	6	6	6.0	4.0- 9.0	SL						1.8	
PARALICHTHYS DENTATUS	1	1	5.6		SL	1					0.3	0.3
SCOPHTHALMUS AQUOSUS	39	36	3.2	2.5- 4.8	SL						11.8	
SYNPHURUS SP.	2	2	8.9	5.7-12.1	SL						0.6	
ADDITIONAL LARVAE CAUGHT	VINCIGUERRIA SP. SYNGNATHIDAE SERRANIDAE SPARIDAE LABRIDAE OR SCARIDAE MUGILIDAE CALLIONYMIDAE GOBIIDAE ACANTHURIDAE SCORPAENIDAE TRIGLIDAE TETRAODONTIDAE UNIDENTIFIED											
P 4 15 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
OPHICHTHUS OCELLATUS	1	1	20.3		TL						0.3	
BREVOORTIA TYRANNUS	8	8	9.2	7.7-12.0	TL	2	2	9.2	8.3-10.1	TL	3.1	
ETRUMEUS SADINA	1	1	13.1		TL						0.3	
CERATOSCOPELUS WARMINGI	2	2	5.7	5.3- 6.1	SL						0.7	
LAMPANYCTUS ALATUS OR PHOTONCTUS	2	2	4.2	4.1- 4.3	SL						0.7	
UROPHYCIS SP.	34	11	3.5	2.5- 5.6	NL	5	4	3.0	2.4- 3.8	NL	11.9	
LEIOSTOMUS XANTHURUS	322	102	4.2	3.0- 7.5	SL	84	82	4.0	2.8- 7.1	SL	124.6	
MICROPOGON UNDULATUS	76	75	3.8	3.0- 7.0	SL	25	24	3.9	3.0- 7.7	SL	31.1	
PEPRILUS TRIACANTHUS	1	1	3.4		SL						0.3	
PRIONOTUS CAROLINUS	15	15	6.0	4.8- 7.0	SL	15	15	3.9	2.7- 6.7	SL	9.5	
BOTHUS OCELLATUS	15	15	4.6	3.0- 7.5	SL						5.0	
ETROPUS MICROSTOMUS						19	19	3.7	2.6-10.0	SL	6.3	
PARALICHTHYS DENTATUS	2	2	3.5	3.2- 3.8	SL 4	1	1	3.2		SL 1	0.9	1.5
SYNPHURUS SP.	2	2	6.0	4.1- 7.8	SL						0.7	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE PARALEPIDIDAE OPHIDIIDAE SERRANIDAE SPARIDAE LABRIDAE OR SCARIDAE MUGILIDAE CALLIONYMIDAE GOBIIDAE ACANTHURIDAE GEMPYLIDAE STROMATEIDAE SCORPAENIDAE TRIGLIDAE UNIDENTIFIED					SYNODONTIDAE PARALEPIDIDAE OPHIDIIDAE SYNGNATHIDAE SERRANIDAE SPARIDAE CHAETODONTIDAE MUGILIDAE GOBIIDAE TRIGLIDAE UNIDENTIFIED						

CRUISE DATE D65 4 1965 STA. D M SPECIES ANALYZED P 5 15 12	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER $10M^2$ LARVAE	EGGS
	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 15-33M							
BREVOORTIA TYRANNUS	3	3	9.5	8.7-10.7	TL								1.0	
MYCTOPHIDAE							2	2	4.6	4.2- 5.0	SL		0.7	
CERATOSCOPELUS MADERENSIS	2	2	10.2	9.8-10.6	NL								0.7	
CERATOSCOPELUS WARMINGI	50	20	4.0	2.9- 6.1	SL		2	2	3.8	3.2- 4.5	SL		16.7	
DIAPHUS SP.	6	6	4.8	3.7- 7.1	SL		2	2	6.5	6.2- 6.8	SL		2.5	
HYGOPHUM TANNINGI							1	1	5.0		SL		0.3	
LAMPANYCTUS ALATUS OR PHOTONOTUS	8	8	3.8	3.4- 4.3	SL		12	12	3.7	2.9- 4.5	SL		6.6	
LAMPANYCTUS ATER							1	1	5.7		SL		0.3	
MYCTOPHUM SP.							1	1	5.2		SL		0.3	
NOTOSCOPELUS SP.							6	6	4.7	4.4- 5.5	SL		2.0	
HEMANTHIAS VIVANUS							1	1	3.6		SL		0.3	
PLECTRANTHIAS GARNUPELLUS	1	1	3.6		SL								0.3	
LEIOSTOMUS XANTHURUS	8	8	3.4	2.5- 4.1	SL								2.7	
MICROPOGON UNDULATUS	1	1	3.4		SL								0.3	
PEPRILUS TRIACANTHUS							3	3	2.5	2.7- 3.3	SL		1.0	
PRIONOTUS CAROLINUS							1	1	5.2		SL		0.3	
ROTHUS OCELLATUS	5	5	4.5	3.7- 5.7	SL		1	1	4.0		SL		1.8	
SYACIUM PAPILLOSUM	1	1	10.7		SL		1	1	3.7		SL		0.6	
SYMPHURUS SP.	1	1	3.8		SL								0.3	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE						MURAENIDAE							
	CYCLOTHONE SP.						OPHICHTHIDAE							
	STOMIATIDAE						SYNODONTIDAE							
	SYNODONTIDAE						PARALEPIDIDAE							
	MYCTOPHIDAE						LOPHIIFORMES							
	SERRANIDAE						SERRANIDAE							
	CARANGIDAE						GRAMMISTIDAE							
	SPARIDAE						CORYPHAENIDAE							
	LABRIDAE OR SCARIDAE						CHAETODONTIDAE							
	MUGILIDAE						LABRIDAE OR SCARIDAE							
	CALLIONYMIDAE						MUGILIDAE							
	GOBIIDAE						GOBIIDAE							
	ACANTHURIDAE						STROMATEIDAE							
	GEMPYLIDAE						UNIDENTIFIED							
	SCORPAENIDAE													
	BALISTIDAE													
	TETRADONTIDAE													
	UNIDENTIFIED													

CRUISE DATE D66 1 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	NO. PER $10M^2$ LARVAE	 EGGS
A 1 26 01	SAMPLING DEPTH 0- 6M											
CLUPEA HARENGUS HARENGUS	2	2	36.5	36.1-36.9	TL						0.2	
GADUS MORHUA	7	7	10.3	6.7-16.2	SL	5					0.8	0.6
AMMODYTES SP.	50	50	8.9	5.5-20.8	TL						6.1	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE PHOLIDAE COTTIDAE											
A 2 26 01	SAMPLING DEPTH 0-15M											
CLUPEA HARENGUS HARENGUS	7	6	35.4	24.5-41.5	TL						2.1	
GADUS MORHUA	3	3	8.2	5.9- 9.6	SL	3					0.9	0.9
POLLACHIUS VIRENS	5	4	11.5	6.9-15.7	SL	0					1.5	0.0
AMMODYTES SP.	27	27	10.6	6.3-23.2	TL						8.2	
SCOPHTHALMUS AQUOSUS	1	1	27.0		SL						0.3	
LIPARDA FERRUGINEA	1	1	57.6		SL						0.3	
ADDITIONAL LARVAE CAUGHT	PHOLIDAE COTTIDAE UNIDENTIFIED											
B 1 26 01	SAMPLING DEPTH 0-15M											
GADUS MORHUA						1					0.0	0.3
AMMODYTES SP.	2	2	6.6	5.6- 7.6	TL						0.6	
ADDITIONAL LARVAE CAUGHT	PHOLIDAE COTTIDAE											
B 2 26 01	SAMPLING DEPTH 0-15M											
GADUS MORHUA						1					0.0	0.3
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE PHOLIDAE COTTIDAE											
B 3 26 01	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CLUPEA HARENGUS HARENGUS	4	3	28.0	25.4-31.1	TL						1.3	
ENGRAULIS ENCRASICOLUS						1	1	6.2	SL	0	0.3	0.0
GADUS MORHUA										0	0.0	0.7
POLLACHIUS VIRENS	1	1	11.5		SL					0	0.3	0.0
AMMODYTES SP.	22	22	9.1	5.8-14.5	TL						7.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE PHOLIDAE					OPHIDIIDAE						
B 4 26 01	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CLUPEA HARENGUS HARENGUS	1	1	27.0		TL	4	4	29.1	28.9-29.6	TL	1.6	
GADUS MORHUA	2	2	4.9	4.4- 5.3	SL	0	2	2	5.2 5.2- 5.2	SL	0	1.3	0.0
POLLACHIUS VIRENS						0	1	1	3.3	SL	0	0.3	0.0
AMMODYTES SP.	1	1	11.8		TL		13	13	10.3	5.5-14.6	TL	4.6	
ADDITIONAL LARVAE CAUGHT						SYNGNATHIDAE						
B 5 26 01	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CLUPEA HARENGUS HARENGUS	1	1	23.7		TL	3	3	28.5	26.6-30.6	TL	1.3	
POLLACHIUS VIRENS	2	2	9.0	8.5- 9.4	SL	0	3	3	10.1 8.2-11.6	SL	0	1.6	0.0
AMMODYTES SP.	37	36	11.5	7.3-16.3	TL		25	23	11.5 6.9-15.2	TL	19.4	
B 6 25 01	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CLUPEA HARENGUS HARENGUS	6	6	26.9	24.3-30.1	TL	8	8	26.9	22.9-30.4	TL	4.5	
GADUS MORHUA						0	10	10	7.6 5.6-10.1	SL	0	3.3	0.0
POLLACHIUS VIRENS	22	22	6.5	4.3- 9.5	SL	0	37	36	6.7 4.1-11.5	SL	0	18.9	0.0
AMMODYTES SP.	237	57	10.4	6.5-17.5	TL		344	73	11.0 7.0-20.6	TL	165.7	
PARALICHTHYS DENTATUS						0	1	1	8.7	SL	0	0.3	0.0
B 7 25 01	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CLUPEA HARENGUS HARENGUS	1	1	30.2		TL						0.3	
GADUS MORHUA	3	3	5.6	5.2- 5.9	SL	0	3	3	5.6 4.6- 7.3	SL	0	1.9	0.0
MELANOGRAMMUS AEGLEFINUS	2	2	5.7	4.6- 6.9	NL	1					0	0.7	0.3
POLLACHIUS VIRENS	15	13	6.0	4.3- 9.2	SL	0	7	7	5.2 4.3- 6.3	SL	0	6.8	0.0
AMMODYTES SP.	68	51	12.1	9.6-16.4	TL		52	52	11.1 8.5-14.6	TL	27.7	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
C 1 02 02	SAMPLING DEPTH 0-15M											
SCOPHTHALMUS AQUOSUS	1	1	33.0		SL						0.3	
ADDITIONAL LARVAE CAUGHT	COTTIDAE											
C 2 02 02	SAMPLING DEPTH 0-15M											
ENGRAULIS ENCRASICOLUS	1	1	34.2		SL	0					0.3	0.0
GADUS MORHUA						1					0.0	0.3
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE COTTIDAE UNIDENTIFIED											

CRUISE DATE D66 1 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER LENGTHS (MM) NO. TOTAL MEAS. MEAN RANGE MEAS. EGGS	********** LARVAE ********** NUMBER LENGTHS (MM) NO. TOTAL MEAS. MEAN RANGE MEAS. EGGS	NO. PER 10^2 LARVAE EGGS
C 3 C2 02	SAMPLING DEPTH 0-15M	SAMPLING DEPTH 18-24M	
ADDITIONAL LARVAE CAUGHT		OPHICIIDAE PHOLIDAE	
C 4 C3 02	SAMPLING DEPTH 0-15M	SAMPLING DEPTH 18-24M	
GADUS MORHUA	2 2 5.2 3.8- 6.5 SL 0	3	0.6 0.5
MELANOGRAMMUS AEGLEFINUS	1 1 5.7 SL 0	0	0.3 0.0
POLLACHIUS VIRENS	0	1 1 7.0 SL 0	0.2 0.0
ADDITIONAL LARVAE CAUGHT PHOLIDAE		UNIDENTIFIED	
C 5 C3 02	SAMPLING DEPTH 0-15M	SAMPLING DEPTH 18-33M	
CLUPEA HARENGUS MARINUS	1 1 27.3 TL		0.3
ENGRAULIS ENCRASICHOLUS	1 1 6.8 SL 0	1 1 8.7 SL 0	0.6 0.0
GADUS MORHUA	5 4 5.5 4.6- 6.2 SL 1	5 5 5.5 4.1- 6.5 SL 0	3.2 0.3
POLLACHIUS VIRENS	0	9 8 8.2 4.9-11.0 SL 0	3.0 0.0
AMMODYTES SP.	2 2 13.5 13.0-14.0 TL		0.7
ADDITIONAL LARVAE CAUGHT PHOLIDAE		PHOLIDAE UNIDENTIFIED	
C 6 C4 02	SAMPLING DEPTH 0-15M	SAMPLING DEPTH 18-33M	
GADUS MORHUA	6 6 5.6 4.6- 7.7 SL 0	4 4 6.2 4.9- 8.4 SL 0	3.1 0.0
POLLACHIUS VIRENS	3 3 7.2 4.4- 8.9 SL 0	0	1.0 0.0
ADDITIONAL LARVAE CAUGHT ANGUILLA ROSTRATA		ANGUILLA ROSTRATA PHOLIDAE	
C 7 C4 02	SAMPLING DEPTH 0-15M	SAMPLING DEPTH 18-33M	
GADUS MORHUA	3 3 6.1 4.2- 7.2 SL 0	3 3 7.7 7.0- 9.0 SL 0	1.9 0.0
POLLACHIUS VIRENS	0	13 13 7.9 4.6-13.7 SL 0	4.3 0.0
AMMODYTES SP.	4 4 14.4 12.3-17.4 TL	6 6 12.9 10.0-17.0 TL	3.2
ADDITIONAL LARVAE CAUGHT ANGUILLA ROSTRATA			
C 8 C4 02	SAMPLING DEPTH 0-15M	SAMPLING DEPTH 18-33M	
AMMODYTES SP.	4 4 13.8 12.9-15.3 TL		1.3
ADDITIONAL LARVAE CAUGHT PARALEPIDIDAE			
D 1 C4 02	SAMPLING DEPTH 0- 6M		
POLLACHIUS VIRENS	3 3 5.0 3.3- 5.9 SL 0		0.4 0.0
AMMODYTES SP.	4 3 13.2 11.0-15.6 TL		0.5
ADDITIONAL LARVAE CAUGHT COTTIDAE			
D 2 C4 02	SAMPLING DEPTH 0- 6M		
GADUS MORHUA	1 1 6.2 SL 0		0.1 0.0
POLLACHIUS VIRENS	1 1 9.6 SL 0		0.1 0.0
ADDITIONAL LARVAE CAUGHT COTTIDAE			
D 3 C4 02	SAMPLING DEPTH 0-15M		
GADUS MORHUA	2 2 5.2 5.1- 5.2 SL 5		0.6 1.5
POLLACHIUS VIRENS	1 1 10.5 SL 0		0.3 0.0
AMMODYTES SP.	1 1 13.0 TL		0.3
ADDITIONAL LARVAE CAUGHT PHOLIDAE			
D 4 C4 02	SAMPLING DEPTH 0-15M		
GADUS MORHUA	3 3 5.2 4.3- 5.8 SL 0		0.9 0.0
POLLACHIUS VIRENS	1 1 10.0 SL 0		0.3 0.0
AMMODYTES SP.	1 1 12.2 TL		0.3
D 5 C4 02	SAMPLING DEPTH 0-15M	SAMPLING DEPTH 18-24M	
GADUS MORHUA	2 1 7.8 SL 0	3 3 8.8 7.5- 9.7 SL 2	1.1 0.3
POLLACHIUS VIRENS	0	1 1 12.8 SL 0	0.2 0.0
AMMODYTES SP.	1 1 21.2 TL	1 1 20.0 TL	0.5
ADDITIONAL LARVAE CAUGHT ANGUILLA ROSTRATA		PHOLIDAE	
D 6 C4 02	SAMPLING DEPTH 0-15M	SAMPLING DEPTH 18-33M	
GADUS MORHUA	1 1 4.7 SL 0	0	0.3 0.0
AMMODYTES SP.	19 19 14.4 12.0-17.8 TL	2 2 14.6 13.0-16.3 TL	6.4
ADDITIONAL LARVAE CAUGHT		PHOLIDAE	
D 7 C4 02	SAMPLING DEPTH 0-15M	SAMPLING DEPTH 18-33M	
POLLACHIUS VIRENS	3 3 8.0 6.6- 9.0 SL 0	2 2 8.3 8.0- 8.5 SL 0	1.6 0.0
AMMODYTES SP.	2 2 13.1 12.2-14.0 TL	5 5 14.5 13.4-17.4 TL	2.3
PARALICHTHYS CENTATUS	0	1 1 5.5 SL 0	0.3 0.0

CRUISE DATE D66 I 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER LENGTHS (MM) TOTAL MEAS. MEAN RANGE MEAS.	NO. EGGS	********** LARVAE ********** NUMBER LENGTHS (MM) TOTAL MEAS. MEAN RANGE MEAS.	NO. EGGS	NO. PER 10 M^2 LARVAE	EGGS
D 8 C4 02	SAMPLING DEPTH 0-15M		SAMPLING DEPTH 18-33M			
AMMODYTES SP.	2 2 16.6 15.5-17.8 TL				0.7	
PARALICHTHYS DENTATUS		0	1 1 9.1 SL	0	0.3	0.0
ADDITIONAL LARVAE CAUGHT			UNIDENTIFIED			
E 1 C5 02	SAMPLING DEPTH 0- 6M					
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA COTTIDAE					
F 2 C5 02	SAMPLING DEPTH 0- 6M					
AMMODYTES SP.	3 3 14.1 11.6-17.2 TL				0.4	
E 3 C5 02	SAMPLING DEPTH 0- 6M					
GADUS MORHUA	2 2 9.1 7.2-10.9 SL	0			0.2	C.C
AMMODYTES SP.	9 9 14.5 7.3-17.5 TL				1.1	
E 4 C5 02	SAMPLING DEPTH 0-15M					
CLUPEA HARENGUS HARENGUS	1 1 32.0 TL				0.3	
GADUS MORHUA	7 7 9.2 5.7-14.0 SL	0			2.1	C.C
AMMODYTES SP.	1 1 18.0 TL				0.3	
ADDITIONAL LARVAE CAUGHT	PHOLIDAE					
E 5 C5 02	SAMPLING DEPTH 0-15M		SAMPLING DEPTH 18-24M			
CLUPEA HARENGUS HARENGUS	1 1 33.2 TL				0.3	
GADUS MORHUA	3 3 8.8 7.7-10.6 SL	1		0	1.0	0.3
POLLACHIUS VIRENS		0	1 1 4.1 SL	0	0.2	C.C
AMMODYTES SP.	1 1 24.0 TL				0.3	
ADDITIONAL LARVAE CAUGHT	PHOLIDAE COTTIDAE UNIDENTIFIED		PHOLIDAE			
E 6 C5 02	SAMPLING DEPTH 0-15M		SAMPLING DEPTH 18-24M			
CLUPEA HARENGUS HARENGUS	1 1 26.9 TL				0.3	
GADUS MORHUA	2 2 7.7 6.5- 8.9 SL	0		0	0.6	0.0
SCOPHTHALMUS AQUOSUS	1 1 9.2 SL				0.3	
ADDITIONAL LARVAE CAUGHT	PHOLIDAE					
E 7 C5 02	SAMPLING DEPTH 0-15M		SAMPLING DEPTH 18-33M			
POLLACHIUS VIRENS	1 1 10.0 SL	0		0	0.3	0.0
AMMODYTES SP.	22 22 13.5 5.9-22.0 TL				7.3	
E 8 C5 02	SAMPLING DEPTH 0-15M		SAMPLING DEPTH 18-33M			
AMMODYTES SP.	1 1 17.1 TL				0.3	
F 2 C6 02	SAMPLING DEPTH 0- 6M					
AMMODYTES SP.	7 7 13.7 10.8-16.4 TL				0.8	
ADDITIONAL LARVAE CAUGHT	COTTIDAE					
F 3 C6 02	SAMPLING DEPTH 0-15M					
GADUS MORHUA	4 2 8.5 7.7- 9.2 SL	0			1.2	0.0
AMMODYTES SP.	90 55 13.5 10.3-20.5 TL				27.3	
PARALICHTHYS DENTATUS	1 1 7.2 SL	0			0.3	0.0
ADDITIONAL LARVAE CAUGHT	COTTIDAE					
F 4 C6 02	SAMPLING DEPTH 0-15M					
GADUS MORHUA	1 1 9.7 SL	0			0.3	C.C
AMMODYTES SP.	25 24 14.9 10.3-20.4 TL				7.6	
F 5 C6 02	SAMPLING DEPTH 0-15M		SAMPLING DEPTH 18-24M			
GADUS MORHUA	2 2 9.2 7.7-10.7 SL	0	7 7 10.7 8.5-15.0 SL	0	1.7	C.C
AMMODYTES SP.	32 30 16.4 12.5-19.6 TL		84 47 16.9 12.6-21.8 TL		23.4	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA PHOLIDAE		ANGUILLA ROSTRATA BREGMACEROTIDAE PHOLIDAE UNIDENTIFIED			
F 6 C5 02	SAMPLING DEPTH 0-15M		SAMPLING DEPTH 18-33M			
POLLACHIUS VIRENS	2 2 8.3 8.1- 8.4 SL	0		0	0.7	0.0
AMMODYTES SP.	3 3 14.9 12.5-16.4 TL		1 1 17.2 TL		1.2	
ADDITIONAL LARVAE CAUGHT			ANGUILLA ROSTRATA GOBIIDAE			
F 7 C5 02	SAMPLING DEPTH 0-15M		SAMPLING DEPTH 18-33M			

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STA. D M SPECIES ANALYZED	NUMBER TOTAL	NUMBER MEAS.	LENGTHS (MM) MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NUMBER TOTAL	NUMBER MEAS.	LENGTHS (MM) MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	NO. PER 10M² EGGS
G 1 C6 02	SAMPLING DEPTH 0- 6M													
CLUPEA HARENGUS HARENGUS	1	1	26.0		TL								0.1	
ANCHOA MITCHILLI	2	2	45.3	44.2-46.5	TL								0.2	
POLLACHIUS VIRENS	1	1	9.6		SL	0							0.1	0.0
AMMODYTES SP.	28	28	9.6	4.9-21.4	TL								3.4	
ADDITIONAL LARVAE CAUGHT	PHOLIDAE													
	COTTIDAE													
G 2 C6 02	SAMPLING DEPTH 0- 6M													
GADUS MORHUA	3	3	10.2	8.3-12.2	SL	0							0.4	0.0
AMMODYTES SP.	60	50	11.9	6.9-22.7	TL								7.3	
ADDITIONAL LARVAE CAUGHT	COTTIDAE													
G 3 C6 02	SAMPLING DEPTH 0-15M													
GADUS MORHUA	1					0							0.3	0.0
AMMODYTES SP.	33	33	12.9	5.4-19.1	TL								10.0	
G 4 C6 02	SAMPLING DEPTH 0-15M													
AMMODYTES SP.	14	13	15.7	12.2-18.9	TL								4.2	
ADDITIONAL LARVAE CAUGHT	PHOLIDAE													
G 5 C6 02	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
GADUS MORHUA						0	1					0	0.3	0.0
AMMODYTES SP.	1	1	17.9		TL		12	12	11.8	9.6-18.0	TL		4.3	
ADDITIONAL LARVAE CAUGHT	PHOLIDAE													
G 6 C6 02	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
AMMODYTES SP.							1	1	16.9		TL		0.3	
ADDITIONAL LARVAE CAUGHT	LABRIDAE OR SCARIDAE						PHOLIDAE							
H 1 C7 02	SAMPLING DEPTH 0- 3M													
CLUPEA HARENGUS HARENGUS	1	1	44.3		TL								0.1	
AMMODYTES SP.	15	15	10.9	5.6-18.6	TL								0.9	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA													
H 2 C7 02	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	2	2	21.1	19.4-22.9	TL								0.2	
GADUS MORHUA	1	1	7.4		SL	0							0.1	0.0
UROPHYCIS SP.	1	1	7.6		NL								0.1	
AMMODYTES SP.	47	45	10.1	6.0-17.7	TL								5.7	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA													
	COTTIDAE													
H 3 C7 02	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	1	1	15.5		TL								0.1	
GADUS MORHUA	1	1	6.5		SL	0							0.1	0.0
AMMODYTES SP.	13	13	14.3	6.8-22.2	TL								1.6	
ADDITIONAL LARVAE CAUGHT	COTTIDAE													
H 4 C6 02	SAMPLING DEPTH 0-15M													
AMMODYTES SP.	12	12	14.7	5.0-25.5	TL								3.6	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA													
	GOBIIDAE													
	UNIDENTIFIED													
H 5 C6 02	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
AMMODYTES SP.							3	3	16.9	15.5-18.6	TL		0.5	
PRIONOTUS CAROLINUS							2	2	31.4	21.3-41.5	SL		0.3	
PARALICHTHYS DENTATUS	1	1	7.6		SL	0						0	0.3	0.0
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA													
H 6 C6 02	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS SP.	1	1	3.1		NL								0.3	
H 7 C6 02	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
POLLACHIUS VIRENS						0	1	1	13.1		SL	0	0.3	0.0
ADDITIONAL LARVAE CAUGHT	SERRANIDAE						ANGUILLA ROSTRATA							
J 1 C7 02	SAMPLING DEPTH 0- 6M													
J 2 C7 02	SAMPLING DEPTH 0- 6M													
ANCHOA MITCHILLI	1	1	59.5		TL								0.1	
AMMODYTES SP.	1	1	20.2		TL								0.1	

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J 3 C7 02	SAMPLING DEPTH 0- 6M											
AMMODYTES SP.	3	3	11.1	7.8-13.6	TL						0.4	
J 4 C7 02	SAMPLING DEPTH 0-15M											
AMMODYTES SP.	1	1	19.0		TL						0.3	
J 5 C7 02	SAMPLING DEPTH 0-15M											
BREVOORTIA TYRANNUS	1	1	23.5		TL						0.3	
AMMODYTES SP.	2	2	21.9	20.8-23.1	TL						0.6	
J 6 C7 02	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
AMMODYTES SP.	3	3	17.2	14.1-19.0	TL	2	2	12.1	5.8-18.4	TL	1.3	
J 7 C7 02	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ADDITIONAL LARVAE CAUGHT						CARAPIDAE						
K 1 C8 02	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	3	3	16.8	9.5-25.4	TL						0.4	
AMMODYTES SP.	1	1	6.6		TL						0.1	
K 2 C8 02	SAMPLING DEPTH 0-15M											
BREVOORTIA TYRANNUS	4	4	17.3	13.8-24.3	TL						1.2	
ANCHOA MITCHILLI	17	17	39.0	30.1-46.6	TL						5.2	
AMMODYTES SP.	4	4	15.0	11.6-17.8	TL						1.2	
SCOPHTHALMUS AQUOSUS	2	2	7.2	5.6- 8.7	SL						0.6	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE COTTIDAE											
K 3 C7 02	SAMPLING DEPTH 0-15M											
BREVOORTIA TYRANNUS	1	1	17.0		TL						0.3	
MICROPOGON UNDULATUS	1	1	48.0		SL						0.3	
AMMODYTES SP.	3	3	19.7	16.7-24.0	TL						0.9	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE											
K 4 C7 02	SAMPLING DEPTH 0-15M											
AMMODYTES SP.	4	4	22.0	14.0-27.8	TL						1.2	
K 5 C7 02	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
ENCHELYOPUS CIMBRIUS					0	1	1	3.4		SL 0	0.2	0.0
AMMODYTES SP.	6	6	19.7	16.8-21.5	TL	8	8	18.8	13.5-29.5	TL	3.1	
PRIONOTUS CAROLINUS						1	1	30.4		SL	0.2	
ADDITIONAL LARVAE CAUGHT						GOBIIDAE						
K 6 C7 02	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
OPHICHTHUS OCELLATUS	1	1	33.5		TL						0.3	
BREVOORTIA TYRANNUS	1	1	17.9		TL						0.3	
ENGRAULIS EURYSTOME						2	2	18.4	17.9-19.0	TL	0.7	
UROPHYCIS SP.	4	3	2.7	2.5- 2.8	NL	1	1	2.3		NL	1.5	
UROPHYCIS REGIUS	3	3	9.7	7.8-13.1	NL						1.0	
BOTHUS OCELLATUS	1										0.3	
ETROPUS MICROSTOMUS	1	1	7.6		SL						0.3	
PARALICHTHYS DENTATUS					0	1	1	8.9		SL 0	0.3	0.0
ADDITIONAL LARVAE CAUGHT	VINCIGUERRIA SP. SERRANIDAE GOBIIDAE					CARAPIDAE GOBIIDAE						
K 7 C7 02	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
MYRICHTHYS OCULATUS	1	1	99.9		TL						0.3	
OPHICHTHUS OCELLATUS	1	1	68.5		TL						0.3	
ENGRAULIS EURYSTOME	1	1	12.5		TL						0.3	
NOTOSCOPELUS SP.						1	1	10.4		SL	0.3	
UROPHYCIS REGIUS	1	1	6.1		NL						0.3	
SCOMBER JAPONICUS					0	1	1	11.9		SL 0	0.3	0.0
L 1 C8 02	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	6	6	22.3	17.0-29.1	TL						0.7	
ANCHOA MITCHILLI	9	9	37.8	34.6-41.0	TL						1.1	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA											

CRUISE DATE D66 1 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
L 2 C8 02	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	4	4	19.6	15.9-28.0	TL						0.5	
GADUS MORHUA	2	2	8.1	7.2- 9.0	SL	0					0.2	0.0
AMMODYTES SP.	1	1	7.5		TL						0.1	
PARALICHTHYS DENTATUS	1	1	9.7		SL	0					0.1	0.0
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
L 3 C8 02	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
GADUS MORHUA					0	3	2	9.1	8.5- 9.6	SL 0	0.5	0.0
POLLACHIUS VIRENS	2	2	8.3	6.5-10.0	SL 0					0	0.6	0.0
LEIOSTOMUS XANTHURUS						1	1	14.0		SL	0.2	
PARALICHTHYS DENTATUS	1	1	8.6		SL 0	1	1	9.0		SL 0	0.5	0.0
L 4 C8 02	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
AMMODYTES SP.	2	2	25.0	17.6-32.5	TL	4	4	22.9	14.6-28.1	TL	1.9	
L 5 C8 02	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
BREVOORTIA TYRANNUS						1	1	17.0		TL	0.3	
DIAPHUS SP.						1	1	7.1		SL	0.3	
NOTOSCOPELUS SP.	1	1	8.6		SL						0.3	
UROPHYCIS SP.	1	1	2.7		NL						0.3	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE					CARAPIDAE						
M 1 C8 02	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	3	3	23.6	17.4-27.4	TL						0.4	
LEIOSTOMUS XANTHURUS	2	2	14.1	13.5-14.7	SL						0.2	
MICROPOGON UNDULATUS	2	2	10.9	10.5-11.3	SL						0.2	
PARALICHTHYS DENTATUS	1	1	13.0		SL 0						0.1	0.0
M 2 C8 02	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	2	2	18.8	17.7-20.0	TL						0.2	
LEIOSTOMUS XANTHURUS	4	4	12.8	11.6-14.9	SL						0.5	
M 3 C8 02	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	2	2	16.6	15.8-17.4	TL						0.2	
GADUS MORHUA	1	1	9.0		SL 0						0.1	0.0
LEIOSTOMUS XANTHURUS	2	2	11.5	10.0-13.1	SL						0.2	
AMMODYTES SP.	1	1	22.1		TL						0.1	
PARALICHTHYS DENTATUS	1	1	11.2		SL 0						0.1	0.0
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA											
M 4 C8 02	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LEIOSTOMUS XANTHURUS	9	9	9.9	7.7-11.1	SL	191	93	10.4	7.4-13.7	SL	66.4	
MICROPOGON UNDULATUS	2	2	7.8	7.7- 8.0	SL	1	1	7.3		SL	0.9	
AMMODYTES SP.	2	2	22.0	20.0-24.0	TL	1	1	18.7		TL	0.9	
PARALICHTHYS DENTATUS					0	12	12	9.5	8.4-10.6	SL 0	4.0	0.0
M 5 C8 02	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
BREVOORTIA TYRANNUS	2	2	17.2	14.5-19.9	TL						0.7	
ETRUMEUS SADINA	4	4	21.6	15.4-25.0	TL						1.3	
ENGRAULIS EURYSTOLE	2	2	21.9	19.3-24.6	TL						0.7	
LAMPANYCTUS ALATUS OR PHOTONOTUS						1	1	4.8		SL	0.3	
LEIOSTOMUS XANTHURUS						10	10	10.9	5.6-13.7	SL	3.3	
ROTHIS OCELLATUS						1	1	6.8		SL	0.3	
ETROPUS MICROSTOMUS	1	1	3.4		SL	1	1	6.2		SL	0.6	
PARALICHTHYS DENTATUS					0	2	2	7.1	6.1- 8.1	SL 0	0.7	0.0
ADDITIONAL LARVAE CAUGHT	VINCIGUERRIA SP.					NETTASTOMATICAE						
	PARALEPIDIDAE					OPHIDIIDAE						
	LOPHIIFORMES					CARANGIDAE						
N 1 C9 02	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	6	6	20.3	17.5-23.0	TL						0.7	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA											
N 2 C9 02	SAMPLING DEPTH 0-15M											
BREVOORTIA TYRANNUS	5	5	13.9	11.5-18.0	TL						1.5	
DIAPHUS SP.	1	1	6.4		SL						0.3	
NOTOSCOPELUS SP.	1	1	6.2		SL						0.3	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA											

CRUISE DATE C66 1 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10 M² LARVAE	EGGS
N 3 C9 02	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	49	49	13.7	7.1-29.8	TL								14.8	
CIAPHUS SP.	1	1	8.2		SL								0.3	
UROPHYCIS SP.	2	2	2.5	2.1- 2.9	NL								0.6	
UROPHYCIS REGIUS	1	1	22.3		NL								0.3	
LEIOSTOMUS XANTHURUS	92	91	7.4	4.3-10.5	SL								27.9	
MICROPOGON UNDULATUS	7	7	6.1	4.6- 6.8	SL								2.1	
ETROPUS MICROSTOMUS	3	3	7.4	4.2- 9.6	SL								0.9	
PARALICHTHYS DENTATUS	6	6	7.0	3.8- 9.7	SL	0							1.8	0.0
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE SERRANIDAE SPARIDAE GOBIIDAE SCORPAENIDAE UNIDENTIFIED													
N 4 C9 02	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 16-33M							
OPHICHTHUS MELANOPORUS							1	1	40.3		NL		0.3	
ETRUMEUS SADINA	4	4	9.8	8.4-12.0	TL		3	3	9.7	9.2-10.4	TL		2.2	
ENGRAULIS EURYSTOLE	1	1	19.0		TL		1	1	10.5		TL		0.6	
MYCTOPHIDAE	6	6	5.1	3.8- 5.8	SL								2.0	
BENTHOSEMA SUBORBITALE	1	1	6.6		SL								0.3	
CERATOSCOPELUS MADERENSIS	3	3	8.5	6.9-10.4	SL		1	1	5.8		SL		1.2	
CIAPHUS SP.	1	1	8.9		SL		1	1	6.3		SL		0.6	
DIOGENICHTHYS ATLANTICUS							1	1	5.1		SL		0.3	
ELECTRONA RISSOI							1	1	5.6		SL		0.3	
HYGOPHUM BENOITI OR HYGOMI							3	3	7.3	6.0- 7.9	SL		1.0	
LAMPANYCTUS ALATUS OR PHOTONOTUS	3	3	4.2	3.2- 6.1	SL		1	1	4.8		SL		1.2	
MYCTOPHUM SP.	1	1	4.1		SL								0.3	
NOTOSCOPELUS SP.	2	2	5.8	5.7- 6.0	SL								0.7	
NOTOSCOPELUS RESPLENDENS	1	1	4.5		SL		1	1	6.5		SL		0.6	
UROPHYCIS SP.							12	11	3.2	2.5- 4.1	NL		4.0	
UROPHYCIS REGIUS	4	4	2.3	1.6- 3.6	NL		2	1	4.8		NL		1.9	
HEMANTHIAS VIVANUS	3	2	4.6	4.6- 4.7	SL		1	1	4.1		SL		1.2	
PEMATOMUS SALTATRIX	1	1	8.7		SL								0.3	
LEIOSTOMUS XANTHURUS	10	10	4.4	3.9- 5.2	SL		12	12	5.5	4.1- 7.5	SL		7.0	
MICROPOGON UNDULATUS	5	5	4.7	3.8- 5.7	SL		1	1	5.2		SL		1.8	
PERRILUS TRIACANTHUS	8	8	3.3	1.7- 4.7	SL								2.7	
BOTHUS OCELLATUS	5	5	6.3	4.2- 9.4	SL		1	1	7.2		SL		1.8	
ETROPUS MICROSTOMUS	13	13	4.8	3.2- 9.8	SL		19	19	4.7	3.1- 6.0	SL		10.2	
PARALICHTHYS DENTATUS	3	3	4.2	3.2- 5.2	SL	0	2	2	3.6	3.3- 4.0	SL	0	1.6	0.0
SYNODUS SP.	3	3	6.0	5.6- 6.5	SL		2	2	6.9	6.7- 7.0	SL		1.6	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE NETTASTOMATIDAE STOMIATIDAE SYNODONTIDAE PARALEPIDIDAE BREGMACEROTIDAE OPHIDIIDAE SERRANIDAE CARANGIDAE SPARIDAE LABRIDAE OR SCARIDAE MUGILIDAE CALLIONYMIDAE GOBIIDAE GEMPYLIDAE SCORPAENIDAE BALISTIDAE TETRAODONTIDAE UNIDENTIFIED							SYNODONTIDAE PARALEPIDIDAE BREGMACEROTIDAE OPHIDIIDAE SERRANIDAE CARANGIDAE SPARIDAE LABRIDAE OR SCARIDAE GOBIIDAE TRICHIURIDAE SCORPAENIDAE BALISTIDAE TETRAODONTIDAE UNIDENTIFIED						

CRUISE DATE C66 1 1966 STA. D M SPECIES ANALYZED N 5 C9 02	********** LARVAE ********** NUMBER TOTAL	LENGTHS (MM) MEAS.	MEAN	RANGE		NO. MEAS.	EGGS	********** LARVAE ********** NUMBER TOTAL	LENGTHS (MM) MEAS.	MEAN	RANGE		NO. MEAS.	EGGS	NO. PER 10M^2 LARVAE	EGGS
SAMPLING DEPTH 0-15M								SAMPLING DEPTH 18-33M								
BREVOORTIA TYRANNUS	15	15	11.9	5.7-17.5	TL			6	6	11.5	8.6-13.4	TL			6.5	
ETRUMEUS SADINA	11	11	9.9	5.8-14.5	TL										3.7	
CERATOSCOPELUS WARMINGI								1	1	8.9		SL			0.3	
OTAMUS SP.								1	1	6.9		SL			0.3	
HYGOPHUM HYGOMI								1	1	5.8		SL			0.3	
MYCTOPHUM AFFINE								1	1	5.5		SL			0.3	
NOTOLYCHNUS VALDIVAE								1	1	5.8		SL			0.3	
NOTOSCOPELUS SP.	1	1	7.9		SL										0.3	
ENCHELYOPUS CIMBRIUS	1	1	2.4		SL	0							0		0.3	0.0
UROPHYCIS SP.	19	15	2.7	1.5- 4.0	NL			9	9	2.7	2.0- 3.2	NL			8.7	
HEMANTHIAS VIVANUS								1	1	5.1		SL			0.3	
PLECTRANTHIAS GARNOFELLUS	1	1	4.5		SL										0.3	
LEIOSTOMUS XANTHURUS	3	3	4.9	4.6- 5.1	SL			3	3	5.6	4.7- 7.3	SL			1.9	
MICROPOGON UNDULATUS	2	2	4.8	4.5- 5.1	SL			1	1	5.3		SL			0.9	
PRIONOTUS CAROLINUS	3	3	6.3	5.5- 7.8	SL			2	2	5.6	5.3- 5.9	SL			1.6	
BOTHUS OCELLATUS	2	2	7.7	7.5- 7.9	SL			2	2	7.3	5.7- 8.8	SL			1.3	
ETROPUS MICROSTOMUS	6	6	4.3	3.5- 5.3	SL			9	9	4.3	3.3- 5.7	SL			4.8	
PARALICHTHYS DENTATUS	6	6	5.1	3.7- 6.9	SL	0		3	3	4.7	3.8- 6.4	SL	0		2.8	0.0
SYNPHURUS SP.	2	2	7.2	6.7- 7.6	SL			1	1	6.4		SL			0.9	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE OPHICHTHIDAE SYNODONTIDAE PARALEPIDIDAE BREGMACEROTIDAE OPHIDIIDAE SPARIDAE LABRIDAE OR SCARIDAE MUGILIDAE CALLIONYMIDAE GOBIIDAE SCORPAENIDAE TRIGLIDAE BALISTIDAE UNIDENTIFIED							MORINGUIDAE CONGRIDAE STOMIATIDAE SYNODONTIDAE PARALEPIDIDAE LOPHIIFORMES BREGMACEROTIDAE CARAPIDAE SERRANIDAE GRAMMISTIDAE APOGONIDAE CARANGIDAE SPARIDAE LABRIDAE OR SCARIDAE GOBIIDAE SCORPAENIDAE UNIDENTIFIED								
P 1 C9 02	SAMPLING DEPTH 0- 6M															
CALLECHELYS PERRYAE	1	1	67.0		NL										0.1	
MYROPHIS PUNCTATUS	1	1	67.0		TL										0.1	
BREVOORTIA TYRANNUS	3	3	14.9	13.6-17.3	TL										0.4	
LEIOSTOMUS XANTHURUS	8	8	13.2	12.0-14.7	SL										1.0	
MICROPOGON UNDULATUS	3	3	10.1	9.6-10.9	SL										0.4	
SCOPHTHALMUS AQUOSUS	2	2	5.5	3.2- 7.7	SL										0.2	
ADDITIONAL LARVAE CAUGHT	SPARIDAE															
P 2 C9 02	SAMPLING DEPTH 0- 6M															
BREVOORTIA TYRANNUS	9	9	21.1	14.6-26.6	TL										1.1	
LEIOSTOMUS XANTHURUS	12	12	12.4	10.1-14.2	SL										1.5	
PARALICHTHYS DENTATUS	1	1	3.8		SL	0									0.1	0.0
ADDITIONAL LARVAE CAUGHT	SPARIDAE UNIDENTIFIED															
P 3 C9 02	SAMPLING DEPTH 0- 6M															
BREVOORTIA TYRANNUS	108	108	14.8	6.5-23.9	TL										13.1	
ENGRAULIS EURYSTOLE	1	1	30.8		TL										0.1	
LEIOSTOMUS XANTHURUS	17	17	10.5	7.0-13.8	SL										2.1	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE SPARIDAE UNIDENTIFIED															
P 4 C9 02	SAMPLING DEPTH 0-15M															
BREVOORTIA TYRANNUS	45	44	12.6	7.1-17.9	TL										13.6	
CERATOSCOPELUS MADERENSIS	1	1	5.9		SL										0.3	
UROPHYCIS SP.	20	17	5.0	3.2- 9.0	NL										6.1	
LEIOSTOMUS XANTHURUS	18	18	6.0	4.3-10.3	SL										5.5	
MICROPOGON UNDULATUS	4	4	5.5	3.9- 6.6	SL										1.2	
PEPRILUS TRIACANTHUS	2	2	4.3	3.0- 5.6	SL										0.6	
ETROPUS MICROSTOMUS	6	6	6.4	5.3- 7.7	SL										1.8	
PARALICHTHYS DENTATUS	6	6	4.4	3.8- 5.0	SL	0									1.8	0.0
ADDITIONAL LARVAE CAUGHT	BREGMACEROTIDAE SERRANIDAE CARANGIDAE SPARIDAE UNIDENTIFIED															

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P 5 09 02

	********** LARVAE **********						********** LARVAE **********								2
	NUMBER		LENGTHS (MM)			NO.	NUMBER		LENGTHS (MM)			NO.		NO. PER 10M	
	TOTAL	MEAS.	MEAN	RANGE	MEAS.	EGGS	TOTAL	MEAS.	MEAN	RANGE	MEAS.	EGGS		LARVAE	EGGS
	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M								
OPHICHTHUS OCELLATUS							1	1	38.0		TL			0.3	
BREVOORTIA TYRANNUS	21	21	10.1	7.0-16.0	TL		5	5	10.5	6.5-15.4	TL			8.0	
BENTHOSEMA SUBORBITALE							1	1	6.3		SL			0.3	
CERATOSCOPELUS MADEREASIS	1	1	6.1		SL									0.3	
CERATOSCOPELUS WARMINGI	1	1	5.0		SL									0.3	
DIAPHUS SP.	1	1	7.1		SL		2	2	6.7	6.3- 7.1	SL			1.0	
HYGOPHUM BENOITI OR HYGOME							1	1	5.5		SL			0.3	
NOTOLYCHNUS VALDIVAE							2	2	5.7	5.2- 6.3	SL			0.7	
NOTOSCOPELUS SP.	1	1	6.5		SL		4	4	6.3	5.8- 7.1	SL			1.6	
NOTOSCOPELUS RESPLENDENS							2	2	5.7	5.2- 6.2	SL			0.7	
UROPHYCIS SP.	8	6	2.0	1.7- 2.5	NL		2	2	2.7	2.5- 2.9	NL			3.1	
HEMANTHIAS VIVANUS	5	4	3.3	2.8- 3.8	SL		1	1	3.5		SL			1.8	
PLECTRANTHIAS GARNOTELLUS							2	2	4.7	4.5- 4.9	SL			0.7	
LEIOSTOMUS XANTHURUS	10	10	4.2	3.4- 5.4	SL		2	2	5.3	5.2- 5.4	SL			3.7	
MICROPOGON UNDULATUS	3	3	3.7	3.4- 4.2	SL		1	1	6.5		SL			1.2	
AUXIS SP.							1	1	5.5		SL			0.3	
BOTHUS OCELLATUS	3	3	4.1	3.8- 4.4	SL		1	1	7.4		SL			1.2	
ETROPUS MICROSTOMUS	3	3	4.2	4.1- 4.3	SL		6	6	4.5	3.9- 5.5	SL			2.9	
PARALICHTHYS DENTATUS	3	3	4.5	4.1- 4.9	SL	4						0		1.0	1.3

ADDITIONAL LARVAE CAUGHT

OPHICHTHIDAE
MYCTOPHIDAE
OPHIDIIDAE
SERRANIDAE
SPARIDAE
MUGILIDAE
CALLIONYMIDAE
GOBIIDAE
SCORPAENIDAE
UNIDENTIFIED

MURAENIDAE
OPHICHTHIDAE
NETTASTOMATIDAE
SYNODONTIDAE
BREGMACEROTIDAE
OPHIDIIDAE
SERRANIDAE
SPARIDAE
LABRIDAE OR SCARIDAE
CALLIONYMIDAE
GOBIIDAE
GEMPYLIDAE
SCORPAENIDAE
TRIGLIDAE
UNIDENTIFIED

CRUISE DATE C66 2 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
A 1 C6 04	SAMPLING DEPTH 0- 6M													
CLUPEA HARENGUS HARENGUS	6	6	34.7	31.1-39.9	TL								0.7	
GADUS MORHUA	1	1	6.2		NL	0							0.1	0.0
AMMODYTES SP.	13	13	15.3	8.2-28.7	TL								1.6	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE													
	COTTIDAE													
A 2 C6 04	SAMPLING DEPTH 0-15M													
CLUPEA HARENGUS HARENGUS	7	7	35.0	30.0-38.4	TL								2.1	
GADUS MORHUA	6	6	5.9	4.3- 7.4	NL	1							1.8	0.3
AMMODYTES SP.	18	15	23.8	8.9-47.4	TL								5.5	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
	BLENNIIDAE													
	COTTIDAE													
A 3 C6 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	22	22	35.0	27.9-41.5	TL		2	2	31.5	31.1-31.9	TL		7.3	
GADUS MORHUA	1					7						0	0.3	2.3
AMMODYTES SP.	27	27	16.6	5.5-39.7	TL		20	19	15.0	5.6-28.7	TL		14.8	
PSEUDOPLEURONECTES AMERICANUS	6	4	3.9	3.4- 4.2	SL								2.0	
ADDITIONAL LARVAE CAUGHT	COTTIDAE						PHOLIDAE							
							COTTIDAE							
A 4 C6 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	5	5	36.3	34.9-38.5	TL		6	6	32.9	30.3-37.6	TL		3.5	
GADUS MORHUA	3	3	5.2	4.6- 5.9	NL	8						0	1.0	2.7
AMMODYTES SP.	10	10	19.4	9.3-29.8	TL		35	35	21.5	10.9-34.4	TL		14.7	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE						BLENNIIDAE							
	COTTIDAE						PHOLIDAE							
							COTTIDAE							
A 5 C7 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	1	1	29.5		TL		6	6	31.5	29.0-34.2	TL		2.3	
AMMODYTES SP.	1	1	18.5		TL		2	2	17.5	13.5-21.6	TL		1.0	
ADDITIONAL LARVAE CAUGHT	COTTIDAE						BLENNIIDAE							
							COTTIDAE							
A 6 C7 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
AMMODYTES SP.	5	5	22.3	15.5-35.5	TL								1.7	
A 7 C7 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	3	3	31.5	28.6-34.0	TL		4	4	32.8	32.1-33.9	TL		2.2	
GADUS MORHUA	1	1	29.9		SL	0						0	0.3	0.0
AMMODYTES SP.	73	10	20.6	13.4-31.3	TL		23	23	21.6	16.9-40.1	TL		29.6	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE						BLENNIIDAE							
	COTTIDAE													
	UNIDENTIFIED													
B 1 C7 04	SAMPLING DEPTH 0- 6M													
AMMODYTES SP.	11	10	13.9	6.8-26.0	TL								1.3	
PSEUDOPLEURONECTES AMERICANUS	6	4	4.1	3.5- 4.9	SL								0.7	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE													
	COTTIDAE													
B 2 C7 04	SAMPLING DEPTH 0-15M													
GADUS MORHUA	5	2	5.9	4.3- 7.5	NL	1							1.5	0.3
AMMODYTES SP.	10	10	13.9	7.6-22.9	TL								3.0	
LIMANDA FERRUGINEA	7	7	3.7	3.5- 3.9	SL								2.1	
PSEUDOPLEURONECTES AMERICANUS	73	25	3.5	3.0- 4.2	SL								22.1	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE													
	COTTIDAE													
	UNIDENTIFIED													
B 3 C7 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS MORDAX						0						1	0.0	0.3
GADUS MORHUA	4	4	15.6	4.2-47.6	SL	1	3	1	5.4		SL	0	2.2	0.3
MELANOGRAMMUS AEGLEFINUS						0						1	0.0	0.3
AMMODYTES SP.	4	4	14.2	12.8-15.7	TL		1	1	19.6		TL		1.5	
CITHARICHTHYS ARCTIFRONS	1												0.3	
LIMANDA FERRUGINEA	4	3	3.8	3.5- 4.2	SL								1.3	
PSEUDOPLEURONECTES AMERICANUS	76	13	4.0	3.2- 5.4	SL								25.3	
ADDITIONAL LARVAE CAUGHT	COTTIDAE						PHOLIDAE							
	UNIDENTIFIED						COTTIDAE							

CRUISE DATE D66 2 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
B 4 C7 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CLUPEA HARENGUS HARENGUS	2	2	33.7	32.3-35.2	TL						0.7	
ENCHELYOPUS CIMBRIUS					0					3	0.0	1.0
GADUS MORHUA					11					3	0.0	4.3
MELANOGRAMMUS AEGLEFINUS					0					4	0.0	1.3
AMMODYTES SP.	6	6	19.6	14.2-23.5	TL	3	3	21.2	18.1-25.9	TL	2.8	
ADDITIONAL LARVAE CAUGHT	COTTIDAE					COTTIDAE						
B 5 C7 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENCHELYOPUS CIMBRIUS					1					1	0.0	0.6
GADUS MORHUA					2					2	0.0	1.3
MELANOGRAMMUS AEGLEFINUS					1					0	0.0	0.3
POLLACHIUS VIRENS	1	1	8.7		NL 0					0	0.3	0.0
AMMODYTES SP.	9	9	15.9	11.9-18.1	TL	3	3	23.6	16.9-36.5	TL	3.7	
LIMANDA FERRUGINEA	1	1	6.4		SL						0.3	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE					BLENNIIDAE COTTIDAE						
B 6 C7 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENCHELYOPUS CIMBRIUS					1					0	0.0	0.3
GADUS MORHUA					1					0	0.0	0.3
MELANOGRAMMUS AEGLEFINUS					1					0	0.0	0.3
AMMODYTES SP.	11	11	18.4	13.6-22.5	TL	12	12	15.5	10.5-20.5	TL	7.3	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE					COTTIDAE						
B 7 C7 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CERATOSCOPELUS WARMINGI						21	21	3.3	2.4- 6.1	SL	7.0	
AMMODYTES SP.	19	19	22.4	13.9-34.1	TL	4	4	16.3	14.4-19.6	TL	7.0	
LIMANDA FERRUGINEA	2										0.7	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED					UNIDENTIFIED						
C 1 C8 04	SAMPLING DEPTH 0-15M											
GADUS MORHUA					1						0.0	0.3
AMMODYTES SP.	3	3	16.8	4.2-39.0	TL						0.9	
LIMANDA FERRUGINEA	19	16	4.0	2.9- 5.3	SL						5.8	
PSEUDOPLEURONECTES AMERICANUS	7	6	3.7	3.3- 4.2	SL						2.1	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE PHOLIDAE COTTIDAE											
C 2 C8 04	SAMPLING DEPTH 0-15M											
POLLACHIUS VIRENS	1	1	16.1		SL 0						0.3	0.0
AMMODYTES SP.	6	6	37.8	31.5-42.8	TL						1.8	
LIMANDA FERRUGINEA	6	4	3.7	3.2- 4.3	SL						1.8	
PSEUDOPLEURONECTES AMERICANUS	9	9	3.9	3.3- 4.6	SL						2.7	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE PHOLIDAE COTTIDAE											
C 3 C8 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
CLUPEA HARENGUS HARENGUS	1	1	34.0		TL						0.3	
POLLACHIUS VIRENS	2	2	13.8	12.5-15.0	SL 0	1	1	7.9		NL 0	0.8	0.0
AMMODYTES SP.	3	3	25.6	9.1-34.6	TL	5	5	27.2	9.2-34.0	TL	1.7	
LIMANDA FERRUGINEA	8	6	4.4	4.0- 4.7	SL	16	15	4.1	3.7- 5.2	SL	5.0	
PSEUDOPLEURONECTES AMERICANUS	1	1	5.2		SL	11	10	4.1	3.4- 4.9	SL	2.1	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE SCORPAENIDAE COTTIDAE UNIDENTIFIED					BLENNIIDAE PHOLIDAE						
C 4 C8 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENCHELYOPUS CIMBRIUS					0	1	1	4.9		NL 0	0.3	0.0
GADUS MORHUA					4	2	2	6.1	4.6- 7.7	NL 2	0.7	1.9
POLLACHIUS VIRENS	1	1	4.6		NL 0					0	0.3	0.0
AMMODYTES SP.						1	1	35.0		TL	0.3	
LIMANDA FERRUGINEA	84	25	4.1	3.2- 5.2	SL	63	25	3.9	3.1- 4.9	SL	46.2	
ADDITIONAL LARVAE CAUGHT	COTTIDAE					BLENNIIDAE						
C 5 C8 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENCHELYOPUS CIMBRIUS					0	1	1	3.4		SL 0	0.3	0.0
GADUS MORHUA					4	1	1	4.2		SL 2	0.3	1.5
AMMODYTES SP.	2	2	25.5	22.5-28.6	TL	2	2	19.8	17.7-21.9	TL	1.3	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	6.4		SL						0.3	
LIMANDA FERRUGINEA	75	24	4.1	3.3- 5.2	SL	75	25	4.4	3.5- 6.2	SL	47.5	

CRUISE DATE 066 3 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
C 6 C8 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
GADUS MORHUA	2	1	4.4		SL	3	1	1	4.6		SL	0	0.9	1.0
AMMODYTES SP.	1	1	19.2		TL								0.3	
GLYPTOCEPHALUS CYNOGLOSSUS							3	2	5.8	5.4- 6.2	SL		1.0	
LIMANDA FERRUGINEA	65	25	4.8	3.3- 6.8	SL		12	11	5.2	3.8- 7.4	SL		23.5	
PSEUDOPLEURONECTES AMERICANUS							1	1	5.6		SL		0.3	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						BLENNIIDAE							
C 7 C8 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
GADUS MORHUA						1						0	0.0	0.3
AMMODYTES SP.	1	1	23.7		TL								0.3	
LIMANDA FERRUGINEA	2	1	5.7		SL								0.7	
C 8 C8 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
AMMODYTES SP.	2	2	17.9	16.3-19.6	TL		2	2	25.3	22.3-28.4	TL		1.3	
D 1 C9 04	SAMPLING DEPTH 0- 6M													
AMMODYTES SP.	8	8	21.8	7.7-41.3	TL								1.0	
PSEUDOPLEURONECTES AMERICANUS	602	25	3.8	3.2- 4.3	SL								13.0	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
	PHOLIDAE													
	COTTIDAE													
	UNIDENTIFIED													
D 2 C9 04	SAMPLING DEPTH 0- 6M													
AMMODYTES SP.	6	6	30.9	24.9-38.6	TL								0.7	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	4.9		SL								0.1	
LIMANDA FERRUGINEA	2	2	4.2	3.4- 5.0	SL								0.2	
PSEUDOPLEURONECTES AMERICANUS	210	25	3.7	3.2- 4.3	SL								25.5	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE													
	PHOLIDAE													
	UNIDENTIFIED													
D 3 C9 04	SAMPLING DEPTH 0-15M													
ENCHELYOPUS CIMBRIUS						1							0.0	0.3
AMMODYTES SP.	4	4	31.3	28.6-34.1	TL								1.2	
LIMANDA FERRUGINEA	15	13	3.6	2.9- 4.3	SL								4.5	
PSEUDOPLEURONECTES AMERICANUS	9	9	3.8	2.9- 4.6	SL								2.7	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE													
D 4 C8 04	SAMPLING DEPTH 0-15M													
GADUS MORHUA	2	2	3.9	3.7- 4.1	SL	6							0.6	1.8
LIMANDA FERRUGINEA	14	13	4.3	3.5- 5.7	SL								4.2	
PSEUDOPLEURONECTES AMERICANUS	7	6	5.3	4.8- 6.0	SL								2.1	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE													
	PHOLIDAE													
	UNIDENTIFIED													
D 5 C8 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	1	1	4.6		SL	1						0	0.3	0.3
GADUS MORHUA	3	3	5.2	4.8- 5.9	SL	12	1	1	5.6		SL	12	1.2	7.6
AMMODYTES SP.	2	2	16.5	9.8-23.3	TL								0.7	
LIPARIS INQUILINUS	1	1	44.0		TL		1	1	3.8		TL		0.6	
GLYPTOCEPHALUS CYNOGLOSSUS							1	1	4.7		SL		0.3	
LIMANDA FERRUGINEA	30	20	4.0	2.7- 5.8	SL		17	13	3.8	3.0- 4.8	SL		14.7	
PSEUDOPLEURONECTES AMERICANUS							2	2	4.6	4.3- 4.9	SL		0.7	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						UNIDENTIFIED							
D 6 C8 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	1	1	30.7		TL								0.3	
GADUS MORHUA						6	3	3	4.1	3.3- 5.2	SL	3	1.0	2.8
POLLACHIUS VIRENS						0	1	1	4.1		SL	0	0.3	0.0
AMMODYTES SP.	1	1	44.1		TL								0.3	
GLYPTOCEPHALUS CYNOGLOSSUS							2	2	5.0	4.6- 5.4	SL		0.7	
LIMANDA FERRUGINEA	59	25	4.3	3.3- 6.3	SL		47	25	3.6	2.7- 5.6	SL		33.4	
ADDITIONAL LARVAE CAUGHT							UNIDENTIFIED							
D 7 C8 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
D 8 C9 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BENTHOSEMA GLACIALE							2	2	6.5	6.1- 6.9	SL		0.7	
ADDITIONAL LARVAE CAUGHT	PARALEPIDIDAE						UNIDENTIFIED							

CRUISE DATE DEC 3 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE		NO. MEAS.	EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE		NO. MEAS.	EGGS	NO. PER 10M 2 LARVAE	EGGS
E 1 13 04	SAMPLING DEPTH 0- 6M													
PELLACHIUS VIRENS	2	1	12.1			SL	0						0.2	0.0
APHODYTES SP.	20	20	36.7	21.3-45.5		TL							2.4	
PSEUDOPLEURONECTES AMERICANUS	13	13	4.4	3.9- 4.9		SL							1.6	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA BLENNIICAE PHOLIDAE COTTIDAE													
E 2 13 04	SAMPLING DEPTH 0- 6M													
APHODYTES SP.	26	26	37.5	22.2-48.2		TL							3.2	
PSEUDOPLEURONECTES AMERICANUS	34	25	4.2	3.2- 5.4		SL							4.1	
ADDITIONAL LARVAE CAUGHT	BLENNIICAE PHOLIDAE UNIDENTIFIED													
F 3 22 04	SAMPLING DEPTH 0-15M													
APHODYTES SP.	3	3	41.6	31.8-50.0		TL							0.9	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA BLENNIICAE													
E 4 22 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ENCHELYOPUS CIMBRIUS	1	1	2.0			SL	0					0	0.3	0.0
GADUS MORHUA	5	4	4.0	3.4- 4.8		SL	6	1	1	8.0		SL	0 1.7	1.9
GLYPTOCEPHALUS CYNOGLOSSUS	15	8	5.1	4.2- 6.0		SL		10	5	5.5	5.0- 6.5	SL	6.2	
LIMANDA FERRUGINEA	353	25	3.8	2.7- 5.3		SL		334	25	3.8	2.9- 5.3	SL	142.4	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						GOBIIDAE UNIDENTIFIED							
E 5 22 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
GADUS MORHUA						0	1	1	4.1			SL	1 0.2	0.2
APHODYTES SP.							1	1	24.4			TL	0.2	
GLYPTOCEPHALUS CYNOGLOSSUS	2	2	6.0	5.9- 6.0		SL	3	3	5.5	5.8- 5.9		SL	1.1	
LIMANDA FERRUGINEA	255	25	4.1	3.0- 5.8		SL	240	25	4.6	3.3- 7.2		SL	117.1	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
E 6 22 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS						0	1	1	3.3			SL	0 0.3	0.0
GADUS MORHUA						0	1	1	3.9			SL	0 0.3	0.0
LIMANDA FERRUGINEA	59	25	3.8	3.0- 5.6		SL	61	25	4.7	3.3- 6.7		SL	38.0	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						UNIDENTIFIED							
E 7 22 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS						1						4	0.0	1.6
GLYPTOCEPHALUS CYNOGLOSSUS							2	2	5.7	4.7- 6.7		SL	0.7	
LIMANDA FERRUGINEA	17	17	4.8	3.3- 7.7		SL	28	24	4.3	3.3- 5.4		SL	14.4	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
E 8 22 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	1					0						0	0.3	0.0
LIMANDA FERRUGINEA	1	1	6.1			SL							0.3	
ADDITIONAL LARVAE CAUGHT							UNIDENTIFIED							
F 1 14 04	SAMPLING DEPTH 0- 6M													
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	5.0			SL							0.1	
PSEUDOPLEURONECTES AMERICANUS	199	25	4.2	3.0- 5.6		SL							24.1	
ADDITIONAL LARVAE CAUGHT	PHOLIDAE COTTIDAE													
F 2 14 04	SAMPLING DEPTH 0- 6M													
ENCHELYOPUS CIMBRIUS	1	1	3.9			SL	0						0.1	0.0
APHODYTES SP.	4	4	29.1	25.8-31.0		TL							0.5	
LIMANDA FERRUGINEA	4	4	4.0	2.9- 4.5		SL							0.5	
PSEUDOPLEURONECTES AMERICANUS	210	25	4.2	3.3- 6.3		SL							25.5	
ADDITIONAL LARVAE CAUGHT	BLENNIICAE COTTIDAE UNIDENTIFIED													
F 3 14 04	SAMPLING DEPTH 0-15M													
GADUS MORHUA						1							0.0	0.3
APHODYTES SP.	5	5	24.7	20.9-32.9		TL							1.5	
PSEUDOPLEURONECTES AMERICANUS	37	19	4.1	3.0- 5.8		SL							11.2	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE PHOLIDAE UNIDENTIFIED													

CRUISE DATE C66 3 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER $10M^2$ LARVAE	EGGS
F 4 14 04	SAMPLING DEPTH 0-15M													
GADUS MORHUA	1	1	6.5		SL	1							0.3	0.3
AMMODYTES SP.	5	5	37.3	33.7-44.0	TL								1.5	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	5.6		SL								0.3	
LIMANDA FERRUGINEA	3	3	3.6	3.0- 4.0	SL								0.9	
PSEUDOPLEURONECTES AMERICANUS	23	21	4.1	2.7- 6.5	SL								7.0	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE UNIDENTIFIED													
F 5 14 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
GADUS MORHUA						5						9	0.0	4.5
GLYPTOCEPHALUS CYNOGLOSSUS							2	2	4.8	4.7- 4.8	SL		0.7	
LIMANDA FERRUGINEA	8	7	3.7	3.4- 4.0	SL		33	25	4.1	3.5- 4.7	SL		13.4	
PSEUDOPLEURONECTES AMERICANUS							3	3	5.7	4.5- 6.7	SL		1.0	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						BLENNIIDAE UNIDENTIFIED							
F 6 14 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
GADUS MORHUA	1	1	12.2		SL	2	1	1	4.3		SL	0	0.6	0.7
AMMODYTES SP.	1	1	18.2		TL								0.3	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	6.0		SL		1	1	5.0		SL		0.6	
LIMANDA FERRUGINEA	73	25	4.7	3.7- 6.5	SL		41	25	4.9	3.7- 7.1	SL		35.6	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE UNIDENTIFIED						BLENNIIDAE							
F 7 14 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
AMMODYTES SP.							2	2	31.3	27.8-34.8	TL		0.7	
LIMANDA FERRUGINEA	7	7	5.5	4.7- 6.2	SL		18	17	5.7	4.8- 6.9	SL		8.1	
ADDITIONAL LARVAE CAUGHT							UNIDENTIFIED							
G 1 15 04	SAMPLING DEPTH 0- 6M													
GADUS MORHUA	3	3	4.3	3.8- 4.6	SL	0							0.4	0.0
AMMODYTES SP.	3	3	33.8	28.5-37.8	TL								0.4	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	5.7		SL								0.1	
LIMANDA FERRUGINEA	3	3	3.6	2.9- 4.2	SL								0.4	
PSEUDOPLEURONECTES AMERICANUS	108	25	4.3	2.9- 6.2	SL								13.1	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE													
G 2 15 04	SAMPLING DEPTH 0- 6M													
GADUS MORHUA						1							0.0	0.1
POLLACHIUS VIRENS	1	1	31.4		SL	0							0.1	0.0
AMMODYTES SP.	4	4	24.4	21.1-31.6	TL								0.5	
GLYPTOCEPHALUS CYNOGLOSSUS	6	5	5.6	5.0- 6.2	SL								0.7	
LIMANDA FERRUGINEA	1												0.1	
PSEUDOPLEURONECTES AMERICANUS	115	25	4.2	3.2- 5.7	SL								13.9	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE UNIDENTIFIED													
G 3 15 04	SAMPLING DEPTH 0-15M													
GADUS MORHUA	3	2	5.8	4.2- 7.4	NL	2							0.9	0.6
LIMANDA FERRUGINEA	12	12	4.2	3.4- 5.0	SL								3.6	
PSEUDOPLEURONECTES AMERICANUS	15	12	4.9	3.4- 6.2	SL								4.5	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE PHOLIDAE													
G 4 15 04	SAMPLING DEPTH 0-15M													
GADUS MORHUA	2	2	4.5	4.1- 4.5	SL	12							0.6	3.6
AMMODYTES SP.	1	1	43.8		TL								0.3	
GLYPTOCEPHALUS CYNOGLOSSUS	3	2	4.7	4.7- 4.7	SL								0.9	
LIMANDA FERRUGINEA	54	25	4.0	3.1- 5.5	SL								16.4	
PSEUDOPLEURONECTES AMERICANUS	1	1	4.3		SL								0.3	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE UNIDENTIFIED													
G 5 15 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
AMMODYTES SP.	1	1	44.3		TL								0.3	
GLYPTOCEPHALUS CYNOGLOSSUS	13	5	5.6	5.5- 5.9	SL		4	1	5.8		SL		5.2	
LIMANDA FERRUGINEA	38	25	4.3	3.5- 5.8	SL		5	4	4.2	3.3- 4.6	SL		13.1	
PSEUDOPLEURONECTES AMERICANUS	1	1	5.4		SL								0.3	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
G 6 14 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
AMMODYTES SP.	1	1	26.0		TL		1	1	32.6		TL		0.6	
LIMANDA FERRUGINEA							1	1	5.1		SL		0.3	

CRUISE DATE C66 3 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	NO. PER 10M² LARVAE	 EGGS
H 1 15 04	SAMPLING DEPTH C- 6M											
GLYPTOCEPHALUS CYNOGLOSSUS	1										0.1	
PSEUDOPLEURONECTES AMERICANUS	10	9	5.0	3.4- 7.0	SL						1.2	
H 2 15 04	SAMPLING DEPTH 0-15M											
GADUS MORHUA	1	1	3.5		SL					0	0.3	0.0
AMMODYTES SP.	1	1	32.0		TL						0.3	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	5.1		SL						0.3	
PSEUDOPLEURONECTES AMERICANUS	22	22	5.3	3.7- 7.0	SL						6.7	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
H 3 15 04	SAMPLING DEPTH 0-15M											
GADUS MORHUA	2	1	3.5		SL					2	0.6	0.6
AMMODYTES SP.	1	1	30.4		TL						0.3	
GLYPTOCEPHALUS CYNOGLOSSUS	1										0.3	
LIMANDA FERRUGINEA	3	2	3.6	3.5- 3.6	SL						0.9	
PSEUDOPLEURONECTES AMERICANUS	21	21	4.9	3.7- 6.7	SL						6.4	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE											
H 4 15 04	SAMPLING DEPTH 0-15M											
GADUS MORHUA										6	0.0	1.8
LIMANDA FERRUGINEA	3	3	5.7	3.9- 9.0	SL						0.9	
PSEUDOPLEURONECTES AMERICANUS	4	4	5.0	4.2- 6.0	SL						1.2	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
H 5 15 04	SAMPLING DEPTH C-15M					SAMPLING DEPTH 18-24M						
GADUS MORHUA					0					1	0.0	0.2
AMMODYTES SP.	1	1	40.2		TL						0.3	
GLYPTOCEPHALUS CYNOGLOSSUS						2	1	6.0		SL	0.3	
LIMANDA FERRUGINEA	51	25	4.5	3.5- 5.9	SL	93	25	4.0	2.9- 5.4	SL	30.7	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED					BLENNIIDAE UNIDENTIFIED						
H 6 15 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
GADUS MORHUA	1	1	5.9		SL					0	0.3	0.0
POLLACHIUS VIRENS	1	1	27.9		SL					0	0.3	0.0
AMMODYTES SP.	7	7	26.1	21.4-37.5	TL	3	3	33.1	26.9-37.3	TL	3.1	
GLYPTOCEPHALUS CYNOGLOSSUS	2	2	5.8	5.4- 6.2	SL	1					0.9	
LIMANDA FERRUGINEA	51	25	4.8	3.4- 6.9	SL	41	6	5.6	3.9- 8.2	SL	29.0	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA					UNIDENTIFIED						
H 7 15 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
AMMODYTES SP.	23	21	29.6	22.2-41.3	TL	2	2	29.0	26.0-32.1	TL	7.7	
GLYPTOCEPHALUS CYNOGLOSSUS						1	1	5.6		SL	0.3	
LIMANDA FERRUGINEA	2	2	5.5	5.2- 5.7	SL	2	2	4.6	4.4- 4.8	SL	1.3	
ADDITIONAL LARVAE CAUGHT						TETRAODONTIDAE UNIDENTIFIED						
J 1 19 04	SAMPLING DEPTH 0- 6M											
SCOPHTHALMUS AQUOSUS	2	2	3.7	3.4- 3.9	SL						0.2	
PSEUDOPLEURONECTES AMERICANUS	1	1	8.2		SL						0.1	
J 2 19 04	SAMPLING DEPTH 0- 6M											
SCOPHTHALMUS AQUOSUS	3	3	3.4	3.2- 3.9	SL						0.4	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
J 3 16 04	SAMPLING DEPTH C- 6M											
BREVOORTIA TYRANNUS	1	1	29.4		TL						0.1	
AMMODYTES SP.	1	1	35.5		TL						0.1	
J 4 16 04	SAMPLING DEPTH C- 6M											
J 5 16 04	SAMPLING DEPTH C-15M											
GLYPTOCEPHALUS CYNOGLOSSUS	3	3	5.6	5.2- 5.8	SL						0.9	
LIMANDA FERRUGINEA	3	2	4.8	4.2- 5.4	SL						0.9	
J 6 16 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
GADUS MORHUA					0	1	1	6.5		SL	0	0.2	0.0
AMMODYTES SP.	4	4	35.6	33.2-39.5	TL						1.3	
J 7 16 04	SAMPLING DEPTH C-15M					SAMPLING DEPTH 18-33M						
AMMODYTES SP.	6	6	28.7	25.9-31.1	TL	8	8	28.3	24.2-35.8	TL	4.5	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	5.4		SL	1					0.6	
LIMANDA FERRUGINEA	5	4	5.2	4.5- 6.0	SL						1.7	

CRUISE DATE C66 3 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER LARVAE	LOG 2 EGGS
K 1 19 04	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	2	2	27.3	25.3-29.3	TL						0.2	
K 2 19 04	SAMPLING DEPTH C-15M											
K 3 19 04	SAMPLING DEPTH C-15M											
K 4 19 04	SAMPLING DEPTH 0-15M											
LIMANDA FERRUGINEA	1	1	6.7		SL						0.3	
K 5 19 04	SAMPLING DEPTH C-15M					SAMPLING DEPTH 18-24M						
AMMODYTES SP.						1	1	35.6		TL	0.2	
GLYPTOCEPHALUS CYNOGLOSSUS						2	2	5.8	4.6- 6.5	SL	0.3	
LIMANDA FERRUGINEA	4	4	5.5	5.2- 5.7	SL	2	2	5.5	5.5- 5.5	SL	1.6	
ADDITIONAL LARVAE CAUGHT BLENNIIDAE												
K 6 19 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LIMANDA FERRUGINEA	4	4	5.9	5.4- 6.2	SL	7	7	5.8	5.5- 6.4	SL	3.5	
K 7 19 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LIMANDA FERRUGINEA	3	2	6.1	5.0- 7.2	SL						1.0	
L 1 20 04	SAMPLING DEPTH C- 6M											
BREVOORTIA TYRANNUS	1	1	25.0		TL						0.1	
SCOPHTHALMUS AQUOSUS	3	3	3.2	3.0- 3.7	SL						0.4	
L 2 20 04	SAMPLING DEPTH 0- 6M											
SCOPHTHALMUS AQUOSUS	1	1	3.1		SL						0.1	
L 3 20 04	SAMPLING DEPTH C-15M					SAMPLING DEPTH 18-24M						
SCOPHTHALMUS AQUOSUS	1	1	3.2		SL						0.3	
L 4 20 04	SAMPLING DEPTH C-15M					SAMPLING DEPTH 18-33M						
GLYPTOCEPHALUS CYNOGLOSSUS						1	1	8.0		SL	0.3	
LIMANDA FERRUGINEA						1	1	3.8		SL	0.3	
L 5 20 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LIMANDA FERRUGINEA						1	1	11.2		SL	0.3	
M 1 20 04	SAMPLING DEPTH C- 6M											
BREVOORTIA TYRANNUS	12	12	22.7	20.6-24.7	TL						1.5	
PEPRILUS TRIACANTHUS	1	1	5.8		SL						0.1	
SCOPHTHALMUS AQUOSUS	3	3	3.4	3.2- 3.9	SL						0.4	
M 2 20 04	SAMPLING DEPTH C- 6M											
SCOPHTHALMUS AQUOSUS	2	2	3.5	3.4- 3.5	SL						0.2	
M 3 20 04	SAMPLING DEPTH 0- 6M											
PRIONOTUS CAROLINUS	1	1	7.5		SL						0.1	
PARALICHTHYS DENTATUS	2	2	8.4	8.2- 8.7	SL	0					0.2	0.0
ADDITIONAL LARVAE CAUGHT SYNODONTIDAE GOBIIDAE												

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STA.	D M	SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE		NO. MEAS. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE		NO. MEAS. EGGS	NO. PER 10M² LARVAE	EGGS
M 4	20 04		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		OPHICHTHUS OCELLATUS							2	2	26.1	23.5-28.7	TL		0.7	
		ETRUMEUS SADINA							1	1	16.0		TL		0.3	
		ANCHOA HERSETUS	6	6	12.0	7.7-19.8	TL								2.0	
		ENGRAULIS EURYSTOLE							1	1	13.5		TL		0.3	
		CERATOSCOPELUS MADERENSIS	4	4	5.3	4.4- 7.2	SL		5	5	5.8	5.1- 6.5	SL		2.9	
		CERATOSCOPELUS WARMINGI	2	2	9.2	6.6- 9.8	SL		1	1	5.2		SL		0.9	
		DIAPHUS SP.	4	2	5.2	4.3- 6.1	SL		1	1	8.3		SL		1.5	
		HYGOPHUM BENOITI	1	1	7.5		SL		1	1	7.3		SL		0.6	
		HYGOPHUM BENOITI OR HYGOMI	1	1	5.7		SL		1	1	5.0		SL		0.6	
		LAMPANYCTUS ATER	1	1	5.9		SL								0.3	
		UROPHYCIS SP.	2	2	3.6	2.8- 4.5	NL		3	3	3.8	3.7- 3.9	NL		1.6	
		HEMANTHIAS VIVANUS	3	2	4.5	4.2- 4.8	SL								1.0	
		ARMODYTES SP.	2	2	30.6	17.1-44.2	TL								0.7	
		PEPRILUS TRIACANTHUS	3	3	3.3	2.3- 4.4	SL		6	6	4.7	3.7- 6.8	SL		2.9	
		BOTHUS OCELLATUS	4	4	3.0	2.5- 3.5	SL		1	1	3.5		SL		1.5	
		CITHARICHTHYS ARCTIFRONS	4	4	3.6	2.5- 4.3	SL		12	11	6.2	3.5- 8.2	SL		5.2	
		ETROPUS MICROSTOMUS	1	1	3.1		SL		1	1	5.9		SL		0.6	
		SYACIUM PAPILLOSUM	3	3	3.8	3.5- 4.2	SL								1.0	
		ADDITIONAL LARVAE CAUGHT	MURAENIDAE						CYCLOTHONE SP.							
			CYCLOTHONE SP.						SYNODONTIDAE							
			SYNODONTIDAE						OPHIDIIDAE							
			BREGMACEROTIDAE						SERRANIDAE							
			OPHIDIIDAE						LABRIDAE OR SCARIDAE							
			SERRANIDAE						SCORPAENIDAE							
			SPARIDAE						TRIGLIDAE							
			GOBIIDAE						UNIDENTIFIED							
			SCORPAENIDAE													
			TRIGLIDAE													
			UNIDENTIFIED													
M 5	20 04		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		ETRUMEUS SADINA							8	8	7.7	4.6-11.8	TL		2.7	
		ENGRAULIS EURYSTOLE							6	6	15.1	10.0-19.5	TL		2.0	
		MYCTOPHIDAE	1	1	5.9		SL		5	4	5.4	4.6- 6.4	SL		2.0	
		CERATOSCOPELUS MADERENSIS	3	3	6.8	5.9- 8.4	SL		4	4	5.3	4.5- 6.1	SL		2.2	
		HYGOPHUM BENOITI	1	1	7.6		SL		2	2	7.5	7.1- 8.0	SL		1.0	
		LAMPANYCTUS SP.							2	2	4.7	4.5- 4.9	SL		0.7	
		MYCTOPHUM AFFINE							3	3	5.9	5.1- 6.6	SL		1.0	
		UROPHYCIS SP.							2	2	3.8	3.5- 4.2	NL		0.7	
		HEMANTHIAS VIVANUS	2	2	5.2	4.6- 5.8	SL								0.7	
		LEIOSTOMUS XANTHURUS							3	3	4.3	3.7- 5.1	SL		1.0	
		PEPRILUS TRIACANTHUS	5	5	6.7	4.6- 9.4	SL		13	13	5.2	3.3- 6.8	SL		5.8	
		PRIONOTUS CAROLINUS	2	2	5.5	5.7- 6.1	SL		2	2	5.6	5.3- 6.0	SL		1.3	
		BOTHUS OCELLATUS	1	1	3.7		SL		3	3	6.2	3.3-11.9	SL		1.3	
		CITHARICHTHYS ARCTIFRONS							2	2	5.1	4.6- 5.5	SL		0.7	
		ETROPUS MICROSTOMUS							3	3	5.9	3.9- 7.7	SL		1.0	
		SYMPHURUS SP.	4	4	11.7	10.0-12.5	SL		7	7	9.2	4.5-14.0	SL		3.5	
		ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE						CYCLOTHONE SP.							
			OPHIDIIDAE						SYNODONTIDAE							
			SERRANIDAE						OPHIDIIDAE							
			POMACENTRIDAE						SERRANIDAE							
			LABRIDAE OR SCARIDAE						CARANGIDAE							
			BLENNIIDAE						SPARIDAE							
			SCORPAENIDAE						LABRIDAE OR SCARIDAE							
			TRIGLIDAE						PHOLIDAE							
			UNIDENTIFIED						STROMATEIDAE							
									SCORPAENIDAE							
									UNIDENTIFIED							
M 1	20 04		SAMPLING DEPTH 0-15M													
		BREVOORTIA TYRANNUS	3	3	15.2	14.1-17.0	TL								0.9	
		LEIOSTOMUS XANTHURUS	2	2	6.4	6.1- 6.8	SL								0.6	
		MICROPOGON UNDULATUS	1	1	7.5		SL								0.3	
		PEPRILUS TRIACANTHUS	2	2	8.9	8.3- 9.6	SL								0.6	
		PRIONOTUS CAROLINUS	1	1	2.1		SL								0.3	
		PARALICHTHYS DENTATUS	14	14	9.0	6.9-10.9	SL								4.2	0.0
		ADDITIONAL LARVAE CAUGHT	STOMIATIDAE													
			SYNODONTIDAE													
			SYNGNATHIDAE													
			SERRANIDAE													
			SPARIDAE													
			GOBIIDAE													
			SCORPAENIDAE													
			TRIGLIDAE													

CRUISE DATE 066 3 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER $10M^2$ LARVAE	EGGS
N 2 20 04	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	1	1	14.0		TL								0.1	
ANCHOA HEPSETUS	2	2	11.4	8.0-14.5	TL								0.2	
MYCTOPHUM AFFINE	1	1	5.2		SL								0.1	
LEIOSTOMUS XANTHURUS	1	1	9.1		SL								0.1	
PERPILUS TRIACANTHUS	1	1	8.6		SL								0.1	
PRIONOTUS CAROLINUS	21	21	3.6	2.2- 5.4	SL								2.5	
CITHARICHTHYS ARCTIFRONS	4	4	3.9	3.1- 4.6	SL								0.5	
PARALICHTHYS DENTATUS	1	1	8.7		SL	0							0.1	0.0
ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.													
	SYNODONTIDAE													
	SERRANIDAE													
	GOBIIDAE													
	UNIDENTIFIED													
N 3 20 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
BREVOORTIA TYRANNUS	9	9	15.0	11.0-17.4	TL		4	4	15.3	14.4-16.0	TL		3.4	
ETRUMEUS SADINA	49	49	28.7	11.0-60.8	TL		73	73	31.3	26.2-40.6	TL		26.9	
ANCHOA HEPSETUS	2	2	15.3	11.5-19.2	TL								0.6	
ENGRAULIS EURYSTOLE	11	11	31.1	25.0-43.1	TL		7	7	27.7	8.4-39.2	TL		4.5	
MYCTOPHIDAE							1	1	6.9		SL		0.2	
CERATOSCOPELUS MADERENSIS	2	2	7.1	6.2- 8.0	SL								0.6	
CERATOSCOPELUS WARMINGI	1	1	5.6		SL								0.3	
HYGOPHUM BENOITI							1	1	9.9		SL		0.2	
LOPHIUS AMERICANUS	1	1	3.6		TL								0.3	
HEMANTHIAS VIVANUS							2	1	3.9		SL		0.3	
LARIMUS FASCIATUS							1	1	5.2		SL		0.2	
LEIOSTOMUS XANTHURUS	9	9	9.0	7.3-11.1	SL		4	4	8.5	6.7-10.1	SL		3.4	
MICROPOGON UNDULATUS	1	1	5.2		SL								0.3	
PERPILUS TRIACANTHUS	1	1	5.9		SL		1	1	3.4		SL		0.5	
PRIONOTUS CAROLINUS	23	23	3.6	2.3- 8.5	SL								7.4	
BOTHUS OCELLATUS							1						0.2	
CITHARICHTHYS ARCTIFRONS	1	1	12.0		SL		1	1	13.1		SL		0.5	
MONOLENE SESSILICAUDA	1	1	7.0		SL								0.3	
PARALICHTHYS DENTATUS	11	11	8.4	6.0-10.2	SL	0	5	5	9.1	6.9-11.4	SL	0	4.2	0.0
SCOPHTHALMUS AQUOSUS							2	2	3.2	3.1- 3.3	SL		0.3	
ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.						SYNODONTIDAE							
	SYNODONTIDAE						PARALEPIDIDAE							
	BREGMACEROTIDAE						OPHIDIIDAE							
	OPHIDIIDAE						SERRANIDAE							
	SPARIDAE						CARANGIDAE							
	SCORPAENIDAE						SPARIDAE							
	TRIGLIDAE						TRIGLIDAE							
	UNIDENTIFIED													
N 4 20 04	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
OPHICHTHUS GOMESI	1	1	14.5		TL								0.3	
BREVOORTIA TYRANNUS	1	1	19.0		TL								0.3	
ETRUMEUS SADINA							3	3	12.2	6.4-15.6	TL		1.0	
ANCHOA HEPSETUS	17	17	8.1	2.5-14.4	TL								5.7	
ENGRAULIS EURYSTOLE							7	7	11.1	10.5-11.7	TL		2.3	
CERATOSCOPELUS MADERENSIS	3	3	6.4	5.7- 7.3	SL		1	1	6.6		SL		1.2	
CERATOSCOPELUS WARMINGI							3	3	6.7	5.7- 8.6	SL		1.0	
DIAPHUS SP.	1	1	6.8		SL								0.3	
HYGOPHUM BENOITI							1	1	7.7		SL		0.3	
LAMPANYCTUS ALATUS OR PHOTONCTUS	3	3	5.0	4.8- 5.1	SL								1.0	
MYCTOPHUM AFFINE	2	2	8.0	6.9- 9.1	SL								0.7	
UROPHYCIS SP.	2	2	3.5	2.8- 4.3	NL		1	1	4.3		NL		0.9	
HEMANTHIAS VIVANUS	1	1	3.2		SL		2	2	4.3	3.7- 5.0	SL		1.0	
LEIOSTOMUS XANTHURUS	1	1	4.4		SL		3	3	4.5	4.2- 4.8	SL		1.3	
MENTICIRRHUS SP.	1												0.3	
AUXIS SP.	2	2	6.9	6.7- 7.1	SL		1	1	7.4		SL		0.9	
PERPILUS TRIACANTHUS	38	38	2.5	1.4- 8.2	SL		28	26	3.5	2.3- 6.0	SL		20.7	
PRIONOTUS CAROLINUS	4	4	6.6	5.9- 8.0	SL		9	9	3.8	2.3- 5.2	SL		4.2	
BOTHUS OCELLATUS	5	5	5.1	2.6-11.1	SL		2	2	12.1	8.3-15.8	SL		2.2	
CITHARICHTHYS ARCTIFRONS							5	5	6.8	4.2-12.7	SL		1.7	
CYCLOPSETTA FIMBRIATA	1	1	4.5		SL								0.3	
ETROPUS MICROSTOMUS	3	3	8.7	4.6-11.2	SL		1	1	6.0		SL		1.2	
PARALICHTHYS DENTATUS	3	3	4.4	3.7- 5.6	SL	0	1	1	3.7		SL	0	1.2	0.0
SYMPHURUS SP.	10	9	7.2	4.1-11.6	SL		3	3	9.0	4.3-17.1	SL		4.0	
ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.						SYNODONTIDAE							
	SYNODONTIDAE						BREGMACEROTIDAE							
	BREGMACEROTIDAE						OPHIDIIDAE							
	OPHIDIIDAE						SERRANIDAE							
	SERRANIDAE						SPARIDAE							
	CARANGIDAE						LABRIDAE OR SCARIDAE							
	SPARIDAE						GOBIIDAE							
	BLENNIIDAE						TRIGLIDAE							
	GOBIIDAE						UNIDENTIFIED							
	STROMATEIDAE													
	SCORPAENIDAE													
	TRIGLIDAE													
	TETRADONTIDAE													
	UNIDENTIFIED													

CRUISE DATE C66 3 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	 MEAN	LENGTHS (MM) RANGE	 MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	 MEAN	LENGTHS (MM) RANGE	 MEAS.	NO. EGGS	2 NO. PER 10M LARVAE	 EGGS
N 5 20 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
MYCTOPHIDAE						1	1	4.3	SL		0.3	
CERATOSCOPELUS MADERENSIS	44	44	6.4	4.7-10.2	SL	50	50	6.1	3.7- 9.7	SL	29.9	
CERATOSCOPELUS WARMINGI	48	48	4.9	3.8- 7.1	SL	55	55	4.9	3.6-10.7	SL	32.7	
DIAPHUS SP.	3	3	5.3	5.0- 5.8	SL	5	5	6.8	4.2-12.1	SL	2.6	
LAMPANYCTUS SP.						2	2	3.4	3.1- 3.7	SL	0.7	
LAMPANYCTUS ALATUS OR PHOTONOTUS	3	3	4.1	4.0- 4.2	SL	1	1	4.5		SL	1.2	
LAMPANYCTUS ATER	1	1	5.3		SL	1	1	7.4		SL	0.6	
LAMPADENA SP.						1	1	6.2		SL	0.3	
MYCTOPHUM OBTUSIROSTRIS						1	1	6.0		SL	0.3	
HEMIANTHIAS VIVANUS	2	2	6.2	5.3- 7.1	SL	2	2	7.2	6.0- 8.4	SL	1.3	
ALEPIS SP.	6	6	4.6	4.1- 5.1	SL	8	8	5.2	4.7- 6.9	SL	4.5	
KATSUWONUS PELAMIS	1	1	5.6		SL						0.3	
THUNNUS THYNNUS						1	1	7.7		SL	0.3	
PRIONOTUS CAROLINUS	3	3	4.2	3.0- 5.3	SL						1.0	
BOTHUS OCELLATUS	1	1	7.2		SL	9	9	5.6	3.7-10.7	SL	3.3	
CITHARICHTHYS ARCTIFRONS	1	1	6.0		SL						0.3	
ETROPUS MICROSTOMUS						1	1	3.7		SL	0.3	
SYNAPHUBRANCHUS SP.						1	1	5.6		SL	0.3	
ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.					CYCLOTHONE SP.						
	SYNODONTIDAE					STOMIATIDAE						
	CHLOROPHTHALMIDAE					SYNODONTIDAE						
	PARALEPIDIDAE					PARALEPIDIDAE						
	BREGMACEROTIDAE					BREGMACEROTIDAE						
	SERRANIDAE					CAPROIDAE						
	GRAMMISTIDAE					SERRANIDAE						
	CARANGIDAE					APOGONIDAE						
	POMACENTRIDAE					CARANGIDAE						
	LABRIDAE OR SCARIDAE					CORYPHAENIDAE						
	MUGILIDAE					POMACENTRIDAE						
	SPHYRAENIDAE					LABRIDAE OR SCARIDAE						
	GOBIIDAE					CALLIONYMIDAE						
	GEMPYLIDAE					GOBIIDAE						
	SCORPAENIDAE					GEMPYLIDAE						
	UNIDENTIFIED					SCORPAENIDAE						
						UNIDENTIFIED						
P 1 21 04	SAMPLING DEPTH 0- 6M											
P 2 21 04	SAMPLING DEPTH 0- 6M											
ANCHOA HEPSETUS	1	1	16.6		TL						0.1	
PARALICHTHYS DENTATUS	1									0	0.1	0.0
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
P 3 21 04	SAMPLING DEPTH 0- 6M											
PARALICHTHYS DENTATUS	1	1	5.3		SL					0	0.1	0.0
ADDITIONAL LARVAE CAUGHT	SPARIDAE											
	UNIDENTIFIED											
P 4 21 04	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 16-24M						
ANCHOA HEPSETUS						2	2	20.4	20.0-20.9	TL	0.3	
BENTHOSEMA SUBORBITALE						1	1	8.5		SL	0.2	
LOPHIUS AMERICANUS	2	2	4.6	4.5- 4.8	TL	9	9	4.7	3.8- 5.4	TL	2.1	
LEIOSTOMUS XANTHURUS	1	1	9.4		SL						0.3	
PEPRILUS TRIACANTHUS	6	6	7.0	4.0-12.2	SL	3	3	7.8	7.1- 9.2	SL	2.3	
CITHARICHTHYS ARCTIFRONS	2	2	11.5	11.8-12.0	SL						0.6	
ETROPUS MICROSTOMUS						2	2	6.9	5.4- 8.4	SL	0.3	
PARALICHTHYS DENTATUS					0	1	1	4.6		SL 0	0.2	0.0
SYNAPHUBRANCHUS SP.	1	1	5.7		SL						0.3	
ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.					OPHIDIIDAE						
	OPHIDIIDAE					SPARIDAE						
	SYNGNATHIDAE					GOBIIDAE						
	SPARIDAE					STROMATEIDAE						
	UNIDENTIFIED					UNIDENTIFIED						

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STA. 0 M SPECIES ANALYZED
P 5 21 04

	********** LARVAE **********						********** LARVAE **********							2
	NUMBER		LENGTHS (MM)			NO.	NUMBER		LENGTHS (MM)			NO.	NO. PER 10M²	
	TOTAL	MEAS.	MEAN	RANGE	MEAS.	EGGS	TOTAL	MEAS.	MEAN	RANGE	MEAS.	EGGS	LARVAE	EGGS
	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
MYCTOPHIDAE	2	2	4.1	4.0- 4.3	SL		4	4	4.0	3.7- 4.3	SL		1.9	
CERATOSCOPELUS MADERENSIS	3	3	6.0	5.0- 7.4	SL								1.0	
CERATOSCOPELUS WARMINGI	40	40	4.9	3.1- 7.9	SL		28	28	5.6	3.6- 7.9	SL		21.3	
DIAPHUS SP.	6	6	4.9	4.3- 6.2	SL		19	19	5.6	3.7- 5.3	SL		8.1	
LAMPANYCTUS SP.	2	2	3.1	3.1- 3.1	SL		2	2	4.7	4.7- 4.7	SL		1.3	
LAMPANYCTUS NOBILIS							2	2	5.5	5.3- 6.6	SL		0.7	
LAMPADENA SP.							2	2	8.2	7.8- 8.6	SL		0.7	
MYCTOPHUM OBTUSIROSTRIS							1	1	5.2		SL		0.3	
MYCTOPHUM SELENOPS							1	1	4.5		SL		0.3	
ACTISCOPELUS SP.	1	1	5.8		SL								0.3	
HEMANTHIAS VIVANUS							4	4	3.3	3.2- 3.6	SL		1.3	
PLECTRANTHIAS GARNUPELLUS							2	2	4.0	3.8- 4.2	SL		0.7	
KATSUWONUS PELAMIS	2	2	4.5	4.5- 4.6	SL								0.7	
BOTHUS OCELLATUS	4	4	9.3	3.3-19.5	SL		5	5	5.6	4.4- 6.9	SL		2.9	
SYACIUM PAPILLOSUM	1	1	6.2		SL								0.3	
ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.						CYCLOTHONE SP.							
	VINCIGUERRIA SP.						STOMIATICAE							
	PARALEPIDIDAE						CHLOROPHTHALMIDAE							
	BREGMACEROTIDAE						PARALEPIDIDAE							
	EXOCOETIDAE						SERRANIDAE							
	SERRANIDAE						GRAMMISTIDAE							
	GRAMMISTIDAE						CHAETODONTIDAE							
	CARANGIDAE						POMACENTRIDAE							
	CORYPHAENIDAE						LABRIDAE OR SCARIDAE							
	LABRIDAE OR SCARIDAE						GOBIIDAE							
	ACANTHURIDAE						ACANTHURIDAE							
	UNIDENTIFIED						SCORPAENIDAE							
							UNIDENTIFIED							

CRUISE DATE 066 5 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
A 1 12 05	SAMPLING DEPTH 0- 6M													
CLUPEA HARENGUS HARENGUS	2	2	36.2	35.8-36.7	TL								0.2	
GADUS MORHUA	2	2	3.9	3.5- 4.2	SL	0							0.2	0.0
AMMODYTES SP.	8	8	26.2	8.7-41.6	TL								1.0	
LIPARIS INQUILINUS	133	43	4.4	3.0- 6.7	TL								16.1	
CITHARICHTHYS ARCTIFRONS	4												0.5	
LIMANDA FERRUGINEA	21	19	4.0	3.1- 5.6	SL								2.5	
PSEUDOPLEURONECTES AMERICANUS	63	25	4.8	3.2- 7.2	SL								7.6	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	BLENNIIDAE													
	STROMATEIDAE													
	COTTIDAE													
	UNIDENTIFIED													
A 2 12 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
CLUPEA HARENGUS HARENGUS	1	1	40.2		TL								0.3	
ENGRAULIS MORDAX						1						1	0.0	0.5
GADUS MORHUA						1						0	0.0	0.3
AMMODYTES SP.	1	1	15.2		TL								0.3	
SCOMBER SCOMBRUS						0						2	0.0	0.3
LIPARIS ATLANTICUS							1	1	8.6		TL		0.2	
LIPARIS INQUILINUS	40	31	4.1	3.1- 6.5	TL		51	25	4.8	3.2- 6.9	TL		20.5	
CITHARICHTHYS ARCTIFRONS	1												0.3	
HIPPOGLOSSOIDES PLATESSOIDES	2	2	7.6	7.2- 8.0	SL								0.6	
LIMANDA FERRUGINEA	37	32	4.0	2.5- 6.2	SL		27	22	3.7	2.9- 5.6	SL		15.7	
PSEUDOPLEURONECTES AMERICANUS	289	25	4.2	3.2- 6.6	SL		176	25	4.6	3.3- 7.8	SL		117.2	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE						BLENNIIDAE							
	COTTIDAE						COTTIDAE							
A 3 13 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS MORDAX						0						1	0.0	0.3
GADUS MORHUA						0						3	0.0	1.0
AMMODYTES SP.	1	1	21.4		TL		1	1	24.7		TL		0.6	
LIPARIS INQUILINUS	12	9	5.3	4.1- 7.9	TL		4	4	7.9	7.0- 8.7	TL		4.9	
CITHARICHTHYS ARCTIFRONS	1												0.3	
LIMANDA FERRUGINEA							36	25	3.6	3.1- 4.0	SL		12.0	
PSEUDOPLEURONECTES AMERICANUS	58	25	3.8	2.9- 5.1	SL		9	9	5.9	4.2- 7.2	SL		20.4	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE						BLENNIIDAE							
	UNIDENTIFIED						UNIDENTIFIED							
A 4 13 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	1	1	36.8		TL								0.3	
GADUS MORHUA	2	2	9.1	7.1-11.0	SL	0	10	10	5.8	5.1- 7.0	SL	0	3.9	0.0
MELANOGRAMMUS AEGLEFINUS	19	18	4.4	3.4- 6.6	SL	0	3	3	4.5	4.2- 4.9	SL	0	6.7	0.0
GLYPTOCEPHALUS CYNOGLOSSUS	11	6	5.4	4.3- 7.2	SL		16	9	5.2	4.2- 6.0	SL		8.6	
HIPPOGLOSSOIDES PLATESSOIDES							10	7	7.3	6.2- 9.4	SL		3.3	
LIMANDA FERRUGINEA	111	25	4.1	3.1- 5.4	SL		76	25	4.0	3.1- 5.1	SL		58.6	
PSEUDOPLEURONECTES AMERICANUS	1	1	5.0		SL		5	4	5.0	4.2- 6.1	SL		2.0	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE						ANGUILLA ROSTRATA							
	UNIDENTIFIED						BLENNIIDAE							
							UNIDENTIFIED							
A 5 13 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
GADUS MORHUA	2	2	5.1	3.9- 6.3	NL	0	4	4	7.6	5.2-10.8	SL	0	1.9	0.0
MELANOGRAMMUS AEGLEFINUS	14	14	5.4	3.9- 7.5	SL	0	39	38	5.6	4.1- 8.4	SL	0	17.2	0.0
AMMODYTES SP.	1	1	37.8		TL								0.3	
LIPARIS INQUILINUS	1	1	7.3		TL								0.3	
GLYPTOCEPHALUS CYNOGLOSSUS							45	29	5.5	4.2- 7.0	SL		15.0	
HIPPOGLOSSOIDES PLATESSOIDES	10	8	6.6	5.3- 8.3	SL		12	9	8.6	6.7-13.1	SL		7.0	
LIMANDA FERRUGINEA	28	27	4.5	3.3- 6.3	SL		93	25	4.3	3.3- 5.8	SL		39.4	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
A 6 13 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS MORDAX	1	1	2.0		SL	0	1	1	2.0		SL	27	0.6	9.0
GADUS MORHUA	16	16	8.9	5.1-12.8	SL	0	9	9	7.6	5.8- 9.2	SL	0	7.8	0.0
MELANOGRAMMUS AEGLEFINUS	63	63	6.2	3.9-12.7	SL	0	57	56	6.4	3.9-11.9	SL	0	37.9	0.0
POLLACHIUS VIRENS	2	2	9.5	9.5- 9.5	SL	0						0	0.7	0.0
AMMODYTES SP.	1	1	39.2		TL								0.3	
LIPARIS INQUILINUS	3	2	8.8	7.8- 9.8	TL								1.0	
GLYPTOCEPHALUS CYNOGLOSSUS	34	31	5.1	3.8- 5.9	SL		22	17	5.0	4.1- 5.7	SL		17.5	
HIPPOGLOSSOIDES PLATESSOIDES	22	15	9.4	5.1-16.4	SL		11	11	11.5	6.7-16.0	SL		10.3	
LIMANDA FERRUGINEA	17	17	4.7	3.2- 6.1	SL		16	16	4.3	3.3- 5.4	SL		10.4	
PSEUDOPLEURONECTES AMERICANUS	1	1	5.0		SL								0.3	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE						UNIDENTIFIED							

CRUISE DATE C66 5 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	NO. PER 10M² LARVAE	 EGGS
A 7 13 05	SAMPLING DEPTH C-15M					SAMPLING DEPTH 18-33M						
MYCTOPHIDAE	5	5	4.3	3.7- 5.0	SL						1.7	
BENTHOSEMA GLACIALE						2	2	5.4	5.0- 5.8	SL	0.7	
GADUS MORHUA	8	7	8.0	5.3-12.0	SL	20	20	7.1	5.6-10.4	SL	9.1	0.0
MELANOGRAMMUS AEGLEFINUS	5	4	6.7	5.6- 8.5	SL	27	26	7.1	4.6-11.0	SL	10.5	0.0
POLLACHIUS VIRENS					0	1	1	4.2		SL	0.3	0.0
GLYPTOCEPHALUS CYNOGLOSSUS	2	2	4.2	3.7- 4.7	SL	2	2	5.6	5.2- 5.9	SL	1.3	
HIPPOGLOSSOIDES PLATESSOIDES	4	4	10.5	6.3-16.2	SL	7	6	11.4	9.3-13.5	SL	3.5	
LIMANDA FERRUGINEA						2	2	3.9	3.2- 4.6	SL	0.7	
ADDITIONAL LARVAE CAUGHT	SCORPAENIDAE					SCORPAENIDAE UNIDENTIFIED						
B 1 13 05	SAMPLING DEPTH C- 9M											
GADUS MORHUA	2	2	8.8	8.4- 9.1	SL	0					0.4	0.0
UROPHYCIS CHUSS	1	1	4.6		NL						0.2	
MERLUCCIUS BILINEARIS	1	1	71.2		NL	0					0.2	0.0
AMMODYTES SP.	7	7	35.7	16.7-60.5	TL						1.3	
SCOMBER SCOMBRUS						109					0.0	15.6
LIPARIS INQUILINUS	69	63	4.4	3.3-10.0	TL						12.5	
PSEUDOPLEURONECTES AMERICANUS	71	25	7.3	6.0- 9.2	SL						12.9	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE COTTIDAE UNIDENTIFIED											
B 2 13 05	SAMPLING DEPTH C-15M											
ENGRAULIS MORDAX	2	2	2.8	2.7- 2.8	SL	0					0.6	0.0
GADUS MORHUA	9	7	14.2	7.0-40.0	SL	0					2.7	0.0
AMMODYTES SP.	6	6	19.1	12.7-27.5	TL						1.8	
SCOMBER SCOMBRUS						153					0.0	46.4
LIPARIS INQUILINUS	13	11	5.1	3.5- 7.2	TL						3.9	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	6.2		SL						0.3	
LIMANDA FERRUGINEA	13	13	5.5	3.6- 8.5	SL						3.9	
PSEUDOPLEURONECTES AMERICANUS	4	4	6.7	6.1- 7.5	SL						1.2	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE COTTIDAE											
B 3 13 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENGRAULIS MORDAX	6	6	2.6	2.2- 2.8	SL	0				0	2.0	0.0
GADUS MORHUA	16	16	9.0	3.5-18.6	SL	0	4	4	8.6	5.3-12.7	SL	0	6.1	0.0
MELANOGRAMMUS AEGLEFINUS	7	7	7.1	4.6-10.4	SL	0	6	6	7.9	6.3- 9.9	SL	0	4.1	0.0
AMMODYTES SP.	3	3	19.8	18.7-21.2	TL								1.0	
SCOMBER SCOMBRUS						15					21	0.0	11.5
LIPARIS INQUILINUS	24	20	5.2	3.8-10.0	TL							8.0	
GLYPTOCEPHALUS CYNOGLOSSUS	27	25	5.6	4.3- 7.0	SL		18	12	5.7	4.7- 7.0	SL		14.1	
HIPPOGLOSSOIDES PLATESSOIDES	2	2	8.7	7.9- 9.5	SL		2	2	12.1	11.9-12.2	SL		1.3	
LIMANDA FERRUGINEA	69	25	4.3	2.7- 7.7	SL		69	25	4.9	3.3- 8.3	SL		43.7	
PSEUDOPLEURONECTES AMERICANUS	1	1	6.4		SL								0.3	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE COTTIDAE						BLENNIIDAE UNIDENTIFIED							
B 4 13 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENGRAULIS MORDAX	2	2	3.0	2.3- 3.7	SL	13	2	2	2.4	2.4- 2.4	SL	12	1.3	7.5
GADUS MORHUA	1	1	8.6		SL	0	2	2	6.1	5.3- 6.8	SL	0	1.0	0.0
MELANOGRAMMUS AEGLEFINUS	1					0						0	0.3	0.0
SCOMBER SCOMBRUS						7						0	0.0	2.3
LIPARIS INQUILINUS							1	1	6.4		TL		0.3	
GLYPTOCEPHALUS CYNOGLOSSUS	22	22	5.6	4.1- 7.7	SL		36	32	5.5	4.2- 7.2	SL		18.6	
HIPPOGLOSSOIDES PLATESSOIDES	3	3	9.3	8.6-10.0	SL		5	4	10.2	7.7-12.5	SL		2.6	
LIMANDA FERRUGINEA	67	25	6.0	4.1- 7.7	SL		84	25	5.6	4.1- 7.7	SL		48.1	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE						BLENNIIDAE							
B 5 13 05	SAMPLING DEPTH C-15M					SAMPLING DEPTH 18-33M						
ENGRAULIS MORDAX	1	1	1.8		SL	29	5	5	2.2	2.0- 2.4	SL	29	2.0	18.4
GADUS MORHUA						2	4	4	7.8	4.4-11.8	SL	1	1.3	0.5
MELANOGRAMMUS AEGLEFINUS						0	4	4	6.0	4.6- 7.8	SL	0	1.3	0.0
AMMODYTES SP.	1	1	30.0		TL								0.3	
SCOMBER SCOMBRUS						0						3	0.0	1.0
LIPARIS INQUILINUS	1	1	12.0		TL		1	1	7.3		TL		0.6	
GLYPTOCEPHALUS CYNOGLOSSUS	31	29	5.1	4.2- 6.5	SL		65	58	5.1	4.1- 6.2	SL		31.0	
HIPPOGLOSSOIDES PLATESSOIDES	3	1	8.3		SL		4	4	11.8	9.8-14.1	SL		2.2	
LIMANDA FERRUGINEA	219	25	5.4	3.3- 7.8	SL		221	25	5.0	2.8- 6.2	SL		139.4	

CRUISE DATE 066 5 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
B 6 13 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENCHELYOPUS CIMBRIUS	1	1	2.0	SL	63					15	0.3	23.9
GADUS MORHUA					0	3	3	6.6 5.7- 7.8	SL	0	1.0	0.0
MELANOGRAMMUS AEGLEFINUS					0	1	1	7.2	SL	0	0.3	0.0
POLLACHIUS VIRENS	2	2	9.8 9.0-10.6	SL	0					0	0.7	0.0
SCOMBER SCOMBRUS					2					1	0.0	0.9
GLYPTOCEPHALUS CYNOGLOSSUS						1	1	6.6	SL		0.3	
HIPPOGLOSSOIDES PLATESSOIDES	3	2	9.0 6.2-11.8	SL							1.0	
LIMANDA FERRUGINEA	64	25	5.4 3.8- 8.4	SL		42	25	5.6 3.8- 7.8	SL		33.2	
ADDITIONAL LARVAE CAUGHT	COTTIDAE											
B 7 13 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
BENTHOSEMA SP.	2	2	6.1 5.5- 6.8	SL							0.7	
BENTHOSEMA GLACIALE						4	4	5.7 5.0- 6.8	SL		1.3	
ENCHELYOPUS CIMBRIUS	1	1	13.5	SL	12					9	0.3	6.6
MELANOGRAMMUS AEGLEFINUS					0	6	6	7.7 5.4-10.2	SL	0	2.0	0.0
POLLACHIUS VIRENS					0	1	1	7.0	SL	0	0.3	0.0
GLYPTOCEPHALUS CYNOGLOSSUS						4	4	5.2 4.7- 5.8	SL		1.3	
LIMANDA FERRUGINEA	1	1	6.7	SL		4	4	5.5 4.6- 6.5	SL		1.6	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
C 1 14 05	SAMPLING DEPTH 0-15M											
ENCHELYOPUS CIMBRIUS					3						0.0	0.9
AMMODYTES SP.	4	4	24.3 14.7-38.7	TL							1.2	
SCOMBER SCOMBRUS					344						0.0	104.2
LIMANDA FERRUGINEA	6	6	6.5 4.7- 7.9	SL							1.8	
PSEUDOPLEURONECTES AMERICANUS	3	3	5.9 4.8- 7.3	SL							0.9	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA COTTIDAE											
C 2 14 05	SAMPLING DEPTH 0-15M											
AMMODYTES SP.	1	1	57.8	TL							0.3	
SCOMBER SCOMBRUS.					164						0.0	49.7
LIPARIS INQUILINUS	3	3	6.3 5.3- 7.0	TL							0.9	
LIMANDA FERRUGINEA	2	2	7.2 6.1- 8.2	SL							0.6	
C 3 14 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
ENCHELYOPUS CIMBRIUS	7	7	3.2 2.0- 3.8	SL	0	1	1	2.7	SL	0	2.3	0.0
SCOMBER SCOMBRUS					40					29	0.0	17.0
LIPARIS INQUILINUS	1	1	3.6	TL		1	1	3.0	TL		0.5	
GLYPTOCEPHALUS CYNOGLOSSUS						2					0.3	
LIMANDA FERRUGINEA	3	2	5.7 5.2- 6.2	SL		4	3	6.8 6.1- 7.7	SL		1.6	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE											
C 4 14 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENCHELYOPUS CIMBRIUS	9	8	3.0 2.2- 3.8	SL	0	4	4	3.3 2.5- 4.7	SL	0	4.0	0.0
GADUS MORHUA					0	1	1	5.4	SL	0	0.3	0.0
SCOMBER SCOMBRUS					18					19	0.0	11.7
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	6.8	SL							0.3	
LIMANDA FERRUGINEA	69	21	5.7 2.7- 9.0	SL		15	1	6.7	SL		45.7	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED					UNIDENTIFIED						
C 5 14 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENCHELYOPUS CIMBRIUS	4	4	3.3 2.5- 4.4	SL	0					0	1.3	0.0
GADUS MORHUA	1	1	4.2	SL	0					0	0.9	0.0
AMMODYTES SP.	1	1	35.2	TL							0.3	
SCOMBER SCOMBRUS					6					3	0.0	2.8
PERRILUS TRIACANTHUS	1	1	4.5	SL							0.3	
GLYPTOCEPHALUS CYNOGLOSSUS	2	1	6.4	SL							0.7	
LIMANDA FERRUGINEA	68	25	5.2 3.5- 7.0	SL		120	25	7.0 5.7- 9.2	SL		60.4	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED					UNIDENTIFIED						
C 6 14 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENCHELYOPUS CIMBRIUS	2	2	2.4 2.0- 2.8	SL	0	2	2	2.5 2.3- 3.4	SL	0	1.3	0.0
GADUS MORHUA					0	1	1	5.2	SL	0	0.3	0.0
SCOMBER SCOMBRUS					1					0	0.0	0.3
GLYPTOCEPHALUS CYNOGLOSSUS	3	1	5.0	SL							1.0	
LIMANDA FERRUGINEA	60	16	6.0 4.2- 9.0	SL		94	25	6.3 3.9- 8.2	SL		49.3	
ADDITIONAL LARVAE CAUGHT						UNIDENTIFIED						
C 7 14 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENCHELYOPUS CIMBRIUS					4	2	2	2.4 2.0- 2.7	SL	0	0.7	1.3
GADUS MORHUA	2	2	6.4 5.8- 7.0	SL	0	2	1	6.4	SL	0	1.3	0.0
MELANOGRAMMUS AEGLEFINUS	1	1	6.3	SL	0	2	2	8.4 7.2- 9.6	SL	0	1.0	0.0
GLYPTOCEPHALUS CYNOGLOSSUS	48	39	6.7 4.8-11.2	SL		61	52	6.2 4.2- 9.0	SL		34.7	
LIMANDA FERRUGINEA	290	25	5.9 4.2- 9.1	SL		310	25	6.4 3.9- 9.7	SL		150.3	
ADDITIONAL LARVAE CAUGHT						BLENNIIDAE STICHAEIDAE						

CRUISE DATE D66 5 1966 STA. O M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	2 NO. PER 10M LARVAE	EGGS
C 8 14 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BENTHOSEMA SP.							1	1	5.5		SL		0.3	
BENTHOSEMA GLACIALE	3	3	6.8	6.5- 7.2	SL								1.0	
ENCHELYOPUS CIMBRIUS						0						1	0.0	0.3
GADUS MORHUA						0	3	3	6.5	4.7- 7.6	SL	0	1.0	0.0
MELANOGRAMMUS AEGLEFINUS						0	1	1	4.3		SL	0	0.3	0.0
AMMODYTES SP.	2	2	36.1	33.3-39.0	TL		1	1	23.8		TL		0.9	
LIMANDA FERRUGINEA	4	4	7.6	6.0- 9.4	SL		4	1	6.5		SL		2.5	
ADDITIONAL LARVAE CAUGHT							MYCTOPHIDAE							
C 1 16 05	SAMPLING DEPTH 0- 6M													
ENCHELYOPUS CIMBRIUS	7	7	3.1	2.2- 3.9	SL	0							0.8	0.0
UROPHYCIS SP.	1	1	11.0		NL								0.1	
SCOMBER SCOMBRUS						2752							0.0	333.5
LIPARIS INQUILINUS	1	1	3.7		TL								0.1	
LIMANDA FERRUGINEA	11	10	5.0	3.7- 6.2	SL								1.3	
PSEUDOPLEURONECTES AMERICANUS	2	1	4.2		SL								0.2	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE													
D 2 16 05	SAMPLING DEPTH 0- 6M													
ENCHELYOPUS CIMBRIUS	11	11	3.2	2.2- 5.4	SL	0							1.3	0.0
SCOMBER SCOMBRUS						5235							0.0	634.5
LIPARIS INQUILINUS	1	1	4.1		TL								0.1	
LIMANDA FERRUGINEA	176	25	5.5	3.9- 8.1	SL								21.3	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE													
D 3 16 05	SAMPLING DEPTH 0-15M													
ENCHELYOPUS CIMBRIUS	4	4	3.1	2.4- 3.9	SL	7							1.2	2.1
AMMODYTES SP.	1	1	41.8		TL								0.3	
SCOMBER SCOMBRUS						750							0.0	227.3
LIMANDA FERRUGINEA	207	25	5.1	3.9- 6.7	SL								62.7	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE													
D 4 16 05	SAMPLING DEPTH 0-15M													
ENCHELYOPUS CIMBRIUS	20	17	3.6	3.0- 4.2	SL	8							6.1	2.4
GADUS MORHUA	1	1	5.4		SL	0							0.3	0.0
MELANOGRAMMUS AEGLEFINUS	1	1	6.2		SL	0							0.3	0.0
SCOMBER SCOMBRUS						66							0.0	20.0
LIPARIS INQUILINUS	4	4	4.8	4.3- 5.2	TL								1.2	
LIMANDA FERRUGINEA	613	25	5.0	3.7- 5.9	SL								185.7	
D 5 16 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ENCHELYOPUS CIMBRIUS	12	12	4.3	3.3- 9.5	SL	0	12	12	4.2	3.3- 6.5	SL	0	5.6	0.0
GADUS MORHUA	2	2	6.6	6.5- 6.7	SL	0						0	0.6	0.0
SCOMBER SCOMBRUS						42						29	0.0	17.6
LIPARIS INQUILINUS							1	1	4.6		TL		0.2	
GLYPTOCEPHALUS CYNOGLOSSUS	2	2	8.5	8.5- 8.5	SL		2	1	8.3		SL		0.9	
LIMANDA FERRUGINEA	624	25	4.8	3.9- 5.7	SL		617	25	4.7	3.3- 5.7	SL		251.3	
ADDITIONAL LARVAE CAUGHT							BLENNIIDAE UNIDENTIFIED							
D 6 17 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	2	2	3.7	3.5- 3.9	SL	0	1	1	4.9		SL	0	0.9	0.0
GADUS MORHUA	3	3	6.7	4.3- 9.2	SL	0						0	1.0	0.0
AMMODYTES SP.	2	2	32.5	31.0-34.0	TL								0.7	
SCOMBER SCOMBRUS						6						1	0.0	2.1
GLYPTOCEPHALUS CYNOGLOSSUS	6	5	6.7	5.7- 7.7	SL		6	3	6.7	5.3- 8.0	SL		3.8	
LIMANDA FERRUGINEA	471	25	5.2	3.4- 6.7	SL		398	25	5.4	3.4- 8.0	SL		273.9	
ADDITIONAL LARVAE CAUGHT							BLENNIIDAE							
D 7 17 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS						0	3	3	2.5	2.3- 2.7	SL	0	1.0	0.0
SCOMBER SCOMBRUS						2						0	0.0	0.7
GLYPTOCEPHALUS CYNOGLOSSUS							2	1	7.7		SL		0.7	
LIMANDA FERRUGINEA	126	25	5.1	3.4- 6.7	SL		156	25	6.1	4.2- 8.9	SL		49.8	
ADDITIONAL LARVAE CAUGHT							UNIDENTIFIED							
D 8 17 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
MYCTOPHIDAE							1	1	5.1		SL		0.3	
BENTHOSEMA SP.							1	1	6.4		SL		0.3	
ENCHELYOPUS CIMBRIUS						1	1	1	2.4		SL	0	0.3	0.3
MELANOGRAMMUS AEGLEFINUS	1	1	9.1		SL	0						0	0.3	0.0
GLYPTOCEPHALUS CYNOGLOSSUS	2	1	6.3		SL		2						1.3	
HIPPOGLOSSOIDES PLATESSOIDES							1	1	10.0		SL		0.3	
LIMANDA FERRUGINEA	38	25	7.3	4.7-11.2	SL		24	22	7.8	4.0-10.0	SL		19.4	

CRUISE DATE DEC 5 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER $10M^2$ LARVAE	EGGS
E 1 19 05	SAMPLING DEPTH 0- 6M													
ENCHELYOPUS CIMBRIUS	1	1	21.2		SL	0							0.1	0.0
AMMODYTES SP.	2	2	40.4	31.9-48.9	TL								0.2	
SCOMBER SCOMBRUS						1127							0.0	136.6
SCOPHTHALMUS AQUOSUS	3	3	2.8	2.7- 3.0	SL								0.4	
LIMANDA FERRUGINEA	2	2	5.3	4.9- 5.7	SL								0.2	
PSEUDOPLEURONECTES AMERICANUS	14	14	7.7	4.4- 8.9	SL								1.7	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE STICHAEIDAE													
E 2 18 05	SAMPLING DEPTH 0- 6M													
ENCHELYOPUS CIMBRIUS	9	9	3.3	2.7- 4.0	SL	0							1.1	0.0
SCOMBER SCOMBRUS						4378							0.0	530.6
SCOPHTHALMUS AQUOSUS	1												0.1	
LIMANDA FERRUGINEA	56	25	6.3	4.6-11.9	SL								6.8	
PSEUDOPLEURONECTES AMERICANUS	2	2	7.9	7.0- 8.7	SL								0.2	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
E 3 18 05	SAMPLING DEPTH 0-15M													
ENCHELYOPUS CIMBRIUS	6	6	4.0	2.7- 7.2	SL	1							1.8	0.3
GADUS MORHUA	2	2	7.8	7.5- 8.0	SL	0							0.6	0.0
SCOMBER SCOMBRUS						241							0.0	73.0
LIPARIS INQUILINUS	4	4	4.7	3.9- 5.5	TL								1.2	
SCOPHTHALMUS AQUOSUS	1	1	3.1		SL								0.3	
LIMANDA FERRUGINEA	110	25	5.5	4.6- 6.4	SL								33.3	
E 4 17 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ENCHELYOPUS CIMBRIUS	6	6	3.0	2.2- 3.4	SL	0	9	9	3.3	1.8- 5.2	SL	2	3.3	0.3
GADUS MORHUA	5	4	4.7	3.9- 5.6	SL	2	1	1	9.1		SL	0	1.7	0.6
SCOMBER SCOMBRUS						104						33	0.0	37.3
LIPARIS INQUILINUS	4	3	5.6	5.4- 6.0	TL		4	4	6.3	5.2- 6.9	TL		1.9	
GLYPTOCEPHALUS CYNOGLOSSUS	3	3	5.3	5.1- 5.8	SL		9	4	5.5	4.9- 6.6	SL		2.4	
LIMANDA FERRUGINEA	162	25	5.5	4.1- 7.4	SL		279	25	5.1	3.3- 6.7	SL		54.8	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						ANGUILLA ROSTRATA BLENNIIDAE UNIDENTIFIED							
E 5 17 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ENCHELYOPUS CIMBRIUS	1	1	1.8		SL	1	1	1	2.8		SL	1	0.5	0.5
SCOMBER SCOMBRUS						7						8	0.0	3.5
GLYPTOCEPHALUS CYNOGLOSSUS	2	1	7.1		SL		1	1	8.8		SL		0.8	
LIMANDA FERRUGINEA	286	25	6.0	3.5- 9.2	SL		138	25	6.1	3.2- 8.9	SL		110.1	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE UNIDENTIFIED													
E 6 17 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ENCHELYOPUS CIMBRIUS	11	11	3.2	2.5- 3.8	SL	0	12	12	3.2	2.5- 3.7	SL	0	5.3	0.0
SCOMBER SCOMBRUS						3						0	0.0	1.0
GLYPTOCEPHALUS CYNOGLOSSUS	4	4	6.9	5.1- 9.6	SL		3	3	5.4	4.6- 6.1	SL		1.7	
LIMANDA FERRUGINEA	191	25	4.2	2.9- 8.7	SL		109	25	4.2	2.8- 6.5	SL		76.3	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						UNIDENTIFIED							
E 7 17 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ADDITIONAL LARVAE CAUGHT							UNIDENTIFIED							
E 8 17 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS						1						3	0.0	1.3
F 1 18 05	SAMPLING DEPTH 0- 6M													
SCOMBER SCOMBRUS						249							0.0	30.2
SCOPHTHALMUS AQUOSUS	62	59	2.9	2.1- 4.3	SL								7.5	
LIMANDA FERRUGINEA	1	1	4.5		SL								0.1	
F 2 18 05	SAMPLING DEPTH 0- 6M													
SCOMBER SCOMBRUS						413							0.0	50.1
SCOPHTHALMUS AQUOSUS	40	33	3.1	2.4- 4.6	SL								4.8	
F 3 18 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ENCHELYOPUS CIMBRIUS	1	1	22.4		SL	0						0	0.3	0.0
TAUTOGA ONITIS	1												0.3	
SCOMBER SCOMBRUS						2489						2168	0.0	1114.6
SCOPHTHALMUS AQUOSUS	4	4	2.7	2.5- 3.0	SL		2	2	3.1	2.8- 3.3	SL		1.6	
LIMANDA FERRUGINEA	17	17	6.2	3.7- 9.9	SL		13	12	6.1	4.7- 6.9	SL		7.3	
PSEUDOPLEURONECTES AMERICANUS	2	2	7.0	5.9- 8.1	SL								0.6	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													

CRUISE DATE C66 5 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	2 NO. PER 10M LARVAE	EGGS
H 1 19 05	SAMPLING DEPTH 0- 3M													
CYNOSCION SP.	2	2	2.7	2.7- 2.8	SL								0.1	
MENTICIRRHUS SP.	4	4	2.8	2.5- 3.4	SL								0.2	
SCOMBER SCOMBRUS						326							0.0	19.8
PEPRILUS TRIACANTHUS	1	1	8.7		SL								0.1	
SCOPHTHALMUS AQUOSUS	47	42	3.3	2.4- 5.4	SL								2.8	
LIMANDA FERRUGINEA	1	1	4.5		SL								0.1	
PSEUDOPLEURONECTES AMERICANUS	3	3	7.4	7.1- 7.7	SL								0.2	
ADDITIONAL LARVAE CAUGHT	STROMATEIDAE UNIDENTIFIED													
H 2 19 05	SAMPLING DEPTH 0-15M													
SCOMBER SCOMBRUS						766							0.0	238.2
SCOPHTHALMUS AQUOSUS	102	50	3.3	2.3- 4.6	SL								30.9	
LIMANDA FERRUGINEA	4	3	6.4	5.4- 7.2	SL								1.2	
PSEUDOPLEURONECTES AMERICANUS	8	7	6.7	3.7- 8.5	SL								2.4	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
H 3 19 05	SAMPLING DEPTH 0-15M													
TAUTOGA ONITIS	15	1	2.6		TL								4.5	
SCOMBER SCOMBRUS						42							0.0	12.7
SCOPHTHALMUS AQUOSUS	60	46	2.9	2.3- 3.8	SL								18.2	
LIMANDA FERRUGINEA	21	20	6.5	5.2- 8.8	SL								6.4	
PSEUDOPLEURONECTES AMERICANUS	1	1	6.2		SL								0.3	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
H 4 20 05	SAMPLING DEPTH 0-15M													
ENCHELYOPUS CIMBRIUS	3	3	3.7	3.2- 4.1	SL	0							0.9	0.0
GADUS MORHUA	1	1	14.6		SL	0							0.3	0.0
SCOMBER SCOMBRUS						203							0.0	61.5
LIPARIS INQUILINUS	1	1	8.6		TL								0.3	
SCOPHTHALMUS AQUOSUS	10	9	3.1	2.5- 4.1	SL								3.0	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	5.2		SL								0.3	
LIMANDA FERRUGINEA	55	25	6.3	4.4- 7.5	SL								16.7	
H 5 20 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ENCHELYOPUS CIMBRIUS	1	1	3.4		SL	0	3	2	3.4	3.2- 3.5	SL	0	0.8	0.0
MERLUCCIUS BILINEARIS						0						1	0.0	0.2
SCOMBER SCOMBRUS						83						108	0.0	43.0
SCOPHTHALMUS AQUOSUS	4	4	3.1	3.0- 3.3	SL		7	7	3.0	2.8- 3.5	SL		2.4	
GLYPTOCEPHALUS CYNOGLOSSUS	1						2	2	5.6	5.4- 5.8	SL		0.6	
LIMANDA FERRUGINEA	64	25	5.9	3.5- 7.1	SL		33	22	5.4	2.9- 7.7	SL		25.0	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						UNIDENTIFIED							
H 6 20 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS						0	1	1	3.7		SL	0	0.3	0.0
SCOMBER SCOMBRUS						4						0	0.0	1.3
SCOPHTHALMUS AQUOSUS	2												0.7	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	5.4		SL								0.3	
LIMANDA FERRUGINEA	4	2	4.3	2.9- 5.7	SL		22	17	6.5	4.9- 7.5	SL		8.5	
H 7 20 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	1	1	2.4		SL	0						0	0.3	0.0
LIMANDA FERRUGINEA							3						1.0	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
J 1 21 05	SAMPLING DEPTH 0- 6M													
TAUTOGA ONITIS	1	1	3.1		TL								0.1	
SCOMBER SCOMBRUS						5							0.0	0.6
SCOPHTHALMUS AQUOSUS	9	8	4.0	2.7- 6.2	SL								1.1	
LIMANDA FERRUGINEA	1												0.1	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE UNIDENTIFIED													
J 2 21 05	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	1	1	25.0		TL								0.1	
SCOMBER SCOMBRUS						21							0.0	2.5
SCOPHTHALMUS AQUOSUS	41	40	3.5	2.7- 5.5	SL								5.0	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
J 3 21 05	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	1	1	25.0		TL								0.1	
SCOMBER SCOMBRUS	4	4	3.6	3.2- 4.3	SL	15							0.5	1.8
SCOPHTHALMUS AQUOSUS	205	50	3.1	2.2- 4.8	SL								24.8	
LIMANDA FERRUGINEA	2	2	8.9	8.7- 9.1	SL								0.2	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													

CRUISE DATE 066 5 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
F 4 18 05	SAMPLING DEPTH 0-15M													
ENCHELYOPUS CIMBRIUS	2	2	4.0	3.6- 4.3	SL	0							0.6	0.0
SCOMBER SCOMBRUS						1528							0.0	463.0
LIPARIS INQUILINUS	1	1	10.4		TL								0.3	
SCOPHTHALMUS AQUOSUS	1	1	3.7		SL								0.3	
LIMANDA FERRUGINEA	32	31	6.0	4.4- 8.7	SL								9.7	
PSEUDOPLEURONECTES AMERICANUS	3	3	7.8	7.5- 8.2	SL								0.9	
ADDITIONAL LARVAE CAUGHT LABRIDAE OR SCARIDAE														
F 5 18 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	5	5	5.6	2.5-15.4	SL	5	4	4	3.5	2.8- 4.6	SL	0	2.8	1.7
SCOMBER SCOMBRUS						47						16	0.0	19.4
LIPARIS INQUILINUS	7	3	7.2	6.3- 9.0	TL		2	2	5.3	5.3- 5.3	TL		2.8	
GLYPTOCEPHALUS CYNOGLOSSUS	3	3	5.8	5.2- 6.7	SL		4	3	6.0	4.7- 8.2	SL		2.2	
LIMANDA FERRUGINEA	356	25	5.9	2.9-10.2	SL		150	25	6.0	3.7- 5.6	SL		156.8	
PSEUDOPLEURONECTES AMERICANUS							1	1	8.7		SL		0.3	
F 6 18 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	1	1	2.4		SL	0						0	0.3	0.0
GADUS MORHUA						0	1	1	10.4		SL	0	0.3	0.0
SCOMBER SCOMBRUS						7						4	0.0	3.4
LIPARIS INQUILINUS	3	3	7.1	6.5- 7.8	TL		2	2	5.9	5.9- 6.0	TL		1.6	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	5.7		SL		5	4	7.2	6.7- 8.0	SL		2.0	
LIMANDA FERRUGINEA	513	25	4.9	3.5- 8.3	SL		326	25	5.9	4.2- 8.4	SL		262.5	
ADDITIONAL LARVAE CAUGHT							BLENNIIDAE							
F 7 19 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS						1						0	0.0	0.3
SCOMBER SCOMBRUS						2						1	0.0	0.9
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	8.5		SL		1	1	7.4		SL		0.6	
LIMANDA FERRUGINEA	58	25	7.3	5.2-10.2	SL		49	25	6.9	5.5- 8.9	SL		33.7	
G 1 19 05	SAMPLING DEPTH 0- 6M													
SCOMBER SCOMBRUS						1212							0.0	146.9
SCOPHTHALMUS AQUOSUS	41	40	2.9	2.2- 5.1	SL								5.0	
PSEUDOPLEURONECTES AMERICANUS	3	3	7.6	5.8- 8.7	SL								0.4	
G 2 19 05	SAMPLING DEPTH 0- 6M													
TAUTOGA ONITIS	22	3	2.3	2.1- 2.6	TL								2.7	
SCOMBER SCOMBRUS						1029							0.0	124.7
SCOPHTHALMUS AQUOSUS	58	53	2.9	2.3- 4.2	SL								7.0	
PSEUDOPLEURONECTES AMERICANUS	4	4	7.7	7.4- 7.9	SL								0.5	
G 3 19 05	SAMPLING DEPTH 0-15M													
ENCHELYOPUS CIMBRIUS	1	1	3.9		SL	1							0.3	0.3
TAUTOGA ONITIS	18	1	2.5		TL								5.5	
SCOMBER SCOMBRUS						517							0.0	156.7
SCOPHTHALMUS AQUOSUS	30	25	2.9	2.5- 4.6	SL								9.1	
GLYPTOCEPHALUS CYNOGLOSSUS	1												0.3	
LIMANDA FERRUGINEA	3	1	3.2		SL								0.9	
PSEUDOPLEURONECTES AMERICANUS	12	12	8.3	7.7- 9.1	SL								3.6	
ADDITIONAL LARVAE CAUGHT BLENNIIDAE UNIDENTIFIED														
G 4 19 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS						0						2	0.0	0.7
SCOMBER SCOMBRUS						88						32	0.0	37.1
SCOPHTHALMUS AQUOSUS							1	1	3.5		SL		0.3	
GLYPTOCEPHALUS CYNOGLOSSUS	2	2	5.2	4.9- 5.5	SL		3	3	6.4	6.2- 6.7	SL		1.6	
LIMANDA FERRUGINEA	87	25	4.0	2.7- 5.8	SL		191	25	4.4	3.3- 5.6	SL		89.8	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
G 5 19 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	2	2	3.5	3.5- 3.5	SL	1	1	1	3.7		SL	0	0.9	0.3
SCOMBER SCOMBRUS						1						0	0.0	0.3
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	5.4		SL								0.3	
LIMANDA FERRUGINEA	178	25	4.3	3.1- 5.3	SL		288	25	5.0	2.9- 6.2	SL		149.4	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
G 6 19 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
SCOMBER SCOMBRUS						0						2	0.0	0.7
LIMANDA FERRUGINEA	10	7	6.6	5.7- 7.3	SL		4	3	7.1	6.5- 7.7	SL		4.3	

CRUISE DATE C66 5 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE		NO. MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE		NO. MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
J 4 20 05	SAMPLING DEPTH C-15M															
SCOMBER SCOMBRUS	9	9	4.6	3.4- 6.8	SL		79								2.7	23.9
SCOPHTHALMUS AQUOSUS	72	63	3.4	2.7- 6.2	SL										21.8	
GLYPTOCEPHALUS CYNOGLOSSUS	2	2	12.4	12.2-12.5	SL										0.6	
LIMANDA FERRUGINEA	61	25	8.0	5.4- 9.7	SL										18.5	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED																
J 5 20 05	SAMPLING DEPTH 0-15M															
ENCHELYOPUS CIMBRIUS	1	1	3.7		SL		0								0.3	0.0
SCOMBER SCOMBRUS	5	5	3.3	3.1- 3.6	SL		5								1.5	1.5
SCOPHTHALMUS AQUOSUS	22	21	3.2	2.7- 5.0	SL										6.7	
LIMANDA FERRUGINEA	188	25	7.9	5.6-12.4	SL										57.0	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED																
J 6 20 05	SAMPLING DEPTH 0-15M							SAMPLING DEPTH 18-33M								
ENCHELYOPUS CIMBRIUS	1	1	4.1		SL		0							0	0.3	0.0
SCOMBER SCOMBRUS							4							5	0.0	2.9
LIMANDA FERRUGINEA	10	9	5.6	3.7- 7.8	SL			26	25	5.2	3.9- 7.4	SL			11.7	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED								UNIDENTIFIED								
J 7 20 05	SAMPLING DEPTH 0-15M							SAMPLING DEPTH 18-33M								
SCOMBER SCOMBRUS							4							1	0.0	1.5
SCOPHTHALMUS AQUOSUS								2	2	3.1	2.9- 3.3	SL			0.7	
LIMANDA FERRUGINEA	35	25	6.3	4.3-10.2	SL			52	25	6.1	4.8- 8.9	SL			27.8	
ADDITIONAL LARVAE CAUGHT								UNIDENTIFIED								
K 1 21 05	SAMPLING DEPTH 0- 6M															
BREVOORTIA TYRANNUS	1	1	26.0		TL										0.1	
LEIOSTOMUS XANTHURUS	2	2	13.1	12.1-14.2	SL										0.2	
SCOMBER SCOMBRUS	9	9	4.4	3.9- 5.4	SL		1								1.1	0.1
SCOPHTHALMUS AQUOSUS	35	28	3.6	2.6- 5.8	SL										4.2	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED																
K 2 21 05	SAMPLING DEPTH 0- 6M															
LOPHIUS AMERICANUS	1	1	5.2		TL										0.1	
TAUTOGA ONITIS	8	7	2.8	2.7- 3.1	TL										1.0	
SCOMBER SCOMBRUS	295	60	3.9	2.5- 7.7	SL		0								35.8	0.0
PARALICHTHYS DENTATUS	1	1	9.5		SL		0								0.1	0.0
SCOPHTHALMUS AQUOSUS	109	50	3.3	2.5- 4.7	SL										13.2	
LIMANDA FERRUGINEA	2	2	9.0	8.0-10.0	SL										0.2	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED																
K 3 21 05	SAMPLING DEPTH 0-15M															
TAUTOGA ONITIS	2														0.6	
SCOMBER SCOMBRUS	218	57	4.3	2.8- 8.1	SL		0								66.1	0.0
CITHARICHTHYS ARCUIFRONS	1	1	3.1		SL										0.3	
SCOPHTHALMUS AQUOSUS	34	20	4.2	2.8- 6.1	SL										10.3	
GLYPTOCEPHALUS CYNOGLOSSUS	5	5	14.6	11.9-17.6	SL										1.5	
LIMANDA FERRUGINEA	13	13	8.4	6.7-10.7	SL										3.9	
ADDITIONAL LARVAE CAUGHT LABRIDAE OR SCARIDAE UNIDENTIFIED																
K 4 22 05	SAMPLING DEPTH 0-15M							SAMPLING DEPTH 18-24M								
LOPHIUS AMERICANUS	2	2	4.2	3.5- 4.9	TL										0.6	
ENCHELYOPUS CIMBRIUS							0	1	1	4.6		SL		0	0.2	0.0
SCOMBER SCOMBRUS	119	46	3.4	2.5- 5.5	SL		0	11	7	3.9	3.1- 4.9	SL		0	38.5	0.0
SCOPHTHALMUS AQUOSUS	2	1	2.8		SL			1	1	5.6		SL			0.8	
GLYPTOCEPHALUS CYNOGLOSSUS	3	2	10.2	9.6-10.7	SL			1	1	5.0		SL			1.1	
LIMANDA FERRUGINEA	36	25	7.2	5.3- 9.2	SL			55	25	7.1	4.5-10.5	SL			19.9	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED																
K 5 22 05	SAMPLING DEPTH 0-15M							SAMPLING DEPTH 18-24M								
LOPHIUS AMERICANUS	1	1	3.3		TL			4	4	4.0	3.5- 5.2	TL			1.0	
MERLUCCIUS BILINEARIS	1	1	2.5		NL		0							0	0.3	0.0
SCOMBER SCOMBRUS	118	52	3.1	2.5- 5.1	SL		0	53	38	3.2	2.5- 5.4	SL		0	44.8	0.0
SCOPHTHALMUS AQUOSUS	2														0.6	
LIMANDA FERRUGINEA	27	24	5.7	4.7- 9.1	SL			13	10	5.2	4.6- 6.8	SL			10.4	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED								UNIDENTIFIED								
K 6 22 05	SAMPLING DEPTH 0-15M							SAMPLING DEPTH 18-33M								
ENCHELYOPUS CIMBRIUS	1	1	2.9		SL		0							0	0.3	0.0
UROPHYCIS SP.								5	5	3.4	2.8- 3.9	NL			1.7	
SCOMBER SCOMBRUS							0	3	3	4.0	3.8- 4.2	SL		0	1.0	0.0
GLYPTOCEPHALUS CYNOGLOSSUS								4	2	6.1	5.4- 6.7	SL			1.3	
LIMANDA FERRUGINEA	20	17	5.9	4.5- 8.0	SL			88	25	7.0	4.2-13.2	SL			35.3	
ADDITIONAL LARVAE CAUGHT								UNIDENTIFIED								

CRUISE DATE D66 5 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	NO. PER 10M^2 LARVAE	 EGGS
K 7 22 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
MYCTOPHIDAE						1	1	3.8		SL	0.3	
BENTHOSCHA SP.						1	1	6.8		SL	0.3	
ENCHELYOPUS CIMBRIUS	1	1	2.6		SL	0				0	0.3	0.0
SCOMBER SCOMBRUS						1				1	0.0	0.6
LIMANDA FERRUGINEA	2	2	6.9	6.7- 7.0	SL	7	6	6.6	6.0- 7.3	SL	2.9	
L 1 22 05	SAMPLING DEPTH 0- 6M											
ETRUMEUS SADINA	2	2	35.3	17.8-52.8	TL						0.2	
URCHYCIS SP.	1	1	56.6		NL						0.1	
LEIOSTOMUS XANTHURUS	1	1	8.3		SL						0.1	
SCOMBER SCOMBRUS	3	3	3.7	3.0- 4.2	SL	0					0.4	0.0
SCOPHTHALMUS AQUOSUS	7	5	3.2	2.9- 3.7	SL						0.8	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE											
L 2 23 05	SAMPLING DEPTH 0- 6M											
ETRUMEUS SADINA	1	1	26.0		TL						0.1	
TAUTOGA ONITIS	4	4	3.0	2.4- 3.4	TL						0.5	
SCOMBER SCOMBRUS	93	82	3.8	2.6- 5.6	SL	0					11.3	0.0
PEPRILUS TRIACANTHUS	4	4	6.1	3.8- 8.0	SL						0.5	
SCOPHTHALMUS AQUOSUS	21	20	3.7	2.4- 5.6	SL						2.5	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE ATHERINIDAE SYNGNATHIDAE SPARIDAE UNIDENTIFIED											
L 3 23 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ETRUMEUS SADINA						1	1	25.5		TL	0.3	
ENCHELYOPUS CIMBRIUS					0	1	1	5.9		SL	0	0.3	0.0
GADUS MORHUA	1	1	3.3		SL	0				0	0.3	0.0
TAUTOGA ONITIS	4	4	3.6	3.4- 4.0	TL	6	5	3.7	3.6- 4.0	TL	3.2	
SCOMBER SCOMBRUS	115	52	4.0	2.8- 5.5	SL	0 158	56	3.9	2.7- 7.3	SL	0 87.2	0.0
PEPRILUS TRIACANTHUS	1	1	5.2		SL	7	7	7.1	5.0-11.4	SL	2.6	
PARALICHTHYS DENTATUS					0	3	3	11.5	11.1-12.3	SL	0 1.0	0.0
SCOPHTHALMUS AQUOSUS	36	35	4.2	2.9- 5.7	SL	32	29	4.5	2.8- 6.2	SL	21.5	
GLYPTOCEPHALUS CYNOGLOSSUS						2	2	12.8	10.9-14.6	SL	0.7	
LIMANDA FERRUGINEA	2	2	10.2	9.6-10.7	SL	2	2	9.0	9.0- 9.0	SL	1.3	
ADDITIONAL LARVAE CAUGHT						CONGRIDAE						
L 4 22 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ETRUMEUS SADINA						2	2	18.6	18.2-19.1	TL	0.7	
LOPHIUS AMERICANUS	3	3	4.4	4.2- 4.6	TL	3	3	4.6	4.6- 4.7	TL	1.9	
SCOMBER SCOMBRUS	241	61	3.6	2.6- 6.8	SL	0 33	30	3.6	2.6- 7.2	SL	0 83.3	0.0
PEPRILUS TRIACANTHUS	15	15	5.9	3.4- 9.9	SL	25	25	5.3	2.3- 9.2	SL	12.8	
PARALICHTHYS DENTATUS	1	1	6.4		SL	0 2	2	9.0	8.8- 9.3	SL	0 1.0	0.0
HIPPOGLOSSINA OBLONGUS	1	1	2.8		SL						0.3	
SCOPHTHALMUS AQUOSUS	61	54	3.6	2.4- 5.7	SL	84	50	4.1	2.8- 6.2	SL	46.3	
GLYPTOCEPHALUS CYNOGLOSSUS	2	2	7.2	7.0- 7.4	SL	19	19	12.5	7.5-22.3	SL	6.9	
LIMANDA FERRUGINEA	3	3	9.4	7.0-12.0	SL	12	12	8.6	6.7-10.2	SL	4.9	
ADDITIONAL LARVAE CAUGHT	SPARIDAE UNIDENTIFIED					SYNODONTIDAE SPARIDAE UNIDENTIFIED						
L 5 22 05	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LOPHIUS AMERICANUS	1	1	4.3		TL						0.3	
ENCHELYOPUS CIMBRIUS					0	7	7	2.9	2.3- 3.4	SL	0 2.3	0.0
SCOMBER SCOMBRUS	3	3	3.9	3.2- 4.4	SL	0					0 1.0	0.0
PEPRILUS TRIACANTHUS						1	1	6.8		SL	0.3	
CITHARICHTHYS ARCTIFRONS						1	1	8.7		SL	0.3	
SCOPHTHALMUS AQUOSUS	9	9	4.1	2.7- 5.4	SL	10	9	4.5	3.1- 5.8	SL	6.0	
GLYPTOCEPHALUS CYNOGLOSSUS						5	4	10.3	7.5-12.3	SL	1.7	
LIMANDA FERRUGINEA	45	25	6.6	4.2-10.9	SL	286	25	6.6	4.3-10.1	SL	108.8	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED					UNIDENTIFIED						
N 1 23 05	SAMPLING DEPTH 0- 6M											
PEPRILUS TRIACANTHUS	2	2	3.1	2.6- 3.6	SL						0.2	
ADDITIONAL LARVAE CAUGHT	SPARIDAE											
N 2 23 05	SAMPLING DEPTH 0- 6M											
PRICNOTUS CAROLINUS	6	6	2.5	2.0- 3.4	SL						0.7	
ADDITIONAL LARVAE CAUGHT	SPARIDAE UNIDENTIFIED											

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	********** LARVAE **********						********** LARVAE **********							
	NUMBER		LENGTHS (MM)			NO.	NUMBER		LENGTHS (MM)			NO.	NO. PER LOP	
	TOTAL	MEAS.	MEAN	RANGE	MEAS.	EGGS	TOTAL	MEAS.	MEAN	RANGE	MEAS.	EGGS	LARVAE	EGGS
M 3 23 05	SAMPLING DEPTH 0- 6M													
SARDINELLA ANCHOVIA	3	3	12.5	10.5-14.8	TL								0.4	
ANCHOA HEPSETUS	4	4	9.2	7.0-12.0	TL								0.5	
MYCTOPHIDAE	1	1	5.2		SL								0.1	
CERATOSCOPELUS MADEFENSIS	1	1	6.1		SL								0.1	
UROPHYCIS SP.	3	3	3.6	3.1- 4.2	NL								0.4	
LARIMUS FASCIATUS	2	2	3.5	3.4- 3.7	SL								0.2	
PEPRILUS TRIACANTHUS	18	18	4.7	2.3- 9.8	SL								2.2	
PRIONOTUS CAROLINUS	4	4	5.5	5.2- 6.3	SL								0.5	
CITHARICHTHYS ARCTIFRONS	1	1	10.2		SL								0.1	
ETROPUS MICROSTOMUS	3	3	4.2	3.5- 4.9	SL								0.4	
SYACIUM PAPILLOSUM	3	3	4.4	3.2- 6.9	SL								0.4	
SYMPHURUS SP.	6	6	5.6	3.2- 7.7	SL								0.7	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE													
	OPHIDIIDAE													
	SERRANIDAE													
	CORYPHAENIDAE													
	SPARIDAE													
	LABRIDAE OR SCARIDAE													
	MUGILIDAE													
	GOBIIDAE													
	ACANTHURIDAE													
	STROMATEIDAE													
	SCORPAENIDAE													
	TRIGLIDAE													
	BALISTIDAE													
	UNIDENTIFIED													

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M 4 23 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
OPHICHTHUS SP.	1	1	58.5		TL								0.3	
ANCHOA HEPSETUS							25	25	9.3	5.0-14.7	TL		4.0	
ENGRAULIS EURYSTOLE	42	42	2.8	1.1-17.3	TL								13.6	
MYCTOPHIDAE	3	3	5.3	4.8- 6.0	SL		1	1	5.6		SL		1.1	
CERATOSCOPELUS MADEFENSIS	1	1	5.6		SL								0.3	
CERATOSCOPELUS WARMINGI							1	1	5.9		SL		0.2	
HYGOPHUM BENOITI OR HYGONI	1	1	4.8		SL								0.3	
HYGOPHUM TANNINGI							1	1	5.6		SL		0.2	
LAMPANYCTUS SP.	1	1	4.0		SL		1	1	4.8		SL		0.5	
LAMPANYCTUS ATER	1	1	5.1		SL		1	1	6.7		SL		0.5	
MYCTOPHUM SP.							2	2	4.7	4.4- 5.1	SL		0.3	
PERMATOMUS SALTATRIX	1	1	5.1		SL		1	1	7.5		SL		0.5	
LARIMUS FASCIATUS	3	3	3.9	3.5- 4.5	SL								1.0	
AUXIS SP.	8	8	5.6	4.2- 7.5	SL		5	5	5.4	4.5- 6.6	SL		3.3	
EUTHYNNUS ALLETTERATUS	1	1	6.1		SL								0.3	
SARDA SARDA						6						3	0.0	2.3
SCOMBER JAPONICUS	2	2	5.6	5.5- 5.8	SL	0						0	0.6	0.0
SCOMBEROMORUS CAVALLA	1	1	7.5		SL		2	2	6.6	6.3- 6.9	SL		0.6	
PEPRILUS TRIACANTHUS	41	41	4.0	1.7- 9.8	SL		27	27	3.9	2.5- 6.5	SL		17.0	
ANCHUS OCELLATUS	3	3	3.6	3.2- 3.9	SL		5	4	6.8	4.1-14.3	SL		1.7	
CYCLOPSETTA FIMBRIATA	2	2	6.0	5.0- 6.9	SL		1	1	4.0		SL		0.8	
SYACIUM PAPILLOSUM	25	24	4.3	2.1- 6.2	SL		15	15	5.0	4.1- 6.1	SL		10.8	
SYMPHURUS SP.	38	38	5.4	3.1-13.6	SL		31	31	5.6	3.2-10.7	SL		16.7	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE						MURAENIDAE							
	OPHICHTHIDAE						OPHICHTHIDAE							
	CYCLOTHONE SP.						SYNODONTIDAE							
	SYNODONTIDAE						LOPHIIFORMES							
	LOPHIIFORMES						OPHIDIIDAE							
	BREGMACEROTIDAE						SERRANIDAE							
	OPHIDIIDAE						APOGONIDAE							
	SERRANIDAE						CARANGIDAE							
	APOGONIDAE						SPARIDAE							
	CARANGIDAE						LABRIDAE OR SCARIDAE							
	CORYPHAENIDAE						SPHYRAENIDAE							
	SPARIDAE						BLENNIIDAE							
	LABRIDAE OR SCARIDAE						GOBIIDAE							
	MUGILIDAE						ACANTHURIDAE							
	BLENNIIDAE						TRICHIURIDAE							
	CALLIONYMIDAE						STROMATEIDAE							
	GOBIIDAE						SCORPAENIDAE							
	STROMATEIDAE						TRIGLIDAE							
	SCORPAENIDAE						BALISTIDAE							
	TRIGLIDAE						TETRADONTIDAE							
	BALISTIDAE						UNIDENTIFIED							
	UNIDENTIFIED													

CRUISE DATE C66 5 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
N 5 23 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ANCHOA HEPSETUS	81	41	12.3	8.3-15.3	TL		9	9	11.9	9.6-17.4	TL		27.3	
MYCTOPHIDAE	2	2	4.9	4.3- 5.6	SL		1	1	3.8		SL		0.9	
CERATOSCOPELUS MADERENSIS							1	1	5.6		SL		0.3	
DIAPHUS SP.							1	1	10.4		SL		0.3	
UROPHYCIS SP.							1	1	3.9		NL		0.3	
HEMIMYTHIAS VIVANUS	1	1	4.5		SL		7	7	4.5	3.5- 5.4	SL		2.6	
PERATOMUS SALTATRIX	17	17	7.7	5.1- 9.1	SL								5.7	
AUXIS SP.	6	6	6.1	5.0- 7.4	SL		10	10	5.6	4.4- 6.5	SL		5.1	
SARDA SARDA						0	1	1	6.5		SL	0	0.3	0.0
PEPRILUS TRIACANTHUS	14	14	4.7	2.6- 6.9	SL		6	6	5.0	2.7- 7.6	SL		6.2	
BOTHUS OCELLATUS	3	3	3.8	3.3- 4.7	SL		21	21	4.5	3.3- 8.7	SL		7.9	
CYCLOPSETTA FIMBRIATA	2	2	4.9	3.5- 6.2	SL		1	1	5.5		SL		0.9	
SYACIUM PAPILLOSUM	10	10	3.8	2.9- 4.5	SL		32	32	3.8	2.9- 5.5	SL		13.7	
SYMPHURUS SP.	21	18	6.2	3.6-10.0	SL		22	20	5.4	3.4- 8.7	SL		13.6	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE						SYNODONTIDAE							
	OPHIDIIDAE						LOPHIIFORMES							
	EXOCOETIDAE						OPHIDIIDAE							
	HOLOCENTRIDAE						HOLOCENTRIDAE							
	SERRANIDAE						SERRANIDAE							
	CARANGIDAE						APOGONIDAE							
	SPARIDAE						CARANGIDAE							
	LABRIDAE OR SCARIDAE						SPARIDAE							
	MUGILIDAE						LABRIDAE OR SCARIDAE							
	SPHYRAENIDAE						SPHYRAENIDAE							
	GOBIIDAE						GOBIIDAE							
	SCORPAENIDAE						ACANTHURIDAE							
	BALISTIDAE						STROMATEIDAE							
	UNIDENTIFIED						SCORPAENIDAE							
							TRIGLIDAE							
							BALISTIDAE							
							UNIDENTIFIED							
N 1 24 05	SAMPLING DEPTH 0-15M													
SARDINELLA ANCHOVIA	6	5	15.7	12.9-18.6	TL								1.8	
ENGRAULIS EURYSTOLE	6	6	10.1	6.0-14.0	TL								1.8	
SYMPHURUS SP.	6	5	10.4	5.2-13.2	SL								1.8	
ADDITIONAL LARVAE CAUGHT	CARANGIDAE													
	SPARIDAE													
	LABRIDAE OR SCARIDAE													
	BALISTIDAE													
	UNIDENTIFIED													
N 2 24 05	SAMPLING DEPTH 0-15M													
SARDINELLA ANCHOVIA	2	2	16.3	15.0-17.6	TL								0.6	
ANCHOA HEPSETUS	9	9	13.9	9.4-17.4	TL								2.7	
ENGRAULIS EURYSTOLE	1	1	23.0		TL								0.3	
LARIMUS FASCIATUS	1	1	4.7		SL								0.3	
PEPRILUS TRIACANTHUS	2	2	4.8	4.7- 5.0	SL								0.6	
SYMPHURUS SP.	4	4	9.2	6.0-11.8	SL								1.2	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE													
	BREGMACEROTICAE													
	OPHIDIIDAE													
	LABRIDAE OR SCARIDAE													
	GOBIIDAE													
	BALISTIDAE													
	UNIDENTIFIED													

CRUISE DATE C66 5 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
N 3 24 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
SARDINELLA ANCHOVIA	4	4	17.5	11.0-23.5	TL		2	2	15.0	15.0-15.0	TL		1.6	
ANCHOA HEPSETUS	20	20	10.9	7.4-16.0	TL		107	51	10.0	4.0-19.1	TL		23.4	
ENGRAULIS EURYSTOLE	3	3	11.0	8.1-12.8	TL								1.0	
MYCTOPHIDAE							1	1	3.8		SL		0.2	
CERATOSCOPELUS SP.							4	4	4.6	3.9- 5.3	SL		0.6	
CERATOSCOPELUS MADERENSIS							1	1	12.3		SL		0.2	
PERATOMUS SALTATRIX							1	1	5.0		SL		0.2	
SARDA SARDA						2						1	0.0	0.8
PEPRILUS TRIACANTHUS	19	19	4.4	2.8-11.7	SL		52	52	3.7	1.9-11.5	SL		14.3	
PRIONOTUS CAROLINUS							2	2	6.8	5.9- 7.7	SL		0.3	
CITHARICHTHYS ARCTIFRONS							1	1	8.5		SL		0.2	
CYCLOPSETTA FIMBRIATA	1	1	7.0		SL								0.3	
ETROPUS MICROSTOMUS							9	9	6.5	2.9- 8.8	SL		1.5	
SYACIUM PAPILLOSUM							2	2	5.6	7.3-11.8	SL		0.3	
SYMPHURUS SP.	9	9	8.6	5.3-14.3	SL		21	20	8.9	4.2-15.2	SL		6.2	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE						OPHICHTHIDAE							
	LOPHIIFORMES						SYNODONTIDAE							
	BREGMACEROTIDAE						PARALEPIDIDAE							
	OPHIDIIDAE						LOPHIIFORMES							
	SERRANIDAE						BREGMACEROTIDAE							
	CARANGIDAE						OPHIDIIDAE							
	SPARIDAE						SERRANIDAE							
	LABRIDAE OR SCARIDAE						CARANGIDAE							
	GOBIIDAE						SPARIDAE							
	STROMATEIDAE						LABRIDAE OR SCARIDAE							
	TRIGLIDAE						MUGILIDAE							
	BALISTIDAE						GOBIIDAE							
	UNIDENTIFIED						TRICHIURIDAE							
							STROMATEIDAE							
							SCORPAENIDAE							
							TRIGLIDAE							
							BALISTIDAE							
							TETRAODONTIDAE							
							UNIDENTIFIED							

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SPECIES ANALYZED	LARVAE NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	LARVAE NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
OPHICHTHUS GOMESI							1	1	21.0		TL		0.3	
SARDINELLA ANCHOVIA	4	4	6.3	5.4- 7.4	TL		1	1	10.2		TL		1.5	
ANCHOA HEPSETUS							33	33	10.6	6.8-14.6	TL		11.0	
ENGRAULIS EURYSTOLE							9	9	5.4	6.5-12.2	TL		3.0	
CERATOSCOPELUS MADERENSIS	2	2	8.7	7.8- 9.7	SL		1	1	8.9		SL		0.9	
CERATOSCOPELUS WARMINGI	6	6	6.8	5.2-10.4	SL		1	1	5.2		SL		2.1	
DIAPHUS SP.	2	2	4.2	3.5- 4.9	SL		5	5	6.2	3.9- 7.5	SL		2.3	
HYGOPHUM BENOITI							1	1	4.5		SL		0.3	
LAMPANYCTUS ALATUS OR PHOTONOTUS							2	2	4.2	3.5- 4.9	SL		0.7	
LAMPANYCTUS ATER							1	1	5.8		SL		0.3	
MYCTOPHUM AFFINE							2	2	4.8	4.3- 5.3	SL		0.7	
NOTOSCOPELUS RESPLENDENS							1	1	8.2		SL		0.3	
UROPHYCIS SP.							4	2	2.5	2.2- 2.8	NL		1.3	
HEMANTHIAS VIVANUS							1	1	4.8		SL		0.3	
PEMATOMUS SALTATRIX	1	1	5.1		SL								0.3	
LARIMUS FASCIATUS	1	1	3.9		SL								0.3	
AUXIS SP.	13	13	5.5	5.0- 7.6	SL		15	15	6.7	4.6- 9.5	SL		8.9	
ELTHYNNUS ALLETTERATUS	1	1	6.7		SL		1	1	8.5		SL		0.6	
SARDA SARDA						9						9	0.0	5.7
PERRILUS TRIACANTHUS	4	4	3.9	3.4- 4.5	SL		15	15	3.6	1.8- 4.9	SL		6.2	
ACTHUS OCELLATUS	92	25	4.3	2.7- 6.7	SL		123	25	4.7	3.1- 6.7	SL		68.6	
CYCLOPSETTA FIMBRIATA	2	2	4.1	4.0- 4.2	SL		2	2	5.5	4.2- 6.7	SL		1.3	
SYACIUM PAPILLOSUM	94	25	3.8	2.5- 5.4	SL		106	25	3.9	2.6- 6.5	SL		63.5	
SYMPHURUS SP.	24	24	5.6	3.1-11.5	SL		97	93	5.7	3.2-14.2	SL		29.5	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE						MURAENIDAE							
	CYCLOTHONE SP.						CYCLOTHONE SP.							
	SYNODONTIDAE						MAUROLICUS SP.							
	LOPHIIFORMES						SYNODONTIDAE							
	OPHIDIIDAE						PARALEPIDIDAE							
	CARAPIDAE						SUDIS SP.							
	HOLOCENTRIDAE						LOPHIIFORMES							
	CAPROIDAE						BREGMACEROTIDAE							
	FISTULARIIDAE						OPHIDIIDAE							
	SERRANIDAE						SERRANIDAE							
	APOGONIDAE						APOGONIDAE							
	CARANGIDAE						MALACANTHUS SP.							
	CORYPHAENIDAE						CARANGIDAE							
	SPARIDAE.						CORYPHAENIDAE							
	POMACENTRIDAE						SPARIDAE							
	LABRIDAE OR SCARIDAE						POMACENTRIDAE							
	BLENNIIDAE						LABRIDAE OR SCARIDAE							
	CALLIONYMIDAE						MUGILIDAE							
	GOBIIDAE						SPHYRAENIDAE							
	TRICHIURIDAE						CALLIONYMIDAE							
	STROMATEIDAE						GOBIIDAE							
	SCORPAENIDAE						ACANTHURIDAE							
	TRIGLIDAE						TRICHIURIDAE							
	DACTYLOPTERUS VOLITANS						STROMATEIDAE							
	BALISTIDAE						SCORPAENIDAE							
	UNIDENTIFIED						TRIGLIDAE							
							DACTYLOPTERUS VOLITANS							
							BALISTIDAE							
							TETRAODONTIDAE							
							UNIDENTIFIED							

CRUISE DATE C66 5 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M^2 LARVAE	EGGS
N 5 25 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 15-33M							
MEGALOPS ATLANTICA	4	4	7.0	6.5- 7.5	NL		2	2	9.2	8.6- 9.9	NL		1.9	
OPHICHTHUS OCELLATUS							1	1	43.5		TL		0.3	
SARDINELLA ANCHOVIA	5	5	10.2	8.5-12.6	TL		5	5	12.2	10.6-13.6	TL		3.2	
ANCHOA HEPSETUS	22	22	10.0	6.1-17.0	TL		23	23	10.7	6.1-17.5	TL		14.3	
CERATOSCOPELUS SP.	1	1	4.7		SL								0.3	
CERATOSCOPELUS MADERENSIS	2	2	4.8	4.0- 5.6	SL		3	2	6.4	6.4- 6.5	SL		1.6	
CERATOSCOPELUS WARMINGI	8	8	4.9	2.7- 8.9	SL		3	3	4.8	4.3- 5.7	SL		3.4	
DIAPHUS SP.	2	2	4.2	3.9- 4.5	SL		2	2	5.4	4.5- 6.4	SL		1.3	
LAMPANYCTUS SP.	2	2	5.3	5.0- 5.6	SL								0.7	
LAMPANYCTUS ALATUS OR PHOTONOTUS							1						0.3	
LAMPANYCTUS ATER							1	1	6.5		SL		0.3	
HEMANTHIAS VIVANUS	1	1	3.6		SL								0.3	
AUXIS SP.	106	105	6.7	3.8-10.1	SL		169	169	7.1	3.5-10.9	SL		58.1	
EUTHYNNUS ALLETTERATUS	2	2	5.3	4.5- 6.1	SL		2	2	7.6	6.3- 8.9	SL		1.3	
KATSUWONUS PELAMIS							2	2	6.2	6.2- 6.3	SL		0.7	
SARDA SARDA						1						0	0.0	0.3
SCOMBEROMORUS CAVALLA	3	3	5.3	3.9- 7.3	SL		7	7	5.7	4.0- 6.8	SL		3.2	
THUNNUS ALBACARES OR ALALUNGA	1	1	5.3		SL								0.3	
PERCILUS TRIACANTHUS							21	21	4.6	2.0-11.7	SL		7.0	
PRIONOTUS CAROLINUS							2	2	3.8	3.7- 4.0	SL		0.7	
ETRUMEUS OCELLATUS	31	31	5.6	3.1-11.2	SL		52	25	5.0	2.1-15.5	SL		16.6	
SYACIUM PAPILLOSUM	19	19	4.3	3.2- 7.0	SL		27	27	4.4	2.5- 5.7	SL		14.7	
SYNODUS SP.	4	4	4.4	4.0- 5.0	SL		1	1	3.7		SL		1.5	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE						ANGUILLIFORMES							
	OPHICHTHIDAE						MURAENIDAE							
	CYCLOTHONE SP.						OPHICHTHIDAE							
	VINCIGUERRIA SP.						SYNODONTIDAE							
	SYNODONTIDAE						PARALEPIDIDAE							
	PARALEPIDIDAE						LOPHIIFORMES							
	LOPHIIFORMES						BREGMACEROTIDAE							
	OPHIDIIDAE						OPHIDIIDAE							
	SERRANIDAE						CARAPIDAE							
	GRAMMISTIDAE						HOLOCENTRIDAE							
	APOGONIDAE						SERRANIDAE							
	MALACANTHUS SP.						GRAMMISTIDAE							
	CARANGIDAE						PRIACANTHIDAE							
	SPARIDAE						APOGONIDAE							
	CHAETODONTIDAE						CARANGIDAE							
	POMACENTRIDAE						CORYPHAENIDAE							
	LABRIDAE OR SCARIDAE						POMACENTRIDAE							
	CALLIONYMIDAE						LABRIDAE OR SCARIDAE							
	GOBIIDAE						MUGILIDAE							
	ACANTHURIDAE						CALLIONYMIDAE							
	ISTIOPHORIDAE						GOBIIDAE							
	SCORPAENIDAE						ISTIOPHORIDAE							
	TRIGLIDAE						STROMATEIDAE							
	BALISTIDAE						SCORPAENIDAE							
	TETRAODONTIDAE						TRIGLIDAE							
	UNIDENTIFIED						DACTYLOPTERUS VOLITANS							
							BALISTIDAE							
							TETRAODONTIDAE							
P 1 24 05	SAMPLING DEPTH 0- 6M													
ANCHOA HEPSETUS	102	17	3.6	2.3- 4.2	TL								12.4	
ETRUMEUS MICROSTOMUS	1	1	2.7		SL								0.1	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
	BLENNIIDAE													
	UNIDENTIFIED													
P 2 24 05	SAMPLING DEPTH 0- 6M													
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													

CRUISE DATE C66 5 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
P 3 24 05	SAMPLING DEPTH 0- 6M													
ANCHOA HEPSETUS	3	3	16.6	14.6-18.6	TL								0.4	
MYCTOPHIDAE	6	6	4.0	3.3- 4.3	SL								0.7	
CERATOSCOPELUS SP.	9	5	4.3	3.4- 5.6	SL								1.1	
PCMATOMUS SALTATRIX	4	4	3.5	3.4- 3.9	SL								0.5	
AUXIS SP.	7	6	4.1	3.5- 4.8	SL								0.8	
ETROPUS MICROSTOMUS	3	3	2.5	2.2- 2.7	SL								0.4	
SYACIUM PAPILLOSUM	1												0.1	
ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP. LOPHIIFORMES SERRANIDAE APOGONIDAE CARANGIDAE CORYPHAENIDAE SPARIDAE MUGILIDAE SPHYRAENIDAE CALLIONYMIDAE GOBIIDAE GEMPYLIDAE SCORPAENIDAE BALISTIDAE UNIDENTIFIED													
P 4 24 05	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
OPHICHTHUS GOMESI							1	1	62.5		TL		0.2	
ANCHOA HEPSETUS	17	17	12.3	6.8-20.0	TL		16	16	9.6	3.9-16.8	TL		7.8	
LAMPANYCTUS CUPRINUS							1	1	7.4		SL		0.2	
NOTOLYCHNUS VALDIVAE							1	1	5.8		SL		0.2	
CYNOSCION SP.							1	1	2.9		SL		0.2	
PEPRILUS TRIACANTHUS	3	3	4.4	3.7- 5.1	SL		5	5	3.9	3.2- 4.6	SL		1.7	
BOTHUS OCELLATUS	1	1	3.6		SL		1	1	7.5		SL		0.5	
ETROPUS MICROSTOMUS							3	3	3.9	3.1- 5.4	SL		0.5	
SYACIUM PAPILLOSUM							1	1	6.1		SL		0.2	
SYNPHURUS SP.							1	1	4.0		SL		0.2	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE LOPHIIFORMES OPHIDIIDAE SERRANIDAE CARANGIDAE SPARIDAE BLENNIIDAE GOBIIDAE STROMATEIDAE TRIGLIDAE BALISTIDAE TETRAODONTIDAE UNIDENTIFIED						OPHICHTHIDAE SYNODONTIDAE LOPHIIFORMES BREGMACEROTIDAE OPHIDIIDAE SERRANIDAE CARANGIDAE SPARIDAE BLENNIIDAE CALLIONYMIDAE GOBIIDAE TRICHIURIDAE STROMATEIDAE TRIGLIDAE BALISTIDAE TETRAODONTIDAE UNIDENTIFIED							

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SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 15-33M							
AHLIA EGMONTIS	1	1	77.5		TL								0.3	
ANCHOA HEPSETUS							13	13	7.5	4.6-11.4	TL		4.3	
MYCTOPHIDAE	1						3	3	3.9	3.7- 4.3	SL		1.3	
CERATOSCOPELUS MADEFENSIS	2	2	6.4	5.3- 7.5	SL		9	9	7.2	4.4-11.9	SL		3.6	
CERATOSCOPELUS WARMINGI	5	5	6.5	5.5- 7.5	SL		15	15	4.5	3.4- 7.4	SL		6.5	
DIAPHUS SP.	6	6	5.6	4.1- 8.0	SL		27	27	4.7	3.5- 7.1	SL		10.8	
HYGOPHUM TANNINGI	1	1	6.3		SL								0.3	
LAMPANYCTUS ALATUS OR PHOTONOTUS							1	1	3.4		SL		0.3	
LAMPADENA SP.							1	1	5.4		SL		0.3	
MYCTOPHUM SP.							2	2	4.9	4.6- 5.2	SL		0.7	
HERMANTHIAS VIVANUS							2	2	4.1	3.6- 4.6	SL		0.7	
AUXIS SP.	9	9	5.7	4.0-10.6	SL		11	11	4.7	3.8- 6.0	SL		6.4	
EUTHYNNUS ALLETTERATUS	3	3	5.5	4.5- 7.4	SL		2	2	5.1	3.8- 6.4	SL		1.6	
KATSUWONUS PELAMIS	7	7	6.6	6.2- 7.1	SL		1	1	4.5		SL		2.4	
SARDA SARDA						0						1	0.0	0.3
SCOMBEROMORUS CAVALLA	4	4	3.8	3.6- 4.2	SL		11	11	3.9	3.4- 4.8	SL		4.9	
THUNNUS ALBACARES							1	1	4.1		SL		0.3	
THUNNUS ALBACARES OR ALALUNGA	1	1	5.3		SL								0.3	
THUNNUS OBESUS OR ATLANTICUS	1	1	4.5		SL								0.3	
PRICNOTUS CAROLINUS	1	1	5.5		SL								0.3	
ACTHUS OCELLATUS	16	16	5.8	3.0-13.7	SL		6	6	5.6	4.4- 7.6	SL		6.8	
ETROPUS MICROSTOMUS	4	4	6.0	3.9- 8.3	SL								1.3	
SYACIUM PAPILLOSUM	10	10	4.3	2.6- 6.9	SL		14	14	3.8	2.2- 6.3	SL		7.7	
SYMPHURUS SP.	4	4	3.8	3.3- 4.7	SL		6	5	4.6	3.1- 6.0	SL		3.2	

ADDITIONAL LARVAE CAUGHT

MURAENIDAE	ANGUILLIFORMES
OPHICHTHIDAE	MURAENIDAE
SYNODONTIDAE	OPHICHTHIDAE
LOPHIIFORMES	SYNODONTIDAE
BREGMACEROTIDAE	PARALEPIDIDAE
OPHIDIIDAE	LOPHIIFORMES
HOLOCENTRIDAE	OPHIDIIDAE
SERRANIDAE	HOLOCENTRIDAE
PRIACANTHIDAE	SERRANIDAE
APOGONIDAE	GRAMMISTIDAE
CARANGIDAE	PRIACANTHIDAE
CORYPHAENIDAE	APOGONIDAE
CHAETODONTIDAE	CARANGIDAE
POMACENTRIDAE	SPARIDAE
LABRIDAE OR SCARIDAE	CHAETODONTIDAE
BLENNIIDAE	POMACENTRIDAE
CALLIONYMIDAE	LABRIDAE OR SCARIDAE
GOBIIDAE	MUGILIDAE
ACANTHURIDAE	SPHYRAENIDAE
GEMPYLIDAE	CALLIONYMIDAE
SCORPAENIDAE	GOBIIDAE
TRIGLIDAE	ACANTHURIDAE
BALISTIDAE	SCORPAENIDAE
UNIDENTIFIED	BALISTIDAE

CRUISE DATE 066 7 1966 STA. D N SPECIES ANALYZED	LARVAE NUMBER TOTAL	LARVAE NUMBER MEAS.	LARVAE LENGTHS (MM) MEAN	LARVAE LENGTHS (MM) RANGE	LARVAE LENGTHS (MM) MEAS.	NO. EGGS	LARVAE NUMBER TOTAL	LARVAE NUMBER MEAS.	LARVAE LENGTHS (MM) MEAN	LARVAE LENGTHS (MM) RANGE	LARVAE LENGTHS (MM) MEAS.	NO. EGGS	NO. PER 10M² LARVAE	NO. PER 10M² EGGS
A 1 17 06	SAMPLING DEPTH 0- 6M													
ENCHELYOPUS CIMBRIUS	15	15	4.2	3.2- 5.7	SL	1							1.8	0.1
MELANOGRAMMUS AEGLEFINUS	1	1	4.3		SL	0							0.1	0.0
UROPHYCIS CHUSS	2	1	1.4		NL								0.2	
MERLUCCIUS BILINEARIS	81	54	2.4	1.7- 2.8	NL	206							9.8	25.0
TAUTOGA ONITIS	3												0.4	
SCOMBER SCOMBRUS	71	62	3.4	2.7- 4.7	SL	2108							8.6	255.5
LIPARIS ATLANTICUS	18	18	5.2	3.2- 7.2	TL								2.2	
SCOPHTHALMUS AQUOSUS	60	56	3.1	2.3- 5.7	SL								7.3	
GLYPTOCEPHALUS CYNOGLOSSUS	3	2	4.5	4.4- 4.5	SL								0.4	
LIMANDA FERRUGINEA	65	25	4.2	2.5- 7.7	SL								7.9	
PSEUDOPLEURONECTES AMERICANUS	83	25	5.3	4.3- 7.7	SL								10.1	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE BALISTIDAE													
A 2 17 06	SAMPLING DEPTH 0-15M													
ENCHELYOPUS CIMBRIUS	17	17	2.7	1.8- 4.2	SL	12							5.2	3.6
UROPHYCIS CHUSS	1	1	1.8		NL								0.3	
MERLUCCIUS BILINEARIS	75	55	2.3	1.8- 3.2	NL	242							22.7	73.3
TAUTOGA ONITIS	2	2	1.9	1.2- 2.6	TL								0.6	
TAUTOGOLABRUS ADSPERSUS	1	1	4.4		TL								0.3	
SCOMBER SCOMBRUS	33	32	3.3	2.7- 4.3	SL	1227							10.0	371.8
LIPARIS ATLANTICUS	2	2	4.4	4.0- 4.9	TL								0.6	
SCOPHTHALMUS AQUOSUS	4	4	2.9	2.7- 3.3	SL								1.2	
GLYPTOCEPHALUS CYNOGLOSSUS	8	6	4.4	4.0- 4.6	SL								2.4	
LIMANDA FERRUGINEA	260	29	4.4	2.9- 5.7	SL								78.8	
PSEUDOPLEURONECTES AMERICANUS	153	25	4.7	3.6- 6.2	SL								46.4	
A 3 17 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ENCHELYOPUS CIMBRIUS	8	8	3.2	2.5- 3.5	SL	1	16	16	3.0	2.0- 4.6	SL	8	5.0	1.6
GADUS MORHUA	1	1	4.6		SL	0						0	0.3	0.0
UROPHYCIS CHUSS	3	3	1.4	1.2- 1.5	NL								1.0	
MERLUCCIUS BILINEARIS	49	35	2.2	1.8- 2.6	NL	117	3	3	2.1	1.9- 2.3	NL	209	15.8	69.7
TAUTOGOLABRUS ADSPERSUS	14	13	3.4	2.6- 4.3	TL		12	11	3.5	2.6- 4.5	TL		6.2	
SCOMBER SCOMBRUS	44	40	3.0	2.3- 4.1	SL	2385	24	24	3.1	2.5- 4.0	SL	1009	17.4	895.4
SCOPHTHALMUS AQUOSUS	2	1	2.5		SL								0.6	
GLYPTOCEPHALUS CYNOGLOSSUS	3	3	4.3	3.7- 4.7	SL		9	9	4.5	3.5- 7.0	SL		2.4	
LIMANDA FERRUGINEA	415	25	4.6	3.0- 7.8	SL		665	25	4.8	2.9- 6.5	SL		234.9	
PSEUDOPLEURONECTES AMERICANUS	25	21	4.3	3.3- 5.4	SL		15	15	4.0	3.4- 4.7	SL		10.1	
ADDITIONAL LARVAE CAUGHT							LABRIDAE OR SCARIDAE							
A 4 17 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	23	21	3.1	1.8- 4.6	SL	23	18	17	2.6	1.8- 3.7	SL	23	12.9	14.6
GADUS MORHUA						0	1	1	3.9		SL	0	0.3	0.0
MELANOGRAMMUS AEGLEFINUS						0	3	3	6.9	6.1- 8.1	SL	0	1.0	0.0
MERLUCCIUS BILINEARIS	3	3	3.3	3.2- 3.6	NL	107	16	15	2.4	2.0- 3.1	NL	158	6.2	84.8
TAUTOGOLABRUS ADSPERSUS	19	19	3.6	3.2- 4.7	TL								6.3	
SCOMBER SCOMBRUS	28	27	3.2	2.4- 4.8	SL	4664	17	17	3.0	2.6- 3.7	SL	1997	14.1	2064.7
GLYPTOCEPHALUS CYNOGLOSSUS	10	9	5.6	4.6- 7.4	SL		19	16	4.5	3.8- 5.5	SL		9.3	
LIMANDA FERRUGINEA	379	25	4.9	3.2- 7.2	SL		440	25	4.3	2.1- 6.7	SL		260.3	
PSEUDOPLEURONECTES AMERICANUS	3	3	4.3	3.8- 4.7	SL		14	13	4.1	3.2- 5.4	SL		5.6	
A 5 17 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	267	34	2.9	1.8- 4.4	SL	135	145	31	2.2	1.7- 3.7	SL	107	128.4	76.2
UROPHYCIS SP.	3	2	2.0	1.8- 2.2	NL								1.0	
UROPHYCIS CHUSS							1	1	1.6		NL		0.3	
MERLUCCIUS BILINEARIS	4	3	2.7	2.2- 3.1	NL	123	1	1	2.8		NL	79	1.5	63.2
TAUTOGOLABRUS ADSPERSUS							2	2	3.9	3.4- 4.4	TL		0.7	
SCOMBER SCOMBRUS	86	84	3.5	2.6- 5.0	SL	56	31	31	3.6	2.9- 4.7	SL	47	36.1	44.5
GLYPTOCEPHALUS CYNOGLOSSUS	8	6	5.1	3.7- 7.2	SL		25	24	5.8	3.4- 9.2	SL		10.7	
LIMANDA FERRUGINEA	278	25	4.3	2.9- 5.3	SL		439	25	5.5	3.9- 6.7	SL		229.7	
PSEUDOPLEURONECTES AMERICANUS	1						1	1	6.5		SL		0.6	
A 6 17 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	73	38	2.5	1.6- 4.6	SL	283	316	40	2.2	1.6- 3.9	SL	383	127.2	212.5
MELANOGRAMMUS AEGLEFINUS	1	1	5.6		SL	0	1	1	7.2		SL	0	0.6	0.0
UROPHYCIS CHUSS	1	1	4.0		NL								0.3	
MERLUCCIUS BILINEARIS						1						0	0.0	0.3
SCOMBER SCOMBRUS	13	13	3.6	2.8- 4.9	SL	30	2	2	4.2	3.8- 4.6	SL	45	4.6	24.0
GLYPTOCEPHALUS CYNOGLOSSUS	20	17	5.5	3.7- 8.5	SL		24	16	5.5	3.2- 7.9	SL		14.0	
LIMANDA FERRUGINEA	640	25	4.8	3.2- 7.2	SL		756	25	5.0	3.5- 6.7	SL		444.0	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													

CRUISE DATE 066 7 1966 STA. D M SPECIES ANALYZED	LARVAE NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	LARVAE NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
A 7 17 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BENTHOSEMA GLACIALE							6	6	5.9	8.9-12.1	SL		2.0	
CERATOSCOPELUS MADERENSIS	3	3	6.8	6.1- 7.6	SL		3	3	7.0	6.3- 7.4	SL		1.9	
HYGOPHUM HYGOMI	1	1	11.4		SL								0.3	
LOPHIUS AMERICANUS	3	3	4.7	3.9- 5.2	TL		1	1	2.9		TL		1.2	
ENCHELYOPUS CIMBRIUS	5	5	2.9	2.0- 3.8	SL	0	9	8	2.8	2.2- 3.9	SL	1	4.5	0.3
MELANOGRAMMUS AEGLEFINUS						0	1	1	7.1		SL	0	0.3	0.0
UROPHYCIS CHUSS	1	1	1.4		NL								0.3	
MERLUCCIUS BILINEARIS						1						0	0.0	0.3
SCOMBER SCOMBRUS	2	2	3.5	3.5- 3.6	SL	21	5	5	3.4	3.0- 4.1	SL	0	2.3	7.0
GLYPTOCEPHALUS CYNOGLOSSUS							2	1	5.1		SL		0.7	
LIMANDA FERRUGINEA	4	1	5.4		SL		13	2	6.2	5.2- 7.1	SL		5.5	
B 1 18 06	SAMPLING DEPTH 0-15M													
ENCHELYOPUS CIMBRIUS	243	28	2.9	1.7- 6.8	SL	5							73.6	1.5
GADUS MORHUA	2	2	9.0	8.5- 9.4	SL	0							0.6	0.0
UROPHYCIS CHUSS	1	1	2.2		NL								0.3	
MERLUCCIUS BILINEARIS	3	3	2.8	2.5- 3.3	NL	4							0.9	1.2
TAUTOGA ONITIS	36	31	3.6	2.9- 4.7	TL								10.9	
TAUTOGOLABRUS ADSPERSUS	609	586	3.3	2.0- 5.7	TL								184.5	
SCOMBER SCOMBRUS	77	61	3.6	2.7- 6.5	SL	77							23.3	23.3
LIPARIS ATLANTICUS	1	1	4.0		TL								0.3	
SCOPHTHALMUS AQUOSUS	13	13	3.1	2.2- 4.3	SL								3.9	
GLYPTOCEPHALUS CYNOGLOSSUS	2												0.6	
LIMANDA FERRUGINEA	27	23	6.3	2.7- 9.2	SL								8.2	
PSEUDOPLEURONECTES AMERICANUS	61	25	5.5	4.5- 7.0	SL								18.5	
ADDITIONAL LARVAE CAUGHT BLENNIIDAE														
B 2 18 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ENCHELYOPUS CIMBRIUS	39	37	2.6	1.5- 5.1	SL	79	4	4	2.9	2.1- 3.4	SL	2	12.6	25.5
GADUS MORHUA						1	1	1	4.6		SL	0	0.2	0.3
MERLUCCIUS BILINEARIS	18	16	2.6	2.0- 5.3	NL	16						3	5.8	5.4
TAUTOGA ONITIS	52	42	2.7	1.9- 3.9	TL		2	1	2.6		TL		16.8	
TAUTOGOLABRUS ADSPERSUS	1100	719	3.0	1.7- 5.5	TL		89	85	3.1	2.0- 4.9	TL		355.5	
SCOMBER SCOMBRUS	894	83	3.7	2.4- 7.2	SL	134	48	42	3.5	2.7- 6.3	SL	11	288.9	43.3
LIPARIS ATLANTICUS	4	3	4.2	3.4- 5.7	TL		10	8	3.5	3.0- 5.0	TL		2.8	
SCOPHTHALMUS AQUOSUS	3	2	2.8	2.7- 2.8	SL								1.0	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	8.8		SL								0.3	
LIMANDA FERRUGINEA	55	53	6.7	3.4- 9.2	SL		70	25	5.9	4.8- 7.4	SL		28.2	
PSEUDOPLEURONECTES AMERICANUS	3	3	5.2	5.1- 5.3	SL		1	1	5.0		SL		1.1	
ADDITIONAL LARVAE CAUGHT BLENNIIDAE														
B 3 18 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	20	19	5.8	1.6-21.7	SL	10	1	1	4.5		SL	0	6.7	3.3
GADUS MORHUA	7	7	6.1	3.4- 7.0	SL	0	1	1	7.2		SL	0	2.4	0.0
MERLUCCIUS BILINEARIS	15	15	2.9	2.1- 4.4	NL	0	4	4	2.5	2.4- 2.8	NL	0	5.8	0.0
TAUTOGA ONITIS	2	1	2.4		TL								0.7	
TAUTOGOLABRUS ADSPERSUS	920	874	3.7	2.2- 6.2	TL		9	9	4.0	3.5- 4.5	TL		306.6	
SCOMBER SCOMBRUS	256	80	4.2	2.6- 8.2	SL	102	12	12	4.8	3.1- 6.9	SL	6	85.3	34.0
LIPARIS INQUILINUS	1	1	4.8		TL		10	7	3.8	2.8- 6.0	TL		3.6	
GLYPTOCEPHALUS CYNOGLOSSUS	18	15	4.8	3.4-10.2	SL		1	1	7.2		SL		6.0	
LIMANDA FERRUGINEA	129	25	6.5	4.1- 8.2	SL		199	25	5.4	3.9- 7.2	SL		105.0	
ADDITIONAL LARVAE CAUGHT BLENNIIDAE														
B 4 18 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	73	32	3.4	1.6- 5.9	SL	13	7	7	3.2	1.9- 4.6	SL	2	24.3	4.6
GADUS MORHUA	2	2	3.6	2.9- 4.2	SL	0						0	0.7	0.0
MERLUCCIUS BILINEARIS	15	14	3.3	2.8- 4.1	NL	20	6	3	3.6	2.7- 5.0	NL	7	6.5	8.3
TAUTOGOLABRUS ADSPERSUS	329	316	3.7	2.3- 5.2	TL		6	6	3.6	3.2- 4.4	TL		109.7	
SCOMBER SCOMBRUS	265	91	4.7	2.9- 8.4	SL	110	11	11	3.9	2.7- 6.6	SL	6	88.3	36.7
LIPARIS INQUILINUS OR ATLANTICUS	1	1	5.2		TL		27	15	4.8	3.9- 6.2	TL		9.3	
GLYPTOCEPHALUS CYNOGLOSSUS	20	14	4.9	3.4- 7.7	SL		4	2	4.6	4.1- 5.0	SL		7.3	
LIMANDA FERRUGINEA	173	25	5.7	3.2- 8.4	SL		283	25	5.1	4.2- 6.2	SL		146.2	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
B 5 18 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	147	42	2.5	1.1- 4.6	SL	6	85	33	3.7	1.5-27.5	SL	72	72.4	25.8
MELANOGRAMMUS AEGLEFINUS						0	1	1	9.0		SL	0	0.3	0.0
UROPHYCIS CHUSS	1	1	1.3		NL		1	1	1.4		NL		0.6	
MERLUCCIUS BILINEARIS	120	116	3.3	2.4- 5.7	NL	1	62	56	3.3	2.4- 4.7	NL	64	56.7	21.6
TAUTOGOLABRUS ADSPERSUS	63	60	3.5	2.4- 4.7	TL		127	122	3.7	1.9- 5.0	TL		61.2	
SCOMBER SCOMBRUS	331	72	3.3	2.3- 8.7	SL	110	121	43	4.4	2.6- 9.0	SL	137	139.6	76.7
LIPARIS INQUILINUS							1	1	11.0		TL		0.3	
SCOPHTHALMUS AQUOSUS	1	1	3.7		SL								0.3	
GLYPTOCEPHALUS CYNOGLOSSUS	57	54	5.9	3.5- 9.2	SL		61	58	6.8	3.4- 9.6	SL		37.4	
LIMANDA FERRUGINEA	440	50	5.9	3.3-10.2	SL		612	25	5.3	3.8- 8.1	SL		336.0	

CRUISE DATE C66 7 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	NO. PER 10M LARVAE	2 EGGS
B 6 18 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENCHELYOPUS CIMBRIUS	319 40	3.3	1.5- 4.7	SL	E7	256 31	3.0	1.8- 4.7	SL	97	161.0	58.4
UROPHYCIS CHUSS	1 1	2.1		NL		1 1	1.4		NL		0.6	
MERLUCCIUS BILINEARIS	24 24	3.9	2.7- 4.6	NL	0	60 60	3.7	2.9- 4.4	NL	3	27.2	1.0
TAUTOGOLABRUS ADSPERSUS	50 49	4.1	2.8- 5.5	TL		73 68	3.9	2.8- 5.2	TL		39.3	
SCOMBER SCOMBRUS	121 64	4.2	2.6- 8.2	SL	1	154 60	4.1	2.5- 8.3	SL	0	87.6	0.3
GLYPTOCEPHALUS CYNOGLOSSUS	63 63	7.4	3.4-10.4	SL		64 59	6.8	3.4- 9.7	SL		40.2	
LIMANDA FERRUGINEA	342 25	6.2	4.2- 8.5	SL		274 25	5.3	3.2- 6.1	SL		193.9	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED					UNIDENTIFIED						
B 7 18 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
BENTHOSEMA GLACIALE						2 2	5.7	8.4-11.1	SL		0.7	
CERATOSCOPELUS MADERENSIS						3 3	5.8	4.8- 7.7	SL		1.0	
CERATOSCOPELUS WARMINGI					411						0.0	137.0
LOPHIUS AMERICANUS	2 2	4.4	4.4- 4.5	TL		1 1	4.3		TL		0.9	
ENCHELYOPUS CIMBRIUS	269 40	3.1	1.9- 4.3	SL	12	291 36	3.0	1.7- 4.3	SL	10	177.7	6.5
MELANOGRAMMUS AEGLEFINUS	2 2	5.1	3.4- 6.9	NL	0	1 1	12.6		SL	0	0.9	0.0
MERLUCCIUS BILINEARIS	1 1	3.1		NL	0					1	0.3	0.3
TAUTOGOLABRUS ADSPERSUS	7 7	4.1	3.5- 4.7	TL		4 4	4.4	4.0- 5.0	TL		3.4	
SCOMBER SCOMBRUS	49 48	3.9	2.6- 7.2	SL	1	21 19	4.5	3.2- 6.3	SL	1	21.7	0.6
GLYPTOCEPHALUS CYNOGLOSSUS	14 13	9.8	8.1-11.8	SL		9 9	7.1	4.2- 8.3	SL		7.2	
LIMANDA FERRUGINEA	112 25	6.5	4.1-10.6	SL		61 25	6.0	4.2-10.1	SL		53.9	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
C 1 19 06	SAMPLING DEPTH 0-15M											
LOPHIUS AMERICANUS	9 9	5.5	4.3-10.5	TL							2.7	
ENCHELYOPUS CIMBRIUS	8 7	4.8	3.3- 8.2	SL	0						2.4	0.0
MERLUCCIUS BILINEARIS	8 2	3.6	2.7- 4.5	NL	0						2.4	0.0
TAUTOGA ONITIS	1 1	2.3		TL							0.3	
SCOMBER SCOMBRUS	1 1	3.5		SL	0						0.3	0.0
LIPARIS INQUILINUS	1 1	9.0		TL							0.3	
LIMANDA FERRUGINEA	2 1	12.6		SL							0.6	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE UNIDENTIFIED											
C 2 19 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-27M						
LOPHIUS AMERICANUS	15 15	4.9	3.0-10.6	TL							4.9	
ENCHELYOPUS CIMBRIUS	15 15	8.0	3.0-36.7	SL	0	10 9	5.1	4.2- 6.7	SL	0	6.8	0.0
MERLUCCIUS BILINEARIS					0	1 1	2.9		NL	0	0.2	0.0
SCOMBER SCOMBRUS	13 13	9.3	6.3-12.1	SL	4					0	4.3	1.3
LIMANDA FERRUGINEA	3 2	5.7	5.0- 6.3	SL		43 25	9.2	6.7-12.2	SL		10.3	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE UNIDENTIFIED											
C 3 19 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LOPHIUS AMERICANUS	2 2	3.7	3.2- 4.3	TL							0.7	
ENCHELYOPUS CIMBRIUS	116 28	8.0	3.4-31.2	SL	0	25 22	6.1	3.1- 5.2	SL	0	43.1	0.0
GADUS MORHUA	1				0	3 3	14.7	11.9-17.4	SL	0	1.3	0.0
MERLUCCIUS BILINEARIS	2 2	4.1	4.1- 4.2	NL	0					0	0.7	0.0
TAUTOGOLABRUS ADSPERSUS	13 13	4.3	3.5- 5.2	TL							4.3	
SCOMBER SCOMBRUS	195 181	6.8	4.1-13.0	SL	2	2 2	5.5	5.4- 6.5	SL	0	65.0	0.7
SCOPHTHALMUS AQUOSUS	4 4	4.9	3.7- 6.1	SL							1.3	
GLYPTOCEPHALUS CYNOGLOSSUS	8 7	8.9	4.8-13.7	SL		5 4	12.2	10.4-13.7	SL		4.1	
LIMANDA FERRUGINEA	57 25	9.8	5.5-14.6	SL		121 25	10.8	7.6-13.7	SL		57.4	
C 4 19 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
LOPHIUS AMERICANUS	6 6	4.7	3.8- 6.6	TL							1.9	
ENCHELYOPUS CIMBRIUS	4 4	16.5	4.7-31.7	SL	0					0	1.3	0.0
GADUS MORHUA	5 5	12.9	6.5-19.2	SL	0	1 1	14.4		SL	0	1.7	0.0
SCOMBER SCOMBRUS	6 6	13.3	12.0-14.6	SL	0					0	1.9	0.0
GLYPTOCEPHALUS CYNOGLOSSUS	2 2	13.7	9.6-17.7	SL		6 5	9.0	6.6-10.7	SL		1.6	
LIMANDA FERRUGINEA	75 25	12.3	5.8-16.8	SL		100 25	11.6	5.9-15.2	SL		29.2	
C 5 19 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LOPHIUS AMERICANUS	4 4	9.4	4.6-11.8	TL		1 1	11.0		TL		1.5	
ENCHELYOPUS CIMBRIUS	2 2	12.5	2.8-22.2	SL	0	11 11	6.2	3.3-15.1	SL	0	4.3	0.0
GADUS MORHUA	1 1	17.2		SL	0	2 2	12.3	8.4-16.1	SL	0	1.0	0.0
SCOMBER SCOMBRUS	27 27	13.0	6.5-18.9	SL	0	1 1	7.1		SL	0	9.0	0.0
LIPARIS INQUILINUS						1 1	4.0		TL		0.3	
GLYPTOCEPHALUS CYNOGLOSSUS	4 4	10.9	8.7-14.2	SL		19 19	10.4	6.7-17.1	SL		7.5	
LIMANDA FERRUGINEA	148 25	12.0	5.6-19.6	SL		326 25	10.4	4.7-15.4	SL		153.1	

CRUISE DATE D66 7 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	NO. PER 10M² LARVAE	 EGGS
C 6 19 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
BENTHOSEMA GLACIALE	3	2	6.6	6.5- 6.7	SL						1.0	
LOPHIUS AMERICANUS	1	1	5.8		TL						0.3	
ENCHELYOPUS CIMBRIUS	21	21	9.7	3.7-25.8	SL	0	36	36	5.0	2.6-12.6	SL	0	18.3	0.0
GADUS MORHUA						0	2	2	10.3	9.2-11.3	SL	0	0.7	0.0
MERLUCCIUS BILINEARIS	1	1	5.2		NL	0	5	5	5.7	5.1- 6.3	NL	0	2.0	0.0
TAUTOGOLABRUS ADSPERSUS							1	1	5.0		TL		0.3	
SCOMBER SCOMBRUS	29	28	11.2	5.1-18.0	SL	0	3	3	6.2	4.2- 8.3	SL	0	9.7	0.0
SCOPHTHALMUS AQUOSUS							1						0.3	
GLYPTOCEPHALUS CYNOGLOSSUS	3	3	5.5	4.3- 6.6	SL		23	23	7.4	4.6-19.7	SL		8.6	
LIMANDA FERRUGINEA	89	25	11.9	4.2-17.8	SL		363	25	7.4	3.9-16.0	SL		147.7	
ADDITIONAL LARVAE CAUGHT							UNIDENTIFIED							
C 7 19 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
BENTHOSEMA GLACIALE	15	15	6.5	5.0- 7.5	SL		1	1	4.9		SL		5.0	
ENCHELYOPUS CIMBRIUS	16	16	7.0	2.2-23.3	SL	0	1	1	8.4		SL	0	5.3	0.0
GADUS MORHUA	1	1	8.4		SL	0						0	0.3	0.0
MERLUCCIUS BILINEARIS	4	3	6.3	5.8- 6.9	NL	0						0	1.3	0.0
SCOMBER SCOMBRUS	26	26	9.8	3.9-17.6	SL	0	2	2	10.8	5.2-16.5	SL	0	8.7	0.0
GLYPTOCEPHALUS CYNOGLOSSUS	5	5	11.9	8.0-19.9	SL		3	1	17.0		SL		2.5	
LIMANDA FERRUGINEA	242	25	9.4	4.9-18.7	SL		37	25	10.6	4.4-17.8	SL		84.9	
ADDITIONAL LARVAE CAUGHT							MYCTOPHIDAE							
C 8 19 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LOPHIUS AMERICANUS	1	1	6.1		TL		1	1	5.3		TL		0.6	
ENCHELYOPUS CIMBRIUS						1	1	1	8.6		SL	1	0.3	0.6
MERLUCCIUS BILINEARIS	2	2	4.9	4.7- 5.1	NL	4						1	0.7	1.5
SCOMBER SCOMBRUS	71	71	5.8	4.5-13.4	SL	0						0	23.7	0.0
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	12.0		SL		1	1	12.5		SL		0.6	
LIMANDA FERRUGINEA	10	10	9.1	5.5-13.2	SL		6	6	6.3	4.9- 8.4	SL		5.0	
ADDITIONAL LARVAE CAUGHT	MYCTOPHIDAE UNIDENTIFIED						UNIDENTIFIED							
C 1 20 06	SAMPLING DEPTH 0- 6M											
LOPHIUS AMERICANUS	2	2	5.3	5.3- 5.3	TL								0.2	
ENCHELYOPUS CIMBRIUS	15	14	3.1	1.5- 7.1	SL	0							1.8	0.0
TAUTOGOLABRUS ADSPERSUS	4	3	2.0	1.9- 2.1	TL								0.5	
SCOPHTHALMUS AQUOSUS	8	8	2.8	2.1- 4.1	SL								1.0	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE BALISTIDAE TETRAODONTIDAE											
D 2 20 06	SAMPLING DEPTH 0- 6M											
LOPHIUS AMERICANUS	5	5	6.6	4.1-13.0	TL								0.6	
ENCHELYOPUS CIMBRIUS	7	7	8.2	3.3-23.5	SL	0							0.8	0.0
SCOMBER SCOMBRUS	2	2	9.7	8.4-11.1	SL	0							0.2	0.0
LIMANDA FERRUGINEA	3	3	8.0	6.2-10.2	SL								0.4	
ADDITIONAL LARVAE CAUGHT	TETRAODONTIDAE											
D 3 20 06	SAMPLING DEPTH 0-15M											
LOPHIUS AMERICANUS	2	2	9.5	7.0-12.0	TL								0.6	
ENCHELYOPUS CIMBRIUS	2	2	3.8	3.5- 4.0	SL	0							0.6	0.0
SCOMBER SCOMBRUS	1	1	18.0		SL	0							0.3	0.0
SCOPHTHALMUS AQUOSUS	3	3	2.6	2.5- 2.6	SL								0.9	
LIMANDA FERRUGINEA	7	6	10.0	5.7-14.1	SL								2.1	
D 4 20 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
LOPHIUS AMERICANUS	4	4	14.5	12.6-18.3	TL		16	16	12.9	9.5-17.2	TL		3.8	
ENCHELYOPUS CIMBRIUS	2	2	18.4	18.0-18.8	SL	0	29	29	9.3	3.0-30.5	SL	0	5.3	0.0
SCOMBER SCOMBRUS	4	4	22.8	21.9-23.8	SL	0	1	1	21.2		SL	0	1.4	0.0
LIPARIS INQUILINUS							1	1	3.0		TL		0.2	
SCOPHTHALMUS AQUOSUS							3	3	7.6	7.3- 8.3	SL		0.5	
GLYPTOCEPHALUS CYNOGLOSSUS							6	6	11.3	8.4-20.0	SL		1.0	
LIMANDA FERRUGINEA	4	4	15.0	13.2-17.2	SL		116	25	11.5	4.6-16.0	SL		20.0	
D 5 20 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LOPHIUS AMERICANUS							2	2	11.0	11.0-11.0	TL		0.7	
ENCHELYOPUS CIMBRIUS	3	3	17.7	16.7-18.9	SL	0	9	7	12.9	4.6-23.0	SL	0	3.9	0.0
SCOMBER SCOMBRUS	30	30	17.9	15.4-21.4	SL	0						0	10.0	0.0
LIPARIS INQUILINUS							2	2	11.5	11.0-12.0	TL		0.7	
GLYPTOCEPHALUS CYNOGLOSSUS							5	5	9.1	6.8-10.7	SL		1.7	
LIMANDA FERRUGINEA	12	12	15.7	14.6-17.6	SL		219	25	9.5	5.0-14.7	SL		76.6	

CRUISE DATE C66 7 1966 STA. D M SPECIES ANALYZED.	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
C 6 20 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
LOPHIUS AMERICANUS	1	1	10.0		TL								0.3	
ENCHELYOPUS CIMBRIUS	4	4	23.4	17.0-28.7	SL	0	9	9	19.9	15.7-24.3	SL	0	4.2	0.0
UROPHYCIS SP.							1	1	20.2		NL		0.3	
SCOMBER SCOMBRUS	39	39	16.9	12.9-27.0	SL	0	5	5	16.7	12.0-25.7	SL	0	13.4	0.0
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	10.0		SL		8	6	7.2	5.1- 9.0	SL		3.0	
LIMANDA FERRUGINEA	52	25	15.3	7.2-17.4	SL		481	25	13.4	5.0-17.3	SL		175.9	
D 7 20 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BENTHOSEMA GLACIALE	1	1	9.2		SL								0.3	
LOPHIUS AMERICANUS	2	2	7.6	5.3-10.0	TL								0.7	
ENCHELYOPUS CIMBRIUS	3	3	20.3	17.3-22.1	SL	0	11	11	16.0	8.1-26.8	SL	0	4.6	0.0
GADUS MORHUA						0	1	1	11.6		SL	0	0.3	0.0
SCOMBER SCOMBRUS	24	24	17.9	12.9-21.5	SL	0	30	30	18.8	7.8-22.3	SL	0	17.2	0.0
LIMANDA FERRUGINEA	9	8	17.8	16.1-19.6	SL		29	29	12.2	4.6-20.7	SL		12.4	
D 8 20 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BENTHOSEMA GLACIALE	40	16	8.0	6.2- 9.4	SL		18	9	7.6	5.5-10.6	SL		18.0	
CERATOSCOPELUS MADERENSIS	12	12	5.3	2.2- 6.3	SL								4.0	
LOPHIUS AMERICANUS	14	14	5.5	4.3- 9.0	TL								4.7	
ENCHELYOPUS CIMBRIUS	6	5	3.2	2.7- 3.7	SL	0						0	2.0	0.0
SCOMBER SCOMBRUS	6	6	8.5	4.7-13.1	SL	0						0	2.0	0.0
LIMANDA FERRUGINEA	3	3	10.2	9.8-10.6	SL								1.0	
E 1 29 06	SAMPLING DEPTH 0- 3M													
BREVOORTIA TYRANNUS	1	1	13.7		TL								0.1	
ANCHOA HEPSETUS	13	12	7.7	4.5-13.7	TL								0.8	
TAUTOGA ONITIS	2	2	5.7	4.8- 6.6	TL								0.1	
E 2 29 06	SAMPLING DEPTH 0- 6M													
ENCHELYOPUS CIMBRIUS	1	1	7.2		SL	0							0.1	0.0
TAUTOGOLABRUS ADSPERSUS	1	1	3.9		TL								0.1	
PRICNOTUS CAROLINUS	2	2	3.4	3.3- 3.5	SL								0.2	
SCOPHTHALMUS AQUOSUS	1	1	5.4		SL								0.1	
E 3 29 06	SAMPLING DEPTH 0- 6M													
ENCHELYOPUS CIMBRIUS	1	1	27.5		SL	0							0.1	0.0
TAUTOGA ONITIS	1	1	4.3		TL								0.1	
TAUTOGOLABRUS ADSPERSUS	1	1	4.8		TL								0.1	
PRICNOTUS CAROLINUS	1	1	5.1		SL								0.1	
E 4 29 06	SAMPLING DEPTH 0-15M													
LOPHIUS AMERICANUS	1	1	27.0		TL								0.3	
ENCHELYOPUS CIMBRIUS	5	5	30.7	27.4-37.1	SL	0							1.5	0.0
SCOMBER SCOMBRUS	1	1	33.0		SL	0							0.3	0.0
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	7.3		SL								0.3	
E 5 29 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
LOPHIUS AMERICANUS	1	1	31.0		TL								0.3	
ENCHELYOPUS CIMBRIUS	4	4	12.6	9.5-16.7	SL	0	3	3	31.5	26.7-40.2	SL	0	2.2	0.0
GADUS MORHUA						0	1	1	17.6		SL	0	0.3	0.0
GLYPTOCEPHALUS CYNOGLOSSUS							2	2	7.8	6.6- 8.9	SL		0.7	
LIMANDA FERRUGINEA	85	25	10.7	6.0-16.1	SL		88	25	8.4	4.9-15.4	SL		54.8	
E 6 29 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
LOPHIUS AMERICANUS	2	2	18.5	14.0-23.0	TL								0.7	
ENCHELYOPUS CIMBRIUS	10	10	19.9	9.6-36.8	SL	0						0	3.3	0.0
SCOMBER SCOMBRUS	18	18	38.8	33.4-49.7	SL	0						0	6.0	0.0
GLYPTOCEPHALUS CYNOGLOSSUS	2	2	12.8	10.6-15.0	SL		4	4	11.0	6.6-14.6	SL		1.9	
LIMANDA FERRUGINEA	185	25	11.9	8.2-19.3	SL		229	25	8.3	5.1-12.7	SL		131.8	
E 7 28 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
MYCTOPHIDAE							4	4	8.1	6.6- 9.1	SL		1.3	
LOPHIUS AMERICANUS	1	1	17.0		TL								0.3	
SCOMBER SCOMBRUS	1	1	30.0		SL	0						0	0.3	0.0
GLYPTOCEPHALUS CYNOGLOSSUS	3	3	20.1	14.8-26.7	SL		4	4	24.3	15.2-29.4	SL		2.2	
LIMANDA FERRUGINEA	184	25	12.7	10.2-17.2	SL		123	25	11.2	7.3-17.5	SL		96.2	
E 8 28 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BENTHOSEMA GLACIALE	8	8	7.9	7.0- 8.7	SL		3	3	7.3	6.4- 8.1	SL		3.4	
CERATOSCOPELUS MADERENSIS	20	20	5.5	4.3- 6.5	SL								6.7	
SCOMBER SCOMBRUS	4	4	30.0	27.4-32.1	SL	0	1	1	25.1		SL	0	1.5	0.0
LIMANDA FERRUGINEA	1	1	12.4		SL		1						0.6	
ADDITIONAL LARVAE CAUGHT							CONGRIDAE							

CRUISE DATE DEC 7 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M LARVAE	EGGS
F 1 28 06	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	11	11	9.5	7.8-14.4	TL								1.3	
ANCHOA MITCHILLI	976	115	6.6	3.7-12.2	TL								118.3	
CYNOSCION SP.	44	42	3.1	2.2- 4.6	SL								5.3	
MENTICIRRHUS SP.	1	1	3.2		SL								0.1	
PRIONOTUS CAROLINUS	1	1	5.0		SL								0.1	
SCOPHTHALMUS AQUOSUS	3	3	3.9	2.7- 5.1	SL								0.4	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE TETRAODONTIDAE													
F 2 28 06	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	2	2	8.0	8.0- 8.1	TL								0.2	
ANCHOA MITCHILLI	333	63	4.5	2.5- 9.3	TL								40.4	
CYNOSCION SP.	25	25	2.9	2.5- 4.0	SL								3.0	
MENTICIRRHUS SP.	2	1	2.1		SL								0.2	
TAUTOGA ONITIS	2	2	3.2	2.9- 3.6	TL								0.2	
TAUTOGOLABRUS ADSPERSUS	3	3	3.1	2.9- 3.5	TL								0.4	
PRIONOTUS CAROLINUS	3	3	3.3	3.0- 3.5	SL								0.4	
HIPPOGLOSSINA OBLONGUS	1	1	3.2		SL								0.1	
SCOPHTHALMUS AQUOSUS	1	1	3.4		SL								0.1	
ADDITIONAL LARVAE CAUGHT	CYPRIDIDAE ATHERINIDAE TETRAODONTIDAE UNIDENTIFIED													
F 3 28 06	SAMPLING DEPTH 0-15M													
ANCHOA HEPSETUS	28	22	4.9	2.8- 7.8	TL								8.5	
ANCHOA MITCHILLI	27	22	4.9	2.8- 7.8	TL								8.2	
MYCTOPHIDAE	5	4	2.3	2.1- 2.5	SL								1.5	
UROPHYCIS CHUSS	2	2	2.5	1.3- 3.7	NL								0.6	
CYNOSCION SP.	2	2	2.4	2.2- 2.6	SL								0.6	
TAUTOGA ONITIS	1	1	2.7		TL								0.3	
PRIONOTUS CAROLINUS	6	6	2.6	2.1- 3.1	SL								1.8	
SCOPHTHALMUS AQUOSUS	11	10	3.2	2.2- 5.8	SL								3.3	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	10.3		SL								0.3	
ADDITIONAL LARVAE CAUGHT	TETRAODONTIDAE UNIDENTIFIED													
F 4 28 06	SAMPLING DEPTH 0-15M													
LOPHIUS AMERICANUS	4	4	4.1	3.8- 4.8	TL								1.2	
ENCHELYOPUS CIMBRIUS	1	1	42.4		SL	0							0.3	0.0
UROPHYCIS CHUSS	5	5	2.1	1.4- 3.2	NL								1.5	
TAUTOGA ONITIS	1	1	3.1		TL								0.3	
TAUTOGOLABRUS ADSPERSUS	5	5	4.1	3.1- 5.4	TL								1.5	
HIPPOGLOSSINA OBLONGUS	1	1	4.2		SL								0.3	
LIMANDA FERRUGINEA	1	1	5.7		SL								0.3	
ADDITIONAL LARVAE CAUGHT	STROMATEIDAE UNIDENTIFIED													
F 5 28 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS						0	1	1	32.0		SL	0	0.3	0.0
TAUTOGOLABRUS ADSPERSUS	2	2	3.6	3.5- 3.8	TL								0.7	
LIPARIS INQUILINUS							2	2	9.8	9.7-10.0	TL		0.7	
GLYPTOCEPHALUS CYNOGLOSSUS							5	5	12.8	9.7-17.6	SL		1.7	
LIMANDA FERRUGINEA							121	25	8.9	6.5-14.1	SL		40.3	
F 6 28 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
MELANOGRAMMUS AEGLEFINUS						0	1	1	22.8		SL	0	0.3	0.0
LIMANDA FERRUGINEA							1	1	8.7		SL		0.3	
F 7 28 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
MYCTOPHIDAE							1	1	8.6		SL		0.3	
CERATOSCOPELUS MADERENSIS	2	2	6.3	5.7- 7.0	SL								0.7	
LOPHIUS AMERICANUS							1	1	10.3		TL		0.3	
UROPHYCIS CHUSS	9	9	1.8	1.2- 3.6	NL								3.0	
TAUTOGOLABRUS ADSPERSUS	1	1	7.0		TL								0.3	
GLYPTOCEPHALUS CYNOGLOSSUS							1	1	23.7		SL		0.3	
LIMANDA FERRUGINEA	1	1	8.2		SL		19	19	9.8	5.7-13.2	SL		6.6	
F 1 28 06	SAMPLING DEPTH 0- 3M													
ANCHOA MITCHILLI	3	3	5.5	2.9- 7.7	TL								0.2	
CYNOSCION SP.	7	6	3.7	2.9- 4.4	SL								0.4	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													

CRUISE DATE 066 7 1966 STA. D M SPECIES ANALYZED.	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M LARVAE	EGGS
G 2 28 06	SAMPLING DEPTH 0- 6M													
TAUTOGA ONITIS	4	3	3.3	2.8- 3.8	TL								0.5	
CITHARICHTHYS ARCTIFRONS	18	15	2.3	2.0- 2.5	SL								2.2	
HIPPOGLOSSINA OBLONGUS	2	1	3.3		SL								0.2	
SCOPHTHALMUS AQUOSUS	4	1	2.7		SL								0.5	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
G 3 28 06	SAMPLING DEPTH 0- 6M													
LOPHIUS AMERICANUS	1	1	3.6		TL								0.1	
TAUTOGA ONITIS	1	1	2.8		TL								0.1	
ETROPUS MICROSTOMUS	1	1	2.0		SL								0.1	
SCOPHTHALMUS AQUOSUS	1	1	2.3		SL								0.1	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
G 4 28 06	SAMPLING DEPTH 0-15M													
LOPHIUS AMERICANUS	1	1	14.0		TL								0.3	
SCOMBER SCOMBRUS	26	26	34.5	28.3-44.1	SL	0							7.9	0.0
LIMANDA FERRUGINEA	15	15	10.5	7.6-14.4	SL								4.5	
G 5 27 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BENTHOSEMA GLACIALE	1	1	7.6		SL		3	3	4.8	4.1- 5.4	SL		1.3	
LOPHIUS AMERICANUS	5	4	22.9	13.9-30.0	TL								1.7	
ENCHELYOPUS CIMBRIUS	2	2	28.1	27.6-28.5	SL	0	2	2	39.3	36.5-42.0	SL	0	1.3	0.0
GADUS MORHUA						0	1	1	11.3		SL	0	0.3	0.0
SCOMBER SCOMBRUS	4	4	36.2	33.9-38.6	SL	0						0	1.3	0.0
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	17.5		SL								0.3	
LIMANDA FERRUGINEA	105	25	12.1	7.8-15.1	SL		59	25	13.1	5.6-17.6	SL		51.2	
G 6 27 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BENTHOSEMA GLACIALE	13	13	5.5	4.9- 6.9	SL								4.3	
CERATOSCOPELUS MADERENSIS	3	3	7.6	5.4- 8.5	SL								1.0	
LOPHIUS AMERICANUS	3	3	8.0	4.4- 9.9	TL								1.0	
SARDA SARDA						1						0	0.0	0.3
LIMANDA FERRUGINEA	8	8	10.1	7.7-13.2	SL		6	6	5.5	8.7-10.4	SL		4.4	
H 1 27 06	SAMPLING DEPTH 0- 3M													
ANCHOA MITCHILLI	1915	148	4.4	1.7- 6.9	TL								116.0	
CYNOSCION SP.	2	2	2.7	2.1- 3.4	SL								0.1	
TAUTOGA ONITIS	1	1	3.5		TL								0.1	
SARDA SARDA						3							0.0	0.2
PEPRILUS TRIACANTHUS	1	1	12.3		SL								0.1	
PRIONOTUS CAROLINUS	2	2	4.4	4.4- 4.4	SL								0.1	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
H 2 27 06	SAMPLING DEPTH 0- 6M													
ANCHOA MITCHILLI	514	96	5.0	2.8- 7.1	TL								62.3	
CENTROPRISTIS STRIATA	1	1	4.6		SL								0.1	
CYNOSCION SP.	2	2	3.0	3.0- 3.0	SL								0.2	
MENTICIRRHUS SP.	19	18	2.6	2.1- 3.2	SL								2.3	
TAUTOGA ONITIS	19	15	4.1	2.5- 6.3	TL								2.3	
SARDA SARDA	4	4	4.0	3.6- 4.6	SL	0							0.5	0.0
PEPRILUS TRIACANTHUS	59	59	3.0	2.2- 8.5	SL								7.2	
PRIONOTUS CAROLINUS	19	19	4.2	3.1- 6.1	SL								2.3	
ETROPUS MICROSTOMUS	38	34	2.7	2.0- 4.3	SL								4.6	
HIPPOGLOSSINA OBLONGUS	13	12	3.6	2.5- 4.7	SL								1.6	
ADDITIONAL LARVAE CAUGHT SYNGNATHIDAE														
URANOSCOPICAE														
BLENNIIDAE														
STROMATEIDAE														
UNIDENTIFIED														
H 3 27 06	SAMPLING DEPTH 0- 6M													
ANCHOA MITCHILLI	65	61	4.4	1.4- 6.3	TL								7.9	
CYNOSCION SP.	1	1	3.2		SL								0.1	
MENTICIRRHUS SP.	11	11	2.7	2.3- 3.1	SL								1.3	
TAUTOGA ONITIS	1	1	5.0		TL								0.1	
PRIONOTUS CAROLINUS	2	2	3.9	3.3- 4.5	SL								0.2	
ETROPUS MICROSTOMUS	3	3	3.1	3.0- 3.2	SL								0.4	
HIPPOGLOSSINA OBLONGUS	13	13	3.4	2.7- 5.5	SL								1.6	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														

CRUISE DATE C66 7 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
H 4 27 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
UROPHYCIS CHUSS	2	1	3.1		NL						0.6	
MENTICIRRHUS SP.	1	1	2.2		SL						0.3	
TAUTOGA ONITIS	1	1	4.4		TL						0.3	
PRIONOTUS CAROLINUS	5	5	2.6	1.8- 3.9	SL						1.6	
ETROPUS MICROSTOMUS	3	3	3.1	2.5- 3.7	SL						1.0	
HIPPOGLOSSINA OBLONGUS	1	1	3.4		SL						0.3	
LIMANDA FERRUGINEA						3	3	7.1	6.6- 7.5	SL	0.5	
ADDITIONAL LARVAE CAUGHT	STROMATEIDAE UNIDENTIFIED											
H 5 27 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LOPHIUS AMERICANUS						1	1	31.5		TL	0.3	
PRIONOTUS CAROLINUS	1	1	3.1		SL						0.3	
LIMANDA FERRUGINEA						8	8	8.9	6.4-10.1	SL	2.7	
ADDITIONAL LARVAE CAUGHT						UNIDENTIFIED						
H 6 27 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
BENTHOSEMA GLACIALE						7	6	8.5	6.0- 7.4	SL	2.3	
LOPHIUS AMERICANUS	1	1	4.5		TL						0.3	
ENCHELYOPUS CIMBRIUS					0	1	1	7.7		SL	0 0.3	0.0
MERLUCCIUS BILINEARIS	1	1	6.3		NL 0						0 0.3	0.0
SCOMBER SCOMBRUS	1	1	15.9		SL 0						0 0.3	0.0
LIMANDA FERRUGINEA	10	10	8.0	4.4-10.2	SL	17	17	7.5	6.1-10.6	SL	8.7	
ADDITIONAL LARVAE CAUGHT	MYCTOPHIDAE UNIDENTIFIED											
H 7 27 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
MYCTOPHIDAE						3	3	6.1	5.5- 7.4	SL	1.0	
BENTHOSEMA GLACIALE	1	1	10.5		SL	3	3	8.3	7.8- 9.2	SL	1.3	
UROPHYCIS CHUSS	1	1	1.4		NL						0.3	
MERLUCCIUS BILINEARIS					0						1 0.0	0.3
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED					UNIDENTIFIED						
J 1 26 06	SAMPLING DEPTH 0- 6M											
ANCHOA MITCHILLI	247	57	4.9	2.8- 7.0	TL						29.9	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE											
J 2 26 06	SAMPLING DEPTH 0- 6M											
ANCHOA MITCHILLI	1279	263	3.5	1.5- 6.8	TL						155.0	
CYNOSCION SP.	6	6	2.8	2.5- 3.1	SL						0.7	
PRIONOTUS CAROLINUS	4	4	2.9	2.1- 4.0	SL						0.5	
CITHARICHTHYS ARCTIFRONS	4	4	2.1	1.8- 2.2	SL						0.5	
ETROPUS MICROSTOMUS	1	1	2.7		SL						0.1	
HIPPOGLOSSINA OBLONGUS	2	2	3.5	2.5- 4.4	SL						0.2	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
J 3 26 06	SAMPLING DEPTH 0- 6M											
ANCHOA MITCHILLI	122	30	3.2	1.5- 5.5	TL						14.8	
MENTICIRRHUS SP.	3	3	2.9	2.7- 3.2	SL						0.4	
SARDA SARDA					9						0.0	1.1
PRIONOTUS CAROLINUS	3	2	2.7	2.7- 2.8	SL						0.4	
HIPPOGLOSSINA OBLONGUS	2	2	2.6	2.5- 2.6	SL						0.2	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
J 4 26 06	SAMPLING DEPTH 0- 6M											
ANCHOA MITCHILLI	57	53	4.1	1.6- 5.8	TL						6.9	
UROPHYCIS CHUSS	4	4	2.3	2.0- 2.6	NL						0.5	
MENTICIRRHUS SP.	5	3	2.2	1.9- 2.4	SL						0.6	
TAUTOGA ONITIS	12	11	2.9	2.3- 3.7	TL						1.5	
SARDA SARDA	4	3	3.5	3.3- 3.8	SL	4					0.5	0.5
PEPRILUS TRIACANTHUS	6	6	3.0	2.1- 3.7	SL						0.7	
PRIONOTUS CAROLINUS	316	22	2.5	2.1- 2.9	SL						38.3	
ETROPUS MICROSTOMUS	41	39	3.1	2.2- 4.6	SL						5.0	
HIPPOGLOSSINA OBLONGUS	35	33	3.2	2.1- 4.8	SL						4.2	
ADDITIONAL LARVAE CAUGHT	URANOSCOPIDAE STROMATEIDAE UNIDENTIFIED											
J 5 26 06	SAMPLING DEPTH 0-15M											
MENTICIRRHUS SP.	1	1	2.3		SL						0.3	
TAUTOGA ONITIS	3	3	3.1	2.4- 3.9	TL						0.9	
PEPRILUS TRIACANTHUS	5	5	7.6	2.1-26.4	SL						1.5	
ETROPUS MICROSTOMUS	5	4	3.8	3.4- 4.2	SL						1.5	
HIPPOGLOSSINA OBLONGUS	1										0.3	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											

CRUISE DATE 066 7 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER $10M^2$ LARVAE	EGGS
J 6 27 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ANCHOA MITCHILLI							1	1	4.7		TL		0.2	
BENTHOSEMA GLACIALE	7	7	6.6	6.1- 7.2	SL		3	3	7.5	6.1- 9.7	SL		2.7	
LOPHIUS AMERICANUS	1	1	10.0		TL								0.3	
ENCHELYOPUS CIMBRIUS						0	2	2	11.0	4.6-17.4	SL	0	0.3	C.C
UROPHYCIS CHUSS	5	4	2.9	2.5- 3.2	NL								1.6	
LIMANDA FERRUGINEA							4	4	11.7	9.1-14.2	SL		0.6	
J 7 27 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BENTHOSEMA GLACIALE	6	6	6.7	6.4- 7.6	SL								2.0	
LOPHIUS AMERICANUS	1	1	19.0		TL								0.3	
PRIONOTUS CAROLINUS	1	1	3.1		SL								0.3	
LIPARIS INQUILINUS							1	1	10.0		TL		0.3	
GLYPTOCEPHALUS CYNOGLOSSUS	3	2	12.1	8.7-15.5	SL								1.0	
LIMANDA FERRUGINEA	56	25	10.4	7.5-13.3	SL		9	9	9.9	8.2-12.1	SL		19.8	
K 1 26 06	SAMPLING DEPTH 0- 6M													
SARDA SARDA						16							0.0	1.9
K 2 26 06	SAMPLING DEPTH 0-15M													
ANCHOA MITCHILLI	29	29	3.3	1.5- 6.8	TL								8.8	
SARDA SARDA						8							0.0	2.4
ETROPUS MICROSTOMUS	1	1	2.0		SL								0.3	
HIPPOGLOSSINA OBLONGUS	1												0.3	
ADDITIONAL LARVAE CAUGHT	URANOSCOPICAE													
	UNIDENTIFIED													
K 3 26 06	SAMPLING DEPTH 0-15M													
ANCHOA MITCHILLI	14	11	5.6	2.5- 8.1	TL								4.2	
SARDA SARDA	1	1	3.3		SL	0							0.3	0.0
ETROPUS MICROSTOMUS	1	1	2.3		SL								0.3	
HIPPOGLOSSINA OBLONGUS	2	1	2.6		SL								0.6	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE													
	UNIDENTIFIED													
K 4 26 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
LOPHIUS AMERICANUS	2	2	4.3	4.3- 4.3	TL								0.6	
UROPHYCIS CHUSS	1	1	1.9		NL								0.3	
TAUTOGA ONITIS	5	5	4.1	3.6- 4.7	TL								1.6	
PEPRILUS TRIACANTHUS	19	19	4.9	2.6-15.0	SL		4	4	11.6	5.8-17.5	SL		6.5	
PRIONOTUS CAROLINUS	3	3	3.4	2.8- 4.0	SL								1.0	
ROTHUS OCELLATUS							1	1	4.6		SL		0.2	
ETROPUS MICROSTOMUS	24	22	3.3	2.4- 4.3	SL								7.8	
HIPPOGLOSSINA OBLONGUS	10	10	4.5	2.7- 6.9	SL		1						3.2	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	30.2		SL								0.3	
LIMANDA FERRUGINEA							1	1	14.6		SL		0.2	
ADDITIONAL LARVAE CAUGHT	URANOSCOPICAE						SYNODONTIDAE							
	GOBIIDAE													
	STROMATEIDAE													
	UNIDENTIFIED													
K 5 25 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
LOPHIUS AMERICANUS	2	2	15.2	14.0-16.5	TL								0.6	
ENCHELYOPUS CIMBRIUS						0	1	1	41.0		SL	0	0.2	0.0
TAUTOGOLABRUS ADSPERSUS	1	1	4.3		TL								0.3	
SCOMBER SCOMBRUS	1	1	29.1		SL	0	2	2	27.0	25.7-28.3	SL	0	0.6	C.C
PEPRILUS TRIACANTHUS	3	3	6.9	5.8- 9.0	SL		1	1	4.4		SL		1.1	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	11.0		SL		1	1	42.7		SL		0.5	
LIMANDA FERRUGINEA	1	1	14.1		SL		1	1	10.0		SL		0.5	
K 6 25 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BENTHOSEMA GLACIALE	5	4	7.6	6.7- 8.2	SL		1	1	7.1		SL		1.8	
LOPHIUS AMERICANUS	2	2	5.8	4.7- 6.9	TL		1	1	4.6		TL		0.9	
ENCHELYOPUS CIMBRIUS						0	1	1	4.9		SL	0	0.3	0.0
UROPHYCIS CHUSS	6	4	3.0	2.1- 3.9	NL								2.0	
MERLUCCIUS BILINEARIS	1	1	7.8		NL	0						0	0.3	C.C
TAUTOGOLABRUS ADSPERSUS	1	1	6.2		TL								0.3	
LIMANDA FERRUGINEA	20	20	10.3	8.5-13.6	SL		34	25	10.2	6.5-15.1	SL		17.3	
ADDITIONAL LARVAE CAUGHT							CYCLOTHONE SP.							
							GOBIIDAE							
K 7 25 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS CHUSS	1	1	13.2		NL								0.3	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						SERRANIDAE							

CRUISE DATE C66 7 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M^2 LARVAE	EGGS
L 1 23 06	SAMPLING DEPTH 0- 6M													
ANCHOA MITCHILLI	14	14	4.8	1.2- 7.7	TL								1.7	
CYNOSCION SP.	1												0.1	
PEPRILUS TRIACANTHUS	3	3	3.5	3.2- 4.0	SL								0.4	
ETROPUS MICROSTOMUS	3	3	2.8	1.9- 4.2	SL								0.4	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE SYNGNATHIDAE BLENNIIDAE GOBIIDAE													
L 2 22 06	SAMPLING DEPTH 0- 6M													
ANCHOA MITCHILLI	24	23	3.8	1.9- 6.8	TL								2.9	
CYNOSCION SP.	1	1	2.0		SL								0.1	
PEPRILUS TRIACANTHUS	8	8	3.5	2.4- 7.1	SL								1.0	
PRIONOTUS CAROLINUS	1	1	2.8		SL								0.1	
ETROPUS MICROSTOMUS	15	15	3.4	2.1- 4.7	SL								1.8	
LIMANDA FERRUGINEA	2												0.2	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE OPHIDIIDAE GOBIIDAE TRIGLIDAE UNIDENTIFIED													
L 3 22 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ANCHOA HEPSETUS	5	5	5.4	3.3-12.5	TL								1.6	
MYCTOPHIDAE	2	2	4.8	3.7- 5.9	SL								0.6	
BENTHOSEMA GLACIALE							1	1	8.0		SL		0.2	
LOPHIUS AMERICANUS	1	1	5.5		TL		4	4	5.8	4.3- 7.2	TL		1.0	
UROPHYCIS CHUSS	2	2	3.0	2.9- 3.1	NL								0.6	
CENTROPRISTIS STRIATA							2	2	5.7	5.5- 5.9	SL		0.3	
PEPRILUS TRIACANTHUS	27	24	3.7	2.9- 4.9	SL		74	67	3.4	1.6- 8.7	SL		20.3	
CITHARICHTHYS ARCTIFRONS							2	2	9.1	8.5- 9.7	SL		0.3	
ETROPUS MICROSTOMUS	13	13	3.6	2.6- 6.7	SL		2	1	3.9		SL		4.3	
HIPPOGLOSSINA OBLONGUS							7	7	4.7	3.3- 5.8	SL		1.1	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE MUGILIDAE UNIDENTIFIED						OPHIDIIDAE TETRAODONTIDAE							
L 4 22 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
SARDINELLA ANCHOVIA	2	2	14.7	13.8-15.6	TL								0.7	
MYCTOPHIDAE	1	1	3.8		SL								0.3	
DIAPHUS SP.							1	1	5.3		SL		0.3	
LOPHIUS AMERICANUS	6	6	4.8	3.8- 5.7	TL		4	4	5.9	4.7- 8.9	TL		3.1	
ENCHELYOPUS CIMBRIUS	1	1	4.0		SL	0	3	1	4.4		SL	0	1.3	C.C
PEPRILUS TRIACANTHUS	5	5	3.3	2.4- 4.3	SL		13	12	5.3	3.8- 6.6	SL		5.8	
BOTHUS OCELLATUS							1	1	17.0		SL		0.3	
ETROPUS MICROSTOMUS	4	4	5.0	4.1- 5.8	SL		1	1	5.1		SL		1.5	
HIPPOGLOSSINA OBLONGUS	1	1	6.7		SL								0.3	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE LABRIDAE OR SCARIDAE GOBIIDAE BALISTIDAE UNIDENTIFIED						SYNODONTIDAE BLENNIIDAE GOBIIDAE TRIGLIDAE UNIDENTIFIED							
L 5 22 06	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ANCHOA HEPSETUS	5	5	8.1	4.9-12.6	TL								1.7	
BENTHOSEMA GLACIALE	1	1	7.4		SL		2	2	5.5	5.3- 5.8	SL		1.0	
LOPHIUS AMERICANUS	6	6	6.3	4.6- 9.4	TL		1	1	5.4		TL		2.1	
ENCHELYOPUS CIMBRIUS						0	1	1	4.1		SL	0	0.3	C.C
UROPHYCIS CHUSS	1	1	4.1		NL								0.3	
MENTICIRRHUS SP.							1	1	4.1		SL		0.3	
PEPRILUS TRIACANTHUS	30	30	4.2	1.9- 7.3	SL		3	3	4.0	3.9- 4.0	SL		10.0	
ETROPUS MICROSTOMUS	6	5	4.7	3.6- 6.2	SL								2.0	
HIPPOGLOSSINA OBLONGUS	5	5	4.5	3.1- 6.4	SL		1	1	2.8		SL		1.8	
LIMANDA FERRUGINEA							2	1	13.7		SL		0.7	
ADDITIONAL LARVAE CAUGHT	LOPHIEFORMES OPHIDIIDAE CARANGIDAE GOBIIDAE STROMATEIDAE TRIGLIDAE BALISTIDAE UNIDENTIFIED						OPHIDIIDAE GOBIIDAE BALISTIDAE UNIDENTIFIED							
P 1 23 06	SAMPLING DEPTH 0- 6M													
MENTICIRRHUS SP.	1	1	3.4		SL								0.1	

CRUISE DATE 066 7 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	2 NO. PER 10M LARVAE	EGGS
# 2 23 06	SAMPLING DEPTH C-15M											
ENGRAULIS EURYSTOLE	1	1	15.1		TL						0.3	
MYCTOPHIDAE	1	1	3.7		SL						0.3	
CYNOSCION SP.	2	2	3.1	2.9- 3.4	SL						0.6	
LARTMUS FASCIATUS	1	1	3.7		SL						0.3	
MENTICIRRHUS SP.	5	5	3.4	2.4- 4.6	SL						1.5	
PEPRILUS TRIACANTHUS	1	1	3.3		SL						0.3	
SYMPHURUS SP.	1	1	2.8		SL						0.3	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE PARALEPIDIDAE OPHIDIIDAE STROMATEIDAE BALISTIDAE TETRAODONTIDAE											
# 3 23 06	SAMPLING DEPTH 0-15M											
CEPHIDHTHUS GOMEST	3	3	28.8	24.5-31.5	TL						0.9	
SARDINELLA ANCHOVIA	2	2	8.8	7.0-10.7	TL						0.6	
ENGRAULIS EURYSTOLE	22	22	8.5	3.0-17.7	TL						6.7	
MYCTOPHIDAE	2	1	4.6		SL						0.6	
CERATOSCOPELUS MADERENSIS	12	12	5.4	3.5- 7.0	SL						3.6	
CERATOSCOPELUS WARMINGI	1	1	7.6		SL						0.3	
DIAPHUS SP.	1										0.3	
MYCTOPHUM AFFINE	3	3	5.4	4.0- 6.8	SL						0.9	
HEMANTHIAS VIVANUS	2	2	3.4	3.0- 3.9	SL						0.6	
AUXIS SP.	186	1E3	4.5	3.1-10.5	SL						6.4	
ELTHYNNUS ALLETTERATUS	1	1	6.8		SL						0.3	
THUNNUS ALBACARES	1	1	7.1		SL						0.3	
THUNNUS OBESUS OR ATLANTICUS	1	1	6.1		SL						0.3	
PEPRILUS TRIACANTHUS	2	2	3.3	2.5- 4.1	SL						0.6	
BOTHUS OCELLATUS	12	12	5.7	3.5- 7.4	SL						3.6	
CYCLOPSETTA FIMBRIATA	1	1	3.8		SL						0.3	
ETROPUS MICROSTOMUS	2	2	3.1	2.9- 3.3	SL						0.6	
SYACIUM PAPILLOSUM	15	15	4.3	2.1- 8.2	SL						4.5	
SYMPHURUS SP.	3	3	4.6	3.0- 6.7	SL						0.9	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE CYCLOTONE SP. SYNODONTIDAE PARALEPIDIDAE LOPHTIFORMES SYNGNATHIDAE SERRANIDAE APOGONIDAE CARANGIDAE CORYPHAENIDAE SPARIDAE LABRIDAE OR SCARIDAE MUGILIDAE BLENNIIDAE GOBIIDAE SCORPAENIDAE BALISTIDAE TETRAODONTIDAE UNIDENTIFIED											

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M 4 23 06

	********** LARVAE **********						********** LARVAE **********							
	NUMBER		LENGTHS (MM)			NO.	NUMBER		LENGTHS (MM)			NO.	NO. PER 10M²	
	TOTAL	MEAS.	MEAN	RANGE	MEAS.	EGGS	TOTAL	MEAS.	MEAN	RANGE	MEAS.	EGGS	LARVAE	EGGS
	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 15-33M							
MEGALOPS ATLANTICA							1	1	10.5		NL		0.3	
ALBULA VULPES							2	1	20.0		NL		0.7	
OPHICHTHUS GOMESI							2	2	21.3	18.0-24.7	TL		0.7	
SARDINELLA ANCHOVIA	1	1	10.6		TL								0.3	
ENGRAULIS EURYSTOLE	45	43	8.2	3.2-20.7	TL		14	14	5.8	2.6-15.1	TL		18.2	
MYCTOPHIDAE	9	9	4.6	2.6- 6.4	SL								3.0	
BENTHOSEMA SUBORBITALE	1	1	4.8		SL		1	1	5.1		SL		0.6	
CERATOSCOPELUS MADERENSIS	3	3	7.4	6.6- 8.3	SL		1	1	10.9		SL		1.2	
CTENUS SP.	1	1	4.9		SL		4	4	5.6	3.9- 7.5	SL		1.6	
LAMPANYCTUS ALATUS OR PHOTONCTUS	1	1	5.4		SL		1	1	5.1		SL		0.6	
LAMPANYCTUS CUPRINUS							1	1	6.2		SL		0.3	
MYCTOPHUM SELENOPS	1	1	4.3		SL								0.3	
UROPHYCIS CHUSS	1	1	2.4		NL								0.3	
HEMIANTHIAS VIVANUS	1	1	4.1		SL		1	1	6.0		SL		0.6	
LAMPANYCTUS FASCIATUS	1	1	3.9		SL								0.3	
AUXIS SP.	143	130	5.2	3.4-12.6	SL		35	35	6.4	4.0-10.4	SL		54.6	
THUNNUS ALBACORES OR ATLANTICUS	1	1	6.3		SL								0.3	
THUNNUS THYNNUS	1	1	9.3		SL								0.3	
PEPRILUS TRIACANTHUS	3	3	2.8	2.5- 3.5	SL								1.0	
BOTHUS OCELLATUS	41	25	6.4	3.5-10.2	SL		15	14	5.2	2.5-14.0	SL		17.3	
ETROPUS MICROSTOMUS	3	2	4.4	3.7- 5.0	SL		2	2	3.8	3.7- 3.9	SL		1.6	
SYACIUM PAPILLOSUM	48	47	5.4	2.8-11.1	SL		20	20	3.7	1.9- 5.4	SL		21.1	
SYNPHURUS SP.	4	4	6.2	3.7-10.7	SL		4	4	5.5	3.3- 7.7	SL		2.5	

ADDITIONAL LARVAE CAUGHT

ANGUILLIFORMES	MURAENIDAE
CYCLOTHONE SP.	OPHICHTHIDAE
SYNODONTIDAE	CYCLOTHONE SP.
PARALEPIDIDAE	SYNODONTIDAE
MYCTOPHIDAE	PARALEPIDIDAE
BREGMACEROTIDAE	LOPHIIFORMES
OPHIDIIDAE	BREGMACEROTIDAE
FISTULARIIDAE	FISTULARIIDAE
SERRANIDAE	SERRANIDAE
APOGONIDAE	MALACANTHUS SP.
CARANGIDAE	LABRIDAE OR SCARIDAE
CORYPHAENIDAE	CALLIONYMIDAE
SPARIDAE	GOBIIDAE
POMACENTRIDAE	ISTIOPHORIDAE
LABRIDAE OR SCARIDAE	SCORPAENIDAE
MUGILIDAE	DACTYLOPTERUS VOLITANS
BLENNIIDAE	BALISTIDAE
CALLIONYMIDAE	TETRAODONTIDAE
GOBIIDAE	UNIDENTIFIED
STROMATEIDAE	
SCORPAENIDAE	
TRIGLIDAE	
DACTYLOPTERUS VOLITANS	
BALISTIDAE	
TETRAODONTIDAE	
UNIDENTIFIED	

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P 5 23 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
PEGALOPS ATLANTICA	2	2	10.4	9.0-11.8	NL						0.7	
OPHICHTHIDAE	1	1	37.0		TL						0.3	
ARTERICHTUS KENDALLI						1	1	18.0		TL	0.3	
CALLECHELYS PERRYAE	1	1	58.0		TL						0.3	
MYRICHTHYS SP.						1	1	18.0		NL	0.3	
OPHICHTHUS GOMESI	2	2	39.5	25.0-54.0	TL	3	3	30.3	20.7-44.8	TL	1.6	
ENGRAULIS EURYSTOLE	134	33	7.7	2.0-13.7	TL	7	6	5.4	6.9-12.7	TL	44.7	
MYCTOPHIDAE	4	4	4.6	4.0- 5.0	SL	11	8	4.4	3.7- 5.5	SL	4.9	
CERATOSCOPELUS MADERENSIS	4	4	5.8	5.1- 6.7	SL	1	1	7.6		SL	1.5	
CERATOSCOPELUS WARMINGI	2	2	5.6	5.5- 5.7	SL	4	4	6.1	5.4- 7.1	SL	1.9	
DIAPHUS SP.	9	9	6.1	4.1- 9.7	SL	4	4	6.6	4.9- 9.5	SL	4.0	
LAMPADENA SP.	2	2	5.5	5.3- 5.7	SL						0.7	
HEMIBRANCHIUS VIVANUS	9	8	5.2	3.6- 8.2	SL	6	6	5.6	3.2- 7.6	SL	4.7	
LARIMUS FASCIATUS	2	2	3.5	3.3- 3.7	SL						0.7	
AUXIS SP.	193	162	5.4	2.8- 9.7	SL	36	35	6.7	3.6-10.3	SL	69.9	
ELTHYNNUS ALLETTERATUS	2	2	6.8	5.6- 8.2	SL	1	1	6.4		SL	0.9	
KATSUWONUS PELAMIS	5	5	5.9	5.1- 6.5	SL						1.7	
SCOMBEROMORUS CAVALLA	2	2	5.9	5.7- 6.1	SL						0.7	
THUNNUS THYNNUS	1	1	5.4		SL						0.3	
PEPRILUS TRIACANTHUS	12	11	4.6	2.2- 7.0	SL						4.0	
BOTHUS OCELLATUS	42	25	5.7	3.4- 9.4	SL	79	25	5.5	3.3-12.2	SL	28.9	
CYCLOPSETTA FIMBRIATA	5	5	6.6	3.0-11.0	SL						1.7	
ETROPUS MICROSTOMUS	3	3	4.5	3.3- 5.7	SL	6	6	4.0	3.2- 5.5	SL	2.9	
MONOLENE SESSILICAUDA	2	2	9.4	8.6-10.1	SL	1	1	7.1		SL	0.9	
SYACIUM PAPILLOSUM	100	25	4.5	3.0- 9.4	SL	14	14	4.2	2.3- 7.0	SL	24.7	
SYMPHURUS SP.	23	19	5.4	3.3-10.7	SL	5	5	7.0	4.0- 9.7	SL	8.6	
ADDITIONAL LARVAE CAUGHT	CONGRIDAE					OPHICHTHIDAE						
	CYCLOTHONE SP.					CYCLOTHONE SP.						
	STOMIATIDAE					VINCIGUERRIA SP.						
	SYNODONTIDAE					SYNODONTIDAE						
	PARALEPIDIDAE					PARALEPIDIDAE						
	LOPHIIFORMES					LOPHIIFORMES						
	BREGMACEROTIDAE					OPHIDIIDAE						
	OPHIDIIDAE					FISTULARIIDAE						
	HOLOCENTRIDAE					SERRANIDAE						
	SERRANIDAE					LABRIDAE OR SCARIDAE						
	APOGONIDAE					CALLIONYMIDAE						
	CARANGIDAE					GOBIIDAE						
	CORYPHAENIDAE					ACANTHURIDAE						
	POMACENTRIDAE					SCORPAENIDAE						
	LABRIDAE OR SCARIDAE					BALISTIDAE						
	SPHYRAENIDAE					UNIDENTIFIED						
	CALLIONYMIDAE											
	GOBIIDAE											
	GEMPYLIDAE											
	STROMATEIDAE											
	SCORPAENIDAE											
	TRIGLIDAE											
	BALISTIDAE											
	TETRAODONTIDAE											
	UNIDENTIFIED											
N 1 24 06	SAMPLING DEPTH 0-15M											
ANCHOA HEPSETUS	1	1	13.5		TL						0.3	
ENGRAULIS EURYSTOLE	10	10	11.8	5.8-16.5	TL						3.0	
LARIMUS FASCIATUS	1	1	3.1		SL						0.3	
PEPRILUS TRIACANTHUS	13	11	2.7	1.5- 4.4	SL						3.9	
PRIONOTUS CAROLINUS	38	28	3.3	2.5- 4.8	SL						11.5	
BOTHUS OCELLATUS	1	1	13.8		SL						0.3	
SYACIUM PAPILLOSUM	1										0.3	
ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.											
	SYNODONTIDAE											
	CARANGIDAE											
	SCIAENIDAE											
	GOBIIDAE											
	TRICHIURIDAE											
	TRIGLIDAE											
	BALISTIDAE											
	TETRAODONTIDAE											
	UNIDENTIFIED											
N 2 24 06	SAMPLING DEPTH 0-15M											
SARDINELLA ANCHOVIA	2	2	12.1	8.1-16.2	TL						0.6	
PEPRILUS TRIACANTHUS	4	4	2.4	1.8- 3.4	SL						1.2	
PRIONOTUS CAROLINUS	10	10	2.9	2.2- 3.5	SL						3.0	
ETROPUS MICROSTOMUS	1	1	2.0		SL						0.3	
SYACIUM PAPILLOSUM	1	1	3.0		SL						0.3	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE											
	OPHIDIIDAE											
	CARANGIDAE											
	CALLIONYMIDAE											
	TRIGLIDAE											
	BALISTIDAE											
	UNIDENTIFIED											

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STA.	D M	SPECIES ANALYZED	LARVAE NUMBER TOTAL	LARVAE NUMBER MEAS.	LARVAE LENGTHS (MM) MEAN	LARVAE LENGTHS (MM) RANGE	LARVAE LENGTHS (MM) MEAS.	NO. EGGS	LARVAE NUMBER TOTAL	LARVAE NUMBER MEAS.	LARVAE LENGTHS (MM) MEAN	LARVAE LENGTHS (MM) RANGE	LARVAE LENGTHS (MM) MEAS.	NO. EGGS	NO. PER 10M² LARVAE	NO. PER 10M² EGGS
N 3	24 06		SAMPLING DEPTH 0-15M													
		ENGRAULIS EURYSTOLE	6	6	6.4	4.6- 9.5	TL								1.8	
		HEMANTHIAS VIVANUS	1	1	3.0		SL								0.3	
		AUXIS SP.	6	6	5.4	4.2- 5.8	SL								1.8	
		PEPRILUS TRIACANTHUS	13	13	2.4	1.5- 3.0	SL								3.9	
		BOTHUS OCELLATUS	3	3	2.9	2.2- 4.2	SL								0.9	
		ETROPUS MICROSTOMUS	1	1	4.5		SL								0.3	
		SYACIUM PAPILLOSUM	2	1	5.3		SL								0.6	
		SYMPHURUS SP.	1	1	4.7		SL								0.3	
		ADDITIONAL LARVAE CAUGHT	MURAENIDAE													
			EXOCOETIDAE													
			SERRANIDAE													
			CARANGIDAE													
			LABRIDAE OR SCARIDAE													
			UNIDENTIFIED													
N 4	24 06		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		OPHICHTHIDAE	1	1	49.0		TL								0.3	
		OPHICHTHUS GOMESI	2	2	33.2	23.5-43.0	TL								0.7	
		OPHICHTHUS OCELLATUS	1	1	15.0		TL								0.3	
		ENGRAULIS EURYSTOLE	3	3	6.8	5.6- 8.7	TL		7	7	10.5	5.6-13.8	TL		3.2	
		MYCTOPHIDAE							3	2	3.4	3.4- 3.4	SL		1.0	
		CERATOSCOPELUS WARMINGI	1	1	4.4		SL								0.3	
		DIAPHUS SP.							3	3	4.0	3.6- 4.3	SL		1.0	
		HYGOPHUM BENOITI							1	1	3.3		SL		0.3	
		HYGOPHUM BENOITI OR HYGOMI	1	1	4.1		SL		3	3	4.8	3.8- 5.5	SL		1.3	
		LAMPANYCTUS ALATUS OR PHOTONOTUS							1	1	10.1		SL		0.3	
		MYCTOPHUM SP.							7	6	4.5	3.6- 5.6	SL		2.3	
		MYCTOPHUM AFFINE							1	1	5.8		SL		0.3	
		MYCTOPHUM SELENOPS							1	1	6.0		SL		0.3	
		AUXIS SP.	33	32	4.5	3.6- 8.7	SL		14	14	4.3	3.5- 5.4	SL		14.6	
		SARDA SARDA						3						1	0.0	1.2
		PEPRILUS TRIACANTHUS							1	1	3.3		SL		0.3	
		BOTHUS OCELLATUS	25	23	4.8	2.2-11.2	SL		20	19	4.3	2.6- 6.7	SL		14.2	
		CYCLOPSETTA FIMBRIATA	1	1	3.8		SL		1	1	4.5		SL		0.6	
		SYACIUM PAPILLOSUM	23	20	3.4	2.5- 5.0	SL		19	18	3.2	2.2- 5.2	SL		13.2	
		SYMPHURUS SP.	1	1	6.0		SL		8	4	5.6	3.6- 9.2	SL		3.0	
		ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE						OPHICHTHIDAE							
			LOPHIIFORMES						CYCLOTHONE SP.							
			OPHIDIIDAE						SYNODONTIDAE							
			SERRANIDAE						PARALEPIDIDAE							
			APOGONIDAE						SUDIS SP.							
			CARANGIDAE						LOPHIIFORMES							
			LABRIDAE OR SCARIDAE						OPHIDIIDAE							
			SPHYRAENIDAE						CARAPIDAE							
			BLENNIIDAE						SERRANIDAE							
			CALLIONYMIDAE						APOGONIDAE							
			GOBIIDAE						SCIAENIDAE							
			ISTIOPHORIDAE						LABRIDAE OR SCARIDAE							
			SCORPAENIDAE						GOBIIDAE							
			BALISTIDAE						ACANTHURIDAE							
			UNIDENTIFIED						SCORPAENIDAE							
									UNIDENTIFIED							
N 5	24 06		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		ALBULA VULPES							1	1	6.4		NL		0.3	
		SARDINELLA ANCHOVIA	2	2	10.8	7.6-14.0	TL								0.7	
		ENGRAULIS EURYSTOLE	7	7	11.2	9.2-13.0	TL		3	3	9.1	7.9- 9.8	TL		3.1	
		CERATOSCOPELUS MADEFENSIS	1	1	9.2		SL								0.3	
		CERATOSCOPELUS WARMINGI	2	2	5.3	5.2- 5.4	SL								0.7	
		LAMPANYCTUS ALATUS OR PHOTONOTUS	1	1	9.2		SL								0.3	
		LAMPADENA SP.							2	2	3.5	3.8- 4.0	SL		0.7	
		MYCTOPHUM AFFINE							3	3	5.0	4.6- 5.4	SL		1.0	
		HEMANTHIAS VIVANUS	1	1	5.8		SL		1	1	4.6		SL		0.6	
		AUXIS SP.	110	108	4.7	3.4- 7.2	SL		55	55	5.8	4.3- 9.7	SL		51.3	
		BOTHUS OCELLATUS	4	4	7.6	3.6-10.0	SL		13	12	5.2	4.0- 7.6	SL		5.5	
		ETROPUS MICROSTOMUS	1	1	4.8		SL		1	1	5.1		SL		0.6	
		SYACIUM PAPILLOSUM	4	4	5.1	3.9- 8.0	SL		25	25	4.3	2.4- 6.0	SL		9.5	
		SYMPHURUS SP.							4	4	4.1	3.1- 5.8	SL		1.3	
		ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.						MURAENIDAE							
			SYNODONTIDAE						SYNODONTIDAE							
			LOPHIIFORMES						LOPHIIFORMES							
			HOLOCENTRIDAE						BREGMACEROTIDAE							
			SERRANIDAE						CAPROIDAE							
			APOGONIDAE						SERRANIDAE							
			CARANGIDAE						LABRIDAE OR SCARIDAE							
			LABRIDAE OR SCARIDAE						GOBIIDAE							
			CALLIONYMIDAE						SCORPAENIDAE							
			GOBIIDAE						BALISTIDAE							
			SCORPAENIDAE						TETRAODONTIDAE							
			BALISTIDAE						UNIDENTIFIED							
			UNIDENTIFIED													

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P 1 24 06	SAMPLING DEPTH 0- 6M											
ANCHOA HEPSETUS	2	2	17.3	9.7-25.0	TL						0.2	
ADDITIONAL LARVAE CAUGHT	SCIAENIDAE											
	BLENNIIDAE											
	TRIGLIDAE											
	UNIDENTIFIED											
P 2 24 06	SAMPLING DEPTH 0- 6M											
SARDINELLA ANCHOVIA	6	6	5.5	3.0- 8.1	TL						0.7	
ANCHOA HEPSETUS	1	1	17.0		TL						0.1	
ENGRAULIS EURYSTOLE	96	1	16.8		TL						11.6	
MENTICIRRHUS SP.	8	6	2.7	1.9- 3.9	SL						1.0	
PRIONOTUS CAROLINUS	9	9	3.3	1.6- 4.5	SL						1.1	
SYMPHURUS SP.	2	2	3.8	3.3- 4.2	SL						0.2	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE											
	ATHERINIDAE											
	SYNGNATHIDAE											
	BLENNIIDAE											
	STROMATEIDAE											
	BALISTIDAE											
	UNIDENTIFIED											
P 3 24 06	SAMPLING DEPTH 0- 6M											
ANCHOA HEPSETUS	2	2	16.7	15.0-18.5	TL						0.2	
PERRILUS TRIACANTHUS	47	45	1.7	1.1- 2.1	SL						5.7	
SYMPHURUS SP.	1	1	3.1		SL						0.1	
ADDITIONAL LARVAE CAUGHT	BLENNIIDAE											
	GOBIIDAE											
	BALISTIDAE											
	UNIDENTIFIED											
P 4 24 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
ENGRAULIS EURYSTOLE	5	3	8.9	7.5-10.3	TL						1.6	
PRIONOTUS CAROLINUS	7	7	2.1	1.7- 2.7	SL	1	1	1.9		SL	2.3	
FERCPUS MICROSTOMUS	2	2	2.9	2.9- 2.9	SL	1	2	2.8	2.8- 2.8	SL	0.8	
SYMPHURUS SP.	5	5	2.9	2.5- 3.2	SL	1	1	3.1		SL	1.7	
ADDITIONAL LARVAE CAUGHT	CARANGIDAE					OPHIDIIDAE						
	BLENNIIDAE					BALISTIDAE						
	BALISTIDAE					UNIDENTIFIED						
	UNIDENTIFIED											
P 5 25 06	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENGRAULIS EURYSTOLE						2	2	6.3	6.1-10.5	TL	0.7	
MYCTOPHIDAE	5	5	3.8	3.2- 4.2	SL	2	2	3.7	3.6- 3.9	SL	2.2	
CERATOSCOPELUS MADERENSIS	9	9	7.8	5.7-11.4	SL	2	2	8.5	7.5- 9.6	SL	3.4	
CERATOSCOPELUS WARMINGI	11	11	4.4	2.9- 5.9	SL	31	30	4.2	2.6- 7.7	SL	13.6	
CIAFHUS SP.	7	7	5.9	4.0- 8.0	SL	10	10	5.4	3.1- 9.7	SL	5.4	
LAMPANYCTUS SP.	2	2	3.8	3.3- 4.3	SL						0.7	
LAMPANYCTUS ALATUS OR PHOTONOTUS						3	3	8.3	3.9-10.5	SL	1.0	
LAMPANYCTUS ATER	1	1	6.7		SL						0.3	
LAMPANYCTUS NOBILIS						2	2	5.9	5.2- 6.7	SL	0.7	
LAMPADENA SP.	1	1	7.6		SL						0.3	
ACANTHOCYBIUM SOLANDERI	3	3	4.8	2.6- 8.3	SL	1	1	6.2		SL	1.2	
ALEXIS SP.	6	6	3.8	2.9- 5.6	SL	4	4	5.2	4.8- 5.8	SL	3.1	
KATSUWONUS PELAMIS						5	5	4.0	2.8- 5.9	SL	1.7	
BOTHUS OCELLATUS	2	2	4.5	3.6- 5.4	SL	5	5	5.3	3.5- 6.7	SL	2.3	
SYACIUM PAPILLOSUM						1	1	10.9		SL	0.3	
ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.					CYCLOTHONE SP.						
	VINCIGUERRIA SP.					STOMIATIDAE						
	STOMIATIDAE					SYNODONTIDAE						
	CAPROIDAE					CHLOROPHTHALMIDAE						
	SERRANIDAE					PARALEPIDIDAE						
	POMACENTRIDAE					CAPROIDAE						
	MUGILIDAE					SERRANIDAE						
	BALISTIDAE					APOGONIDAE						
	TETRAODONTIDAE					CARANGIDAE						
	UNIDENTIFIED					LABRIDAE OR SCARIDAE						
						CALLIONYMIDAE						
						GEMPYLIDAE						
						SCORPAENIDAE						
						TETRAODONTIDAE						
						UNIDENTIFIED						

CRUISE DATE 06610 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
A 1 C5 08 SAMPLING DEPTH 0- 6M														
CERATOSCOPELUS MADEFENSIS	1	1	8.2		SL								0.1	
ENCHELYOPUS CIMBRIUS						1							0.0	0.1
UROPHYCIS CHUSS	13	10	3.3	2.1- 4.8	NL								1.6	
MERLUCCIUS BILINEARIS	14	13	3.2	2.2- 5.6	NL	1							1.7	0.1
TAUTOGA ONITIS	3	3	4.1	2.6- 5.6	TL								0.4	
TAUTOGOLABRUS ADSPERSUS	25	25	7.2	4.8-11.4	TL								3.0	
PEPRILUS TRIACANTHUS	8	8	4.9	4.0- 7.0	SL								1.0	
PRICNOTUS CAROLINUS	3	3	2.9	2.7- 3.0	SL								0.4	
HIPPOGLOSSINA OBLONGUS	12	6	5.4	2.7- 9.0	SL								1.5	
SCOPHTHALMUS AQUOSUS	6	6	3.5	2.6- 4.3	SL								0.7	
ADDITIONAL LARVAE CAUGHT SYNGNATHIDAE UNIDENTIFIED														
A 2 C5 08 SAMPLING DEPTH 0-15M														
UROPHYCIS CHUSS	33	13	2.7	1.6- 5.5	NL								10.0	
MERLUCCIUS BILINEARIS	31	29	2.8	1.6- 5.1	NL	47							9.4	14.2
TAUTOGOLABRUS ADSPERSUS	4	4	6.1	4.1- 7.6	TL								1.2	
SCOMBER SCOMBRUS	1	1	7.7		SL	0							0.3	0.0
PEPRILUS TRIACANTHUS	9	9	4.3	3.3- 5.8	SL								2.7	
HIPPOGLOSSINA OBLONGUS	9	9	3.9	2.4- 7.2	SL								2.7	
SCOPHTHALMUS AQUOSUS	39	38	3.7	2.4- 4.9	SL								11.8	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	14.7		SL								0.3	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
A 3 C5 09	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 16-24M							
CERATOSCOPELUS MADERENSIS	1	1	7.5		SL								0.3	
ENCHELYOPUS CIMBRIUS	4	4	4.4	2.9- 6.8	SL	0						0	1.3	0.0
UROPHYCIS CHUSS	8	6	2.2	1.6- 2.7	NL		3	1	2.4		NL		2.9	
MERLUCCIUS BILINEARIS	41	34	4.0	2.2- 6.2	NL	73	20	20	5.8	2.2- 8.6	NL	18	15.8	25.3
TAUTOGA ONITIS	2	2	4.0	3.8- 4.3	TL								0.6	
TAUTOGOLABRUS ADSPERSUS	5	5	5.8	3.7- 7.0	TL								1.6	
SCOMBER SCOMBRUS	1	1	3.5		SL	0						0	0.3	0.0
PEPRILUS TRIACANTHUS	7	7	4.6	2.9- 5.5	SL		2	2	2.4	2.3- 2.6	SL		2.5	
HIPPOGLOSSINA OBLONGUS	6	4	2.7	2.4- 2.8	SL								1.9	
SCOPHTHALMUS AQUOSUS	26	26	4.1	3.0- 6.2	SL		14	14	4.4	3.0- 6.7	SL		10.2	
LIMANDA FERRUGINEA	1	1	7.3		SL		2	2	7.4	6.1- 8.7	SL		0.6	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
A 4 C5 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CERATOSCOPELUS MADEFENSIS	2	2	6.8	6.5- 7.2	SL								0.7	
ENCHELYOPUS CIMBRIUS	1	1	2.8		SL	5	11	9	3.0	1.6- 4.3	SL	0	4.0	1.7
UROPHYCIS CHUSS	72	12	2.2	1.3- 3.7	NL		1	1	4.3		NL		24.0	
MERLUCCIUS BILINEARIS	217	193	3.1	1.6- 5.7	NL	119	54	49	5.1	2.4- 6.9	NL	4	83.1	39.7
TAUTOGOLABRUS ADSPERSUS	2	2	6.5	5.0- 8.1	TL								0.7	
PEPRILUS TRIACANTHUS	2	2	2.4	1.7- 3.1	SL								0.7	
HIPPOGLOSSINA OBLONGUS	13	7	2.5	2.2- 2.8	SL								4.3	
SCOPHTHALMUS AQUOSUS	12	12	2.9	2.2- 4.4	SL								4.0	
GLYPTOCEPHALUS CYNOGLOSSUS	3	2	7.8	5.9- 9.7	SL		7	4	6.4	5.0-10.6	SL		3.2	
LIMANDA FERRUGINEA							32	23	7.0	4.6-11.4	SL		10.7	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
A 5 C5 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 16-33M							
CERATOSCOPELUS MADERENSIS							1	1	7.0		SL		0.3	
ENCHELYOPUS CIMBRIUS	42	41	3.4	1.7- 5.7	SL	11	22	22	3.4	2.1- 4.8	SL	5	19.9	5.0
UROPHYCIS CHUSS	11	11	3.5	1.5- 7.9	NL		28	12	3.7	2.1- 5.2	NL		12.6	
MERLUCCIUS BILINEARIS	144	141	5.0	2.7- 8.1	NL	6	120	116	5.3	2.1- 6.6	NL	8	83.2	4.5
TAUTOGOLABRUS ADSPERSUS	8	8	6.4	4.5- 8.6	TL		9	9	4.7	2.8- 8.5	TL		5.4	
SARDA SARDA	3	3	4.4	4.3- 4.5	SL	0	1	1	3.6		SL	0	1.2	0.0
PEPRILUS TRIACANTHUS	14	13	3.6	1.6- 8.0	SL		23	22	3.0	2.0- 6.5	SL		11.9	
CITHARICHTHYS ARCTIFRONS	13	13	6.7	6.0- 8.6	SL		23	23	6.4	4.5- 8.3	SL		11.6	
HIPPOGLOSSINA OBLONGUS	11	11	5.7	3.9- 7.1	SL		7	7	5.6	4.7- 6.6	SL		5.6	
GLYPTOCEPHALUS CYNOGLOSSUS	8	5	5.1	3.3- 6.4	SL		10	9	7.8	4.2-15.2	SL		5.7	
ADDITIONAL LARVAE CAUGHT OPHIDIIDAE														

CRUISE DATE 0661C 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER LOW LARVAE	2 EGGS
A 6 05 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CERATOSCOPELUS MADERENSIS	23	23	6.5	5.1- 9.6	SL		30	30	7.1	5.2-10.1	SL		16.9	
LOPHIUS AMERICANUS	5	5	5.2	4.7- 5.8	TL		4	4	6.0	4.4- 8.0	TL		2.8	
ENCHELYOPUS CIMBRIUS	5	5	3.2	2.5- 3.8	SL	134	2	2	3.0	3.0- 3.0	SL	12	2.2	44.7
UROPHYCIS SP.	1												0.3	
UROPHYCIS CHUSS	1035	39	2.7	1.5- 4.8	NL		31	29	4.4	2.4- 5.8	NL		345.0	
MERLUCCIUS BILINEARIS	144	131	4.0	2.2- 6.6	NL	71	424	401	5.8	2.0- 5.2	NL	0	184.5	23.7
TAUTOGOLABRUS ADSPERSUS	5	5	6.4	4.5- 9.9	TL		1	1	5.2		TL		1.8	
ALXIS SP.	7	7	6.0	4.7- 7.7	SL								2.3	
SARDA SARDA	6	4	3.7	3.0- 5.0	SL	17						0	2.0	5.7
SCOMBER SCOMBRUS	1	1	3.3		SL	0						0	0.3	0.0
PEPRILUS TRIACANTHUS	176	71	3.0	2.3- 6.8	SL		1	1	3.3		SL		58.7	
CITHARICHTHYS ARCTIFRONS	486	25	5.2	3.0- 6.8	SL		288	25	6.6	5.4- 8.8	SL		241.8	
HIPPOGLOSSINA OBLONGUS	175	170	4.0	2.4- 6.6	SL		15	15	5.0	2.5- 8.4	SL		58.3	
GLYPTOCEPHALUS CYNOGLOSSUS							25	25	11.0	5.8-18.1	SL		8.3	
LIMANDA FERRUGINEA							13	13	8.0	5.4-12.2	SL		4.3	
ADDITIONAL LARVAE CAUGHT	CYCLOTHEIDAE						OPHIDIIDAE							
	OPHIDIIDAE						STROMATEIDAE							
	STROMATEIDAE													
	UNIDENTIFIED													
A 7 05 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CERATOSCOPELUS MADERENSIS	99	99	6.5	5.4-10.3	SL		64	64	7.0	6.1- 8.9	SL		51.0	
CERATOSCOPELUS WARMINGI	1	1	6.2		SL								0.3	
LOPHIUS AMERICANUS							7	7	5.0	3.9- 6.3	TL		2.3	
ENCHELYOPUS CIMBRIUS						0						3	0.0	1.0
UROPHYCIS SP.	1	1	4.1		NL								0.3	
UROPHYCIS CHUSS	232	54	2.3	1.2- 4.4	NL		135	25	2.9	1.9- 5.7	NL		114.6	
MERLUCCIUS BILINEARIS	7	5	3.6	2.3- 4.3	NL	5	40	36	4.2	2.2-10.1	NL	10	15.4	4.8
ALXIS SP.	622	517	3.8	2.4- 9.5	SL		10	10	3.7	2.9- 4.6	SL		207.3	
SARDA SARDA	8	8	3.4	3.2- 3.9	SL	12						1	2.7	4.0
PEPRILUS TRIACANTHUS	16	16	3.3	1.1-14.9	SL		1	1	3.4		SL		5.3	
ETHUS OCELLATUS	1	1	11.0		SL								0.3	
CITHARICHTHYS ARCTIFRONS	72	25	3.8	2.2-11.6	SL		136	25	6.9	4.4- 5.7	SL		66.9	
HIPPOGLOSSINA OBLONGUS	50	45	3.2	2.4- 6.0	SL		32	31	4.2	3.1- 8.1	SL		25.7	
LIMANDA FERRUGINEA							1	1	5.4		SL		0.3	
ADDITIONAL LARVAE CAUGHT	CYCLOTHEIDAE SP.						OPHIDIIDAE							
	OPHIDIIDAE						LABRIDAE OR SCARIDAE							
	STROMATEIDAE						GOBIIDAE							
	UNIDENTIFIED						STROMATEIDAE							
							UNIDENTIFIED							
B 1 06 08	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	1	1	5.6		TL								0.3	
ENCHELYOPUS CIMBRIUS	4	4	3.1	1.7- 5.3	SL	0							1.2	0.0
UROPHYCIS CHUSS	13	10	3.4	3.2- 3.7	NL								3.9	
MERLUCCIUS BILINEARIS	2	1	2.6		NL	0							0.6	0.0
TAUTOGA ONITIS	41	36	3.8	2.7- 4.9	TL								12.4	
TAUTOGOLABRUS ADSPERSUS	93	52	4.2	2.3- 8.5	TL								28.2	
PEPRILUS TRIACANTHUS	33	30	3.0	1.7- 4.6	SL								10.0	
PRIONOTUS CAROLINUS	9	9	3.3	2.1- 5.0	SL								2.7	
HIPPOGLOSSINA OBLONGUS	3	2	3.6	2.6- 4.5	SL								0.9	
ADDITIONAL LARVAE CAUGHT	STROMATEIDAE													
	UNIDENTIFIED													
B 2 06 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-21M							
LOPHIUS AMERICANUS							1	1	8.2		TL		0.1	
ENCHELYOPUS CIMBRIUS						2	6	6	3.6	2.2- 4.8	SL	0	0.6	0.6
UROPHYCIS CHUSS	40	25	2.2	1.2- 4.0	NL		20	12	2.8	1.9- 4.3	NL		14.4	
MERLUCCIUS BILINEARIS	7	7	3.8	2.5- 4.7	NL	9	29	22	3.6	2.1- 7.1	NL	1	5.2	2.9
TAUTOGA ONITIS	16	16	3.0	2.2- 4.1	TL		4	4	4.3	3.7- 5.4	TL		5.3	
TAUTOGOLABRUS ADSPERSUS	143	130	3.4	2.0- 6.8	TL		27	26	4.4	2.2- 6.5	TL		46.8	
SCOMBER SCOMBRUS	1	1	4.0		SL	0	1	1	5.1		SL	0	0.4	0.0
PEPRILUS TRIACANTHUS	30	28	2.9	1.9- 4.0	SL		36	36	3.2	2.0- 4.3	SL		13.0	
PRIONOTUS CAROLINUS	14	14	3.1	1.9- 4.2	SL								4.5	
CITHARICHTHYS ARCTIFRONS							1						0.1	
HIPPOGLOSSINA OBLONGUS	8	6	3.4	2.3- 4.2	SL		7	6	3.5	3.2- 4.2	SL		3.2	
SCOPHTHALMUS AQUOSUS	3	2	3.0	2.7- 3.2	SL		5	5	3.8	3.3- 4.3	SL		1.5	
GLYPTOCEPHALUS CYNOGLOSSUS							1	1	5.7		SL		0.1	
ADDITIONAL LARVAE CAUGHT	STROMATEIDAE						OPHIDIIDAE							
	UNIDENTIFIED						STROMATEIDAE							
							UNIDENTIFIED							
B 3 06 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	1	1	2.0		SL	2						0	0.3	0.7
UROPHYCIS CHUSS	1	1	2.5		NL		2	2	2.1	1.8- 2.4	NL		1.0	
MERLUCCIUS BILINEARIS	2	2	2.0	1.9- 2.2	NL	22	10	10	3.3	2.1- 6.5	NL	2	3.9	7.3
TAUTOGOLABRUS ADSPERSUS	17	14	2.8	2.1- 3.7	TL		10	10	4.8	3.2- 6.0	TL		8.4	
PEPRILUS TRIACANTHUS	1	1	2.0		SL		1	1	2.2		SL		0.6	
HIPPOGLOSSINA OBLONGUS	2												0.7	
GLYPTOCEPHALUS CYNOGLOSSUS							3	2	6.6	6.2- 7.0	SL		1.0	
LIMANDA FERRUGINEA							8	8	5.8	5.0- 7.1	SL		2.7	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													

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STA.	D M	SPECIES ANALYZED	LARVAE NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	LARVAE NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
B 4	06 08		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		LOPHIUS AMERICANUS							1	1	5.6		TL		0.3	
		ENCHELYOPUS CIMBRIUS	5	5	3.1	2.4- 3.9	SL	0	1	1	6.5		SL	0	1.8	0.0
		UROPHYCIS CHUSS	23	10	3.6	1.9- 6.1	NL		1	1	3.7		NL		7.7	
		MERLUCCIUS BILINEARIS	29	25	3.9	1.7- 6.4	NL	4	15	15	5.5	2.9- 9.2	NL	0	13.7	1.3
		POMATOMUS SALTATRIX	28	28	3.6	2.8- 5.8	SL		2	2	4.0	3.9- 4.1	SL		9.3	
		TAUTOGA ONITIS	1	1	2.2		TL								0.3	
		TAUTOGOLABRUS ADSPERSUS	18	18	4.0	2.9- 6.4	TL		2	2	3.6	3.0- 4.3	TL		6.1	
		SARDA SARDA	20	18	4.0	3.2- 5.6	SL	6						0	6.7	2.0
		PEPRILUS TRIACANTHUS	41	38	3.3	1.3- 6.3	SL		11	11	4.6	3.5- 6.3	SL		16.0	
		PRIONOTUS CAROLINUS	3	3	4.0	3.4- 4.4	SL								1.0	
		CITHARICHTHYS ARCTIFRONS	1	1	5.2		SL		1	1	6.1		SL		0.6	
		HIPPOGLOSSINA OBLONGUS	10	10	3.9	2.2- 5.4	SL								3.3	
		SCOPHTHALMUS AQUOSUS	1	1	2.3		SL								0.3	
		GLYPTOCEPHALUS CYNOGLOSSUS							3	3	5.3	7.7-10.4	SL		1.0	
		LIMANDA FERRUGINEA							12	12	7.5	6.1- 9.9	SL		4.0	
		ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						UNIDENTIFIED							
B 5	06 08		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		CERATOSCOPELUS MADERENSIS							5	5	7.4	6.7- 8.5	SL		1.7	
		LOPHIUS AMERICANUS	1	1	3.5		TL		1	1	6.6		TL		0.6	
		ENCHELYOPUS CIMBRIUS	2	2	5.2	3.8- 6.6	SL	0	26	25	3.8	2.3- 6.5	SL	5	9.3	1.7
		UROPHYCIS CHUSS	35	17	2.7	1.2- 4.6	NL		5	3	3.1	1.2- 4.5	NL		12.2	
		MERLUCCIUS BILINEARIS	112	88	4.1	2.0- 5.7	NL	12	85	65	6.2	2.2-13.0	NL	2	61.9	4.3
		POMATOMUS SALTATRIX	9	9	3.5	3.0- 4.1	SL								3.0	
		TAUTOGOLABRUS ADSPERSUS	26	24	4.0	2.5- 5.7	TL		3	2	4.0	3.4- 4.6	TL		8.8	
		AUXIS SP.	1	1	4.9		SL		1	1	6.0		SL		0.6	
		SARDA SARDA	61	58	4.0	3.2- 6.4	SL	5						0	20.3	1.7
		SCOMBER SCOMBRUS	2	2	2.9	2.7- 3.2	SL	0	69	48	3.0	2.6- 3.8	SL	0	23.6	0.0
		PEPRILUS TRIACANTHUS	39	37	3.4	1.6- 8.7	SL		11	11	4.3	1.8- 7.2	SL		15.4	
		CITHARICHTHYS ARCTIFRONS	46	25	5.9	4.5- 8.1	SL		8	8	6.9	5.7-11.4	SL		16.5	
		HIPPOGLOSSINA OBLONGUS	21	20	4.5	2.4- 7.1	SL		2	1	6.3		SL		7.0	
		GLYPTOCEPHALUS CYNOGLOSSUS							4	3	12.1	8.9-15.4	SL		1.3	
		LIMANDA FERRUGINEA							10	9	5.2	7.9-11.9	SL		3.3	
		ADDITIONAL LARVAE CAUGHT	PISODONOPHIS CRUENTIFER						OPHICHTHIDAE							
			STROMATEIDAE						UNIDENTIFIED							
			UNIDENTIFIED													
B 6	06 08		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		CERATOSCOPELUS MADERENSIS	7	7	7.4	6.7- 8.6	SL		6	6	8.0	7.7- 8.4	SL		4.1	
		LOPHIUS AMERICANUS							8	8	5.7	4.3- 8.1	TL		2.7	
		ENCHELYOPUS CIMBRIUS						0	5	5	3.4	2.7- 4.1	SL	0	1.7	0.0
		UROPHYCIS CHUSS	367	42	3.7	1.4- 8.6	NL		29	11	4.2	2.4- 5.1	NL		122.3	
		MERLUCCIUS BILINEARIS	98	56	5.4	2.6-15.1	NL	1	172	149	6.8	3.0-16.7	NL	0	86.7	0.3
		POMATOMUS SALTATRIX	5	5	3.6	3.4- 3.8	SL								1.7	
		TAUTOGOLABRUS ADSPERSUS	1	1	6.7		TL								0.3	
		AUXIS SP.	17	17	4.7	4.0- 7.0	SL		1	1	4.1		SL		5.7	
		SARDA SARDA	8	8	6.1	5.6- 6.8	SL	0	1	1	5.0		SL	0	2.7	0.0
		PEPRILUS TRIACANTHUS	207	59	3.3	1.2-17.6	SL		10	10	5.0	2.2-13.5	SL		69.0	
		CITHARICHTHYS ARCTIFRONS	42	25	5.9	4.1- 7.1	SL		2	1	9.9		SL		14.0	
		HIPPOGLOSSINA OBLONGUS	71	50	4.4	3.1- 6.3	SL		5	5	4.9	3.7- 6.3	SL		23.7	
		GLYPTOCEPHALUS CYNOGLOSSUS							3	3	12.9	11.6-15.4	SL		1.0	
		LIMANDA FERRUGINEA							5	5	9.4	7.8-10.6	SL		1.7	
		ADDITIONAL LARVAE CAUGHT	ANGUILLIFORMES						UNIDENTIFIED							
			CYCLOTHONE SP.													
			OPHIDIIDAE													
			UNIDENTIFIED													
B 7	05 08		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		PISODONOPHIS CRUENTIFER	2	2	38.2	22.5-54.0	TL								0.7	
		CERATOSCOPELUS MADERENSIS	15	15	7.9	6.3- 9.8	SL		19	19	8.0	6.2- 9.4	SL		10.8	
		LOPHIUS AMERICANUS							25	25	5.0	3.2- 7.3	TL		8.3	
		UROPHYCIS CHUSS	227	20	3.6	1.4-15.5	NL		88	16	3.9	2.3- 5.3	NL		57.4	
		MERLUCCIUS BILINEARIS	163	162	6.6	3.2-15.3	NL	0	726	701	8.5	3.5-25.9	NL	0	250.9	0.0
		AUXIS SP.	3	3	5.5	3.8- 8.6	SL								1.0	
		PEPRILUS TRIACANTHUS	2	2	7.5	6.0- 9.0	SL								0.7	
		CITHARICHTHYS ARCTIFRONS	39	25	6.9	4.2-12.1	SL		21	21	7.0	2.6-11.0	SL		18.7	
		HIPPOGLOSSINA OBLONGUS	7	6	5.2	3.5- 6.7	SL								2.3	
		GLYPTOCEPHALUS CYNOGLOSSUS							6	6	14.9	6.7-24.5	SL		2.0	
		LIMANDA FERRUGINEA	1	1	15.4		SL		10	10	10.5	8.2-14.6	SL		3.6	
		ADDITIONAL LARVAE CAUGHT	ANGUILLIFORMES						CYCLOTHONE SP.							
			OPHICHTHIDAE													
			LOPHIIFORMES													
			OPHIDIIDAE													
			CALLIONYMIDAE													
			STROMATEIDAE													
			UNIDENTIFIED													

CRUISE DATE 06610 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
C 1 (6 08	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	3	3	8.6	8.1- 9.1	TL								0.4	
ENGRAULIS EURYSTOLE	223	29	5.2	2.8- 6.5	TL								27.0	
LOPHIUS AMERICANUS	1	1	3.4		TL								0.1	
ENCHELYOPUS CIMBRIUS	2	2	3.7	3.2- 4.1	SL	0							0.2	0.0
UROPHYCIS CHUSS	19	16	1.6	1.3- 2.0	NL								2.3	
MERLUCCIUS BILINEARIS	2	2	2.1	1.8- 2.4	NL	0							0.2	0.0
PEMATOMUS SALTATRIX	2	2	6.9	3.0-10.8	SL								0.2	
TAUTOGOLABRUS ADSPERSUS	71	65	3.4	2.1- 7.4	TL								8.6	
PEPRILUS TRIACANTHUS	11	10	2.8	1.9- 3.2	SL								1.3	
PRIONOTUS CAROLINUS	2	2	4.3	3.9- 4.7	SL								0.2	
HIPPOGLOSSINA OBLONGUS	6	6	3.6	2.2- 7.8	SL								0.7	
SCOPHTHALMUS AQUOSUS	5	5	3.8	3.1- 4.2	SL								0.6	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
	SPARIDAE													
	UNIDENTIFIED													
C 2 (7 08	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	1	1	7.7		TL								0.3	
ENGRAULIS EURYSTOLE	413	22	5.3	2.8- 7.0	TL								125.1	
LOPHIUS AMERICANUS	1	1	3.0		TL								0.3	
ENCHELYOPUS CIMBRIUS	44	42	2.6	1.5- 4.6	SL	0							13.3	0.0
MERLUCCIUS BILINEARIS						1							0.0	0.3
MENTICIRRHUS SP.	1	1	3.0		SL								0.3	
TAUTOGOLABRUS ADSPERSUS	45	45	4.1	2.3- 8.9	TL								13.6	
PEPRILUS TRIACANTHUS	12	12	2.7	1.4- 3.5	SL								3.6	
SCOPHTHALMUS AQUOSUS	9	8	4.7	2.7- 7.2	SL								2.7	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
C 3 (7 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
BREVOORTIA TYRANNUS	2	2	9.8	9.3-10.3	TL								0.6	
ENGRAULIS EURYSTOLE	18	15	6.2	5.1- 7.2	TL								5.8	
ENCHELYOPUS CIMBRIUS	10	9	4.3	2.5- 7.7	SL	0	5	5	3.3	2.2- 4.3	SL	0	3.9	0.0
UROPHYCIS CHUSS	2	2	1.4	1.4- 1.5	NL								0.6	
MERLUCCIUS BILINEARIS	9	9	3.2	2.6- 5.5	NL	0						0	2.9	0.0
PEMATOMUS SALTATRIX	14	14	3.9	3.4- 5.1	SL								4.5	
TAUTOGOLABRUS ADSPERSUS	21	21	4.3	3.1- 8.3	TL								6.8	
PEPRILUS TRIACANTHUS	6	6	3.8	2.3- 7.0	SL								1.9	
ETROPUS MICROSTOMUS	2	2	9.7	7.7-11.7	SL								0.6	
HIPPOGLOSSINA OBLONGUS	9	9	5.8	2.4- 9.2	SL		2	2	5.9	4.2- 7.5	SL		3.1	
SCOPHTHALMUS AQUOSUS	3	3	21.5	2.4-35.0	SL								1.0	
LIMANDA FERRUGINEA	3	3	9.8	7.2-12.0	SL		4	4	8.2	3.9-12.0	SL		1.6	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
C 4 (7 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE	11	6	4.3	3.0- 6.3	TL								3.7	
ENCHELYOPUS CIMBRIUS	5	5	4.2	2.6- 5.9	SL	0						0	1.7	0.0
MERLUCCIUS BILINEARIS	41	39	3.7	1.7- 6.3	NL	4	1	1	4.7		NL	0	13.7	1.3
PEMATOMUS SALTATRIX	4	4	2.4	2.4- 2.5	SL								1.3	
TAUTOGOLABRUS ADSPERSUS	32	30	3.5	2.3-10.2	TL		1	1	5.0		TL		10.7	
SARDA SARDA						2						0	0.0	0.7
PEPRILUS TRIACANTHUS	12	11	3.6	1.7- 7.9	SL								4.0	
CITHARICHTHYS ARCTIFRONS	5	5	3.2	1.7- 8.0	SL								1.7	
ETROPUS MICROSTOMUS	1	1	4.7		SL								0.3	
HIPPOGLOSSINA OBLONGUS	19	16	3.2	2.1- 6.7	SL								6.3	
LIMANDA FERRUGINEA							2	2	13.4	13.1-13.7	SL		0.7	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
C 5 (7 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS CHUSS	1	1	1.2		NL								0.3	
MERLUCCIUS BILINEARIS						2	3	3	3.5	2.8- 4.8	NL	0	1.0	0.7
TAUTOGOLABRUS ADSPERSUS	7	6	3.7	2.9- 4.5	TL		3	3	4.6	4.3- 5.0	TL		3.1	
PEPRILUS TRIACANTHUS	1	1	4.3		SL								0.3	
PRIONOTUS CAROLINUS	2	2	3.4	3.2- 3.6	SL								0.7	
HIPPOGLOSSINA OBLONGUS	1	1	3.0		SL		2	2	9.0	8.3- 9.7	SL		1.0	
LIMANDA FERRUGINEA							1	1	7.5		SL		0.3	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						UNIDENTIFIED							
C 6 (7 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE							1	1	7.0		TL		0.3	
ENCHELYOPUS CIMBRIUS						0	2	2	3.7	3.4- 3.9	SL	0	0.7	0.0
UROPHYCIS CHUSS	14	12	3.6	1.5-16.1	NL								4.7	
MERLUCCIUS BILINEARIS	1	1	3.2		NL	19						0	0.3	6.3
PEMATOMUS SALTATRIX	1	1	3.0		SL								0.3	
TAUTOGOLABRUS ADSPERSUS	7	7	3.5	3.1- 4.0	TL		1	1	7.2		TL		2.4	
SARDA SARDA	1	1	3.6		SL	5						0	0.3	1.7
PEPRILUS TRIACANTHUS	4	4	2.0	1.5- 2.8	SL								1.3	
CITHARICHTHYS ARCTIFRONS	1	1	2.5		SL								0.3	
HIPPOGLOSSINA OBLONGUS	7	5	3.2	2.8- 3.4	SL								2.3	
LIMANDA FERRUGINEA							1	1	7.3		SL		0.3	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													

CRUISE DATE D6610 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
C 7 C7 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
LEPHIUS AMERICANUS	1	1	5.9		TL		1	1	3.5		TL		0.6	
ENCHELYOPUS CIMBRIUS						1	15	15	3.2	2.0- 4.2	SL	0	5.0	0.3
UROPHYCIS CHUSS	39	13	4.6	1.5- 7.0	NL		102	14	3.9	2.6- 5.6	NL		45.7	
MERLUCCIUS BILINEARIS						0	7	6	5.2	4.5- 6.0	NL	0	2.3	0.0
POMATOMUS SALTATRIX	4	3	4.7	3.1- 7.5	SL		3	3	3.0	2.9- 3.1	SL		2.2	
TAUTOGOLABRUS ADSPERSUS	2	2	6.2	6.1- 6.4	TL								0.7	
AUXIS SP.	1	1	9.2		SL		1	1	8.6		SL		0.6	
SARDA SARDA	9	9	6.0	4.7- 8.1	SL	1	17	17	5.6	4.3- 8.8	SL	0	8.4	0.3
PEPRILUS TRIACANTHUS	80	80	4.2	2.5- 9.5	SL		24	24	4.7	2.6- 6.6	SL		32.0	
CITHARICHTHYS ARCTIFRONS	41	25	5.9	3.7- 8.7	SL		14	14	6.3	5.0- 7.6	SL		17.0	
HIPPOGLOSSINA OBLONGUS	7	7	4.7	2.5- 7.5	SL		13	12	3.9	3.0- 5.8	SL		6.4	
GLYPTOCEPHALUS CYNOGLOSSUS							6	5	10.2	8.3-12.7	SL		2.0	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE						OPHICHTHIDAE							
	CYCLOTHONE SP.						OPHIDIIDAE							
	OPHIDIIDAE						STROMATEIDAE							
C 8 C7 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
LEPHIUS AMERICANUS	1	1	5.0		TL		12	12	6.4	3.4-11.9	TL		4.3	
ENCHELYOPUS CIMBRIUS						0	27	26	3.3	2.1- 4.4	SL	0	9.0	0.0
UROPHYCIS CHUSS	25	25	4.5	1.2- 7.5	NL		56	11	4.5	2.2- 9.3	NL		26.2	
MERLUCCIUS BILINEARIS	1	1	4.9		NL	0	87	73	5.4	3.3- 7.3	NL	0	29.3	0.0
POMATOMUS SALTATRIX	4	4	3.6	3.4- 3.8	SL								1.3	
SARDA SARDA	2	2	6.0	4.1- 7.9	SL	0	1	1	10.8		SL	0	0.9	0.0
PEPRILUS TRIACANTHUS	43	43	5.1	3.1- 8.5	SL		11	11	4.4	3.2- 5.7	SL		16.6	
CITHARICHTHYS ARCTIFRONS	143	25	6.1	5.0- 8.2	SL		22	22	6.8	5.1-11.2	SL		50.2	
HIPPOGLOSSINA OBLONGUS	5	5	4.8	3.8- 5.8	SL		3	3	5.5	3.6- 5.0	SL		2.5	
GLYPTOCEPHALUS CYNOGLOSSUS							4	4	12.9	5.3-25.9	SL		1.3	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE													
	OPHIDIIDAE													
	STROMATEIDAE													
D 1 C8 08	SAMPLING DEPTH 0- 6M													
ENGRAULIS EURYSTOLE	15	9	3.7	1.9- 7.0	TL								1.8	
TAUTOGOLABRUS ADSPERSUS	4	2	6.7	6.0- 7.4	TL								0.5	
D 2 C8 C8	SAMPLING DEPTH 0- 6M													
ENGRAULIS EURYSTOLE	15	15	5.1	3.7- 7.0	TL								1.8	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
D 3 C8 08	SAMPLING DEPTH 0-15M													
POMATOMUS SALTATRIX	1	1	2.9		SL								0.3	
PEPRILUS TRIACANTHUS	5	5	1.8	1.4- 2.2	SL								1.5	
ETROPUS MICROSTOMUS	1	1	2.5		SL								0.3	
HIPPOGLOSSINA OBLONGUS	5	5	3.1	2.2- 4.3	SL								1.5	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
C 4 C8 08	SAMPLING DEPTH 0- 6M													
ENGRAULIS EURYSTOLE	2	2	6.8	5.5- 8.1	TL								0.2	
UROPHYCIS CHUSS	1	1	3.5		NL								0.1	
POMATOMUS SALTATRIX	36	36	3.9	2.4- 6.2	SL								4.4	
SARDA SARDA						3							0.0	0.4
PEPRILUS TRIACANTHUS	5	5	4.6	1.7-11.0	SL								0.6	
CITHARICHTHYS ARCTIFRONS	1	1	2.5		SL								0.1	
HIPPOGLOSSINA OBLONGUS	8	3	4.7	2.8- 6.1	SL								1.0	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
C 5 C8 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
BREVOORTIA TYRANNUS	1	1	10.6		TL								0.3	
ANCHOA HEPSETUS	12	12	7.7	4.8-11.2	TL								3.9	
LEPHIUS AMERICANUS	1	1	4.0		TL								0.3	
ENCHELYOPUS CIMBRIUS						0	3	3	4.2	3.7- 4.8	SL	0	0.5	0.0
UROPHYCIS CHUSS	77	23	3.1	1.3- 4.8	NL		5	5	4.6	3.5- 6.6	NL		24.9	
MERLUCCIUS BILINEARIS	4	4	3.7	2.4- 7.1	NL	6	1	1	5.2		NL	0	1.4	1.9
POMATOMUS SALTATRIX	549	546	3.5	2.5- 5.1	SL		22	22	3.4	2.8- 4.5	SL		117.4	
TAUTOGOLABRUS ADSPERSUS	7	6	6.7	5.1- 8.5	TL		9	9	8.7	7.7-10.0	TL		3.6	
AUXIS SP.	206	184	3.1	2.0- 4.7	SL		2	2	2.9	2.8- 3.1	SL		66.6	
SARDA SARDA	48	44	3.4	2.8- 4.4	SL	159	5	3	4.0	3.5- 4.9	SL	2	15.5	51.4
PEPRILUS TRIACANTHUS	137	50	3.2	1.5- 7.5	SL		14	14	6.0	2.0- 9.0	SL		44.3	
PRIONOTUS CAROLINUS	1	1	4.7		SL								0.3	
PRIONOTUS EVOLANS	6	6	5.1	4.6- 5.4	SL								1.9	
CITHARICHTHYS ARCTIFRONS	76	25	2.7	1.9- 7.6	SL		4	4	7.1	6.0- 7.7	SL		24.6	
ETROPUS MICROSTOMUS	19	19	3.4	2.1- 5.6	SL								6.1	
HIPPOGLOSSINA OBLONGUS	331	50	3.8	2.4- 5.2	SL		138	50	5.1	3.2- 6.7	SL		123.9	
GLYPTOCEPHALUS CYNOGLOSSUS							1	1	28.2		SL		0.2	
LIMANDA FERRUGINEA							20	19	8.7	6.1-13.9	SL		3.2	
ADDITIONAL LARVAE CAUGHT	STROMATEIDAE						STROMATEIDAE							
	UNIDENTIFIED													

CRUISE DATE 06610 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
D 6 (E 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE	7	7	6.7	5.8- 7.7	TL								2.3	
LOPHIUS AMERICANUS	3	3	5.4	4.8- 6.3	TL								1.0	
UROPHYCIS CHUSS	26	10	3.6	2.0- 5.1	NL		7	7	2.9	1.5- 3.7	NL		10.1	
MERLUCCIUS BILINEARIS	7	6	5.8	4.5- 6.5	NL	0						0	2.3	0.0
PEMATOMUS SALTATRIX	77	17	3.3	2.2- 5.6	SL		2	2	4.3	4.3- 4.4	SL		25.7	
TAUTOGOLABRUS ADSPERSUS	30	30	4.9	3.3- 9.0	TL		1	1	3.4		TL		10.0	
AUXIS SP.	1	1	5.8		SL								0.3	
SARDA SARDA	12	12	4.7	3.1- 6.4	SL	7						0	4.0	2.3
PEPRILUS TRIACANTHUS	5	5	3.8	2.5- 6.2	SL								1.7	
PRIONOTUS CAROLINUS	2	2	5.3	4.9- 5.7	SL								0.7	
PRIONOTUS EVOLANS	1	1	6.7		SL		1	1	6.3		SL		0.6	
CITHARICHTHYS ARCTIFRONS	5	5	5.9	2.6-10.1	SL		1	1	5.2		SL		1.8	
HIPPOGLOSSINA OBLONGUS	10	10	5.1	3.2- 6.5	SL		3	2	5.5	4.5- 6.4	SL		4.0	
GLYPTOCEPHALUS CYNOGLOSSUS							3	3	17.6	16.4-19.7	SL		1.0	
LIMANDA FERRUGINEA							11	11	10.5	8.6-12.4	SL		3.7	
ADDITIONAL LARVAE CAUGHT							UNIDENTIFIED							
D 7 (7 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
LOPHIUS AMERICANUS	5	5	6.2	4.4- 8.9	TL								1.7	
ENCHELYOPUS CIMBRIUS	1	1	2.9		SL	0						0	0.3	0.0
UROPHYCIS CHUSS	74	21	3.4	1.8- 4.4	NL		7	5	3.3	2.2- 4.6	NL		24.7	
MERLUCCIUS BILINEARIS	21	20	6.0	4.5-13.5	NL	0	6	6	12.2	6.4-17.6	NL	0	8.3	0.0
PEMATOMUS SALTATRIX	114	51	4.1	2.8- 5.8	SL		4	4	3.7	3.3- 4.6	SL		38.0	
TAUTOGOLABRUS ADSPERSUS	26	26	4.9	3.4- 9.0	TL								8.7	
SARDA SARDA	4	4	6.6	3.8-10.2	SL	0	1	1	4.1		SL	0	1.5	0.0
PEPRILUS TRIACANTHUS	15	15	4.3	1.7- 7.0	SL								5.0	
CITHARICHTHYS ARCTIFRONS	21	19	4.5	3.3- 6.7	SL		4	4	5.5	5.2- 5.8	SL		7.6	
ETROPUS MICROSTOMUS	1	1	3.2		SL		1						0.6	
HIPPOGLOSSINA OBLONGUS	6	6	4.9	3.1- 6.2	SL		1	1	3.7		SL		2.1	
GLYPTOCEPHALUS CYNOGLOSSUS							1	1	12.7		SL		0.3	
LIMANDA FERRUGINEA	5	5	12.5	10.1-14.7	SL		30	30	11.0	7.2-16.7	SL		11.5	
ADDITIONAL LARVAE CAUGHT	STROMATEIDAE													
	UNIDENTIFIED													
D 8 (7 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
PISCODONOPHIS CRUENTIFER	1	1	27.2		TL								0.3	
MYCTOPHIDAE							1	1	5.5		SL		0.3	
CERATOSCOPELUS MADERENSIS	2	2	15.5	14.9-16.1	SL								0.7	
LOPHIUS AMERICANUS	1	1	13.5		TL		4	4	6.7	5.6- 8.4	TL		1.6	
ENCHELYOPUS CIMBRIUS						0	1	1	4.2		SL	0	0.3	0.0
UROPHYCIS CHUSS	106	16	3.8	1.6- 6.1	NL		7	5	4.3	3.7- 4.9	NL		25.3	
MERLUCCIUS BILINEARIS	1	1	3.6		NL	0	64	61	10.2	6.0-15.5	NL	0	21.6	0.0
TAUTOGOLABRUS ADSPERSUS	1	1	11.1		TL								0.3	
AUXIS SP.	51	45	4.6	2.6- 8.4	SL		2	2	6.2	6.1- 6.3	SL		17.0	
SARDA SARDA	14	14	6.9	3.5- 8.8	SL	0						0	4.7	0.0
PEPRILUS TRIACANTHUS	27	26	4.7	1.7- 9.0	SL		11	11	6.9	5.5- 9.3	SL		11.8	
CITHARICHTHYS ARCTIFRONS	115	25	5.2	2.7- 9.3	SL		313	25	6.2	4.7- 8.7	SL		138.8	
MONOLENE SESSILICAUDA	1	1	11.8		SL								0.3	
HIPPOGLOSSINA OBLONGUS	40	38	5.2	2.5- 7.7	SL		9	8	5.8	4.7- 7.0	SL		15.0	
SCOPHTHALMUS AQUOSUS	3	3	2.7	2.6- 2.7	SL								1.0	
GLYPTOCEPHALUS CYNOGLOSSUS							21	21	18.2	11.3-31.5	SL		7.0	
LIMANDA FERRUGINEA							17	17	10.6	7.3-13.8	SL		5.7	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE						OPHIDIIDAE							
	PISODONOPHIS CRUENTIFER						CARAPIDAE							
	OPHIDIIDAE						BLENNIIDAE							
	UNIDENTIFIED													
E 1 (8 08	SAMPLING DEPTH 0- 6M													
ANCHOA MITCHILLI	2	1	6.5		TL								0.2	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
E 2 (8 09	SAMPLING DEPTH 0- 6M													
E 3 (9 09	SAMPLING DEPTH 0- 6M													
ENGRAULIS EURYSTOLE	2	2	9.1	8.8- 9.5	TL								0.2	
PEMATOMUS SALTATRIX	1	1	3.1		SL								0.1	
PEPRILUS TRIACANTHUS	1	1	4.7		SL								0.1	
E 4 (9 09	SAMPLING DEPTH 0- 6M													
ENGRAULIS EURYSTOLE	12	11	7.0	5.6- 8.4	TL								1.5	
PEPRILUS TRIACANTHUS	29	29	3.4	1.0- 6.6	SL								3.5	

CRUISE DATE C6610 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	 NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	 NO. EGGS	2 NO. PER 10M LARVAE	 EGGS
E 5 C9 08	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
ENGRAULIS EURYSTOLE	2	2	6.1	5.6- 6.6	TL	8	8	5.8	3.7- 7.0	TL	1.9	
PONATOMUS SALTATRIX	95	95	4.2	2.9- 6.7	SL	11	11	4.0	3.6- 4.8	SL	31.0	
AUXIS SP.	2	2	3.6	3.0- 4.3	SL						0.6	
PEPRILUS TRIACANTHUS	5	5	4.7	3.3- 7.0	SL	28	28	4.7	2.6- 8.0	SL	6.1	
PRIONOTUS EVOLANS	1	1	5.5		SL						0.3	
CITHARICHTHYS ARCTIFRONS	1	1	5.2		SL	15	15	6.8	3.3- 9.1	SL	2.7	
ETROPUS MICROSTOMUS						10	10	7.1	4.6-10.3	SL	1.6	
HIPPOGLOSSINA OBLONGUS						21	20	5.2	4.2- 6.7	SL	3.4	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED					STROMATEIDAE						
E 6 C9 08	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ENGRAULIS EURYSTOLE						3	2	7.7	4.7-10.7	TL	1.0	
LOPHIUS AMERICANUS	2	2	4.8	4.3- 5.3	TL	1	1	5.7		TL	0.9	
UROPHYCIS CHUSS	17	17	4.3	2.3- 9.0	NL	21	9	4.6	2.9- 6.7	NL	12.1	
MERLUCCIUS BILINEARIS	1	1	5.3		NL 0	3	3	6.0	5.8- 6.2	NL 0	1.3	0.0
PONATOMUS SALTATRIX	59	59	4.3	2.9- 7.2	SL	12	12	5.9	4.0- 8.7	SL	21.7	
TAUTOGOLABRUS ADSPERSUS	3	3	5.7	5.4- 6.0	TL	4	4	7.1	6.0- 8.2	TL	2.2	
AUXIS SP.	20	20	4.4	3.4- 5.2	SL						6.7	
SARDA SARDA	1	1	7.0		SL 0					0	0.3	0.0
PEPRILUS TRIACANTHUS	8	8	5.4	2.7- 7.0	SL	5	5	7.3	6.8- 8.0	SL	4.1	
CITHARICHTHYS ARCTIFRONS	38	37	5.1	3.2- 7.7	SL	163	25	4.5	3.2- 7.9	SL	65.7	
ETROPUS MICROSTOMUS	1					2	2	5.4	5.4- 5.4	SL	1.0	
HIPPOGLOSSINA OBLONGUS	13	12	4.3	2.8- 6.1	SL	30	27	5.0	3.5- 8.5	SL	13.9	
GLYPTOCEPHALUS CYNOGLOSSUS						1	1	19.4		SL	0.3	
LIMANDA FERRUGINEA						5	5	8.1	6.5-10.0	SL	1.7	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE UNIDENTIFIED					OPHIDIIDAE						
E 7 C9 08	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
UROPHYCIS CHUSS	13	10	3.9	2.9- 8.0	NL	4	4	3.5	2.7- 5.3	NL	5.2	
MERLUCCIUS BILINEARIS	2	2	3.3	2.9- 3.7	NL 0	5	5	5.5	4.2- 7.2	NL 0	2.3	0.0
PONATOMUS SALTATRIX	209	209	3.8	2.7- 5.4	SL	21	21	3.9	2.9- 5.5	SL	69.7	
AUXIS SP.	10	9	3.5	2.7- 4.5	SL	3	3	4.0	3.8- 4.3	SL	4.0	
SARDA SARDA	1	1	3.3		SL 0	1	1	3.9		SL 0	0.6	0.0
PEPRILUS TRIACANTHUS	10	10	5.2	3.5- 6.5	SL	6	6	6.1	5.6- 7.2	SL	5.0	
CITHARICHTHYS ARCTIFRONS	23	21	3.8	2.4- 5.5	SL	33	32	5.0	2.2- 9.8	SL	17.9	
HIPPOGLOSSINA OBLONGUS	20	20	3.4	2.6- 4.5	SL	25	23	5.0	2.9- 6.7	SL	14.3	
GLYPTOCEPHALUS CYNOGLOSSUS						3	3	17.7	14.7-20.4	SL	1.0	
ADDITIONAL LARVAE CAUGHT						OPHIDIIDAE						
E 8 C9 08	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LOPHIUS AMERICANUS						1	1	14.3		TL	0.3	
UROPHYCIS CHUSS	23	19	2.2	1.2- 4.0	NL	4	3	5.3	3.0- 6.7	NL	8.2	
AUXIS SP.	81	79	5.6	2.8-10.5	SL	2	2	5.3	4.1- 6.5	SL	27.0	
SARDA SARDA	2	2	7.6	7.1- 8.1	SL 1	1	1	10.2		SL 0	0.9	0.3
PEPRILUS TRIACANTHUS	3	3	4.0	3.0- 5.9	SL	8	8	13.8	7.4-24.7	SL	3.6	
CITHARICHTHYS ARCTIFRONS	49	25	3.3	2.0- 5.4	SL	5	5	4.8	3.9- 6.6	SL	16.4	
HIPPOGLOSSINA OBLONGUS	37	34	3.0	1.8- 4.4	SL	6	6	4.2	3.0- 7.6	SL	13.1	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE OPHIDIIDAE					OPHICHTHIDAE MYCTOPHIDAE UNIDENTIFIED						
F 1 10 08	SAMPLING DEPTH 0- 6M											
ANCHOA MITCHILLI	29	29	3.8	2.0-13.3	TL						3.5	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE											
F 2 10 08	SAMPLING DEPTH 0- 6M											
ANCHOA MITCHILLI	11	11	4.3	2.5-11.1	TL						1.3	
PEPRILUS TRIACANTHUS	1	1	2.2		SL						0.1	
HIPPOGLOSSINA OBLONGUS	1	1	1.9		SL						0.1	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE											
F 3 10 08	SAMPLING DEPTH 0-15M											
PEPRILUS TRIACANTHUS	1	1	16.8		SL						0.3	
HIPPOGLOSSINA OBLONGUS	1	1	6.2		SL						0.3	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE											
F 4 10 08	SAMPLING DEPTH 0-15M											
ENGRAULIS EURYSTOLE	4	2	7.0	3.5-10.5	TL						1.2	
TAUTOGOLABRUS ADSPERSUS	1	1	2.7		TL						0.3	
PEPRILUS TRIACANTHUS	9	9	10.0	1.8-16.4	SL						2.7	
PRIONOTUS CAROLINUS	3	3	2.3	2.0- 2.8	SL						0.9	
HIPPOGLOSSINA OBLONGUS	2	2	4.1	2.3- 5.8	SL						0.6	

CRUISE DATE 06610 1966 STA. D M SPECIES ANALYZED	LARVAE NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	LARVAE NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
F 5 C9 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ENGRAULIS EURYSTOLE	14	12	7.8	4.0-10.3	TL		4	3	6.0	5.1- 6.8	TL		4.9	
UROPHYCIS CHUSS	4	3	5.7	3.7- 7.3	NL		3	2	7.6	6.8- 8.5	NL		1.7	
CENTROPRISTIS STRIATA	3	3	3.6	2.8- 4.5	SL		1	1	3.7		SL		1.1	
POMATOMUS SALTATRIX	37	37	4.3	2.4- 5.5	SL		1	1	3.1		SL		12.0	
AUXIS SP.	2	2	4.1	2.8- 5.5	SL								0.6	
SARDA SARDA	2	2	4.8	4.7- 5.0	SL	0						0	0.6	0.0
PEPRILUS TRIACANTHUS	22	22	3.8	2.0- 7.0	SL		5	5	3.7	2.5- 7.1	SL		7.6	
PRIONOTUS CAROLINUS	3	3	3.7	2.6- 5.4	SL		2	2	2.8	2.8- 2.9	SL		1.3	
CITHARICHTHYS ARCTIFRONS	2	2	3.9	2.7- 5.0	SL		5	5	5.2	3.1- 7.8	SL		1.4	
ETROPUS MICROSTOMUS	1	1	4.5		SL								0.3	
HIPPOGLOSSINA OBLONGUS	8	8	5.1	2.9- 8.4	SL		1	1	6.7		SL		2.6	
GLYPTOCEPHALUS CYNOGLOSSUS							1	1	14.2		SL		0.2	
ADDITIONAL LARVAE CAUGHT	STROMATEIDAE													
	UNIDENTIFIED													
F 6 C9 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE	112	29	6.4	2.4-10.5	TL		11	11	9.3	7.7-12.8	TL		37.3	
UROPHYCIS CHUSS	21	17	3.8	2.6- 7.0	NL		2	2	4.1	3.1- 5.2	NL		7.0	
MERLUCCIUS BILINEARIS	1	1	6.0		NL	0	2	2	7.0	6.9- 7.2	NL	0	1.0	0.0
POMATOMUS SALTATRIX	240	233	4.9	3.6- 8.1	SL		16	16	4.7	3.0- 8.0	SL		80.0	
TAUTOGOLABRUS ADSPERSUS	7	7	5.4	4.2- 7.2	TL		1	1	6.4		TL		2.4	
AUXIS SP.	28	28	4.9	3.7- 6.4	SL		3	3	4.8	3.9- 5.4	SL		9.4	
PEPRILUS TRIACANTHUS	225	53	3.6	1.9- 7.1	SL		5	3	3.5	2.9- 4.0	SL		75.0	
CITHARICHTHYS ARCTIFRONS	28	27	4.6	2.4-11.1	SL		6	6	4.8	3.1- 6.4	SL		10.4	
ETROPUS MICROSTOMUS	1	1	8.7		SL								0.3	
HIPPOGLOSSINA OBLONGUS	14	13	4.0	3.4- 5.2	SL		1	1	5.5		SL		4.7	
GLYPTOCEPHALUS CYNOGLOSSUS							1	1	17.9		SL		0.3	
LIMANDA FERRUGINEA							1	1	13.3		SL		0.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
F 7 C9 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
PISCODONOPHIS GRUENTIFER	1	1	26.3		TL								0.3	
LOPHIUS AMERICANUS	1	1	12.1		TL								0.3	
UROPHYCIS CHUSS	18	17	4.8	1.6-14.1	NL		2	2	7.3	6.6- 8.1	NL		6.1	
MERLUCCIUS BILINEARIS	7	7	7.5	5.5-10.1	NL	0						0	2.3	0.0
POMATOMUS SALTATRIX	11	11	6.1	4.0- 9.3	SL		1	1	4.4		SL		3.7	
TAUTOGOLABRUS ADSPERSUS	5	4	8.3	6.2-10.0	TL								1.7	
AUXIS SP.	105	97	3.9	2.5- 8.5	SL		3	3	3.5	3.3- 4.5	SL		35.0	
SARDA SARDA	2	2	8.8	8.7- 9.0	SL	0						0	0.7	0.0
PEPRILUS TRIACANTHUS	72	70	2.9	1.8- 4.5	SL		3	3	3.6	3.2- 4.3	SL		24.0	
CITHARICHTHYS ARCTIFRONS	271	25	4.8	2.9- 9.6	SL		4	4	5.1	3.2- 7.2	SL		90.3	
HIPPOGLOSSINA OBLONGUS	26	26	4.4	2.2- 7.7	SL		2	2	3.2	2.8- 3.5	SL		8.7	
GLYPTOCEPHALUS CYNOGLOSSUS							4	4	20.2	9.2-26.1	SL		1.3	
LIMANDA FERRUGINEA	5	4	13.2	10.8-14.4	SL		6	6	10.5	9.0-12.7	SL		3.5	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE						OPHICHTHIDAE							
	OPHIDIIDAE						OPHIDIIDAE							
	STROMATEIDAE						UNIDENTIFIED							
G 1 21 08	SAMPLING DEPTH 0- 6M													
G 2 21 08	SAMPLING DEPTH 0- 6M													
ENGRAULIS EURYSTOLE	9	6	2.8	2.1- 4.2	TL								1.1	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
G 3 21 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
PEPRILUS TRIACANTHUS							1	1	16.2		SL		0.2	
G 4 21 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ENGRAULIS EURYSTOLE	88	72	6.2	2.0-16.9	TL								28.4	
LOPHIUS AMERICANUS	1	1	5.3		TL								0.3	
UROPHYCIS CHUSS	14	11	4.7	3.6- 7.1	NL		1	1	4.5		NL		4.5	
CENTROPRISTIS STRIATA	17	17	3.6	2.3- 5.1	SL								5.5	
AUXIS SP.	1	1	9.5		SL								0.3	
PEPRILUS TRIACANTHUS	53	51	3.8	2.1- 8.5	SL		1	1	3.0		SL		17.1	
PRIONOTUS CAROLINUS	180	33	4.1	2.9- 5.5	SL		5	5	4.9	3.3- 5.9	SL		58.2	
CITHARICHTHYS ARCTIFRONS	18	16	7.5	6.2-10.0	SL		107	25	8.6	6.3-11.5	SL		22.8	
ETROPUS MICROSTOMUS	28	25	6.4	2.8-11.6	SL		1	1	10.3		SL		9.0	
HIPPOGLOSSINA OBLONGUS	8	8	5.4	3.1- 6.7	SL		7	7	7.0	4.8- 8.5	SL		3.6	
LIMANDA FERRUGINEA	1	1	9.1		SL								0.3	
SYMPHURUS SP.	3	3	7.0	6.0- 9.0	SL								1.0	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						OPHIDIIDAE							
	URANOSCOPIDAE													

CRUISE DATE C6610 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	2 NO. PER 10M LARVAE	EGGS
G 5 21 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOME	140	48	5.5	2.6- 8.5	TL								46.7	
UROPHYCIS CHUSS	1	1	5.8		NL		1	1	14.1		NL		0.6	
MERLUCCIUS BILINEARIS	1	1	3.6		NL	0						0	0.3	0.0
CENTROPRISTIS STRIATA	7	7	4.0	3.1- 5.5	SL								2.3	
CYNOSCION SP.	2	2	3.5	3.5- 3.5	SL								0.7	
MENTICIRRHUS SP.	5	5	3.7	3.5- 4.1	SL								1.7	
PEPRILUS TRIACANTHUS	68	65	4.9	1.5-19.2	SL		2	2	4.7	3.0- 6.5	SL		22.7	
PRIONOTUS CAROLINUS	188	24	4.3	2.7- 5.7	SL								62.7	
PRIONOTUS EVOLANS	4	4	5.5	4.8- 6.3	SL								1.3	
CITHARICHTHYS ARCTIFRONS	86	25	6.7	4.3- 8.7	SL		85	25	8.6	5.3-14.7	SL		54.1	
ETROPUS MICROSTOMUS	39	29	5.7	2.3- 9.2	SL		1	1	6.1		SL		13.0	
HIPPOGLOSSINA OBLONGUS							1	1	5.6		SL		0.3	
GLYPTOCEPHALUS CYNOGLOSSUS							2	2	27.4	25.4-29.4	SL		0.7	
LIMANDA FERRUGINEA							2	2	13.1	12.1-14.1	SL		0.7	
SYMPHURUS SP.	2	2	5.8	5.5- 6.0	SL								0.7	
ADDITIONAL LARVAE CAUGHT	OPHIDIICAE						OPHIDIIDAE							
G 6 21 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOME	4	4	12.9	5.6-20.1	TL		5	5	20.1	19.5-21.2	TL		2.9	
LOPHIUS AMERICANUS							1	1	6.4		TL		0.3	
UROPHYCIS CHUSS	64	19	4.4	1.7-10.8	NL		28	10	3.5	2.5- 4.1	NL		28.5	
AUXIS SP.	3	3	9.9	5.6-12.2	SL								1.0	
PEPRILUS TRIACANTHUS	16	13	5.2	2.6- 7.2	SL		6	6	5.3	3.5- 8.3	SL		6.8	
PRIONOTUS CAROLINUS	2	2	5.3	3.8- 6.8	SL								0.7	
CITHARICHTHYS ARCTIFRONS	70	25	5.6	3.6- 9.7	SL		21	19	9.1	4.0-14.2	SL		28.0	
ETROPUS MICROSTOMUS	1	1	5.6		SL								0.3	
HIPPOGLOSSINA OBLONGUS	17	17	5.5	3.1- 8.8	SL		5	5	6.6	5.0- 7.9	SL		6.8	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE OPHIDIICAE						OPHIDIIDAE							
H 1 22 08	SAMPLING DEPTH 0- 3M													
ENGRAULIS EURYSTOME	7	2	6.6	6.6- 6.7	TL								0.4	
ETROPUS MICROSTOMUS	4	2	6.2	5.0- 7.3	SL								0.2	
SYMPHURUS SP.	1	1	4.4		SL								0.1	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
H 2 22 08	SAMPLING DEPTH 0-15M													
ENGRAULIS EURYSTOME	3	3	9.0	5.8-13.1	TL								0.9	
PRIONOTUS CAROLINUS	15	15	2.6	1.5- 4.2	SL								4.5	
SCOPHTHALMUS AQUOSUS	1	1	2.1		SL								0.3	
SYMPHURUS SP.	2	2	2.9	2.9- 2.9	SL								0.6	
ADDITIONAL LARVAE CAUGHT	CALLIONYMIDAE STROMATEICAE UNIDENTIFIED													
H 3 22 08	SAMPLING DEPTH 0- 6M													
ENGRAULIS EURYSTOME	28	22	4.6	3.0- 7.4	TL								3.4	
PEPRILUS TRIACANTHUS	3	3	6.0	3.9-10.0	SL								0.4	
PRIONOTUS CAROLINUS	5	5	3.1	2.5- 3.9	SL								0.6	
ETROPUS MICROSTOMUS	7	7	7.3	2.6-10.3	SL								0.8	
SYMPHURUS SP.	4	4	3.0	2.9- 3.1	SL								0.5	
ADDITIONAL LARVAE CAUGHT	OPHIDIICAE													
H 4 22 08	SAMPLING DEPTH 0-15M													
ENGRAULIS EURYSTOME	134	68	6.8	4.0-16.0	TL								40.6	
CENTROPRISTIS STRIATA	24	24	5.9	3.2-10.6	SL								7.3	
POMATOMUS SALTATRIX	7	7	5.2	3.3- 6.9	SL								2.1	
AUXIS SP.	21	19	5.6	4.1- 9.9	SL								6.4	
PEPRILUS TRIACANTHUS	110	49	4.6	2.5-25.0	SL								33.3	
PRIONOTUS CAROLINUS	69	33	4.8	2.9- 8.7	SL								20.9	
PRIONOTUS EVOLANS	2	2	5.5	5.1- 5.9	SL								0.6	
CITHARICHTHYS ARCTIFRONS	93	25	5.3	3.1- 8.1	SL								28.2	
ETROPUS MICROSTOMUS	399	25	5.8	3.3- 9.2	SL								120.9	
HIPPOGLOSSINA OBLONGUS	4	4	4.9	3.8- 6.7	SL								1.2	
SCOPHTHALMUS AQUOSUS	1	1	3.3		SL								0.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIICAE SYNGNATHICAE URANOSCOPICAE BLENNIICAE STROMATEICAE UNIDENTIFIED													

CRUISE DATE D661C 1966 STA. D M SPECIES ANALYZED	LARVAE NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	LARVAE NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
H 5 22 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
PISODONOPHIS CRUENTIFER	3	3	44.6	28.8-61.0	TL								1.0	
ENGRAULIS EURYSTOLE	200	19	7.0	3.8-19.0	TL		6	6	8.2	5.3-12.5	TL		64.6	
LOPHIUS AMERICANUS	1	1	6.3		TL		1	1	10.6		TL		0.5	
UROPHYCIS CHUSS	33	7	3.7	2.9- 5.7	NL								10.7	
MERLUCCIUS BILINEARIS	1	1	14.8		NL	0	1	1	14.5		NL	0	0.5	0.0
CENTROPRISTIS STRIATA	28	28	4.9	3.2- 7.3	SL		3	3	5.3	4.8- 6.1	SL		9.1	
PERATOMUS SALTATRIX	17	17	10.3	7.7-13.2	SL								5.5	
MENTICIRRHUS SP.	1	1	3.0		SL								0.3	
TAUTOGOLABRUS ADSPERSUS							1	1	12.6		TL		0.2	
AUXIS SP.	12	12	7.7	3.4- 9.1	SL								3.9	
PEPRILUS TRIACANTHUS	325	50	4.1	2.0-14.5	SL		13	13	7.0	2.9-16.5	SL		105.0	
PRIONOTUS CAROLINUS	101	23	5.3	3.1- 8.2	SL		2	2	4.1	4.0- 4.3	SL		32.6	
PRIONOTUS EVOLANS							1	1	4.8		SL		0.2	
CITHARICHTHYS ARCTIFRONS	453	26	6.1	4.1-10.7	SL		42	42	6.5	3.3-12.4	SL		146.4	
ETROPUS MICROSTOMUS	114	25	6.7	2.6- 9.9	SL		12	12	8.0	4.9-11.6	SL		36.9	
HIPPOGLOSSINA OBLONGUS	10	8	8.9	4.7-12.9	SL		1	1	11.3		SL		3.2	
ADDITIONAL LARVAE CAUGHT	PISODONOPHIS CRUENTIFER						OPHIDIIDAE							
	OPHIDIIDAE													
	URANOSCOPIDAE													
	STROMATEIDAE													
	UNIDENTIFIED													
H 6 21 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE	96	59	7.4	4.4-15.0	TL								32.0	
UROPHYCIS CHUSS	76	13	4.2	2.7- 7.8	NL		7	7	3.7	3.1- 4.2	NL		25.3	
TAUTOGOLABRUS ADSPERSUS	1	1	6.9		TL								0.3	
AUXIS SP.	16	16	5.9	4.0-15.1	SL								5.3	
PEPRILUS TRIACANTHUS	46	46	5.2	2.8-18.2	SL								15.3	
PRIONOTUS CAROLINUS	36	36	4.6	2.8- 6.6	SL		1	1	5.7		SL		12.0	
CITHARICHTHYS ARCTIFRONS	74	25	5.3	3.1-13.2	SL		10	10	6.8	3.3-15.2	SL		25.5	
ETROPUS MICROSTOMUS	31	31	6.9	3.3- 9.5	SL		1	1	6.6		SL		10.3	
HIPPOGLOSSINA OBLONGUS	51	51	5.4	3.7- 7.5	SL		2	2	4.4	4.1- 4.6	SL		17.0	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	20.1		SL								0.3	
LIMANDA FERRUGINEA							4	4	10.7	9.7-11.9	SL		1.3	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE						OPHIDIIDAE							
	OPHIDIIDAE													
	URANOSCOPIDAE													
H 7 21 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE	2	2	16.8	8.1-25.5	TL								0.7	
LOPHIUS AMERICANUS							5	5	13.3	5.1-24.2	TL		1.7	
UROPHYCIS SP.	12	11	2.4	2.0- 2.6	NL		1	1	2.5		NL		4.0	
MERLUCCIUS BILINEARIS						0	2	2	15.1	15.0-15.2	NL	0	0.7	0.0
AUXIS SP.	13	13	6.0	4.1-12.5	SL								4.3	
PEPRILUS TRIACANTHUS	14	13	4.3	2.8- 5.5	SL		2	2	6.0	5.0- 7.1	SL		4.9	
CITHARICHTHYS ARCTIFRONS	11	8	4.3	3.4- 6.0	SL		15	13	13.0	10.7-15.2	SL		8.3	
LIMANDA FERRUGINEA							2	2	10.0	9.9-10.0	SL		0.7	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						OPHIDIIDAE							
J 1 22 08	SAMPLING DEPTH 0- 6M													
ANCHOA MITCHILLI	4	4	9.1	6.3-11.2	TL								0.5	
ETROPUS MICROSTOMUS	3	3	3.7	3.4- 4.2	SL								0.4	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
J 2 22 08	SAMPLING DEPTH 0- 6M													
ETROPUS MICROSTOMUS	2	1	3.3		SL								0.2	
ADDITIONAL LARVAE CAUGHT	URANOSCOPIDAE													
J 3 22 08	SAMPLING DEPTH 0- 6M													
ETROPUS MICROSTOMUS	3	1	2.8		SL								0.4	
SYMPHURUS SP.	2	1	3.8		SL								0.2	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
J 4 22 08	SAMPLING DEPTH 0- 6M													
ENGRAULIS EURYSTOLE	6	6	11.7	6.3-21.0	TL								0.7	
MICROPOGON UNDULATUS	48	47	3.8	3.0- 6.0	SL								5.8	
PEPRILUS TRIACANTHUS	3	2	4.5	2.2- 6.8	SL								0.4	
PRIONOTUS CAROLINUS	4	4	5.6	3.5- 7.9	SL								0.5	
CITHARICHTHYS ARCTIFRONS	1	1	11.8		SL								0.1	
ETROPUS MICROSTOMUS	24	22	6.6	2.2-11.7	SL								2.9	
SYMPHURUS SP.	7	6	4.9	3.4- 5.4	SL								0.8	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	SCIAENIDAE													
	TRIGLIDAE													

CRUISE DATE D6610 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M LARVAE	EGGS
J 5 22 08	SAMPLING DEPTH 0-15M													
PISCDONOPHIS CRUENTIFER	1	1	79.0		TL								0.3	
ENGRAULIS EURYSTOLE	62	35	7.5	3.7-10.2	TL								18.8	
UROPHYCIS CHUSS	2	2	16.1	15.1-17.2	NL								0.6	
CENTROPRISTIS STRIATA	8	8	6.5	4.2-10.7	SL								2.4	
MICROPOGON UNDULATUS	1	1	3.2		SL								0.3	
AUXIS SP.	1	1	6.1		SL								0.3	
PEPRILUS TRIACANTHUS	14	14	8.9	2.3-23.1	SL								4.2	
PRIONOTUS CAROLINUS	5	5	7.2	3.7- 8.9	SL								1.5	
CITHARICHTHYS ARCTIFRONS	12	11	7.1	5.1-11.1	SL								3.6	
ETROPUS MICROSTOMUS	341	25	4.6	2.8-10.6	SL								103.3	
SYNPHURUS SP.	1	1	4.0		SL								0.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	STROMATEIDAE													
	TETRAODONTIDAE													
J 6 23 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
PISCDONOPHIS CRUENTIFER	2	2	44.3	39.7-49.0	TL								0.7	
ENGRAULIS EURYSTOLE	70	42	10.2	5.0-27.5	TL		2	2	8.6	6.9-10.3	TL		23.3	
LOPHIUS AMERICANUS	2	2	6.5	5.7- 7.4	TL								0.7	
UROPHYCIS CHUSS	5	5	13.4	11.6-15.5	NL		2	2	7.4	4.7-10.2	NL		2.2	
CENTROPRISTIS STRIATA	1	1	9.4		SL								0.3	
PCMATOMUS SALTATRIX	1	1	7.6		SL								0.3	
AUXIS SP.	1	1	15.7		SL								0.3	
PEPRILUS TRIACANTHUS	9	9	4.4	2.6- 6.9	SL								3.0	
PRIONOTUS CAROLINUS	6	5	8.4	7.3- 9.6	SL		2	1	8.0		SL		2.5	
CITHARICHTHYS ARCTIFRONS	86	25	7.4	5.1-13.2	SL		3	3	10.5	5.8-13.7	SL		28.7	
ETROPUS MICROSTOMUS	107	25	6.1	3.3-11.6	SL		8	8	6.4	3.4-11.0	SL		35.7	
HIPPOGLOSSINA OBLONGUS	11	11	7.6	4.0-13.3	SL		3	3	9.8	8.3-10.6	SL		4.3	
GLYPTOCEPHALUS CYNOGLOSSUS	1	1	27.1		SL		1	1	34.7		SL		0.6	
SYMPHURUS SP.	1	1	8.3		SL								0.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						OPHIDIIDAE							
	URANOSCOPIDAE						TRIGLIDAE							
J 7 23 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
PISCDONOPHIS CRUENTIFER	6	6	45.8	32.0-67.5	TL		1	1	49.5		TL		2.1	
LOPHIUS AMERICANUS							5	5	5.6	3.8- 7.3	TL		1.7	
UROPHYCIS SP.							236	22	4.1	2.2- 8.6	NL		18.7	
UROPHYCIS CHUSS							1	1	3.2		NL		0.3	
MERLUCCIUS BILINEARIS						0	1	1	5.7		NL	0	0.3	0.0
TAUTOGOLABRUS ADSPERSUS							1	1	10.0		TL		0.3	
AUXIS SP.	17	16	7.4	5.0-10.3	SL								5.7	
PEPRILUS TRIACANTHUS	9	9	6.9	6.5- 8.5	SL		209	50	5.4	3.3- 8.0	SL		72.4	
CITHARICHTHYS ARCTIFRONS	2						300	25	7.7	3.9-14.1	SL		100.6	
ETROPUS MICROSTOMUS	1	1	5.0		SL		32	32	6.4	3.7-10.5	SL		11.0	
HIPPOGLOSSINA OBLONGUS	6	6	3.0	2.7- 3.2	SL		92	50	5.7	4.1- 7.2	SL		32.5	
GLYPTOCEPHALUS CYNOGLOSSUS							1	1	17.9		SL		0.3	
LIMANDA FERRUGINEA							2	2	11.6	10.4-12.7	SL		0.7	
ADDITIONAL LARVAE CAUGHT	PISODONOPHIS CRUENTIFER						PISODONOPHIS CRUENTIFER							
	UNIDENTIFIED						OPHIDIIDAE							
							STROMATEIDAE							
							UNIDENTIFIED							
K 1 24 08	SAMPLING DEPTH 0- 6M													
ANCHOA HEPSETUS	4	4	6.7	3.4- 8.7	TL								0.5	
MICROPOGON UNDULATUS	6	6	4.3	3.2- 4.9	SL								0.7	
PRIONOTUS CAROLINUS	2	2	3.6	3.3- 4.0	SL								0.2	
SYNPHURUS SP.	2	2	3.0	2.5- 3.4	SL								0.2	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	GOBIIDAE													
	UNIDENTIFIED													
K 2 24 08	SAMPLING DEPTH 0- 6M													
ANCHOA HEPSETUS	7	7	10.7	3.6-21.0	TL								0.8	
MICROPOGON UNDULATUS	12	12	5.3	4.8- 5.8	SL								1.5	
AUXIS SP.	1	1	6.1		SL								0.1	
PEPRILUS TRIACANTHUS	2	2	3.5	3.5- 3.5	SL								0.2	
PRIONOTUS CAROLINUS	4	4	3.6	2.3- 5.0	SL								0.5	
CITHARICHTHYS ARCTIFRONS	1	1	4.2		SL								0.1	
SYNPHURUS SP.	5	3	8.7	4.1-11.1	SL								0.6	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	URANOSCOPIDAE													
	UNIDENTIFIED													

CRUISE DATE 06610 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M 2 LARVAE	EGGS
K 3 24 08	SAMPLING DEPTH 0-15M											
ENGRAULIS EURYSTOLE	25	24	6.7	2.7-18.1	TL						7.6	
UROPHYCIS SP.	1	1	4.4		NL						0.3	
CENTROPRISTIS STRIATA	2	2	4.6	3.2- 6.1	SL						0.6	
MICROPOGON UNDULATUS	4	4	4.7	4.2- 5.3	SL						1.2	
PEPRILUS TRIACANTHUS	1	1	4.9		SL						0.3	
ETROPUS MICROSTOMUS	44	25	3.5	2.2-11.8	SL						13.3	
SYNPHURUS SP.	9	9	4.6	2.8- 6.8	SL						2.7	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE OPHIDIIDAE SERRANIDAE GRAMMISTIDAE GOBIIDAE UNIDENTIFIED											
K 4 23 08	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
PISCODONOPHIS CRUENTIFER	4	4	52.6	39.8-63.5	TL						1.3	
ENGRAULIS EURYSTOLE	18	16	9.7	4.0-24.1	TL						5.8	
LOPHIUS AMERICANUS						1	1	24.5		TL	0.2	
CENTROPRISTIS STRIATA	1					2	2	11.4	11.0-11.8	SL	0.6	
PONATOMUS SALTATRIX	1	1	6.6		SL						0.3	
MICROPOGON UNDULATUS	1	1	4.3		SL						0.3	
PEPRILUS TRIACANTHUS	1	1	3.4		SL	5	5	8.5	6.1-12.9	SL	1.1	
PRIONOTUS CAROLINUS	1	1	4.0		SL						0.3	
CITHARICHTHYS ARCTIFRONS	2	2	7.5	6.2- 8.7	SL	3	3	10.8	8.6-12.5	SL	1.1	
ETROPUS MICROSTOMUS	80	25	4.5	2.3- 8.3	SL	12	12	10.6	3.7-12.7	SL	26.5	
HIPPOGLOSSINA OBLONGUS						3	2	7.4	6.7- 8.0	SL	0.5	
SYNPHURUS SP.	2	2	4.8	4.2- 5.4	SL						0.6	
ADDITIONAL LARVAE CAUGHT	PISODONOPHIS CRUENTIFER SYNODONTIDAE LOPHIIFORMES OPHIDIIDAE URANOSCOPIDAE STROMATEIDAE					OPHIDIIDAE						
K 5 23 08	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
OPHICHTHUS OCELLATUS	1	1	61.0		TL						0.3	
PISCODONOPHIS CRUENTIFER	1	1	61.3		TL						0.3	
ANCHOA HEPSETUS	3	3	13.3	12.0-15.7	TL						1.0	
ENGRAULIS EURYSTOLE	2	2	15.0	13.1-17.0	TL						0.6	
UROPHYCIS CHUSS	10	8	4.1	2.7- 5.7	NL	9	7	3.8	2.9- 4.5	NL	4.5	
CENTROPRISTIS STRIATA	2	2	5.0	5.0- 5.0	SL	1	1	5.4		SL	0.8	
MENTICIRRHUS SP.	1	1	5.9		SL						0.3	
TAUTOGOLABRUS ADSPERSUS						2					0.3	
ALUXIS SP.	1	1	14.1		SL						0.3	
PEPRILUS TRIACANTHUS	16	16	6.1	4.0-11.0	SL	16	16	7.1	4.7-11.5	SL	7.5	
PRIONOTUS CAROLINUS						1					0.2	
CITHARICHTHYS ARCTIFRONS	46	25	7.6	4.6-10.7	SL	29	29	8.6	6.6-12.8	SL	18.8	
ETROPUS MICROSTOMUS	34	33	5.9	2.1-11.5	SL	9	8	5.1	4.5- 7.1	SL	11.9	
HIPPOGLOSSINA OBLONGUS	3	3	10.2	6.2-14.3	SL	3	3	5.4	8.5-10.2	SL	1.4	
GLYPTOCEPHALUS CYNOGLOSSUS						1	1	27.1		SL	0.2	
ADDITIONAL LARVAE CAUGHT	PISODONOPHIS CRUENTIFER OPHIDIIDAE URANOSCOPIDAE GOBIIDAE					OPHIDIIDAE						
K 6 23 08	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
LOPHIUS AMERICANUS	3	3	16.1	9.1-20.4	TL	1	1	12.4		TL	1.2	
UROPHYCIS CHUSS	11	8	4.5	3.3- 5.5	NL						3.7	
ALUXIS SP.	1	1	4.9		SL						0.3	
PEPRILUS TRIACANTHUS	5	5	5.4	2.0- 8.7	SL	2	2	6.0	5.0- 7.1	SL	2.2	
PRIONOTUS CAROLINUS	1	1	3.7		SL						0.3	
CITHARICHTHYS ARCTIFRONS	58	25	5.3	4.1- 7.1	SL	28	26	6.6	4.2-11.7	SL	26.7	
ETROPUS MICROSTOMUS	19	19	4.2	2.7- 5.7	SL	2	2	5.5	4.1- 7.6	SL	6.4	
HIPPOGLOSSINA OBLONGUS	5	5	6.9	5.4- 8.7	SL	1					1.8	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE URANOSCOPIDAE					OPHIDIIDAE UNIDENTIFIED						
K 7 23 08	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
UROPHYCIS CHUSS	5	2	2.6	1.5- 3.8	NL						1.7	
ALUXIS SP.	1	1	12.5		SL						0.3	
PEPRILUS TRIACANTHUS	2	1	2.5		SL	2	2	4.6	4.4- 4.9	SL	1.3	
CITHARICHTHYS ARCTIFRONS	4	4	4.0	3.2- 4.9	SL						1.3	
ETROPUS MICROSTOMUS	1	1	3.9		SL	2	2	5.5	5.5- 5.5	SL	1.0	
HIPPOGLOSSINA OBLONGUS	5	4	4.9	3.0- 7.4	SL	1	1	3.7		SL	1.8	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE STROMATEIDAE					OPHIDIIDAE UNIDENTIFIED						

CRUISE DATE C6610 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
L 1 25 08	SAMPLING DEPTH 0- 6M													
ENGRAULIS EURYSTOLE	40	39	8.6	2.1-19.0	TL								4.8	
LARIMUS FASCIATUS	2	2	5.6	5.1- 6.2	SL								0.2	
MENTICIRRHUS SP.	1												0.1	
MICROPOGON UNDULATUS	12	12	4.9	4.1- 5.7	SL								1.5	
ETROPUS MICROSTOMUS	1	1	10.7		SL								0.1	
SYMPHURUS SP.	8	8	5.3	2.9- 9.6	SL								1.0	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE													
	OPHIDIIDAE													
	SCIAENIDAE													
	GOBIIDAE													
	UNIDENTIFIED													
L 2 25 08	SAMPLING DEPTH 0- 6M													
ENGRAULIS EURYSTOLE	48	46	10.3	3.9-16.3	TL								5.8	
LARIMUS FASCIATUS	4	4	4.3	3.2- 5.2	SL								0.5	
MENTICIRRHUS SP.	3	3	4.8	4.2- 5.7	SL								0.4	
MICROPOGON UNDULATUS	12	12	4.2	3.2- 5.9	SL								1.5	
AUXIS SP.	1	1	6.5		SL								0.1	
PRIONOTUS CAROLINUS	4	4	6.1	4.6- 7.9	SL								0.5	
ETROPUS MICROSTOMUS	15	15	8.6	4.1-12.2	SL								1.8	
SYACIUM PAPILLOSUM	6	6	7.4	5.4- 9.7	SL								0.7	
SYMPHURUS SP.	48	25	5.2	3.6- 9.6	SL								5.8	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE													
	OPHIDIIDAE													
	SCIAENIDAE													
	LABRIDAE OR SCARIDAE													
	BLENNIIDAE													
	CALLIONYMIDAE													
	GOBIIDAE													
	SCORPAENIDAE													
	BALISTIDAE													
	UNIDENTIFIED													
L 3 25 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ANCHOA HEPSETUS	3	2	11.5	10.0-13.1	TL								1.0	
ENGRAULIS EURYSTOLE	253	122	8.5	4.1-17.0	TL		16	15	11.3	3.8-18.8	TL		61.8	
UROPHYCIS CHUSS	1	1	1.0		NL								0.3	
CENTROPRISTIS STRIATA	5	5	4.5	3.2- 6.3	SL		8	8	6.6	3.6- 8.4	SL		2.8	
LARIMUS FASCIATUS	3	3	3.6	3.4- 3.9	SL								1.0	
MENTICIRRHUS SP.	4	3	4.5	3.8- 5.9	SL								1.3	
MICROPOGON UNDULATUS	2	2	4.4	4.3- 4.6	SL								0.6	
AUXIS SP.	3	3	5.1	4.5- 6.1	SL								1.0	
EUTHYNNUS ALLETTERATUS	1	1	7.9		SL								0.3	
PEPRILUS TRIACANTHUS	4	4	4.0	3.2- 6.0	SL		5	5	4.7	2.0- 6.0	SL		2.0	
PRIONOTUS CAROLINUS	2	2	3.6	3.6- 3.7	SL								0.6	
CITHARICHTHYS ARCTIFRONS							1						0.2	
ETROPUS MICROSTOMUS	132	25	5.1	3.5- 9.9	SL		34	33	6.6	2.8-11.1	SL		46.0	
HIPPOGLOSSINA OBLONGUS							1	1	7.2		SL		0.2	
SYACIUM PAPILLOSUM	5	4	5.0	4.7- 5.2	SL								1.6	
SYMPHURUS SP.	18	14	5.3	3.0-11.1	SL								5.8	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE						SYNODONTIDAE							
	LOPHIIFORMES						OPHIDIIDAE							
	OPHIDIIDAE						SCIAENIDAE							
	SERRANIDAE						GOBIIDAE							
	CARANGIDAE						UNIDENTIFIED							
	SCIAENIDAE													
	LABRIDAE OR SCARIDAE													
	CALLIONYMIDAE													
	GOBIIDAE													
	STROMATEIDAE													
	TRIGLIDAE													
L 4 25 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE	53	51	7.8	5.0-14.1	TL		3	3	15.4	14.1-16.3	TL		17.7	
UROPHYCIS CHUSS	1	1	4.6		NL								0.3	
CENTROPRISTIS STRIATA	5	5	3.2	2.1- 4.3	SL		1	1	7.9		SL		1.8	
LARIMUS FASCIATUS	7	7	3.3	2.9- 4.0	SL								2.3	
MICROPOGON UNDULATUS	21	21	3.1	2.3- 4.1	SL								7.0	
AUXIS SP.							4	4	5.4	3.5- 5.8	SL		1.3	
PEPRILUS TRIACANTHUS	10	10	2.9	1.5- 4.1	SL								3.3	
PRIONOTUS CAROLINUS	1	1	5.1		SL								0.3	
CITHARICHTHYS ARCTIFRONS	11	11	8.1	4.1-13.4	SL		3	3	4.8	4.2- 5.3	SL		4.3	
ETROPUS MICROSTOMUS	24	24	4.4	2.8- 6.1	SL		10	10	4.5	3.2- 8.3	SL		10.5	
HIPPOGLOSSINA OBLONGUS	2	2	3.4	2.4- 4.4	SL								0.7	
SYACIUM PAPILLOSUM	1	1	4.8		SL								0.3	
SYMPHURUS SP.	7	7	4.2	3.2- 5.1	SL								2.3	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE						OPHIDIIDAE							
	LOPHIIFORMES													
	OPHIDIIDAE													
	CARANGIDAE													
	SCIAENIDAE													
	LABRIDAE OR SCARIDAE													
	UNIDENTIFIED													

CRUISE DATE D661C 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	LENGTHS (MM) MEAS.	MEAN	RANGE		NO. EGGS	********** LARVAE ********** NUMBER TOTAL	LENGTHS (MM) MEAS.	MEAN	RANGE		NO. EGGS	NO. PER 10M² LARVAE	EGGS
L 5 25 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ANCHOA HEPSETUS	8	7	10.5	6.8-13.0	TL								2.7	
PEPRILUS TRIACANTHUS	8	7	2.8	2.4- 3.1	SL								2.7	
CITHARICHTHYS ARCTIFRONS	1	1	3.0		SL		1	1	3.1		SL		0.6	
ETROPUS MICROSTOMUS	2	2	3.1	2.7- 3.5	SL								0.7	
SYMPHURUS SP.							1	1	5.5		SL		0.3	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE						UNIDENTIFIED							
	OPHIDIIDAE													
	SCIAENIDAE													
	LABRIDAE OR SCARIDAE													
	CALLIONYMIDAE													
	STROMATEIDAE													
	TETRAODONTIDAE													
M 1 25 08	SAMPLING DEPTH 0- 6M													
ANCHOA HEPSETUS	57	12	7.8	3.4-15.0	TL								6.9	
CENTROPRISTIS STRIATA	1	1	3.3		SL								0.1	
LABRUS FASCIATUS	4	4	3.3	3.1- 3.6	SL								0.5	
MENTICIRRHUS SP.	5	5	3.6	3.2- 4.0	SL								0.6	
MICROPOGON UNDULATUS	15	15	3.4	2.8- 4.1	SL								1.8	
AUXIS SP.	1	1	6.5		SL								0.1	
PEPRILUS TRIACANTHUS	1	1	3.8		SL								0.1	
ETROPUS MICROSTOMUS	2	2	4.2	3.1- 5.2	SL								0.2	
SYACIUM PAPILLOSUM	1	1	4.9		SL								0.1	
SYMPHURUS SP.	3	3	4.1	3.4- 4.9	SL								0.4	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	SCIAENIDAE													
	LABRIDAE OR SCARIDAE													
	SPHYRAENIDAE													
	URANOSCOPIDAE													
	BLENNIIDAE													
	GOBIIDAE													
	BALISTIDAE													
	UNIDENTIFIED													
M 2 25 08	SAMPLING DEPTH 0- 6M													
PAGRAULIS EURYSTOME	60	57	7.6	2.6-13.7	TL								7.3	
LABRUS FASCIATUS	9	9	2.9	2.2- 3.7	SL								1.1	
MICROPOGON UNDULATUS	97	97	3.0	2.4- 3.8	SL								11.8	
AUXIS SP.	2	2	8.3	8.2- 8.5	SL								0.2	
EUTHYNNUS ALLETTERATUS	1	1	4.3		SL								0.1	
ETROPUS MICROSTOMUS	9	9	6.0	4.3- 8.0	SL								1.1	
SYACIUM PAPILLOSUM	3	3	6.5	4.2- 9.2	SL								0.4	
SYMPHURUS SP.	19	19	4.5	2.5- 8.2	SL								2.3	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE													
	CYCLOTHONE SP.													
	SYNODONTIDAE													
	OPHIDIIDAE													
	CARANGIDAE													
	LABRIDAE OR SCARIDAE													
	BLENNIIDAE													
	CALLIONYMIDAE													
	GOBIIDAE													
	TRIGLIDAE													
	BALISTIDAE													
	UNIDENTIFIED													

CRUISE DATE DEC 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M^2 LARVAE	EGGS
M 3 25 CE	SAMPLING DEPTH 0-15M													
CALLECHELYS PERRYAE	1	1	77.5		TL								0.3	
OPHICHTHUS GOMESI	1	1	24.1		TL								0.3	
SARDINELLA ANCHOVIA	21	21	7.2	5.5- 9.4	TL								6.4	
ENGRAULIS EURYSTOLE	195	85	5.1	2.5-11.2	TL								59.1	
GYNCSCION SP.	1	1	3.6		SL								0.3	
LARIMUS FASCIATUS	13	12	2.9	2.3- 4.4	SL								3.9	
MENTICIRRHUS SP.	9	9	3.3	2.7- 4.0	SL								2.7	
MICROPOGON UNDULATUS	24	24	3.4	3.0- 4.1	SL								7.3	
AUXIS SP.	5	5	4.1	3.4- 4.9	SL								1.5	
EUTHYNNUS ALLETTERATUS	7	7	6.3	3.9-11.1	SL								2.1	
PRIONOTUS CAROLINUS	1	1	5.5		SL								0.3	
BOTHUS OCELLATUS	5	5	6.2	3.7- 9.4	SL								1.5	
ETROPUS MICROSTOMUS	5	5	6.5	5.0- 9.2	SL								1.5	
SYACIUM PAPILLOSUM	11	11	4.9	3.8- 7.3	SL								3.3	
SYMPHURUS SP.	20	20	5.7	2.8- 9.3	SL								6.1	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE													
	SYNODONTIDAE													
	LOPHIIFORMES													
	OPHIDIIDAE													
	SERRANIDAE													
	CARANGIDAE													
	SCIAENIDAE													
	LABRIDAE OR SCARIDAE													
	SPHYRAENIDAE													
	BLENNIIDAE													
	CALLIONYMIDAE													
	GOBIIDAE													
	SCORPAENIDAE													
	TRIGLIDAE													
	BALISTIDAE													
	UNIDENTIFIED													
M 4 25 CE	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
PISCODONOPHIS CRUENTIFER	1	1	22.2		TL								0.3	
SARDINELLA ANCHOVIA	18	18	7.5	6.5- 8.8	TL								5.8	
ENGRAULIS EURYSTOLE	88	54	6.4	2.5-10.2	TL		3	2	6.0	3.3- 8.7	TL		28.4	
MYCTOPHIDAE	1	1	4.0		SL								0.3	
CERATOSCOPELUS HAMMINGI	1	1	10.3		SL								0.3	
DIAPHUS SP.							1	1	9.4		SL		0.2	
LARIMUS FASCIATUS	1												0.3	
MENTICIRRHUS SP.							1	1	3.7		SL		0.2	
AUXIS SP.	2	2	6.0	5.1- 7.0	SL								0.6	
EUTHYNNUS ALLETTERATUS	4	4	6.1	4.2- 6.8	SL								1.3	
KATSUWONUS PELAMIS	1	1	5.9		SL								0.3	
PEPRILUS TRIACANTHUS	5	5	2.9	2.0- 3.5	SL								1.6	
PRIONOTUS CAROLINUS							1	1	5.8		SL		0.2	
BOTHUS OCELLATUS	11	11	4.3	2.2- 7.3	SL		1	1	9.6		SL		3.6	
ETROPUS MICROSTOMUS	6	6	4.1	2.9- 7.1	SL								1.9	
SYACIUM PAPILLOSUM	45	44	3.8	2.2- 5.4	SL		2	2	3.5	2.9- 4.1	SL		14.5	
SYMPHURUS SP.	8	8	4.8	2.6-12.2	SL		6	6	5.5	3.3-10.4	SL		3.6	
ADDITIONAL LARVAE CAUGHT	ANGUILLIFORMES						SYNODONTIDAE							
	MURAENIDAE						OPHIDIIDAE							
	OPHICHTHIDAE						SERRANIDAE							
	SYNODONTIDAE						LABRIDAE OR SCARIDAE							
	LOPHIIFORMES						CALLIONYMIDAE							
	OPHIDIIDAE						GOBIIDAE							
	CARAPIDAE						TRIGLIDAE							
	SERRANIDAE						UNIDENTIFIED							
	GRAMMISTIDAE													
	APOGONIDAE													
	CARANGIDAE													
	LABRIDAE OR SCARIDAE													
	SPHYRAENIDAE													
	CALLIONYMIDAE													
	GOBIIDAE													
	TRICHIURIDAE													
	SCORPAENIDAE													
	TRIGLIDAE													
	DACTYLOPTERUS VOLITANS													
	BALISTIDAE													
	UNIDENTIFIED													

CRUISE DATE D661C 1966 STA. # 5	D N 25 CB SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M^2 LARVAE	EGGS
		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
	ENGRAULIS EURYSTOLE	268	11	4.7	2.5-10.3	TL		21	20	6.2	3.5-10.8	TL		89.3	
	CERATOSCOPELUS WARMINGI							1	1	4.8		SL		0.3	
	DIAPHUS SP.							2	2	3.8	3.2- 4.5	SL		0.7	
	LAMPANYCTUS ALATUS OR PHOTONOTUS							1	1	7.1		SL		0.3	
	LAMPANYCTUS CUPRINUS							1	1	6.6		SL		0.3	
	LARIMUS FASCIATUS	4	4	3.1	2.9- 3.5	SL		2	2	3.0	2.4- 3.7	SL		1.9	
	MENTICIRRHUS SP.	1	1	2.7		SL								0.3	
	MICROPOGON UNDULATUS	1	1	3.4		SL		1	1	3.4		SL		0.6	
	AUXIS SP.	1	1	4.6		SL								0.3	
	ELTHYNNUS ALLETTERATUS	2	2	6.1	4.9- 7.4	SL		2	2	5.1	5.1- 5.2	SL		1.3	
	PRIONOTUS CAROLINUS	2	2	5.5	5.7- 6.2	SL		6	6	5.1	4.6- 6.1	SL		2.6	
	BOTHUS OCELLATUS	3	3	6.3	4.0- 9.0	SL								1.0	
	SYACIUM PAPILLOSUM	19	19	4.2	1.9-11.3	SL								6.3	
	SYMPHURUS SP.	7	6	4.9	3.4- 6.2	SL		5	5	5.0	3.5- 8.1	SL		3.8	
	ADDITIONAL LARVAE CAUGHT	MURAENIDAE						NETTASTOMATIDAE							
		SYNODONTIDAE						SYNODONTIDAE							
		OPHIDIIDAE						PARALEPIDIDAE							
		SERRANIDAE						LOPHIIFORMES							
		CARANGIDAE						BREGMACEROTIDAE							
		LABRIDAE OR SCARIDAE						OPHIDIIDAE							
		CALLIONYMIDAE						CARAPIDAE							
		GOBIIDAE						SERRANIDAE							
		SCORPAENIDAE						CARANGIDAE							
		TRIGLIDAE						LABRIDAE OR SCARIDAE							
		BALISTIDAE						BLENNIIDAE							
		UNIDENTIFIED						CALLIONYMIDAE							
								GOBIIDAE							
								STROMATEIDAE							
								SCORPAENIDAE							
								TRIGLIDAE							
								BALISTIDAE							
								TETRADONTIDAE							
								UNIDENTIFIED							

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N L 25 08		SAMPLING DEPTH 0-15M													
	LEPTOCHUS VELIFER	1	1	40.5		TL								0.3	
	SARDINELLA ANCHOVIA	5	5	16.3	13.0-19.0	TL								1.5	
	ENGRAULIS EURYSTOLE	465	145	6.4	2.8-18.8	TL								140.9	
	CENTROPRISTIS STRIATA	1	1	4.5		SL								0.3	
	LARIMUS FASCIATUS	32	32	3.0	2.2- 3.7	SL								9.7	
	MENTICIRRHUS SP.	12	9	3.1	2.4- 3.6	SL								3.6	
	MICROPOGON UNDULATUS	5	5	3.3	3.2- 3.5	SL								1.5	
	AUXIS SP.	1	1	6.0		SL								0.3	
	ELTHYNNUS ALLETTERATUS	13	13	5.5	4.7- 8.9	SL								3.9	
	PEPRILUS TRIACANTHUS	4	4	3.2	2.2- 4.5	SL								1.2	
	PRIONOTUS CAROLINUS	17	17	4.1	2.8- 6.1	SL								5.2	
	BOTHUS OCELLATUS	8	8	7.4	3.4-17.4	SL								2.4	
	CYCLOPSETTA FIMBRIATA	5	5	6.5	5.4- 7.8	SL								1.5	
	SYACIUM PAPILLOSUM	78	25	5.1	3.1- 8.3	SL								23.6	
	SYMPHURUS SP.	27	24	5.2	3.2-14.4	SL								8.2	
	ADDITIONAL LARVAE CAUGHT	MURAENIDAE													
		SYNODONTIDAE													
		LOPHIIFORMES													
		OPHIDIIDAE													
		SERRANIDAE													
		GRAMMISTIDAE													
		CARANGIDAE													
		LABRIDAE OR SCARIDAE													
		URANOSCOPIDAE													
		CALLIONYMIDAE													
		GOBIIDAE													
		TRICHIURIDAE													
		SCORPAENIDAE													
		TRIGLIDAE													
		BALISTIDAE													
		UNIDENTIFIED													

CRUISE DATE 06610 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
N 2 25 08	SAMPLING DEPTH 0-15M													
ANCHOA HEPSETUS	583	158	8.4	2.4-15.5	TL								176.6	
SERRANICULUS PUMILIO	2	2	7.3	6.1- 8.5	SL								0.6	
LABRUS FASCIATUS	4	3	3.8	3.7- 4.0	SL								1.2	
MENTICIRRHUS SP.	1	1	4.8		SL								0.3	
MICROPOGON UNDULATUS	1	1	3.2		SL								0.3	
ALEXIS SP.	1	1	7.1		SL								0.3	
SCOMBEROMORUS CAVALLA	1	1	10.4		SL								0.3	
PRICNOTUS CAROLINUS	6	6	7.1	6.0- 8.1	SL								1.8	
BOTHUS OCELLATUS	2	2	3.8	3.3- 4.2	SL								0.6	
ETROPUS MICROSTOMUS	4	4	6.7	3.6- 8.8	SL								1.2	
SYACIUM PAPILLOSUM	13	13	6.7	3.3-10.8	SL								3.9	
SYMPHURUS SP.	3	3	8.1	3.9-10.7	SL								0.9	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE													
	LOPHIIFORMES													
	OPHIDIIDAE													
	SERRANIDAE													
	CARANGIDAE													
	SPARIDAE													
	LABRIDAE OR SCARIDAE													
	BLENNIIDAE													
	CALLIONYMIDAE													
	GOBIIDAE													
	TRICHIURIDAE													
	SCORPAENIDAE													
	TRIGLIDAE													
	BALISTIDAE													
	UNIDENTIFIED													
N 3 25 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
CALLECHELYS PERRYAE	2	2	41.9	35.0-48.8	TL								0.6	
CEPHICHTHUS GOMESI							1	1	72.5		TL		0.2	
ENGRAULIS EURYSTOLE							284	82	6.4	2.9-11.3	TL		45.9	
LABRUS FASCIATUS							3	3	3.5	2.9- 3.8	SL		0.5	
ELTHYNNUS ALLETTERATUS	5	4	5.9	4.9- 8.8	SL								1.6	
SCOMBEROMORUS CAVALLA	1	1	4.0		SL		1	1	4.6		SL		0.5	
PRICNOTUS CAROLINUS							8	8	4.2	3.4- 5.1	SL		1.3	
BOTHUS OCELLATUS							4	4	9.4	5.0-12.8	SL		0.6	
SYACIUM PAPILLOSUM	20	20	3.6	2.3-11.5	SL		5	5	4.2	3.0- 5.0	SL		6.9	
SYMPHURUS SP.	8	7	4.2	2.7- 6.7	SL		11	9	5.0	3.2-10.7	SL		4.2	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE						SYNODONTIDAE							
	OPHICHTHIDAE						BREGMACEROTIDAE							
	SYNODONTIDAE						OPHIDIIDAE							
	LOPHIIFORMES						SERRANIDAE							
	OPHIDIIDAE						CARANGIDAE							
	CARAPIDAE						LABRIDAE OR SCARIDAE							
	ATHERINIDAE						CALLIONYMIDAE							
	SERRANIDAE						GOBIIDAE							
	CARANGIDAE						TRIGLIDAE							
	LABRIDAE OR SCARIDAE						BALISTIDAE							
	CALLIONYMIDAE						TETRAODONTIDAE							
	GOBIIDAE													
	SCORPAENIDAE													
	TRIGLIDAE													
	BALISTIDAE													
	TETRAODONTIDAE													
	UNIDENTIFIED													

CRUISE DATE 0661C 1966 STA. D M N 4 26 CE SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE		NO. MEAS. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE		NO. MEAS. EGGS	NO. PER 10M² LARVAE	EGGS
	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
OPHICHTHUS GOMESI	1	1	34.3			TL							0.3	
SARDINELLA ANCHOVIA	7	7	9.6	9.0-11.2		TL							2.3	
ENGRAULIS EURYSTOLE	16	16	7.6	3.5-16.9		TL	36	33	6.1	3.5-10.6		TL	16.8	
BENTHOSCMA SP.							1	1	3.9			SL	0.3	
DIAPHUS SP.							1	1	3.6			SL	0.3	
LAMPANYCTUS ALATUS OR PHOTONCTUS							1	1	6.9			SL	0.3	
CENTROPRISTIS STRIATA							2	2	2.7	2.5- 2.9		SL	0.7	
ALXIS SP.	1	1	5.7			SL	2	2	4.3	4.1- 4.5		SL	1.0	
EUTHYNNUS ALLETTERATUS	4	3	5.3	4.5- 5.8		SL	9	9	4.3	3.9- 4.9		SL	4.2	
SCOMBEROMORUS CAVALLA	3	3	4.1	3.6- 4.7		SL	4	4	4.3	3.7- 5.0		SL	2.2	
PEPRILUS TRIACANTHUS							2	2	2.7	2.5- 3.0		SL	0.7	
PRIONOTUS CAROLINUS							16	16	3.1	2.1- 4.5		SL	5.3	
BOTHUS OCELLATUS	1	1	4.3			SL	3	3	5.6	5.5-17.0		SL	1.3	
SYACIUM PAPILLOSUM	6	6	3.5	2.2- 4.7		SL	2	2	4.6	4.4- 4.7		SL	2.5	
SYNPHURUS SP.	1	1	10.2			SL	6	6	4.2	3.2- 7.9		SL	2.3	
ADDITIONAL LARVAE CAUGHT	LOPHIIFORMES						ANGUILLIFORMES							
	OPHIDIIDAE						SYNODONTIDAE							
	SERRANIDAE						LOPHIIFORMES							
	CARANGIDAE						OPHIDIIDAE							
	LABRIDAE OR SCARIDAE						CARANGIDAE							
	CALLIONYMIDAE						LABRIDAE OR SCARIDAE							
	GOBIIDAE						CALLIONYMIDAE							
	SCORPAENIDAE						GOBIIDAE							
	TRIGLIDAE						TRIGLIDAE							
	BALISTIDAE						BALISTIDAE							
							TETRAODONTIDAE							
							UNIDENTIFIED							

N 5 26 OF	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
MEGALOPS ATLANTICA	2	2	17.7	14.0-21.5		NL							0.7	
SARDINELLA ANCHOVIA	8	8	9.6	6.9-12.0		TL	1	1	10.2			TL	2.7	
ENGRAULIS EURYSTOLE	1	1	13.7			TL							0.3	
BENTHOSCMA SP.							1	1	4.1			SL	0.3	
DIAPHUS SP.							3	3	6.1	4.0- 9.9		SL	1.0	
HEMANTHIAS VIVANUS							1	1	2.8			SL	0.3	
ALXIS SP.	25	24	5.7	3.3-22.8		SL	5	5	5.2	4.2- 6.1		SL	9.2	
EUTHYNNUS ALLETTERATUS	28	23	5.6	3.7-23.2		SL	3	3	4.8	4.5- 5.2		SL	9.4	
SCOMBEROMORUS CAVALLA	4	4	4.6	3.8- 5.5		SL	2	2	5.6	5.6- 5.7		SL	1.9	
BOTHUS OCELLATUS	1	1	4.2			SL	1	1	5.2			SL	0.6	
SYACIUM PAPILLOSUM	13	13	3.9	2.7- 5.2		SL	2	2	4.4	4.2- 4.6		SL	4.6	
SYNPHURUS SP.	3	2	4.5	3.7- 5.2		SL							1.0	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE						OPHICHTHIDAE							
	CYCLOTHONE SP.						NETTASTOMATIDAE							
	SYNODONTIDAE						CYCLOTHONE SP.							
	PARALEPIDIDAE						VINCIGUERRIA SP.							
	OPHIDIIDAE						SYNODONTIDAE							
	SERRANIDAE						MYCTOPHIDAE							
	GRAMMISTIDAE						LOPHIIFORMES							
	PRIACANTHIDAE						OPHIDIIDAE							
	CARANGIDAE						CARAPIDAE							
	CHAETODONTIDAE						SERRANIDAE							
	LABRIDAE OR SCARIDAE						GRAMMISTIDAE							
	CALLIONYMIDAE						MALACANTHUS SP.							
	GOBIIDAE						CARANGIDAE							
	ACANTHURIDAE						POMACENTRIDAE							
	SCORPAENIDAE						LABRIDAE OR SCARIDAE							
	BALISTIDAE						CALLIONYMIDAE							
	TETRAODONTIDAE						GOBIIDAE							
	UNIDENTIFIED						ACANTHURIDAE							
							STROMATEIDAE							
							SCORPAENIDAE							
							UNIDENTIFIED							

P 1 26 OB	SAMPLING DEPTH 0- 6M							
ENGRAULIS EURYSTOLE	74	40	5.3	1.9- 9.2		TL	9.0	
LABIMUS FASCIATUS	1	1	3.7			SL	0.1	
SYNPHURUS SP.	28	24	3.0	2.2- 4.9		SL	3.4	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE							
	CARANGIDAE							
	BLENNIIDAE							
	TRIGLIDAE							
	BALISTIDAE							
	UNIDENTIFIED							

CRUISE DATE 0661C 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M^2 LARVAE	EGGS
P 2 26 08	SAMPLING DEPTH 0- 6M													
ENGRAULIS EURYSTOLE	106	101	4.8	1.9-10.0	TL								12.8	
MENTICIRRHUS SP.	1												0.1	
MICROPOGON UNDULATUS	1	1	5.5		SL								0.1	
FUTHYNNUS ALLETTERATUS	2	2	5.8	5.7- 5.9	SL								0.2	
SYMPHURUS SP.	71	25	3.2	2.2- 6.2	SL								8.6	
ADDITIONAL LARVAE CAUGHT	CPHIDIIDAE													
	SYNGNATHIDAE													
	SERRANIDAE													
	CARANGIDAE													
	LABRIDAE OR SCARIDAE													
	BLENNIIDAE													
	GOBIIDAE													
	TRIGLIDAE													
	BALISTIDAE													
	UNIDENTIFIED													
P 3 26 08	SAMPLING DEPTH 0- 6M													
SARDINELLA ANCHOVIA	4	4	6.9	4.4-11.5	TL								0.5	
ENGRAULIS EURYSTOLE	33	31	5.7	3.2-10.0	TL								4.0	
MENTICIRRHUS SP.	2	2	3.1	3.1- 3.2	SL								0.2	
MICROPOGON UNDULATUS	1	1	3.0		SL								0.1	
SYMPHURUS SP.	3	3	3.7	2.9- 4.5	SL								0.4	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE													
	CPHIDIIDAE													
	LABRIDAE OR SCARIDAE													
	GOBIIDAE													
	TRIGLIDAE													
	BALISTIDAE													
	UNIDENTIFIED													
P 4 26 08	SAMPLING DEPTH 0-15M													
OPHICHTHUS GOMESI	1	1	30.3		TL								0.3	
ENGRAULIS EURYSTOLE	38	36	8.1	5.2-11.9	TL								11.5	
LARIMUS FASCIATUS	1	1	3.2		SL								0.3	
AUXIS SP.	2	2	4.6	3.6- 5.6	SL								0.6	
EUTHYNNUS ALLETTERATUS	7	7	5.6	4.8- 6.8	SL								2.1	
SCOMBEROMORUS CAVALLA	2	2	5.8	5.2- 6.5	SL								0.6	
BCTHUS OCELLATUS	1	1	4.2		SL								0.3	
SYACIUM PAPILLOSUM	8	8	3.9	2.8- 5.0	SL								2.4	
SYMPHURUS SP.	2	2	5.0	3.8- 6.2	SL								0.6	
ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.													
	SYNODONTIDAE													
	OPHIDIIDAE													
	CARAPIDAE													
	SERRANIDAE													
	GRAMMISTIDAE													
	CARANGIDAE													
	LABRIDAE OR SCARIDAE													
	BLENNIIDAE													
	CALLIONYMIDAE													
	GOBIIDAE													
	TRICHIURIDAE													
	STROMATEIDAE													
	SCORPAENIDAE													
	TRIGLIDAE													
	BALISTIDAE													
	UNIDENTIFIED													

CRUISE DATE 0661C 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M^2 LARVAE	EGGS
P 5 26 08	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE	9	4	8.7	6.6-10.7	TL								3.0	
CERATOSCOPELUS MADERENSIS	1	1	4.1		SL								0.3	
DIOGENICHTHYS ATLANTICUS							1	1	7.9		SL		0.3	
LOBIANCHIA SP.							1	1	5.8		SL		0.3	
HEMANTHIAS VIVANUS	1	1	3.7		SL								0.3	
AUXIS SP.	8	8	6.2	3.9-11.2	SL		5	5	6.6	4.5- 8.0	SL		4.1	
EUTHYNNUS ALLETTERATUS	2	2	8.1	6.0-10.2	SL								0.7	
KATSUWONUS PELAMIS	2	2	5.7	4.9- 6.5	SL								0.7	
THUNNUS ALBACARES OR ALALUNGA	2	2	5.4	4.6- 6.2	SL								0.7	
BCTHUS OCELLATUS	4	4	3.5	3.2- 3.8	SL		10	9	6.0	2.9- 9.2	SL		4.5	
CITHARICHTHYS ARCTIFRONS							1	1	4.1		SL		0.3	
ETRCPUS MICROSTOMUS							1	1	3.8		SL		0.3	
SYACIUM PAPILLOSUM	15	14	3.7	2.6- 4.9	SL		7	7	4.4	3.3- 5.7	SL		6.8	
SYMPHURUS SP.	2	2	4.2	4.2- 4.2	SL		1	1	3.0		SL		0.9	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE						OPHICHTHIDAE							
	PARALEPIDIDAE						CYCLOTHONE SP.							
	LOPHIIFORMES						SYNODONTIDAE							
	OPHIDIIDAE						PARALEPIDIDAE							
	CARAPIDAE						LOPHIIFORMES							
	CAPROIDAE						GRAMMISTIDAE							
	SERRANIDAE						APOGONIDAE							
	PRIACANTHIDAE						MALACANTHUS SP.							
	APOGONIDAE						CARANGIDAE							
	CARANGIDAE						POMACENTRIDAE							
	CORYPHAENIDAE						LABRIDAE OR SCARIDAE							
	SPARIDAE						GOBIIDAE							
	LABRIDAE OR SCARIDAE						ACANTHURIDAE							
	CALLIONYMIDAE						STROMATEIDAE							
	GOBIIDAE						SCORPAENIDAE							
	SCORPAENIDAE						TRIGLIDAE							
	UNIDENTIFIED						UNIDENTIFIED							

CRUISE DATE 06611 1966 STA. D M	SPECIES ANALYZED	********** LARVAE ********** 1 NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** 2 NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M LARVAE	EGGS
A 1 13 09		SAMPLING DEPTH C- 3M													
	UROPHYCIS CHUSS	8	8	9.1	7.5-10.4	NL								0.5	
	ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
A 2 13 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
	ENCHELYOPUS CIMBRIUS						2						1	0.0	0.8
	UROPHYCIS SP.	5	4	2.4	2.2- 2.7	NL		3	2	3.1	3.1- 3.2	NL		2.0	
	MERLUCCIUS BILINEARIS	2	2	2.9	2.6- 3.3	NL	15	9	7	3.0	2.6- 3.7	NL	7	2.1	5.8
	TAUTOGA ONITIS							1	1	2.2		TL		0.2	
	PERPILUS TRIACANTHUS	2	2	5.1	4.8- 5.5	SL								0.6	
	ADDITIONAL LARVAE CAUGHT STROMATEIDAE														
A 3 13 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
	ENCHELYOPUS CIMBRIUS						1	3	3	3.1	2.5- 3.5	SL	0	0.5	0.3
	UROPHYCIS CHUSS	32	21	5.0	2.4- 7.1	NL		3	2	5.9	5.1- 6.8	NL		10.3	
	MERLUCCIUS BILINEARIS	13	12	3.6	2.5- 4.8	NL	190	9	8	3.9	2.8- 4.6	NL	23	5.5	62.1
	ALXIS SP.							1	1	4.4		SL		0.2	
	CITHARICHTHYS ARCTIFRONS	1	1	6.2		SL								0.3	
	HIPPOGLOSSINA OBLONGUS	2	2	6.2	6.1- 6.2	SL								0.6	
	SCOPHTHALMUS AQUOSUS	2	2	4.4	3.9- 4.8	SL		2	2	3.2	2.9- 3.4	SL		0.9	
	ADDITIONAL LARVAE CAUGHT STROMATEIDAE														
A 4 13 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
	ENCHELYOPUS CIMBRIUS	4	4	2.3	1.7- 2.8	SL	2	18	18	3.1	1.9- 4.1	SL	0	7.2	0.7
	UROPHYCIS SP.	143	31	3.5	2.0- 5.0	NL		126	32	3.0	1.7- 4.9	NL		64.9	
	MERLUCCIUS BILINEARIS	136	131	4.2	2.2- 6.2	NL	7	91	86	3.8	2.3- 6.5	NL	22	71.1	5.4
	TAUTOGOLABRUS ADSPERSUS	1	1	7.0		TL								0.3	
	CITHARICHTHYS ARCTIFRONS	60	25	5.4	4.0- 6.7	SL		12	12	6.2	5.3- 7.2	SL		22.0	
	HIPPOGLOSSINA OBLONGUS	15	14	4.7	3.7- 5.7	SL		10	9	5.2	3.7- 6.1	SL		7.8	
	SCOPHTHALMUS AQUOSUS	4	4	3.7	3.2- 4.2	SL		2	2	4.2	3.5- 4.8	SL		1.9	
	GLYPTOCEPHALUS CYNOGLOSSUS							1	1	8.5		SL		0.3	
	ADDITIONAL LARVAE CAUGHT STROMATEIDAE UNIDENTIFIED														
A 5 13 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
	ENCHELYOPUS CIMBRIUS						23	15	14	2.1	1.6- 3.9	SL	23	5.0	14.6
	UROPHYCIS SP.							1	1	2.9		NL		0.3	
	UROPHYCIS CHUSS	172	14	2.9	1.4- 4.0	NL		65	15	3.7	1.5- 5.9	NL		13.3	
	MERLUCCIUS BILINEARIS	197	187	4.5	1.8- 6.7	NL	112	201	198	4.8	1.8- 7.5	NL	116	126.1	72.3
	TAUTOGOLABRUS ADSPERSUS							2	2	5.1	2.5- 7.7	TL		0.7	
	PERPILUS TRIACANTHUS	1	1	5.9		SL								0.3	
	CITHARICHTHYS ARCTIFRONS	12	10	7.4	6.0- 9.2	SL		5	5	7.4	6.2- 8.7	SL		5.3	
	HIPPOGLOSSINA OBLONGUS	9	9	3.9	3.2- 4.3	SL		6	5	4.7	3.4- 6.2	SL		4.7	
	ADDITIONAL LARVAE CAUGHT							UNIDENTIFIED							
A 6 13 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
	LOPHIUS AMERICANUS	8	8	5.8	4.8- 7.8	TL		10	10	5.7	4.3- 6.2	TL		5.7	
	ENCHELYOPUS CIMBRIUS	1	1	3.7		SL	15	1	1	2.0		SL	3	0.6	5.5
	UROPHYCIS SP.							93	16	4.3	3.5- 5.4	NL		31.0	
	UROPHYCIS CHUSS	348	18	4.0	3.0- 5.2	NL								116.0	
	MERLUCCIUS BILINEARIS	86	83	5.8	2.7-11.9	NL	0	131	123	5.9	4.1-11.5	NL	9	69.5	3.0
	CITHARICHTHYS ARCTIFRONS	8	8	6.7	5.6- 8.2	SL								2.7	
	HIPPOGLOSSINA OBLONGUS	1	1	4.2		SL		1	1	4.9		SL		0.6	
	LIMANDA FERRUGINEA							1	1	6.2		SL		0.3	
	ADDITIONAL LARVAE CAUGHT OPHIDIIDAE							LOPHIIFORMES							
A 7 14 09		SAMPLING DEPTH 0-12M						SAMPLING DEPTH 18-30M							
	CIAPHUS SP.	2	2	7.8	6.9- 8.7	SL								0.7	
	LOPHIUS AMERICANUS	9	9	4.9	3.4- 7.6	TL		6	6	5.8	3.8-10.0	TL		5.1	
	UROPHYCIS SP.	109	18	4.5	3.2- 6.0	NL		8	5	4.7	3.4- 5.5	NL		27.8	
	MERLUCCIUS BILINEARIS	81	43	5.0	3.7-20.0	NL	0	113	107	5.2	2.9-21.0	NL	0	66.9	0.0
	CITHARICHTHYS ARCTIFRONS	6	5	6.3	5.9- 6.8	SL		1	1	6.8		SL		2.2	
	ADDITIONAL LARVAE CAUGHT SYNODONTIDAE OPHIDIIDAE LABRIDAE OR SCARIDAE														
B 1 14 09		SAMPLING DEPTH C- 6M													
	ENGRAULIS EURYSTOLE	1	1	17.0		TL								0.1	
	ENCHELYOPUS CIMBRIUS	4	4	1.8	1.5- 2.3	SL	0							0.5	0.0
	UROPHYCIS CHUSS	5	3	9.8	6.7-15.9	NL								0.6	
	MERLUCCIUS BILINEARIS	13	10	2.7	2.4- 3.2	NL	0							1.6	0.0
	PRIONOTUS CAROLINUS	2	2	3.3	3.0- 3.7	SL								0.2	
	HIPPOGLOSSINA OBLONGUS	2												0.2	
	SCOPHTHALMUS AQUOSUS	1	1	2.8		SL								0.1	
	ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														

CRUISE DATE 06611 1966 STA.	D M	SPECIES ANALYZED	LARVAE NUMBER TOTAL	MEAS.	MEAN	RANGE	MEAS.	NO. EGGS	LARVAE NUMBER TOTAL	MEAS.	MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
B 2	14 09		SAMPLING DEPTH 0-15M													
		ENGRAULIS EURYSTOLE	1	1	10.5		TL								0.3	
		UROPHYCIS CHUSS	21	7	5.1	2.9- 6.8	NL								6.4	
		MERLUCCIUS BILINEARIS	13	9	2.8	2.4- 3.1	NL	0							3.9	C.C
		HIPPOGLOSSINA OBLONGUS	5	5	4.7	3.8- 5.7	SL								1.5	
		SCOPHTHALMUS AQUOSUS	2	2	4.0	2.7- 5.3	SL								0.6	
		ADDITIONAL LARVAE CAUGHT	LABRIDAE OR SCARIDAE													
B 3	16 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		ENGRAULIS EURYSTOLE	11	11	12.1	10.5-14.3	TL		2	2	15.1	13.8-16.5	TL		4.0	
		ENCHELYOPUS CIMBRIUS						0	19	18	2.3	1.6- 5.3	SL	0	6.3	0.0
		UROPHYCIS SP.	1317	25	2.4	1.8- 4.5	NL		303	21	2.7	1.8- 4.8	NL		456.1	
		MERLUCCIUS BILINEARIS	38	32	4.2	2.3- 9.4	NL	36	567	558	5.6	2.4-17.3	NL	19	200.4	17.1
		TAUTOGOLABRUS ADSPERSUS	4	4	6.9	4.3- 9.1	TL								1.3	
		PEPRILUS TRIACANTHUS	1	1	8.0		SL		1	1	3.8		SL		0.6	
		CITHARICHTHYS ARCTIFRONS	8	8	7.2	4.2-11.1	SL		129	25	6.2	3.5- 8.4	SL		45.4	
		HIPPOGLOSSINA OBLONGUS	16	15	4.5	3.4- 5.7	SL		3	3	4.2	2.7- 5.3	SL		5.8	
		SCOPHTHALMUS AQUOSUS							1	1	4.0		SL		0.3	
		ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						OPHIDIIDAE UNIDENTIFIED							
B 4	14 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		ENGRAULIS EURYSTOLE	5	5	9.3	7.9-10.7	TL		3	3	11.0	9.8-11.6	TL		2.5	
		ENCHELYOPUS CIMBRIUS						1	46	44	3.7	1.7- 6.5	SL	0	15.3	C.3
		UROPHYCIS SP.	4	3	2.0	1.4- 2.4	NL		271	19	3.0	2.1- 4.1	NL		91.5	
		UROPHYCIS CHUSS	504	34	3.1	1.3- 5.3	NL								168.0	
		MERLUCCIUS BILINEARIS	12	12	3.5	2.3- 5.8	NL	9	179	179	4.8	1.8-13.0	NL	3	63.3	3.7
		TAUTOGOLABRUS ADSPERSUS	1	1	7.0		TL								0.3	
		PEPRILUS TRIACANTHUS	3	3	2.6	2.5- 2.8	SL								1.0	
		CITHARICHTHYS ARCTIFRONS	42	40	5.5	2.8-12.5	SL		111	25	6.0	3.5- 9.8	SL		49.6	
		HIPPOGLOSSINA OBLONGUS	53	51	4.0	2.7- 5.4	SL		10	10	4.5	3.4- 5.9	SL		19.2	
		GLYPTOCEPHALUS CYNOGLOSSUS							2	2	12.1	5.0-19.2	SL		0.7	
		LIMANDA FERRUGINEA							1	1	8.3		SL		0.3	
		ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE UNIDENTIFIED						OPHIDIIDAE UNIDENTIFIED							
B 5	14 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		PISCDONOPHIS CRUENTIFER	1	1	33.4		TL		1	1	41.5		TL		0.6	
		LOPHIUS AMERICANUS							4	4	6.5	4.5- 8.9	TL		1.3	
		ENCHELYOPUS CIMBRIUS						0	155	41	2.5	1.5- 4.9	SL	6	51.7	2.0
		UROPHYCIS SP.	831	22	2.9	2.0- 4.5	NL		966	30	2.6	1.2- 4.2	NL		511.2	
		MERLUCCIUS BILINEARIS	2	2	5.6	4.8- 6.4	NL	22	103	96	4.1	2.0-11.0	NL	23	34.9	14.3
		TAUTOGOLABRUS ADSPERSUS							1	1	3.4		TL		0.3	
		PEPRILUS TRIACANTHUS	1	1	5.0		SL								0.3	
		CITHARICHTHYS ARCTIFRONS	63	25	5.5	4.2-10.1	SL		183	25	5.7	4.2-12.1	SL		79.9	
		HIPPOGLOSSINA OBLONGUS	15	13	4.4	3.4- 5.0	SL		47	45	4.6	3.2- 6.5	SL		20.2	
		ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE STROMATEIDAE UNIDENTIFIED						OPHIDIIDAE STROMATEIDAE UNIDENTIFIED							
B 6	14 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		PISCDONOPHIS CRUENTIFER							1	1	41.5		TL		0.3	
		LOPHIUS AMERICANUS	6	6	5.7	4.3- 6.6	TL		6	6	7.8	5.3-13.3	TL		3.8	
		ENCHELYOPUS CIMBRIUS	3	3	2.3	1.6- 3.0	SL	2	24	23	3.6	2.5- 6.1	SL	9	8.9	3.6
		UROPHYCIS SP.	122	17	4.1	2.5- 5.8	NL		136	32	3.6	2.2- 5.2	NL		81.9	
		UROPHYCIS CHUSS							9	9	4.4	2.3- 6.9	NL		3.0	
		MERLUCCIUS BILINEARIS	12	4	7.0	4.9- 8.8	NL	4	39	38	6.6	5.1- 7.8	NL	0	16.6	1.3
		CITHARICHTHYS ARCTIFRONS	3	3	5.9	3.6- 7.8	SL		29	29	8.1	4.6-11.7	SL		10.6	
		HIPPOGLOSSINA OBLONGUS	2	2	5.8	5.7- 5.8	SL		7	7	6.0	4.6- 7.5	SL		2.9	
		ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						PISCDONOPHIS CRUENTIFER OPHIDIIDAE							
B 7	14 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		LOPHIUS AMERICANUS	2	2	5.5	5.1- 6.0	TL		1	1	3.6		TL		0.9	
		UROPHYCIS SP.	71	18	4.5	3.2- 5.9	NL		64	17	5.0	3.7-10.1	NL		42.6	
		MERLUCCIUS BILINEARIS	10	10	11.6	6.7-40.0	NL	0	53	51	12.1	6.5-41.1	NL	0	20.7	0.0
		CITHARICHTHYS ARCTIFRONS	1	1	7.1		SL		11	11	8.0	5.5-15.2	SL		4.0	
		ADDITIONAL LARVAE CAUGHT							SYNODONTIDAE OPHIDIIDAE							
C 1	17 09		SAMPLING DEPTH 0- 9M													
		ENGRAULIS EURYSTOLE	4	4	13.3	6.1-19.0	TL								0.7	
		UROPHYCIS SP.	35	14	1.7	1.2- 3.0	NL								6.4	
		MERLUCCIUS BILINEARIS	4	4	3.0	2.7- 3.7	NL	0							0.7	0.0
		PEPRILUS TRIACANTHUS	1	1	2.6		SL								0.2	
		PRIONOTUS CAROLINUS	16	16	2.6	1.9- 3.5	SL								2.9	
		CITHARICHTHYS ARCTIFRONS	1	1	5.4		SL								0.2	
		ETROPUS MICROSTOMUS	1	1	9.1		SL								0.2	
		SCOPHTHALMUS AQUOSUS	4	4	2.9	2.2- 3.3	SL								0.7	
		ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													

CRUISE DATE 06611 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
C 2 17 09	SAMPLING DEPTH 0-15M													
ENGRAULIS EURYSTOLE	5	5	6.3	3.0-18.1	TL								1.5	
UROPHYCIS SP.	34	7	2.3	1.2- 4.5	NL								10.3	
MERLUCCIUS BILINEARIS	5	3	2.7	2.6- 2.8	NL	0							1.5	0.0
TAUTOGA ONITIS	4	4	3.0	2.6- 3.7	TL								1.2	
PRICNOTUS CAROLINUS	2	2	3.9	3.4- 4.4	SL								0.6	
CITHARICHTHYS ARCTIFRONS	7	7	6.3	5.3- 7.2	SL								2.1	
PARALICHTHYS DENTATUS	1					0							0.3	0.0
HIPPOGLOSSINA OBLONGUS	3	3	2.9	2.7- 3.2	SL								0.9	
SCOPHTHALMUS AQUOSUS	1	1	2.7		SL								0.3	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
C 3 17 09	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ENGRAULIS EURYSTOLE	2	2	12.0	8.6-15.4	TL		1	1	8.7		TL		0.8	
ENCHELYOPUS CIMBRIUS						0	1	1	5.7		SL	0	0.2	0.0
UROPHYCIS SP.	87	24	4.2	2.0- 6.2	NL		57	22	3.0	1.5- 7.0	NL		35.9	
MERLUCCIUS BILINEARIS						56						0	0.0	18.1
TAUTOGOLABRUS ADSPERSUS	1	1	5.2		TL								0.3	
PEPRILUS TRIACANTHUS	1	1	3.4		SL								0.3	
PRICNOTUS CAROLINUS	2	2	3.5	3.5- 3.5	SL		4	4	3.8	3.5- 4.3	SL		1.3	
CITHARICHTHYS ARCTIFRONS	14	14	7.7	5.7-13.7	SL		4	4	10.1	7.4-11.7	SL		4.9	
ETROPUS MICROSTOMUS							2	2	8.7	5.7-11.7	SL		0.3	
PARALICHTHYS DENTATUS						0	4	4	3.3	3.2- 3.4	SL	0	0.6	0.0
HIPPOGLOSSINA OBLONGUS							1	1	3.3		SL		0.2	
SCOPHTHALMUS AQUOSUS	1	1	2.8		SL								0.3	
ADDITIONAL LARVAE CAUGHT							UNIDENTIFIED							
C 4 17 09	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
PISCODNOPHIS CRUENTIFER							1	1	59.0		TL		0.3	
ENCHELYOPUS CIMBRIUS						0	23	23	4.7	2.9- 7.2	SL	0	7.7	0.0
UROPHYCIS SP.	622	34	3.3	1.7- 5.1	NL		929	32	3.6	1.6- 6.8	NL		496.2	
MERLUCCIUS BILINEARIS	1	1	4.4		NL	8	312	300	4.2	2.3-10.3	NL	4	164.3	3.7
PEPRILUS TRIACANTHUS	44	44	2.9	2.0- 3.8	SL		2	2	2.9	2.4- 3.4	SL		14.7	
PRIONOTUS CAROLINUS							2	2	3.0	2.7- 3.4	SL		0.7	
CITHARICHTHYS ARCTIFRONS	61	25	6.1	3.7-11.5	SL		398	25	5.9	3.7- 9.3	SL		151.0	
PARALICHTHYS DENTATUS						0	1	1	4.5		SL	0	0.3	0.0
HIPPOGLOSSINA OBLONGUS	11	11	4.4	3.2- 7.0	SL		4	4	5.5	4.5- 6.7	SL		4.6	
SCOPHTHALMUS AQUOSUS	11	2	4.0	3.7- 4.2	SL								3.7	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE STROMATEIDAE						UNIDENTIFIED							
C 5 17 09	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE	2	2	12.8	12.1-13.5	TL		1	1	13.5		TL		0.9	
ENCHELYOPUS CIMBRIUS						0	20	20	5.1	3.7- 7.8	SL	0	6.7	0.0
UROPHYCIS SP.	1315	40	3.3	1.9- 5.8	NL		125	28	4.0	2.1- 7.5	NL		438.3	
MERLUCCIUS BILINEARIS	8	7	3.0	2.5- 4.5	NL	16	157	157	6.9	2.8-11.5	NL	1	54.7	5.3
PEPRILUS TRIACANTHUS	6	6	5.5	2.9-17.8	SL								2.0	
CITHARICHTHYS ARCTIFRONS	100	25	6.7	4.5-13.2	SL		57	25	7.0	4.3-11.7	SL		62.3	
HIPPOGLOSSINA OBLONGUS	39	37	4.5	2.5- 6.0	SL		7	7	5.6	4.3- 7.0	SL		14.0	
SCOPHTHALMUS AQUOSUS	1	1	3.2		SL								0.3	
GLYPTOCEPHALUS CYNOGLOSSUS							2	2	21.5	18.7-24.2	SL		0.7	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE STROMATEIDAE UNIDENTIFIED						OPHIDIIDAE STROMATEIDAE							
C 6 17 09	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
LOPHIUS AMERICANUS							4	4	6.8	4.1- 8.2	TL		1.3	
ENCHELYOPUS CIMBRIUS						0	58	26	4.3	2.2- 7.5	SL	1	19.3	0.3
UROPHYCIS SP.	1625	39	3.6	2.0- 5.5	NL		961	30	4.4	2.6- 7.5	NL		267.8	
MERLUCCIUS BILINEARIS						0	208	207	5.6	2.1-15.5	NL	23	69.3	7.7
PEPRILUS TRIACANTHUS	1	1	3.0		SL								0.3	
CITHARICHTHYS ARCTIFRONS	170	25	5.4	3.1-13.6	SL		639	25	5.5	3.2-14.2	SL		264.0	
HIPPOGLOSSINA OBLONGUS	23	22	5.1	2.9- 6.9	SL		8	8	5.4	4.1- 6.2	SL		9.6	
LIMANDA FERRUGINEA							2	2	13.7	12.7-14.7	SL		0.7	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE STROMATEIDAE UNIDENTIFIED													
C 7 17 09	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE	2	2	12.9	12.5-13.3	TL		1	1	14.1		TL		0.9	
LOPHIUS AMERICANUS	4	4	8.4	3.9-13.9	TL		10	10	6.1	3.7- 9.9	TL		4.5	
ENCHELYOPUS CIMBRIUS	1	1	2.5		SL	0	28	27	3.4	1.6- 5.6	SL	0	9.6	0.0
UROPHYCIS SP.	965	26	2.9	1.2- 4.9	NL		687	28	3.9	2.2- 6.8	NL		518.4	
MERLUCCIUS BILINEARIS	13	12	12.3	3.1-22.5	NL	0	351	345	8.5	3.1-32.8	NL	0	120.9	0.0
ALXIS SP.	1	1	13.5		SL								0.3	
PEPRILUS TRIACANTHUS	1	1	8.2		SL								0.3	
ROTHUS OCELLATUS	1	1	15.4		SL								0.3	
CITHARICHTHYS ARCTIFRONS	13	12	6.9	2.2-13.6	SL		137	25	7.9	2.6-14.7	SL		49.6	
MENOLENE SESSILICAUDA	1	1	19.3		SL								0.3	
HIPPOGLOSSINA OBLONGUS	33	33	5.1	2.7- 7.5	SL		22	22	4.7	2.7- 6.4	SL		17.2	
GLYPTOCEPHALUS CYNOGLOSSUS							1	1	18.2		SL		0.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						OPHIDIIDAE							

CRUISE DATE 06611 1966 STA. D M SPECIES ANALYZED.	********** LARVAE ********** NUMBER TOTAL MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
C 8 17 09	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 16-33M						
PISCIONOPHIS CRUENTIFER	1	1	29.9	TL							0.3	
CERATOSCOPELUS MADEREENSIS	1	1	10.7	SL							0.3	
DIAPHUS SP.						4	4	8.9 7.9- 9.7	SL		1.3	
LOPHIUS AMERICANUS	1	1	6.5	TL							0.3	
UROPHYCIS SP.	23	9	3.6 2.0- 5.1	NL		137	28	4.9 3.8- 6.0	NL		52.6	
MERLUCCIUS BILINEARIS	2	2	8.2 7.9- 8.6	NL	0	2	2	9.7 9.4-10.0	NL	0	1.3	0.0
PEPRILUS TRIACANTHUS	1	1	35.0	SL							0.3	
CITHARICHTHYS ARCTIFRONS	1	1	10.0	SL		11	10	7.9 5.3-12.3	SL		4.0	
HIPPOGLOSSINA OBLONGUS						4	4	5.6 4.2- 6.6	SL		1.3	
SCOPHTHALMUS AQUOSUS						1	1	2.5	SL		0.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE					OPHIDIIDAE						
	CALLIONYMIDAE					GOBIIDAE						
	UNIDENTIFIED											
C 1 18 09	SAMPLING DEPTH C- 6M											
ENGRAULIS EURYSTOLE	62	53	4.5 1.7- 8.6	TL							7.5	
ENCHELYOPUS CIMBRIUS	1	1	1.7	SL	0						0.1	0.0
UROPHYCIS SP.	29	11	2.3 1.6- 3.7	NL							3.5	
CENTROPRISTIS STRIATA	1	1	5.4	SL							0.1	
PEPRILUS TRIACANTHUS	3	3	4.0 3.0- 5.3	SL							0.4	
PRICNOTUS CAROLINUS	111	21	2.8 2.2- 3.8	SL							13.5	
CITHARICHTHYS ARCTIFRONS	1	1	5.2	SL							0.1	
HIPPOGLOSSINA OBLONGUS	5	4	3.4 3.1- 3.7	SL							0.6	
SCOPHTHALMUS AQUOSUS	9	9	2.7 2.5- 3.0	SL							1.1	
ADDITIONAL LARVAE CAUGHT	STROMATEIDAE											
	UNIDENTIFIED											
C 2 18 09	SAMPLING DEPTH C- 6M											
ENGRAULIS EURYSTOLE	47	47	4.2 1.7- 6.9	TL							5.7	
UROPHYCIS SP.	14	10	2.3 1.4- 2.8	NL							1.7	
MERLUCCIUS BILINEARIS	1	1	3.6	NL	0						0.1	0.0
PRICNOTUS CAROLINUS	18	18	3.8 2.7- 5.0	SL							2.2	
CITHARICHTHYS ARCTIFRONS	1	1	5.1	SL							0.1	
HIPPOGLOSSINA OBLONGUS	2	2	2.6 2.4- 2.7	SL							0.2	
SCOPHTHALMUS AQUOSUS	7	7	2.9 2.2- 3.7	SL							0.8	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
C 3 18 09	SAMPLING DEPTH C-15M											
ENGRAULIS EURYSTOLE	10	9	4.9 2.2- 7.2	TL							3.0	
UROPHYCIS SP.	137	32	2.0 1.2- 4.0	NL							41.5	
MERLUCCIUS BILINEARIS	7	5	2.8 2.2- 4.0	NL	0						2.1	0.0
POMATOMUS SALTATRIX	1	1	4.0	SL							0.3	
PEPRILUS TRIACANTHUS	2	2	3.7 3.6- 3.9	SL							0.6	
PRICNOTUS CAROLINUS	6	6	2.3 1.4- 2.9	SL							1.8	
CITHARICHTHYS ARCTIFRONS	2	2	2.8 2.7- 2.9	SL							0.6	
PARALICHTHYS CENTATUS	3	3	3.5 3.3- 3.6	SL	0						0.9	0.0
HIPPOGLOSSINA OBLONGUS	4	2	3.5 3.2- 3.8	SL							1.2	
SCOPHTHALMUS AQUOSUS	4	4	2.7 2.5- 2.9	SL							1.2	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE											
	STROMATEIDAE											
	UNIDENTIFIED											
C 4 19 09	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
ENGRAULIS EURYSTOLE	30	25	6.2 2.9-22.5	TL		1	1	12.1	TL		9.7	
ENCHELYOPUS CIMBRIUS	2	2	2.3 2.2- 2.3	SL	0	1	1	3.3	SL	0	0.8	0.0
UROPHYCIS SP.	99	23	3.3 2.1- 6.0	NL		32	18	2.3 1.5- 3.2	NL		35.6	
MERLUCCIUS BILINEARIS	12	11	3.4 2.6- 4.2	NL	0	11	11	2.8 2.2- 4.2	NL	0	5.5	0.0
PEPRILUS TRIACANTHUS	6	6	5.0 3.4-11.3	SL		4	4	3.2 2.1- 3.9	SL		2.5	
PRICNOTUS CAROLINUS	17	17	2.9 1.9- 4.1	SL		4	4	3.0 2.5- 4.0	SL		5.9	
CITHARICHTHYS ARCTIFRONS	15	13	3.9 3.1- 4.8	SL		11	8	3.3 3.2- 5.9	SL		6.4	
PARALICHTHYS CENTATUS	1	1	3.4	SL	0	2	2	3.2 2.9- 3.6	SL	0	0.6	0.0
HIPPOGLOSSINA OBLONGUS	30	27	3.6 2.5- 7.6	SL		1	1	2.9	SL		9.7	
SCOPHTHALMUS AQUOSUS	4	4	3.7 2.6- 5.4	SL		5	5	2.9 2.7- 3.3	SL		2.0	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED					UNIDENTIFIED						

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STA.	D M	SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
C 5	18 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		ENGRAULIS EURYSTOLE	14	14	8.2	5.7-16.3	TL								4.7	
		ENCHELYOPUS CIMBRIUS	4	2	2.5	2.3- 2.7	SL	6	14	14	3.8	2.5- 5.7	SL	0	5.9	2.0
		UROPHYCIS SP.	704	33	3.5	1.8- 6.4	NL		179	31	5.0	1.9-10.7	NL		270.8	
		MERLUCCIUS BILINEARIS	25	22	3.8	2.6- 5.9	NL	0	136	130	4.9	2.6-11.2	NL	0	52.8	0.0
		PENATOMUS SALTATRIX	1	1	6.7		SL								0.3	
		TAUTOGOLABRUS ADSPERSUS	2	2	7.2	5.9- 8.5	TL		4	4	9.0	8.6- 9.4	TL		1.9	
		PEPRILUS TRIACANTHUS	23	22	4.6	2.0-12.5	SL		2	2	4.1	3.1- 5.1	SL		7.7	
		PRIONOTUS CAROLINUS	28	28	4.1	2.5- 7.9	SL		3	3	4.3	3.7- 5.3	SL		9.4	
		CITHARICHTHYS ARCTIFRONS	10	10	6.6	3.4-11.2	SL		16	16	6.0	3.7-10.4	SL		8.3	
		ETROPUS MICROSTOMUS	9	8	6.2	4.6- 9.2	SL		2	2	6.4	5.6- 7.1	SL		3.4	
		PARALICHTHYS DENTATUS	6	6	4.3	3.2- 5.1	SL	0						0	2.0	0.0
		HIPPOGLOSSINA OBLONGUS	49	45	4.8	3.2- 6.8	SL		18	18	5.9	3.5- 9.8	SL		20.7	
		SCOPHTHALMUS AQUOSUS	10	9	3.8	3.4- 4.2	SL		1	1	3.5		SL		3.3	
		ADDITIONAL LARVAE CAUGHT	CARANGIDAE													
			STROMATEIDAE													
			UNIDENTIFIED													
D 6	18 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		PISODONOPHIS CRUENTIFER	1	1	53.4		TL								0.3	
		ENGRAULIS EURYSTOLE	9	9	13.2	10.8-16.5	TL		1	1	11.6		TL		3.0	
		LOPHIUS AMERICANUS							11	11	5.7	4.7- 9.4	TL		3.7	
		ENCHELYOPUS CIMBRIUS	4	3	4.7	2.7- 8.5	SL	0	11	8	5.0	2.3- 8.9	SL	0	4.9	0.0
		UROPHYCIS SP.	759	30	4.4	2.1- 7.1	NL		191	30	4.6	2.8-11.2	NL		251.3	
		MERLUCCIUS BILINEARIS	22	22	6.0	4.1- 8.8	NL	0	372	363	5.5	3.1-12.2	NL	0	130.6	0.0
		PEPRILUS TRIACANTHUS	5	5	2.9	2.8- 3.0	SL		2	2	2.9	2.5- 3.3	SL		2.2	
		CITHARICHTHYS ARCTIFRONS	151	25	5.9	4.2- 9.4	SL		96	25	6.6	3.2-11.9	SL		77.3	
		HIPPOGLOSSINA OBLONGUS	18	18	4.6	3.1- 6.8	SL		11	11	5.3	4.4- 5.8	SL		9.1	
		GLYPTOCEPHALUS CYNOGLOSSUS							1	1	32.1		SL		0.3	
		ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						OPHICHTHIDAE							
									OPHIDIIDAE							
									LABRIDAE OR SCARIDAE							
D 7	18 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		ENGRAULIS EURYSTOLE	1	1	19.6		TL								0.3	
		LOPHIUS AMERICANUS							5	5	6.7	4.6- 8.1	TL		1.7	
		ENCHELYOPUS CIMBRIUS	1	1	2.6		SL	0	15	15	3.6	2.4- 5.8	SL	1	5.3	0.3
		UROPHYCIS SP.	470	18	3.8	1.5- 4.9	NL		71	15	4.9	2.2- 8.0	NL		164.7	
		MERLUCCIUS BILINEARIS	1	1	8.8		NL	0	61	61	7.0	3.5-10.2	NL	0	20.6	0.0
		PEPRILUS TRIACANTHUS	2	2	3.1	2.7- 3.5	SL								0.7	
		CITHARICHTHYS ARCTIFRONS	86	25	5.3	2.8- 8.2	SL		77	25	10.3	4.8-14.0	SL		51.5	
		HIPPOGLOSSINA OBLONGUS	4	3	3.5	2.9- 4.5	SL		16	16	5.3	2.9- 6.3	SL		6.5	
		GLYPTOCEPHALUS CYNOGLOSSUS							1	1	15.4		SL		0.3	
		ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						OPHIDIIDAE							
			UNIDENTIFIED													
D 8	18 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		CERATOSCOPELUS MADERENSIS	2	2	8.9	8.8- 9.0	SL		7	7	10.9	8.8-13.8	SL		2.9	
		LOPHIUS AMERICANUS							4	4	5.7	4.2- 8.5	TL		1.3	
		ENCHELYOPUS CIMBRIUS						0	8	8	3.6	2.7- 7.0	SL	0	2.7	0.0
		UROPHYCIS SP.	87	21	5.1	2.9- 9.5	NL		163	31	4.8	2.5- 9.9	NL		80.4	
		MERLUCCIUS BILINEARIS						0	56	55	9.1	6.5-12.7	NL	0	18.7	0.0
		PEPRILUS TRIACANTHUS	1	1	26.5		SL								0.3	
		CITHARICHTHYS ARCTIFRONS	27	27	7.8	3.0-14.2	SL		18	17	7.5	3.7-13.3	SL		14.1	
		HIPPOGLOSSINA OBLONGUS	4	4	4.7	3.2- 5.6	SL		11	11	5.8	5.0- 6.2	SL		4.9	
		SCOPHTHALMUS AQUOSUS	2	2	2.8	2.7- 2.9	SL								0.7	
		ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						PARALEPIDIDAE							
			GOBIIDAE						OPHIDIIDAE							
			TETRAODONTIDAE						GOBIIDAE							

CRUISE DATE C6612 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M2 LARVAE	EGGS
A 1 15 10	SAMPLING DEPTH C- 6M													
UROPHYCIS SP.	1	1	3.6		NL								0.1	
MERLUCCIUS BILINEARIS	3	2	3.4	3.1- 3.7	NL	0							0.4	0.0
PARALICHTHYS DENTATUS	2	2	4.6	3.0- 6.2	SL	4							0.2	0.5
SCOPHTHALMUS AQUOSUS	1	1	3.3		SL								0.1	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
A 2 15 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
BREVOORTIA TYRANNUS	1	1	8.0		TL		4	4	4.4	4.1- 4.7	TL		1.0	
ENCHELYOPUS CIMBRIUS	1	1	3.8		SL	0	6	6	2.4	2.2- 3.9	SL	0	1.3	0.0
UROPHYCIS SP.							2	2	2.4	2.4- 2.5	NL		0.3	
MERLUCCIUS BILINEARIS	16	15	4.2	3.2- 5.8	NL	0	31	30	4.1	2.8- 5.3	NL	0	9.9	0.0
PARALICHTHYS DENTATUS	2	2	5.2	4.7- 5.7	SL	6	25	24	4.0	2.9- 7.7	SL	6	4.7	2.8
SCOPHTHALMUS AQUOSUS	1	1	4.4		SL								0.3	
ADDITIONAL LARVAE CAUGHT							UNIDENTIFIED							
A 3 15 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS						0	6	6	3.5	2.7- 4.1	SL	0	2.0	0.0
UROPHYCIS SP.	1	1	12.5		NL								0.3	
MERLUCCIUS BILINEARIS	8	8	4.7	2.8- 6.7	NL	0	37	33	4.9	2.6-26.5	NL	1	14.7	0.3
PRIONOTUS CAROLINUS							1	1	3.1		SL		0.3	
PARALICHTHYS DENTATUS	3	3	4.8	4.2- 5.4	SL	0	14	14	3.7	2.8- 5.5	SL	3	5.6	1.0
SCOPHTHALMUS AQUOSUS	1	1	2.8		SL		1	1	2.6		SL		0.6	
A 4 15 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS	1	1	9.3		TL								0.3	
ENCHELYOPUS CIMBRIUS	14	13	3.4	2.5- 4.1	SL	1						0	4.7	0.3
MERLUCCIUS BILINEARIS	105	102	3.5	2.3- 6.9	NL	31	216	207	3.5	2.3- 5.7	NL	63	103.5	30.3
PARALICHTHYS DENTATUS	34	34	4.0	2.7- 5.4	SL	1	23	23	4.1	3.5- 5.6	SL	0	17.9	0.3
SCOPHTHALMUS AQUOSUS	12	10	3.3	2.2- 4.3	SL		13	13	3.2	2.8- 4.2	SL		7.9	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
A 5 15 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS						4						3	0.0	2.2
UROPHYCIS SP.	79	11	3.5	2.2- 4.6	NL		27	20	3.0	2.0- 4.5	NL		22.7	
MERLUCCIUS BILINEARIS	6	6	3.1	2.7- 3.7	NL	12	73	67	3.0	2.0- 4.6	NL	275	26.1	95.3
CITHARICHTHYS ARCTIFRONS	1	1	5.7		SL		3	3	4.5	3.4- 5.1	SL		1.3	
PARALICHTHYS DENTATUS	49	46	4.6	3.6- 7.5	SL	0	59	56	4.2	2.9- 8.2	SL	0	24.4	0.0
SCOPHTHALMUS AQUOSUS	16	16	4.3	3.3- 5.3	SL		16	16	4.3	3.1- 5.6	SL		10.1	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						BLENNIIDAE							
							UNIDENTIFIED							
A 6 15 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
LOPHIUS AMERICANUS	1	1	7.6		TL		2	2	6.8	6.6- 7.1	TL		1.0	
ENCHELYOPUS CIMBRIUS						0						5	0.0	1.7
UROPHYCIS SP.	34	25	4.4	2.4- 6.6	NL		26	21	4.5	2.4- 8.2	NL		18.9	
MERLUCCIUS BILINEARIS	8	8	5.5	3.1-11.5	NL	1	191	177	4.7	1.8-12.8	NL	2	46.1	1.0
CITHARICHTHYS ARCTIFRONS							3	3	7.2	4.9-10.0	SL		1.0	
PARALICHTHYS DENTATUS	3	3	5.5	3.2- 6.8	SL	0	5	5	5.0	3.9- 5.9	SL	0	2.6	0.0
SCOPHTHALMUS AQUOSUS	4	4	6.0	4.2- 9.5	SL		4	4	3.9	3.1- 4.7	SL		2.5	
A 7 15 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
LOPHIUS AMERICANUS							1	1	6.3		TL		0.3	
UROPHYCIS SP.	52	10	10.6	6.8-16.0	NL		39	9	10.2	6.1-16.5	NL		28.6	
MERLUCCIUS BILINEARIS	2	2	9.9	3.0-16.8	NL	0	40	40	13.5	3.7-21.5	NL	0	13.9	0.0
CITHARICHTHYS ARCTIFRONS							2	2	13.8	13.3-14.3	SL		0.7	
PARALICHTHYS DENTATUS	1	1	3.5		SL	0						0	0.3	0.0
ADDITIONAL LARVAE CAUGHT							OPHIDIIDAE							
							GOBIIDAE							
B 1 14 10	SAMPLING DEPTH C- 6M													
ANCHOA MITCHILLI	8	8	35.6	29.1-45.1	TL								1.0	
MERLUCCIUS BILINEARIS						2							0.0	0.2
PARALICHTHYS DENTATUS	2	2	4.1	3.5- 4.7	SL	0							0.2	0.0
SCOPHTHALMUS AQUOSUS	4	4	3.9	3.7- 4.1	SL								0.5	
B 2 14 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
BREVOORTIA TYRANNUS	15	15	13.7	6.9-18.7	TL		9	7	5.3	3.6- 8.2	TL		6.1	
ENCHELYOPUS CIMBRIUS						0	4	4	3.9	3.5- 4.3	SL	0	0.6	0.0
UROPHYCIS SP.	1	1	5.0		NL								0.3	
MERLUCCIUS BILINEARIS	1	1	2.8		NL	6	4	4	5.5	3.2- 6.8	NL	14	1.0	4.1
PRIONOTUS CAROLINUS							1	1	5.1		SL		0.2	
CITHARICHTHYS ARCTIFRONS	1	1	16.6		SL		3	3	16.4	15.2-18.0	SL		0.8	
PARALICHTHYS DENTATUS	4	4	5.9	4.2- 7.3	SL	0	25	25	4.0	3.1- 7.3	SL	3	5.3	0.5
SCOPHTHALMUS AQUOSUS	6	6	3.7	2.7- 5.5	SL		6	6	2.9	2.5- 3.4	SL		2.8	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													

CRUISE DATE 06612 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
B 3 14 10	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
BREVOORTIA TYRANNUS	24 22	11.7	4.4-18.7	TL		31 27	5.9	4.0-11.1	TL		17.5	
ANCHOA HEPSETUS	1 1	23.7		TL							0.3	
ENCHELYOPUS CIMBRIUS	1 1	3.9		SL	0	13 13	4.0	2.7- 5.0	SL	0	4.6	0.0
UROPHYCIS SP.	3 3	20.1	16.0-23.6	NL		2 2	19.7	16.5-23.0	NL		1.6	
MERLUCCIUS BILINEARIS	1 1	3.3		NL	10	19 19	4.4	2.2- 8.8	NL	19	6.6	9.3
PRICNOTUS CAROLINUS	10 10	4.3	3.0- 6.1	SL		4 4	4.7	3.0- 6.1	SL		4.3	
CITHARICHTHYS ARCTIFRONS						1 1	15.2		SL		0.3	
ETROPUS MICROSTOMUS						2 2	4.8	4.3- 5.3	SL		0.7	
PARALICHTHYS DENTATUS	2 2	8.0	7.8- 8.3	SL	0	71 69	4.0	2.9- 8.8	SL	6	24.3	2.0
SCOPHTHALMUS AQUOSUS	6 6	3.9	3.0- 7.5	SL		9 8	4.2	2.6- 6.8	SL		4.8	
ADDITIONAL LARVAE CAUGHT						OPHIDIIDAE						
B 4 14 10	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
BREVOORTIA TYRANNUS	8 8	9.7	7.1-11.3	TL		2 2	5.8	9.7-10.0	TL		3.1	
ENGRAULIS EURYSTOLE						4 4	10.8	8.1-13.1	TL		1.3	
LOPHIUS AMERICANUS						5 5	19.4	15.3-25.0	TL		1.7	
ENCHELYOPUS CIMBRIUS					0	42 40	4.5	2.3- 8.5	SL	1	14.0	0.3
UROPHYCIS SP.	25 16	5.3	3.2- 7.9	NL		99 25	8.5	3.0-26.1	NL		40.5	
MERLUCCIUS BILINEARIS	6 6	5.7	4.2- 6.8	NL	6	145 142	6.4	2.5-18.5	NL	9	50.1	4.8
PEPRILUS TRIACANTHUS						1 1	5.2		SL		0.3	
PRICNOTUS CAROLINUS						1 1	3.0		SL		0.3	
CITHARICHTHYS ARCTIFRONS						7 7	12.3	6.4-17.2	SL		2.3	
PARALICHTHYS DENTATUS	2 2	6.0	5.6- 6.5	SL	0	33 31	5.3	3.7- 7.5	SL	0	11.6	0.0
HIPPOGLOSSINA OBLONGUS						5 5	5.4	3.7- 7.4	SL		1.7	
SCOPHTHALMUS AQUOSUS	4 4	4.0	3.0- 5.2	SL		10 9	4.7	2.7- 6.6	SL		4.5	
GLYPTOCEPHALUS CYNOGLOSSUS						1 1	20.1		SL		0.3	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED					UNIDENTIFIED						
B 5 14 10	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
BREVOORTIA TYRANNUS	9 9	13.1	9.3-16.2	TL		4 3	8.8	6.9- 9.7	TL		4.0	
LOPHIUS AMERICANUS	1 1	21.6		TL		2 2	14.2	12.5-16.0	TL		1.0	
ENCHELYOPUS CIMBRIUS	3 3	7.5	5.1-10.3	SL	3	10 10	4.9	2.6- 7.2	SL	0	4.2	1.0
UROPHYCIS SP.	72 13	7.9	4.0-19.5	NL		23 17	4.8	2.8-14.5	NL		29.3	
MERLUCCIUS BILINEARIS	24 23	9.6	4.1-14.1	NL	2	204 200	7.5	2.7-13.8	NL	1	75.2	0.9
PEPRILUS TRIACANTHUS	1 1	9.4		SL							0.3	
PRICNOTUS CAROLINUS						2 2	3.4	3.2- 3.7	SL		0.7	
CITHARICHTHYS ARCTIFRONS	4 4	10.8	4.2-13.8	SL		19 19	9.8	4.5-14.3	SL		7.5	
ETROPUS MICROSTOMUS						1 1	3.9		SL		0.3	
PARALICHTHYS DENTATUS	1 1	3.3		SL	0	11 11	4.8	3.4- 6.8	SL	0	4.0	0.0
HIPPOGLOSSINA OBLONGUS						4 4	4.7	3.2- 6.4	SL		1.3	
SCOPHTHALMUS AQUOSUS	1 1	3.3		SL		9 9	4.1	3.1- 5.8	SL		3.3	
ADDITIONAL LARVAE CAUGHT						GOBIIDAE						
B 6 14 10	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
BREVOORTIA TYRANNUS	1 1	9.6		TL							0.3	
ANCHOA HEPSETUS						2 2	12.2	6.6-17.9	TL		0.7	
LOPHIUS AMERICANUS	1 1	24.7		TL		7 7	11.8	4.4-21.8	TL		2.6	
ENCHELYOPUS CIMBRIUS	6 6	5.2	2.5- 7.0	SL	0	25 25	4.7	1.7- 8.0	SL	0	10.1	0.0
UROPHYCIS SP.	177 23	8.6	2.9-19.4	NL		136 24	6.6	3.0-14.6	NL		58.4	
MERLUCCIUS BILINEARIS	31 31	10.2	4.3-16.5	NL	0	277 277	10.8	2.2-21.0	NL	0	101.6	0.0
PRICNOTUS CAROLINUS	2 2	4.1	4.0- 4.3	SL		2 2	4.1	3.6- 4.7	SL		1.3	
CITHARICHTHYS ARCTIFRONS	3 2	11.2	6.6-15.7	SL		52 25	8.8	4.2-14.6	SL		18.2	
PARALICHTHYS DENTATUS	1 1	3.8		SL	0	9 9	4.8	3.8- 7.8	SL	0	3.3	0.0
HIPPOGLOSSINA OBLONGUS	4 4	6.9	3.5-10.2	SL		8 8	5.5	3.7- 7.0	SL		3.9	
SCOPHTHALMUS AQUOSUS	2 1	3.3		SL							0.7	
ADDITIONAL LARVAE CAUGHT	SERRANIDAE UNIDENTIFIED											
B 7 14 10	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CERATOSCOPELUS MADERENSIS	1 1	15.1		SL							0.3	
LOPHIUS AMERICANUS	1 1	5.0		TL		1 1	4.7		TL		0.6	
ENCHELYOPUS CIMBRIUS					0	1 1	6.3		SL	0	0.3	0.0
UROPHYCIS SP.	132 26	5.9	4.6- 8.4	NL		12 10	5.3	3.5- 7.5	NL		44.0	
MERLUCCIUS BILINEARIS	15 15	11.2	6.3-15.7	NL	0	59 58	9.6	3.5-15.0	NL	0	24.2	0.0
CITHARICHTHYS ARCTIFRONS	2 2	8.6	5.7-11.5	SL							0.7	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE UNIDENTIFIED					OPHIDIIDAE						
C 1 13 10	SAMPLING DEPTH 0-15M											
UROPHYCIS SP.	1 1	9.3		NL							0.3	
PRICNOTUS CAROLINUS	3 3	3.2	2.9- 3.4	SL							0.9	
PARALICHTHYS DENTATUS	8 8	6.0	3.8-10.2	SL	0						2.4	0.0
SCOPHTHALMUS AQUOSUS	5 5	3.4	2.7- 4.6	SL							1.5	

CRUISE DATE D6612 1966 STA. D M SPECIES ANALYZED	LARVAE NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	LARVAE NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
C 2 13 10	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	155	65	11.6	5.0-18.2	TL								47.0	
ANCHOA HEPSETUS	10	10	9.8	5.0-11.7	TL								3.0	
ENCHELYOPUS CIMBRIUS	1	1	5.6		SL	0							0.3	0.0
UROPHYCIS SP.	53	25	4.5	2.1- 7.5	NL								16.1	
MERLUCCIUS BILINEARIS	3	3	8.7	4.2-15.2	NL	0							0.9	0.0
PEPRILUS TRIACANTHUS	7	6	4.6	3.0- 7.0	SL								2.1	
PRIONOTUS CAROLINUS	70	25	4.0	2.9- 6.0	SL								21.2	
CITHARICHTHYS ARCTIFRONS	1	1	4.8		SL								0.3	
PARALICHTHYS DENTATUS	44	44	4.8	3.0- 7.5	SL	0							13.3	0.0
HIPPOGLOSSINA OBLONGUS	1	1	5.2		SL								0.3	
SCOPHTHALMUS AQUOSUS	123	50	4.3	2.6- 7.3	SL								37.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	UNIDENTIFIED													
C 3 13 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
BREVOORTIA TYRANNUS	398	153	11.5	7.7-16.2	TL		4	4	10.8	9.3-12.2	TL		118.6	
ANCHOA HEPSETUS							1	1	29.6		TL		0.2	
ENGRAULIS EURYSTOLE	27	26	10.6	7.8-14.3	TL		31	31	10.6	5.3-25.6	TL		13.3	
ENCHELYOPUS CIMBRIUS	5	4	4.3	3.7- 5.3	SL	0	7	7	4.0	2.7- 5.2	SL	0	2.7	0.0
UROPHYCIS SP.	132	27	4.9	2.5- 7.2	NL		23	22	4.7	2.5-18.7	NL		44.2	
MERLUCCIUS BILINEARIS	5	5	7.1	3.5-13.2	NL	1	15	15	5.7	4.4- 7.2	NL	2	4.0	0.6
PEPRILUS TRIACANTHUS	5	5	5.2	4.6- 6.5	SL		5	9	8.9	3.7-46.2	SL		3.0	
PRIONOTUS CAROLINUS	263	54	4.0	1.9- 6.7	SL		77	24	4.2	2.1- 6.1	SL		53.2	
CITHARICHTHYS ARCTIFRONS	9	8	5.2	3.6-11.5	SL		10	10	4.8	3.9- 6.6	SL		4.4	
PARALICHTHYS DENTATUS	40	39	5.7	3.0- 8.0	SL	19	112	112	5.6	3.0- 9.3	SL	14	30.4	8.1
HIPPOGLOSSINA OBLONGUS	3	3	6.7	5.4- 7.8	SL		30	25	4.5	2.7- 7.1	SL		5.8	
SCOPHTHALMUS AQUOSUS	60	59	4.5	2.2- 7.7	SL		142	50	4.5	2.7- 8.9	SL		41.4	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						UNIDENTIFIED							
C 4 13 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS	19	18	11.3	5.4-17.4	TL		1						6.3	
ENGRAULIS EURYSTOLE	23	22	7.5	4.4-12.8	TL		4	3	10.3	8.7-12.2	TL		8.2	
LOPHIUS AMERICANUS							1	1	9.9		TL		0.3	
ENCHELYOPUS CIMBRIUS	20	20	4.5	3.5- 6.2	SL	0	20	19	4.7	3.3- 6.6	SL	0	12.7	0.0
UROPHYCIS SP.	469	22	5.2	3.0- 8.9	NL		64	15	6.7	3.6-14.0	NL		162.0	
MERLUCCIUS BILINEARIS	38	38	5.8	2.6- 9.2	NL	0	65	62	6.7	2.6-13.0	NL	2	33.1	0.7
PEPRILUS TRIACANTHUS	6	6	5.0	3.7- 5.8	SL		4	4	3.3	1.9- 6.7	SL		3.1	
PRIONOTUS CAROLINUS	75	27	4.2	2.5- 6.0	SL		14	14	4.4	2.6- 6.8	SL		27.2	
CITHARICHTHYS ARCTIFRONS	16	16	7.5	3.7-13.3	SL		13	13	5.1	3.4-14.7	SL		9.1	
ETROPUS MICROSTOMUS	4	4	4.5	3.7- 5.6	SL		3	3	5.0	4.6- 5.9	SL		2.2	
PARALICHTHYS DENTATUS	78	78	5.7	3.2- 8.4	SL	6	43	43	6.0	3.3- 8.2	SL	2	37.7	2.5
HIPPOGLOSSINA OBLONGUS	4	4	5.7	4.3- 7.2	SL		3	3	6.2	3.8- 8.5	SL		2.2	
SCOPHTHALMUS AQUOSUS	51	48	4.2	2.7- 6.7	SL		55	52	5.1	2.4- 8.8	SL		33.6	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						ANGUILLIFORMES							
							STROMATEIDAE							
C 5 13 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	18	15	4.4	3.5- 5.9	SL	0	15	15	5.0	3.4- 7.6	SL	0	10.4	0.0
UROPHYCIS SP.	659	26	3.8	2.8- 4.9	NL		140	24	6.3	3.8-10.8	NL		244.3	
MERLUCCIUS BILINEARIS	34	33	5.0	2.6- 7.3	NL	11	162	162	6.0	2.6-11.7	NL	7	84.2	5.6
PEPRILUS TRIACANTHUS	6	6	8.0	5.0-15.2	SL		4	4	7.6	6.8- 8.9	SL		3.1	
CITHARICHTHYS ARCTIFRONS	20	20	7.8	3.6-14.7	SL		134	25	6.4	4.3-11.5	SL		50.7	
PARALICHTHYS DENTATUS	6	6	5.9	5.0- 7.8	SL	0	4	4	6.3	5.0- 7.9	SL	0	3.1	0.0
HIPPOGLOSSINA OBLONGUS	9	9	5.4	4.1- 7.6	SL		12	12	6.0	3.7- 7.1	SL		6.7	
SCOPHTHALMUS AQUOSUS	3	3	4.9	4.7- 5.4	SL		4	4	5.3	4.1- 6.1	SL		2.2	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						OPHIDIIDAE							
							LABRIDAE OR SCARIDAE							
							UNIDENTIFIED							
C 6 13 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	1	1	3.8		SL	0	25	24	4.2	2.2- 5.7	SL	0	8.6	0.0
UROPHYCIS SP.	55	19	4.9	3.5- 5.7	NL		22	19	4.5	2.3- 8.8	NL		23.8	
MERLUCCIUS BILINEARIS	34	34	7.6	3.1-12.2	NL	1	100	99	7.8	2.2-16.3	NL	17	43.5	6.0
PRIONOTUS CAROLINUS	2	2	4.1	3.7- 4.5	SL		1	1	3.5		SL		0.9	
CITHARICHTHYS ARCTIFRONS	4	4	6.3	4.4-10.9	SL		16	16	7.7	3.4-12.6	SL		6.5	
PARALICHTHYS DENTATUS						0	1	1	4.8		SL	0	0.3	0.0
HIPPOGLOSSINA OBLONGUS	3	3	6.6	5.6- 7.5	SL		2	2	6.0	3.2- 8.7	SL		1.6	
SCOPHTHALMUS AQUOSUS							5	5	4.9	3.9- 6.9	SL		1.7	
ADDITIONAL LARVAE CAUGHT							UNIDENTIFIED							
C 7 13 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE	1	1	9.0		TL								0.3	
LOPHIUS AMERICANUS	1	1	9.5		TL		4	4	5.8	7.2-15.2	TL		1.6	
ENCHELYOPUS CIMBRIUS	1	1	7.3		SL	0	24	23	5.2	3.5- 8.9	SL	0	8.3	0.0
UROPHYCIS SP.	92	21	5.2	3.2-10.5	NL		604	29	5.5	3.0-10.6	NL		228.9	
MERLUCCIUS BILINEARIS	45	43	13.5	3.9-29.2	NL	4	490	487	9.9	2.3-33.8	NL	3	176.8	2.2
PRIONOTUS CAROLINUS	1	1	3.5		SL								0.3	
CITHARICHTHYS ARCTIFRONS	198	25	8.1	3.3-15.1	SL		171	25	8.1	4.2-14.6	SL		116.4	
HIPPOGLOSSINA OBLONGUS	8	8	5.7	3.2- 8.5	SL		7	7	6.4	4.4- 8.2	SL		4.7	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						UNIDENTIFIED							

CRUISE DATE 06612 1966 STA. D M	SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
C 8	13 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
	UROPHYCIS SP.	1	1	11.3		NL		8	8	10.1	4.6-14.3	NL		3.0	
	MERLUCCIUS BILINEARIS	1	1	19.8		NL	0	1	1	12.8		NL	0	0.6	0.0
	ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						OPHIDIIDAE							
C 1	06 10	SAMPLING DEPTH C- 6M													
	BREVOORTIA TYRANNUS	2	2	7.6	5.1-10.2	TL								0.2	
	UROPHYCIS SP.	3	2	2.9	1.5- 4.3	NL								0.4	
	MERLUCCIUS BILINEARIS	1	1	2.7		NL	0							0.1	C.C
	PRICNOTUS CAROLINUS	27	27	3.6	2.4- 5.5	SL								3.3	
	PARALICHTHYS DENTATUS	6	5	3.1	2.7- 3.4	SL	1							0.7	C.1
	HIPPOGLOSSINA OBLONGUS	1	1	3.2		SL								0.1	
	SCOPHTHALMUS AQUOSUS	16	16	3.3	2.2- 6.1	SL								1.9	
	ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
		STROMATEIDAE													
D 2	06 10	SAMPLING DEPTH 0- 6M													
	BREVOORTIA TYRANNUS	5	5	6.9	4.4- 8.7	TL								0.6	
	UROPHYCIS SP.	3	2	2.9	2.9- 3.0	NL								0.4	
	PRICNOTUS CAROLINUS	187	25	3.3	1.7- 5.0	SL								22.7	
	PARALICHTHYS DENTATUS	7	7	3.2	2.9- 3.8	SL	2							0.8	C.2
	SCOPHTHALMUS AQUOSUS	92	50	3.2	2.2- 4.7	SL								11.2	
	ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
		SYNGNATHIDAE													
C 3	05 10	SAMPLING DEPTH 0-15M													
	BREVOORTIA TYRANNUS	89	33	6.9	4.1-10.1	TL								27.0	
	ENGRAULIS EURYSTOLE	15	14	8.7	7.1-10.7	TL								4.5	
	ENCHELYOPUS CIMBRIUS	2	2	3.1	2.8- 3.3	SL	0							0.6	0.0
	UROPHYCIS SP.	115	21	3.5	2.1- 5.5	NL								34.8	
	MERLUCCIUS BILINEARIS	3	3	7.1	6.9- 7.4	NL	0							0.9	C.C
	PEPRILUS TRIACANTHUS	13	13	3.7	2.3- 7.5	SL								3.9	
	PRICNOTUS CAROLINUS	830	29	3.4	1.8- 4.8	SL								251.5	
	CITHARICHTHYS ARCTIFRONS	1	1	12.2		SL								0.3	
	ETROPUS MICROSTOMUS	7	7	3.7	3.0- 4.9	SL								2.1	
	PARALICHTHYS DENTATUS	100	58	4.1	2.8- 6.4	SL	27							30.3	8.2
	HIPPOGLOSSINA OBLONGUS	7	7	5.3	4.2- 6.2	SL								2.1	
	SCOPHTHALMUS AQUOSUS	453	50	3.4	2.4- 4.9	SL								137.3	
	ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
		SERRANIDAE													
		UNIDENTIFIED													
C 4	12 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
	BREVOORTIA TYRANNUS	24	17	8.1	4.7-12.8	TL		105	41	6.8	4.7-12.8	TL		24.3	
	ENGRAULIS EURYSTOLE	3	2	9.8	9.0-10.6	TL		3	3	8.5	7.4-10.2	TL		1.4	
	ENCHELYOPUS CIMBRIUS	1	1	4.3		SL	0						0	0.3	0.0
	UROPHYCIS SP.	36	23	3.2	1.7- 6.0	NL		68	19	3.2	1.6- 5.7	NL		22.0	
	MERLUCCIUS BILINEARIS						0	1	1	15.0		NL	2	0.2	C.3
	PORATOMUS SALTATRIX							2	2	3.6	3.3- 4.0	SL		0.3	
	PEPRILUS TRIACANTHUS	1	1	5.8		SL		16	16	3.9	1.8-10.4	SL		2.9	
	PRICNOTUS CAROLINUS	145	28	2.9	1.1- 5.4	SL		151	22	3.4	1.8- 5.4	SL		68.9	
	CITHARICHTHYS ARCTIFRONS							5	5	5.1	3.5- 6.7	SL		0.8	
	ETROPUS MICROSTOMUS	3	3	3.7	2.4- 5.3	SL		8	8	4.0	3.0- 5.3	SL		2.2	
	PARALICHTHYS DENTATUS	29	29	4.4	2.6- 6.9	SL	39	59	55	4.4	3.0- 5.9	SL	64	18.5	22.3
	HIPPOGLOSSINA OBLONGUS							8	3	3.6	3.2- 3.9	SL		1.3	
	SCOPHTHALMUS AQUOSUS	122	50	3.5	2.2- 4.4	SL		121	50	3.4	2.7- 4.9	SL		57.0	
	ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						OPHIDIIDAE							
		UNIDENTIFIED						SERRANIDAE							
								UNIDENTIFIED							
D 5	12 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
	BREVOORTIA TYRANNUS	11	10	7.8	5.0-10.0	TL		50	50	6.5	3.1-12.5	TL		11.5	
	ENGRAULIS EURYSTOLE	2	2	6.3	5.8- 6.8	TL		2	2	10.9	10.0-11.9	TL		0.9	
	ENCHELYOPUS CIMBRIUS						0	1	1	2.4		SL	0	0.2	0.0
	UROPHYCIS SP.	23	12	4.1	2.9- 5.5	NL		56	24	3.8	1.7- 7.5	NL		16.1	
	MERLUCCIUS BILINEARIS	1	1	6.2		NL	1	4	4	6.1	4.6- 8.3	NL	30	1.0	5.2
	CENTROPRISTIS STRIATA	1	1	5.0		SL		1	1	7.1		SL		0.5	
	PEPRILUS TRIACANTHUS	2	2	16.5	4.5-28.6	SL		2	2	9.1	5.0-13.3	SL		0.9	
	PRICNOTUS CAROLINUS	46	41	4.1	2.4- 5.4	SL		107	23	3.5	1.5- 5.5	SL		31.4	
	CITHARICHTHYS ARCTIFRONS	1	1	3.8		SL		5	4	3.8	3.1- 4.6	SL		1.1	
	ETROPUS MICROSTOMUS							17	14	5.1	2.7- 8.6	SL		2.7	
	PARALICHTHYS DENTATUS	11	9	4.8	3.7- 6.4	SL	32	53	47	4.1	2.8- 7.9	SL	55	12.0	18.7
	SCOPHTHALMUS AQUOSUS	20	19	4.0	2.7- 6.0	SL		91	83	3.2	2.2- 6.1	SL		20.8	
	ADDITIONAL LARVAE CAUGHT	TRIGLIDAE						UNIDENTIFIED							
		UNIDENTIFIED													

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STA.	D M	SPECIES ANALYZED	LARVAE NUMBER TOTAL	MEAS.	MEAN	RANGE	MEAS.	NO. EGGS	LARVAE NUMBER TOTAL	MEAS.	MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
D 6	12 10		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		BREVOORTIA TYRANNUS	17	17	12.0	9.3-13.7	TL		11	11	11.4	9.5-13.0	TL		8.8	
		ENGRAULIS EURYSTOLE	7	7	9.9	9.0-11.1	TL		2	2	9.8	9.0-10.7	TL		2.8	
		ENCHELYOPUS CIMBRIUS	1	1	4.4		SL	0						0	0.3	0.0
		UROPHYCIS SP.	863	27	4.2	2.3- 7.9	NL		118	28	4.1	2.4- 7.1	NL		298.2	
		MERLUCCIUS BILINEARIS	125	121	6.2	2.5-18.3	NL	8	135	131	6.9	1.6-17.7	NL	3	82.5	3.4
		PEPRILUS TRIACANTHUS	25	25	5.3	3.7- 9.9	SL		4	4	6.9	5.2- 7.7	SL		8.8	
		PRICNOTUS CAROLINUS	20	20	4.2	2.6- 5.5	SL		4	4	4.2	3.5- 4.6	SL		7.3	
		CITHARICHTHYS ARCTIFRONS	130	25	7.0	4.2- 9.4	SL		130	25	7.1	3.5-13.5	SL		82.3	
		PARALICHTHYS DENTATUS	16	16	5.8	5.0- 7.6	SL	1	12	12	5.7	4.6- 7.0	SL	0	8.8	0.3
		HIPPOGLOSSINA OBLONGUS	11	10	5.2	3.2- 6.2	SL		3	3	7.1	6.2- 7.7	SL		4.3	
		SCOPHTHALMUS AQUOSUS	4	3	5.2	4.1- 5.9	SL		15	15	5.5	3.3- 6.7	SL		6.2	
		ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						STROMATEIDAE							
			CORYPHAENIDAE						UNIDENTIFIED							
			STROMATEIDAE													
			UNIDENTIFIED													
D 7	12 10		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		ENGRAULIS EURYSTOLE	1	1	10.6		TL								0.3	
		LOPHIUS AMERICANUS	1	1	5.4		TL		1	1	5.7		TL		0.6	
		ENCHELYOPUS CIMBRIUS	2	1	3.7		SL	0	1	1	3.8		SL	0	0.9	0.0
		UROPHYCIS SP.	667	34	3.7	2.2- 5.4	NL		310	26	5.1	1.9- 8.1	NL		303.4	
		MERLUCCIUS BILINEARIS	46	45	4.2	3.0- 6.7	NL	5	42	42	5.6	3.4- 8.3	NL	7	27.8	3.8
		PEPRILUS TRIACANTHUS	4	4	4.9	3.4- 6.4	SL		1	1	61.8		SL		1.5	
		PRICNOTUS CAROLINUS	408	32	2.8	1.5- 3.5	SL		1	1	3.3		SL		136.0	
		CITHARICHTHYS ARCTIFRONS	91	25	5.6	3.1-11.3	SL		354	25	6.7	4.2- 5.6	SL		145.3	
		PARALICHTHYS DENTATUS						0	2	2	6.0	5.7- 6.3	SL	0	0.7	0.0
		HIPPOGLOSSINA OBLONGUS	16	16	5.3	3.8- 6.5	SL		14	14	6.8	4.6- 8.3	SL		9.5	
		SCOPHTHALMUS AQUOSUS	2	2	5.3	5.2- 5.3	SL		1	1	5.5		SL		0.9	
		ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						LOPHIIFORMES							
			UNIDENTIFIED						OPHIDIIDAE							
									LABRIDAE OR SCARIDAE							
									UNIDENTIFIED							
D 8	12 10		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		LOPHIUS AMERICANUS	1	1	5.1		TL		1	1	4.9		TL		0.6	
		ENCHELYOPUS CIMBRIUS						0	3	3	4.0	3.5- 4.4	SL	0	1.0	0.0
		UROPHYCIS SP.	460	30	4.0	1.9- 7.6	NL		222	30	4.1	2.1- 6.2	NL		212.0	
		MERLUCCIUS BILINEARIS	2	2	4.3	2.9- 5.7	NL	36	39	35	4.5	2.8- 6.7	NL	9	13.6	13.8
		PEPRILUS TRIACANTHUS	1	1	6.7		SL		1	1	7.7		SL		0.6	
		PRIONOTUS CAROLINUS	1	1	4.0		SL		2	2	2.7	2.3- 3.1	SL		1.0	
		CITHARICHTHYS ARCTIFRONS	9	9	5.2	2.7- 6.5	SL		253	25	6.3	4.6-11.8	SL		87.0	
		HIPPOGLOSSINA OBLONGUS	3	3	3.8	3.5- 4.2	SL		4	4	5.8	4.2- 7.7	SL		2.2	
		ADDITIONAL LARVAE CAUGHT							OPHIDIIDAE							
									UNIDENTIFIED							
E 1	05 10		SAMPLING DEPTH 0- 6M													
		BREVOORTIA TYRANNUS	10	9	7.2	5.6- 8.7	TL								1.2	
		ENGRAULIS EURYSTOLE	1	1	16.5		TL								0.1	
		UROPHYCIS SP.	1	1	1.1		NL								0.1	
		PRIONOTUS CAROLINUS	89	21	2.7	2.0- 3.7	SL								10.8	
		CITHARICHTHYS ARCTIFRONS	1	1	3.7		SL								0.1	
		PARALICHTHYS DENTATUS	1	1	4.1		SL	0							0.1	0.0
		SCOPHTHALMUS AQUOSUS	5	5	2.6	2.2- 2.9	SL								0.6	
		ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
E 2	05 10		SAMPLING DEPTH 0- 6M													
		ENGRAULIS EURYSTOLE	2	2	4.7	3.1- 6.3	TL								0.2	
		UROPHYCIS SP.	10	7	2.0	1.5- 2.4	NL								1.2	
		PRICNOTUS CAROLINUS	134	29	3.6	2.2- 5.5	SL								16.2	
		ETROPUS MICROSTOMUS	17	16	2.9	2.3- 4.1	SL								2.1	
		PARALICHTHYS DENTATUS	10	9	3.7	2.9- 4.8	SL	0							1.2	0.0
		SCOPHTHALMUS AQUOSUS	16	16	2.7	2.3- 3.0	SL								1.9	
		ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
			UNIDENTIFIED													
F 3	05 10		SAMPLING DEPTH 0- 6M													
		BREVOORTIA TYRANNUS	6	6	5.9	4.0-10.3	TL								0.7	
		UROPHYCIS SP.	29	23	2.8	1.8- 4.2	NL								3.5	
		CENTROPRISTIS STRIATA	1	1	5.0		SL								0.1	
		PRIONOTUS CAROLINUS	83	17	2.7	1.5- 3.5	SL								10.1	
		ETROPUS MICROSTOMUS	23	23	3.0	2.3- 3.9	SL								2.8	
		PARALICHTHYS DENTATUS	28	27	3.5	3.0- 4.6	SL	45							3.4	5.5
		HIPPOGLOSSINA OBLONGUS	6	5	3.0	2.8- 3.2	SL								0.7	
		SCOPHTHALMUS AQUOSUS	7	7	2.8	2.4- 3.1	SL								0.8	
		ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
			UNIDENTIFIED													

CRUISE DATE D6612 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
E 4 11 10	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	3	2	11.5	10.0-13.0	TL								0.9	
UROPHYCIS SP.	13	5	5.6	1.9-12.5	NL								3.9	
MERLUCCIUS BILINEARIS	1	1	2.8		NL	33							0.3	10.0
PRIONOTUS CAROLINUS	60	18	3.3	1.6- 4.6	SL								18.2	
ETROPUS MICROSTOMUS	1	1	3.9		SL								0.3	
PARALICHTHYS DENTATUS	4	4	4.4	3.9- 5.1	SL	119							1.2	36.1
HIPPOGLOSSINA OBLONGUS	3	2	3.1	3.0- 3.1	SL								0.9	
SCOPHTHALMUS AQUOSUS	26	8	4.4	2.8- 6.3	SL								7.9	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
	UNIDENTIFIED													
E 5 11 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
BREVOORTIA TYRANNUS	476	111	7.2	3.7-12.5	TL		563	89	6.6	2.9-13.7	TL		237.1	
ENGRAULIS EURYSTOLE	1	1	13.1		TL								0.3	
ENCHELYOPUS CIMBRIUS	1	1	4.3		SL	0						0	0.3	0.0
UROPHYCIS SP.	437	32	3.6	1.6- 8.3	NL		287	33	4.1	1.7- 6.1	NL		180.6	
MERLUCCIUS BILINEARIS	21	21	6.4	2.9-20.2	NL	1	15	15	5.1	2.7- 7.6	NL	1	8.9	0.5
CENTROPRISTIS STRIATA	1	1	6.1		SL								0.3	
PEPRILUS TRIACANTHUS	7	7	3.8	2.5- 5.5	SL		8	8	6.0	4.6- 7.6	SL		3.5	
PRIONOTUS CAROLINUS	433	38	3.5	2.1- 4.7	SL		80	22	3.5	2.0- 5.0	SL		145.9	
PRIONOTUS EVOLANS	1	1	6.4		SL								0.3	
CITHARICHTHYS ARCTIFRONS	28	24	4.4	2.9-13.3	SL		19	19	5.3	3.3-10.7	SL		11.7	
ETROPUS MICROSTOMUS							3	3	3.7	3.4- 4.4	SL		0.5	
PARALICHTHYS DENTATUS	41	40	5.0	2.8- 6.4	SL	15	39	38	4.0	3.0- 6.0	SL	3	18.9	5.1
HIPPOGLOSSINA OBLONGUS	55	52	4.0	2.6- 5.4	SL		11	11	3.8	2.8- 5.2	SL		18.7	
SCOPHTHALMUS AQUOSUS	140	50	3.7	2.4- 4.9	SL		218	50	3.7	2.8- 6.2	SL		78.2	
ADDITIONAL LARVAE CAUGHT	SERRANIDAE						OPHIDIIDAE							
	UNIDENTIFIED						UNIDENTIFIED							
E 6 12 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS	66	36	10.4	7.7-13.0	TL		9	9	9.6	4.9-12.2	TL		22.8	
ENGRAULIS EURYSTOLE							1	1	16.6		TL		0.3	
ENCHELYOPUS CIMBRIUS	1	1	4.1		SL	0						0	0.3	0.0
UROPHYCIS SP.	161	29	4.5	2.9-12.4	NL		69	20	4.9	2.6- 6.7	NL		71.3	
MERLUCCIUS BILINEARIS	35	34	6.6	3.1-25.0	NL	3	18	18	8.5	4.5-23.4	NL	0	16.5	1.0
PEPRILUS TRIACANTHUS	1	1	4.1		SL								0.3	
PRIONOTUS CAROLINUS	62	22	3.9	3.0- 5.0	SL		1	1	4.1		SL		20.7	
CITHARICHTHYS ARCTIFRONS	30	27	6.7	2.7-13.9	SL		44	25	6.0	3.6- 9.3	SL		23.7	
PARALICHTHYS DENTATUS	13	13	5.7	4.9- 6.6	SL	0	8	8	6.4	5.4- 7.5	SL	0	6.6	0.0
HIPPOGLOSSINA OBLONGUS	9	5	4.2	2.5- 5.6	SL		2	1	6.4		SL		3.4	
SCOPHTHALMUS AQUOSUS	40	16	4.1	2.4- 5.8	SL		10	7	4.4	3.7- 5.8	SL		15.3	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED						OPHIDIIDAE							
E 7 12 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS							4	4	10.3	10.0-10.5	TL		1.3	
ENCHELYOPUS CIMBRIUS						0	1	1	2.5		SL	0	0.3	0.0
UROPHYCIS SP.	43	16	3.8	1.8- 6.0	NL		297	36	4.6	2.1- 8.0	NL		111.9	
MERLUCCIUS BILINEARIS	7	7	8.0	4.7-14.1	NL	1	52	52	10.0	2.8-31.4	NL	0	19.4	0.3
CITHARICHTHYS ARCTIFRONS	13	12	6.8	4.7- 8.7	SL		473	25	6.4	4.7- 8.1	SL		141.6	
ETROPUS MICROSTOMUS							1	1	7.1		SL		0.3	
PARALICHTHYS DENTATUS						0	1	1	6.0		SL	3	0.3	1.0
HIPPOGLOSSINA OBLONGUS	1	1	6.3		SL		8	7	6.3	4.7- 8.1	SL		3.0	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						OPHIDIIDAE							
	UNIDENTIFIED						UNIDENTIFIED							
E 8 12 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS SP.	149	29	4.0	2.1- 8.7	NL		21	9	3.2	1.7- 6.5	NL		51.7	
MERLUCCIUS BILINEARIS	5	4	3.5	2.8- 4.4	NL	0	2	2	3.0	2.8- 3.2	NL	0	2.2	0.0
CITHARICHTHYS ARCTIFRONS	25	25	4.1	3.0- 5.2	SL		8	6	5.3	3.7- 7.7	SL		10.2	
HIPPOGLOSSINA OBLONGUS	1	1	6.7		SL		3	2	4.4	3.6- 5.2	SL		1.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	UNIDENTIFIED													
F 1 05 10	SAMPLING DEPTH 0- 6M													
ANCHOA MITCHILLI	7	7	16.5	11.3-19.5	TL								0.8	
UROPHYCIS SP.	2	2	2.6	1.7- 3.5	NL								0.2	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
	GOBIIDAE													
	UNIDENTIFIED													
F 2 05 10	SAMPLING DEPTH 0- 6M													
ANCHOA MITCHILLI	1	1	11.2		TL								0.1	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	SYNGNATHIDAE													
	GOBIIDAE													

CRUISE DATE C6612 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
F 3 C5 10	SAMPLING DEPTH C-15M													
UROPHYCIS SP.	2	1	3.1		NL								0.6	
PRICNOTUS CAROLINUS	15	15	3.2	2.4- 3.8	SL								4.5	
ETRCPUS MICROSTOMUS	16	16	3.3	2.6- 3.7	SL								4.8	
SCOPHTHALMUS AQUOSUS	1	1	3.6		SL								0.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	SYNGNATHIDAE													
F 4 C5 10	SAMPLING DEPTH C-15M													
BREVOORTIA TYRANNUS	4	4	6.2	4.7- 6.5	TL								1.2	
UROPHYCIS SP.	99	30	2.3	1.5- 3.8	NL								30.0	
CENTROPRISTIS STRIATA	2	2	4.2	3.5- 5.0	SL								0.6	
PRICNOTUS CAROLINUS	92	25	3.0	2.1- 5.1	SL								27.9	
CITHARICHTHYS ARCTIFRONS	3	3	5.3	3.4- 6.6	SL								0.9	
ETRCPUS MICROSTOMUS	8	8	3.7	2.6- 4.6	SL								2.4	
PARALICHTHYS DENTATUS	1	1	5.4		SL	0							0.3	0.0
HIPPOGLOSSINA OBLONGUS	4	4	2.9	2.5- 3.1	SL								1.2	
SCOPHTHALMUS AQUOSUS	1	1	3.7		SL								0.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	UNIDENTIFIED													
F 5 C4 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
BREVOORTIA TYRANNUS	18	16	6.9	5.0-11.4	TL		30	29	7.1	5.0-12.5	TL		10.4	
ENGRAULIS EURYSTOLE							3	3	17.9	15.6-20.0	TL		0.5	
UROPHYCIS SP.	33	21	3.1	1.9-10.2	NL		77	35	3.7	1.8- 8.9	NL		22.6	
MERLUCCIUS BILINEARIS	2	2	5.6	4.2- 7.0	NL	0	1	1	3.7		NL	1	0.8	0.2
CENTROPRISTIS STRIATA	2	2	5.4	5.3- 5.6	SL		1	1	3.6		SL		0.8	
PEPRILUS TRIACANTHUS	2	2	5.2	5.1- 5.3	SL		1	1	3.8		SL		0.8	
PRICNOTUS CAROLINUS	191	24	3.2	2.4- 5.2	SL		51	24	3.2	2.2- 4.5	SL		66.9	
CITHARICHTHYS ARCTIFRONS	9	9	5.5	3.4-10.0	SL		16	16	5.0	6.2-12.7	SL		5.4	
ETRCPUS MICROSTOMUS	5	5	4.4	3.6- 4.9	SL		3	3	3.8	3.3- 4.7	SL		2.0	
PARALICHTHYS DENTATUS	15	15	4.3	3.1- 7.0	SL	62	103	99	4.0	2.9- 4.8	SL	39	21.3	25.3
HIPPOGLOSSINA OBLONGUS	1						4	2	7.9	4.8-11.0	SL		1.0	
SCOPHTHALMUS AQUOSUS							31	28	3.6	2.9- 4.5	SL		5.0	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						UNIDENTIFIED							
	UNIDENTIFIED													
F 6 C4 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS	92	43	7.0	5.8-10.2	TL		8	6	7.2	6.9- 7.6	TL		30.7	
ENGRAULIS EURYSTOLE	4	4	12.9	10.0-14.7	TL								1.3	
ENCHELYOPUS CIMBRIUS						0	1	1	4.7		SL	0	0.3	0.0
UROPHYCIS SP.	364	27	3.8	1.7- 7.9	NL		13	8	2.7	2.1- 3.3	NL		121.3	
MERLUCCIUS BILINEARIS	70	69	6.4	2.9-23.3	NL	0	10	9	7.0	3.7-13.8	NL	0	24.3	0.0
PEPRILUS TRIACANTHUS	3	3	13.0	4.0-30.5	SL								1.0	
PRICNOTUS CAROLINUS	373	29	3.0	1.9- 4.3	SL		8	8	2.8	2.2- 3.6	SL		124.3	
CITHARICHTHYS ARCTIFRONS	389	25	6.0	3.2-10.2	SL		11	10	6.2	2.5-10.2	SL		129.7	
ETRCPUS MICROSTOMUS	15	15	5.0	3.3- 6.9	SL		1	1	2.9		SL		5.0	
PARALICHTHYS DENTATUS	115	106	4.0	3.2- 6.5	SL	0	6	6	4.0	3.3- 4.4	SL	0	38.3	0.0
HIPPOGLOSSINA OBLONGUS	77	50	3.3	2.7- 5.2	SL								25.7	
SCOPHTHALMUS AQUOSUS	15	13	3.3	2.7- 5.3	SL		2	2	2.9	2.6- 3.0	SL		5.2	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						OPHIDIIDAE							
	UNIDENTIFIED													
F 7 C4 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS	426	38	6.6	3.1- 8.5	TL		2	2	6.7	5.8- 7.6	TL		142.0	
ENGRAULIS EURYSTOLE	2	2	13.1	11.6-14.7	TL		2	2	14.0	13.3-14.8	TL		1.3	
LOPHIUS AMERICANUS	1	1	5.1		TL		1	1	4.9		TL		0.6	
UROPHYCIS SP.	374	39	3.5	1.8- 5.9	NL		86	15	4.3	2.5- 7.5	NL		140.9	
MERLUCCIUS BILINEARIS	6	6	4.7	3.0- 7.0	NL	0	21	17	6.3	3.0- 9.3	NL	0	8.8	0.0
PEPRILUS TRIACANTHUS							1	1	2.9		SL		0.3	
PRICNOTUS CAROLINUS	5	5	2.9	2.5- 3.1	SL		9	9	3.3	3.0- 3.7	SL		4.5	
CITHARICHTHYS ARCTIFRONS	108	25	6.1	3.3- 7.9	SL		120	25	5.4	4.0-15.0	SL		72.4	
HIPPOGLOSSINA OBLONGUS	32	22	4.2	2.7- 6.2	SL		11	10	6.0	4.2- 8.1	SL		13.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						OPHIDIIDAE							
	STROMATEIDAE						UNIDENTIFIED							
	UNIDENTIFIED													
G 1 C4 10	SAMPLING DEPTH C- 6M													
ANCHOA MITCHILLI	19	19	25.4	14.8-47.1	TL								2.3	
G 2 C3 10	SAMPLING DEPTH 0- 6M													
PRICNOTUS CAROLINUS	11	11	3.7	2.1- 6.0	SL								1.3	
PRICNOTUS EVOLANS	1	1	5.0		SL								0.1	
ETRCPUS MICROSTOMUS	1	1	4.1		SL								0.1	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													

CRUISE DATE 06612 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
G 3 C3 10	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	1	1	11.6		TL								0.3	
UROPHYCIS SP.	8	6	2.4	1.7- 3.0	NL								2.4	
PRICNOTUS CAROLINUS	28	27	3.4	2.3- 5.9	SL								8.5	
ETROPUS MICROSTOMUS	1	1	6.3		SL								0.3	
PARALICHTHYS DENTATUS						24							0.0	7.3
HIPPOGLOSSINA OBLONGUS	2	1	3.0		SL								0.6	
ADDITIONAL LARVAE CAUGHT OPHIDIIDAE														
G 4 C4 10	SAMPLING DEPTH C-15M													
BREVOORTIA TYRANNUS	2553	116	6.4	2.7-10.5	TL								773.6	
ENGRAULIS EURYSTOLE	10	10	17.9	11.4-23.1	TL								3.0	
LOPHIUS AMERICANUS	1	1	14.0		TL								0.3	
UROPHYCIS SP.	804	28	2.7	1.7- 5.4	NL								243.6	
MERLUCCIUS BILINEARIS	1	1	5.4		NL	0							0.3	0.0
CENTROPRISTIS STRIATA	1	1	6.3		SL								0.3	
PEPRILUS TRIACANTHUS	1	1	6.2		SL								0.3	
PRICNOTUS CAROLINUS	2425	25	3.2	1.9- 5.2	SL								734.8	
CITHARICHTHYS ARCTIFRONS	62	25	6.4	2.7-11.7	SL								18.8	
ETROPUS MICROSTOMUS	20	20	5.5	2.7-11.4	SL								6.1	
PARALICHTHYS DENTATUS	22	21	4.1	3.2- 5.2	SL	0							6.7	0.0
HIPPOGLOSSINA OBLONGUS	64	60	4.0	2.9- 7.2	SL								19.4	
SCOPHTHALMUS AQUOSUS	28	28	3.6	3.1- 4.1	SL								8.5	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
G 5 C4 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS	79	37	7.1	2.7-10.3	TL		2	2	7.3	7.2- 7.4	TL		26.3	
ENGRAULIS EURYSTOLE	2	2	13.0	13.0-13.1	TL								0.7	
LOPHIUS AMERICANUS	1	1	4.9		TL								0.3	
ENCHELYOPUS CIMBRIUS						0	1	1	4.2		SL	0	0.3	0.0
UROPHYCIS SP.	209	26	3.4	2.3- 5.5	NL		23	18	3.1	1.7- 4.4	NL		70.4	
MERLUCCIUS BILINEARIS						0	2	2	4.6	3.5- 5.8	NL	0	0.7	0.0
CENTROPRISTIS STRIATA	4	4	5.8	5.5- 6.1	SL								1.3	
PEPRILUS TRIACANTHUS	4	4	5.4	5.2- 5.6	SL								1.3	
PRICNOTUS CAROLINUS	809	25	3.6	2.3- 5.9	SL		31	31	3.2	2.4- 5.7	SL		269.6	
CITHARICHTHYS ARCTIFRONS	52	52	4.9	2.9-10.7	SL		24	24	8.5	4.4-14.2	SL		23.6	
ETROPUS MICROSTOMUS	18	18	7.0	3.9-11.6	SL		6	6	8.8	6.1-11.7	SL		7.4	
PARALICHTHYS DENTATUS	3	3	4.9	3.8- 6.3	SL	0	2	2	5.6	3.8- 7.4	SL	0	1.6	0.0
HIPPOGLOSSINA OBLONGUS	22	19	4.1	3.1- 5.7	SL		1	1	7.1		SL		7.3	
SCOPHTHALMUS AQUOSUS	3	3	4.1	3.7- 4.6	SL		2	2	4.8	4.5- 5.1	SL		1.6	
ADDITIONAL LARVAE CAUGHT SERRANIDAE														
UNIDENTIFIED														
G 6 C4 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS	29	24	7.0	3.9- 5.1	TL		6	5	7.4	6.3-10.3	TL		10.7	
ENGRAULIS EURYSTOLE							2	2	15.9	15.8-16.0	TL		0.7	
CERATOSCOPELUS MADERENSIS	2	2	8.0	7.5- 8.6	SL		2	2	10.0	9.5-10.5	SL		1.3	
LOPHIUS AMERICANUS							1	1	10.6		TL		0.3	
UROPHYCIS SP.	625	27	3.9	2.2- 8.5	NL		97	13	6.1	2.9- 8.0	NL		219.8	
MERLUCCIUS BILINEARIS						0	1	1	7.4		NL	1	0.3	0.3
PEPRILUS TRIACANTHUS							1	1	31.0		SL		0.3	
PRICNOTUS CAROLINUS	351	28	3.3	2.5- 4.0	SL		50	24	3.1	2.2- 3.8	SL		122.0	
CITHARICHTHYS ARCTIFRONS	25	25	6.7	5.1- 9.6	SL		129	25	7.4	5.3- 5.6	SL		50.5	
HIPPOGLOSSINA OBLONGUS	13	13	4.1	2.9- 5.2	SL		10	10	6.0	3.7- 8.0	SL		7.2	
SCOPHTHALMUS AQUOSUS	1	1	3.8		SL								0.3	
ADDITIONAL LARVAE CAUGHT CYCLOTHONE SP.							OPHIDIIDAE							
UNIDENTIFIED														
H 1 C3 10	SAMPLING DEPTH 0- 6M													
PRICNOTUS CAROLINUS	2	2	5.0	4.5- 5.5	SL								0.2	
ADDITIONAL LARVAE CAUGHT OPHIDIIDAE														
UNIDENTIFIED														
H 2 C3 10	SAMPLING DEPTH 0- 6M													
ENGRAULIS EURYSTOLE	1	1	12.8		TL								0.1	
PRICNOTUS CAROLINUS	13	13	3.8	2.1- 5.6	SL								1.6	
ETROPUS MICROSTOMUS	2	2	5.2	4.0- 6.3	SL								0.2	
H 3 C3 10	SAMPLING DEPTH 0-15M													
PRICNOTUS CAROLINUS	7	7	3.6	1.9- 4.8	SL								2.1	
ETROPUS MICROSTOMUS	16	16	4.2	2.0- 6.3	SL								4.8	
PARALICHTHYS DENTATUS						25							0.0	7.6
ADDITIONAL LARVAE CAUGHT OPHIDIIDAE														
UNIDENTIFIED														

CRUISE DATE C6612 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
H 4 C3 10	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	10	10	10.3	8.0-11.3	TL								3.0	
UROPHYCIS SP.	14	5	3.2	2.7- 3.7	NL								4.2	
PRICNOTUS CAROLINUS	38	19	4.2	2.8- 5.2	SL								11.5	
ETROPUS MICROSTOMUS	13	13	5.0	3.7- 8.0	SL								3.9	
PARALICHTHYS DENTATUS						45							0.0	13.6
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	SERRANIDAE													
	UNIDENTIFIED													
H 5 C3 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS	1	1	7.8		TL		5	5	7.4	6.9- 8.0	TL		2.0	
UROPHYCIS SP.	46	31	3.8	2.5- 7.9	NL		18	16	3.1	2.0- 4.5	NL		19.8	
PEPRILUS TRIACANTHUS							1	1	7.0		SL		0.3	
PRICNOTUS CAROLINUS	15	15	3.9	2.5- 5.4	SL		8	8	3.8	2.7- 5.4	SL		7.2	
CITHARICHTHYS ARCTIFRONS	2	2	6.0	4.3- 7.6	SL		2	2	3.5	3.2- 3.7	SL		1.3	
ETROPUS MICROSTOMUS	8	8	7.2	3.4-10.3	SL		2	2	5.5	4.7- 7.0	SL		3.1	
PARALICHTHYS DENTATUS						5						0	0.0	1.7
HIPPOGLOSSINA OBLONGUS	1	1	7.2		SL		1	1	4.2		SL		0.6	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						OPHIDIIDAE							
H 6 C3 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE							4	4	18.7	15.6-21.0	TL		1.3	
CERATOSCOPELUS MADERENSIS	2	2	8.6	7.9- 9.3	SL		8	8	9.6	7.2-11.9	SL		3.3	
UROPHYCIS SP.	232	34	4.9	2.4- 8.3	NL		75	15	7.7	2.2-10.3	NL		54.6	
MERLUCCIUS BILINEARIS						2	1	1	15.0		NL	0	0.3	0.7
PRICNOTUS CAROLINUS	3	3	2.9	2.8- 3.0	SL								1.0	
CITHARICHTHYS ARCTIFRONS	79	25	6.2	3.2-10.7	SL		121	25	8.7	6.0-12.7	SL		64.0	
ETROPUS MICROSTOMUS	1	1	5.9		SL								0.3	
HIPPOGLOSSINA OBLONGUS	8	8	4.6	3.6- 5.9	SL		6	5	6.1	5.5- 6.3	SL		4.6	
ADDITIONAL LARVAE CAUGHT	LOPHIIFORMES						OPHIDIIDAE							
	OPHIDIIDAE						GOBIIDAE							
	UNIDENTIFIED													
H 7 C3 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENGRAULIS EURYSTOLE	5	5	17.7	11.2-22.6	TL		1	1	25.5		TL		1.8	
CERATOSCOPELUS MADERENSIS	4	4	9.3	7.7-11.6	SL		2	2	12.0	10.5-13.5	SL		1.9	
UROPHYCIS SP.	68	30	4.0	1.8- 8.6	NL		1	1	9.6		NL		22.7	
CITHARICHTHYS ARCTIFRONS	15	14	6.3	3.3-12.5	SL								5.0	
HIPPOGLOSSINA OBLONGUS	7	7	3.3	2.7- 4.5	SL								2.3	
ADDITIONAL LARVAE CAUGHT	LOPHIIFORMES													
	OPHIDIIDAE													
	UNIDENTIFIED													
J 1 C1 10	SAMPLING DEPTH 0- 6M													
ADDITIONAL LARVAE CAUGHT	GOBIIDAE													
J 2 C1 10	SAMPLING DEPTH 0- 3M													
BREVOORTIA TYRANNUS	2	2	5.9	5.5- 6.4	TL								0.1	
ANCHOA HEPSETUS	1	1	17.3		TL								0.1	
PRICNOTUS CAROLINUS	6	6	6.1	5.7- 6.6	SL								0.4	
ETROPUS MICROSTOMUS	10	10	4.6	3.3- 6.7	SL								0.6	
SYNPHURUS SP.	6	6	6.1	3.7- 8.1	SL								0.4	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	SYNGNATHIDAE													
	BLENNIIDAE													
	TRIGLIDAE													
	UNIDENTIFIED													
J 3 C1 10	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	2	2	3.9	3.5- 4.4	TL								0.2	
UROPHYCIS SP.	2	2	8.1	7.5- 8.8	NL								0.2	
PRICNOTUS CAROLINUS	1	1	4.9		SL								0.1	
ETROPUS MICROSTOMUS	12	12	5.0	2.7- 8.9	SL								1.5	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	TRIGLIDAE													
J 4 C2 10	SAMPLING DEPTH 0- 6M													
UROPHYCIS SP.	6	4	5.2	2.7- 6.5	NL								0.7	
PRICNOTUS CAROLINUS	4	4	4.0	3.5- 4.5	SL								0.5	
CITHARICHTHYS ARCTIFRONS	1	1	7.0		SL								0.1	
ETROPUS MICROSTOMUS	15	15	7.7	4.6-11.1	SL								1.8	
HIPPOGLOSSINA OBLONGUS	1	1	5.3		SL								0.1	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													

CRUISE DATE 06612 1966 STA. D M SPECIES ANALYZED	LARVAE NUMBER TOTAL	LARVAE NUMBER MEAS.	LARVAE LENGTHS (MM) MEAN	LARVAE LENGTHS (MM) RANGE	LARVAE LENGTHS (MM) MEAS.	NO. EGGS	LARVAE NUMBER TOTAL	LARVAE NUMBER MEAS.	LARVAE LENGTHS (MM) MEAN	LARVAE LENGTHS (MM) RANGE	LARVAE LENGTHS (MM) MEAS.	NO. EGGS	NO. PER 10M² LARVAE	NO. PER 10M² EGGS
J 5 C2 10	SAMPLING DEPTH 0-15M													
UROPHYCIS SP.	36	26	5.9	4.0- 8.4	NL								10.9	
PEPRILUS TRIACANTHUS	2	2	3.6	3.1- 4.1	SL								0.6	
PRICNOTUS CAROLINUS	2	2	5.0	4.0- 6.1	SL								0.6	
CITHARICHTHYS ARCTIFRONS	21	21	5.6	2.7-10.8	SL								6.4	
ETROPUS MICROSTOMUS	15	15	8.3	3.9-11.9	SL								4.5	
HIPPOGLOSSINA OBLONGUS	4	4	5.0	3.2- 6.4	SL								1.2	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE UNIDENTIFIED													
J 6 C2 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
UROPHYCIS SP.	114	16	6.0	4.5- 8.1	NL		38	30	5.4	2.5- 8.9	NL		41.1	
CENTROPRISTIS STRIATA							1	1	4.1		SL		0.2	
PEPRILUS TRIACANTHUS							1	1	4.2		SL		0.2	
PRICNOTUS CAROLINUS	2	2	3.4	3.2- 3.7	SL								0.6	
CITHARICHTHYS ARCTIFRONS	55	25	6.1	3.7-10.7	SL		46	25	6.6	3.3-12.6	SL		24.3	
ETROPUS MICROSTOMUS	20	20	7.4	4.3- 9.3	SL		11	11	7.3	4.7-10.3	SL		7.9	
HIPPOGLOSSINA OBLONGUS	7	7	4.6	3.7- 6.3	SL		7	7	6.3	4.7- 7.9	SL		3.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE						OPHIDIIDAE							
J 7 C2 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CERATOSCOPELUS MADEFENSIS	2	2	9.8	7.7-12.0	SL		3	3	11.1	11.0-11.1	SL		1.6	
UROPHYCIS SP.	8	3	6.8	5.6- 7.7	NL		5	4	11.2	6.0-14.0	NL		4.1	
MERLUCCIUS BILINEARIS						0	1	1	22.5		NL	0	0.3	0.0
CITHARICHTHYS ARCTIFRONS	3	3	5.2	4.2- 6.2	SL		10	10	7.8	5.2-13.6	SL		4.2	
ADDITIONAL LARVAE CAUGHT	LOPHIIFORMES						LOPHIIFORMES GOBIIDAE							
K 1 C1 10	SAMPLING DEPTH 0-15M													
ANCHOA HEPSETUS	1	1	7.8		TL								0.3	
CENTROPRISTIS STRIATA	1	1	4.3		SL								0.3	
PEPRILUS TRIACANTHUS	1	1	4.2		SL								0.3	
SYMPHURUS SP.	3	2	8.2	7.9- 8.4	SL								0.9	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE TRIGLIDAE													
K 2 C1 10	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	2	2	3.6	3.5- 3.7	TL								0.6	
ANCHOA HEPSETUS	1	1	16.5		TL								0.3	
SYMPHURUS SP.	2	2	7.4	7.2- 7.5	SL								0.6	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE TRIGLIDAE													
K 3 C1 10	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	11	10	6.4	4.5- 7.7	TL								3.3	
UROPHYCIS SP.	1	1	8.2		NL								0.3	
MICROPOGON UNDULATUS	1	1	4.6		SL								0.3	
PRICNOTUS CAROLINUS	1	1	4.4		SL								0.3	
ETROPUS MICROSTOMUS	26	25	5.1	3.6- 8.4	SL								7.9	
SYMPHURUS SP.	1	1	6.7		SL								0.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
K 4 C1 10	SAMPLING DEPTH 0-15M													
UROPHYCIS SP.	6	5	3.9	2.9- 6.0	NL								1.8	
PRICNOTUS CAROLINUS	3	3	3.6	3.3- 4.0	SL								0.9	
CITHARICHTHYS ARCTIFRONS	6	6	4.8	4.0- 6.0	SL								1.8	
ETROPUS MICROSTOMUS	4	2	5.0	4.6- 5.3	SL								1.2	
ADDITIONAL LARVAE CAUGHT	URANOSCOPIDAE													
K 5 C1 10	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
ANCHOA HEPSETUS	13	13	8.1	5.1-14.4	TL		2	2	16.0	15.1-17.0	TL		4.3	
ENGRAULIS EURYSTOLE							8	8	13.5	7.2-19.4	TL		1.3	
UROPHYCIS SP.	9	6	4.1	2.7- 5.6	NL		31	11	7.9	3.9- 9.8	NL		7.8	
CENTROPRISTIS STRIATA							1	1	7.3		SL		0.2	
LARIMUS FASCIATUS	1	1	5.5		SL		1	1	4.3		SL		0.5	
MICROPOGON UNDULATUS	2	2	4.4	4.1- 4.8	SL								0.6	
PEPRILUS TRIACANTHUS							1	1	7.6		SL		0.2	
PRICNOTUS CAROLINUS							2	2	3.0	2.7- 3.3	SL		0.3	
BOTHUS OCELLATUS	1						1	1	8.4		SL		0.5	
CITHARICHTHYS ARCTIFRONS	17	13	4.6	3.0- 6.7	SL		8	6	6.3	4.2-10.3	SL		6.5	
ETROPUS MICROSTOMUS	20	20	5.9	4.6- 7.1	SL		8	8	6.7	5.3- 9.1	SL		7.4	
SYACIUM PAPILLOSUM	1	1	8.2		SL								0.3	
GLYPTOCEPHALUS CYNOGLOSSUS							1	1	22.7		SL		0.2	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE LOPHIIFORMES CPHIDIIDAE URANOSCOPIDAE TRIGLIDAE						OPHIDIIDAE GOBIIDAE							

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STA.	D M	SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M LARVAE	NO. PER 10M EGGS
K 6	30 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		ANCHOA HEPSETUS	24	23	10.6	5.5-15.8	TL		8	6	11.6	7.0-16.0	TL		9.9	
		ENGRAULIS EURYSTOME	7	7	13.2	6.9-16.9	TL		6	6	11.6	7.0-16.0	TL		4.1	
		CERATOSCOPELUS WARMINGI							1	1	5.4		SL		0.3	
		UROPHYCIS SP.	23	14	3.5	2.1- 4.1	NL		118	21	4.3	2.9- 5.5	NL		46.2	
		SCOMBEROMORUS CAVALLA	1	1	6.0		SL								0.3	
		BOTHUS OCELLATUS	2	2	6.3	6.0- 6.5	SL								0.7	
		CITHARICHTHYS ARCTIFRONS	14	13	5.2	4.0- 6.8	SL		13	12	5.4	3.7- 7.9	SL		8.5	
		ETROPUS MICROSTOMUS	24	24	6.0	3.7- 7.3	SL		6	6	5.4	3.4- 8.0	SL		9.2	
		SYACIUM PAPILLOSUM	6	6	5.8	4.2- 8.6	SL		2	2	4.7	4.6- 4.8	SL		2.5	
		GLYPTOCEPHALUS CYNOGLOSSUS							2	2	30.7	29.8-31.5	SL		0.7	
		SYMPHURUS SP.	3	3	7.3	5.3-11.1	SL		2	2	9.5	9.2- 9.7	SL		1.6	
		ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.						CYCLOTHONE SP.							
			SYNODONTIDAE						LOPHIIFORMES							
			BREGMACEROTICAE						OPHIDIIDAE							
			OPHIDIIDAE						SERRANIDAE							
			SERRANIDAE						GOBIIDAE							
			GOBIIDAE						TRIGLIDAE							
			TRIGLIDAE													
			UNIDENTIFIED													
K 7	30 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
		ANCHOA HEPSETUS	4	4	17.2	16.5-18.2	TL		1	1	15.8		TL		1.5	
		ENGRAULIS EURYSTOME	6	6	20.3	19.3-21.5	TL								2.0	
		DIAPHUS SP.							1	1	4.4		SL		0.3	
		UROPHYCIS SP.							5	4	3.7	2.0- 5.2	NL		1.7	
		MERLUCCIUS BILINEARIS	1	1	11.0		NL	0						0	0.3	0.0
		MICROPOGON UNDULATUS	1	1	4.2		SL								0.3	
		BOTHUS OCELLATUS	4	4	4.5	3.8- 5.4	SL								1.3	
		CITHARICHTHYS ARCTIFRONS							1	1	3.8		SL		0.3	
		SYACIUM PAPILLOSUM	4	3	4.4	4.1- 4.8	SL								1.3	
		ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.						SYNODONTIDAE							
			SYNODONTIDAE						CARAPIDAE							
			CARAPIDAE						GOBIIDAE							
			GOBIIDAE						TETRADONTIDAE							
			UNIDENTIFIED						UNIDENTIFIED							
L 1	30 09		SAMPLING DEPTH 0- 6M													
		MICROPOGON UNDULATUS	4	4	4.6	3.4- 6.1	SL								0.5	
		SYMPHURUS SP.	1	1	6.8		SL								0.1	
		ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
			UNIDENTIFIED													
L 2	30 09		SAMPLING DEPTH 0- 6M													
		ANCHOA HEPSETUS	7	7	6.9	3.0-12.2	TL								0.8	
		LARIMUS FASCIATUS	3	3	2.7	2.0- 3.2	SL								0.4	
		MICROPOGON UNDULATUS	28	28	3.5	2.6- 4.4	SL								3.4	
		ETROPUS MICROSTOMUS	1	1	2.9		SL								0.1	
		SYACIUM PAPILLOSUM	1												0.1	
		SYMPHURUS SP.	2	2	4.7	3.9- 5.4	SL								0.2	
		ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED													
L 3	30 09		SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
		OPHICHTHUS GOMESI							2	2	56.2	44.9-67.5	TL		0.3	
		ANCHOA HEPSETUS	140	53	7.8	3.1-17.2	TL		150	47	10.0	4.9-20.0	TL		67.2	
		CERATOSCOPELUS WARMINGI							2	2	6.0	5.0- 7.1	SL		0.3	
		DIAPHUS SP.	1	1	12.9		SL								0.3	
		NOTOLYCHNUS VALDIVAE							2	2	5.9	5.6- 6.2	SL		0.3	
		UROPHYCIS SP.	1	1	4.2		NL		2	2	5.1	4.7- 5.5	NL		0.6	
		HEMANTHIAS VIVANUS	1	1	4.7		SL								0.3	
		LARIMUS FASCIATUS	1	1	3.2		SL		1	1	3.7		SL		0.5	
		MICROPOGON UNDULATUS	22	22	3.3	2.8- 5.0	SL		78	77	3.3	2.7- 5.0	SL		19.4	
		SCOMBEROMORUS CAVALLA							1	1	11.1		SL		0.2	
		PRIONOTUS CAROLINUS							1	1	6.3		SL		0.2	
		BOTHUS OCELLATUS	1	1	4.7		SL		4	4	9.8	7.4-14.4	SL		1.0	
		ETROPUS MICROSTOMUS	40	37	3.8	3.1- 4.8	SL		129	26	5.2	3.3- 7.6	SL		33.1	
		SYACIUM PAPILLOSUM	2	2	7.8	6.0- 9.6	SL		10	10	7.2	4.5-13.3	SL		2.2	
		SYMPHURUS SP.	3	3	6.8	4.1-12.1	SL		13	12	8.5	5.0-13.1	SL		3.0	
		ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE						SYNODONTIDAE							
			OPHIDIIDAE						LOPHIIFORMES							
			SERRANIDAE						BREGMACEROTICAE							
			PRIACANTHIDAE						OPHIDIIDAE							
			BLENNIIDAE						SERRANIDAE							
			CALLIONYMIDAE						SCIAENIDAE							
			GOBIIDAE						URANOSCOPIDAE							
			TRIGLIDAE						BLENNIIDAE							
									CALLIONYMIDAE							
									GOBIIDAE							
									SCORPAENIDAE							
									TRIGLIDAE							
									BALISTIDAE							
									UNIDENTIFIED							

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L 4 30 09	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ANCHOA HEPSETUS	7	6	8.4	6.4-12.0	TL						2.3	
ENGRAULIS EURYSTOLE	6	6	7.9	6.8- 9.1	TL	8	8	7.9	4.7-12.6	TL	4.5	
CERATOSCOPELUS MAMMINGI						1	1	5.0		SL	0.3	
DIAPHUS SP.	1	1	11.2		SL	1	1	5.0		SL	0.6	
UROPHYCIS SP.						2	2	3.4	3.2- 3.6	NL	0.7	
HEMANTHIAS VIVANUS	1	1	6.6		SL						0.3	
MICROPOGON UNDULATUS						1	1	3.4		SL	0.3	
ALEXIS SP.	1	1	7.7		SL						0.3	
BOTHUS OCELLATUS	14	14	7.0	4.2- 9.8	SL	1	1	7.7		SL	4.7	
SCOPHTHALMUS AQUOSUS	1	1	3.3		SL						0.3	
SYACIUM PAPILLOSUM	6	6	5.5	4.8- 7.2	SL						2.0	
SYMPHURUS SP.	3	3	12.4	6.6-16.8	SL	2	2	5.7	4.8- 6.6	SL	1.6	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE					OPHICHTHIDAE						
	SYNODONTIDAE					SYNODONTIDAE						
	LOPHIIFORMES					LOPHIIFORMES						
	OPHIDIIDAE					OPHIDIIDAE						
	SERRANIDAE					SERRANIDAE						
	CARANGIDAE					LABRIDAE OR SCARIDAE						
	MUGILIDAE					GOBIIDAE						
	GOBIIDAE					UNIDENTIFIED						
	TRIGLIDAE											
	UNIDENTIFIED											
L 5 30 09	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
ANCHOA HEPSETUS	3	3	13.0	11.3-16.2	TL						1.0	
CERATOSCOPELUS MADERENSIS	1	1	8.9		SL						0.3	
DIAPHUS SP.	1	1	5.0		SL	1	1	6.2		SL	0.6	
HEMANTHIAS VIVANUS						1	1	5.6		SL	0.3	
BOTHUS OCELLATUS	7	7	4.8	3.9- 5.8	SL	16	16	4.9	3.5- 8.3	SL	7.4	
SYACIUM PAPILLOSUM	14	14	4.9	3.5- 8.5	SL	12	12	5.2	3.2- 7.3	SL	8.2	
SYMPHURUS SP.	1	1	5.7		SL	1	1	13.2		SL	0.6	
ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.					CYCLOTHONE SP.						
	SYNODONTIDAE					SYNODONTIDAE						
	SERRANIDAE					PARALEPIDIDAE						
	APOGONIDAE					LOPHIIFORMES						
	CARANGIDAE					SERRANIDAE						
	LABRIDAE OR SCARIDAE					APOGONIDAE						
	GOBIIDAE					MALACANTHUS SP.						
	SCORPAENIDAE					LABRIDAE OR SCARIDAE						
	TETRAODONTIDAE					MUGILIDAE						
	UNIDENTIFIED					GOBIIDAE						
						SCORPAENIDAE						
						UNIDENTIFIED						
M 1 28 09	SAMPLING DEPTH 0- 6M											
ANCHOA HEPSETUS	2	2	8.3	8.2- 8.5	TL						0.2	
ENGRAULIS EURYSTOLE	4	3	6.1	5.4- 6.5	TL						0.5	
MICROPOGON UNDULATUS	10	10	4.3	3.6- 5.1	SL						1.2	
PEPRILUS TRIACANTHUS	1	1	3.3		SL						0.1	
PRICNOTUS CAROLINUS	3	3	6.0	5.0- 6.9	SL						0.4	
CYCLOPSETTA FIMBRIATA	2	2	7.2	4.7- 9.6	SL						0.2	
ETRUMEUS MICROSTOMUS	2	2	3.9	3.6- 4.1	SL						0.2	
SYMPHURUS SP.	3	3	10.5	5.0-13.5	SL						0.4	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE											
	CYCLOTHONE SP.											
	SYNODONTIDAE											
	OPHIDIIDAE											
	SYNGNATHIDAE											
	BLENNIIDAE											
	BALISTIDAE											
	TETRAODONTIDAE											
M 2 28 09	SAMPLING DEPTH 0- 6M											
ANCHOA HEPSETUS	17	16	7.5	4.7-11.7	TL						2.1	
ENGRAULIS EURYSTOLE	90	36	6.2	3.9- 9.2	TL						10.9	
BENTHOSEMA SUBORBITALE	1	1	10.0		SL						0.1	
MICROPOGON UNDULATUS	3	3	4.8	3.6- 7.1	SL						0.4	
PEPRILUS TRIACANTHUS	2	2	3.3	3.0- 3.6	SL						0.2	
PRICNOTUS CAROLINUS	1	1	4.0		SL						0.1	
BOTHUS OCELLATUS	1	1	5.2		SL						0.1	
ETRUMEUS MICROSTOMUS	6	6	4.6	4.0- 6.9	SL						0.7	
SYACIUM PAPILLOSUM	2	2	5.6	5.4- 5.7	SL						0.2	
SYMPHURUS SP.	4	4	4.7	3.7- 7.2	SL						0.5	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE											
	BALISTIDAE											
	UNIDENTIFIED											

CRUISE DATE 06612 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER $10M^2$ LARVAE	EGGS
M 3 28 09	SAMPLING DEPTH 0-15M											
OPHICHTHUS GOMESI	2	2	44.1	43.0-45.2	TL						0.6	
ANCHOA HEPSETUS	266	49	9.2	4.3-17.8	TL						80.6	
ENGRAULIS EURYSTOLE	64	34	7.7	4.4-14.0	TL						19.4	
CERATOSCOPELUS MADERENSIS	1	1	4.7		SL						0.3	
DIAPHUS SP.	3	3	4.8	4.3- 5.3	SL						0.9	
HEMANTHIAS VIVANUS	2	2	4.2	3.9- 4.6	SL						0.6	
LARMUS FASCIATUS	6	6	3.6	2.7- 5.4	SL						1.8	
MICROPOGON UNDULATUS	165	162	3.6	2.7- 4.6	SL						50.0	
AUXIS SP.	1	1	11.3		SL						0.3	
SCOMBEROMORUS CAVALLA	3	3	11.0	8.9-12.9	SL						0.9	
PRIONOTUS CAROLINUS	1	1	3.6		SL						0.3	
BOTHUS OCELLATUS	5	5	5.1	4.2- 6.7	SL						1.5	
CYCLOPSETTA FIMBRIATA	2	2	5.7	5.5- 5.8	SL						0.6	
ETROPUS MICROSTOMUS	50	25	5.8	4.1- 8.9	SL						15.2	
SYACIUM PAPILLOSUM	33	32	5.3	3.3-11.2	SL						10.0	
SYMPHURUS SP.	12	10	8.5	5.9-12.1	SL						3.6	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE											
	OPHIDIIDAE											
	SERRANIDAE											
	CARANGIDAE											
	SCIAENIDAE											
	SPHYRAENIDAE											
	URANOSCOPIDAE											
	BLENNIIDAE											
	CALLIONYMIDAE											
	GOBIIDAE											
	TRIGLIDAE											
	BALISTIDAE											
	UNIDENTIFIED											

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M 4 28 09	SAMPLING DEPTH 0-15M											
ANCHOA HEPSETUS	236	40	7.5	4.7-16.0	TL						71.5	
ENGRAULIS EURYSTOLE	8	8	9.7	3.9-16.5	TL						2.4	
CERATOSCOPELUS MADERENSIS	1	1	9.4		SL						0.3	
DIAPHUS SP.	1	1	6.3		SL						0.3	
LAMPANYCTUS ALATUS OR PHOTONOTUS	1	1	7.6		SL						0.3	
MICROPOGON UNDULATUS	29	29	3.5	2.5- 4.4	SL						8.8	
AUXIS SP.	2	2	5.3	4.2- 6.5	SL						0.6	
EUTHYNNUS ALLETTERATUS	1	1	6.4		SL						0.3	
SCOMBEROMORUS CAVALLA	9	9	6.6	5.1-11.4	SL						2.7	
PRIONOTUS CAROLINUS	4	4	5.4	4.8- 5.8	SL						1.2	
BOTHUS OCELLATUS	6	6	4.6	2.7- 7.7	SL						1.8	
CYCLOPSETTA FIMBRIATA	2	2	7.7	6.6- 8.7	SL						0.6	
SYACIUM PAPILLOSUM	34	33	5.2	2.6-11.7	SL						10.3	
SYMPHURUS SP.	1	1	4.3		SL						0.3	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE											
	OPHICHTHIDAE											
	SERRIVOMERIDAE											
	CYCLOTHONE SP.											
	SYNODONTIDAE											
	LOPHIIFORMES											
	BREGMACEROTIDAE											
	OPHIDIIDAE											
	SERRANIDAE											
	CARANGIDAE											
	LABRIDAE OR SCARIDAE											
	SPHYRAENIDAE											
	URANOSCOPIDAE.											
	BLENNIIDAE											
	CALLIONYMIDAE											
	GOBIIDAE											
	TRIGLIDAE											
	UNIDENTIFIED											

CRUISE DATE D6612 1966 STA. O M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10 M² LARVAE	EGGS
N 5 29 09	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
MYRICHTHYS SP.							1	1	51.0		TL		0.3	
OPHICHTHUS GOMESI	1	1	65.0		TL								0.3	
SARDINELLA ANCHOVIA	2	2	11.0	10.7-11.4	TL		4	4	13.5	10.7-16.4	TL		1.9	
ANCHOA HEPSETUS	4	4	11.3	6.9-15.5	TL		523	86	7.5	3.0-16.4	TL		175.5	
ENGRAULIS EURYSTOLE	57	30	6.8	3.1- 9.2	TL								19.0	
CERATOSCOPELUS MADERENSIS	2	2	6.3	6.2- 6.4	SL		3	3	5.7	5.5- 5.8	SL		1.6	
CERATOSCOPELUS WARMINGI							1	1	4.9		SL		0.3	
OTAHUS SP.							1	1	7.0		SL		0.3	
LAMPANYCTUS NOBILIS							2	2	11.1	9.4-12.8	SL		0.7	
HEMANTHIAS VIVANUS							6	5	4.4	3.0- 4.8	SL		2.0	
LABIMUS FASCIATUS							1	1	3.3		SL		0.3	
MICROPOGON UNDULATUS	5	5	3.3	2.8- 3.7	SL		6	6	3.8	3.4- 4.0	SL		3.5	
AUXIS SP.	1	1	5.5		SL		2	2	6.9	4.1- 9.7	SL		1.0	
ELTHYNNUS ALLETTERATUS							1	1	5.7		SL		0.3	
SCOMBEROMORUS CAVALLA							16	16	7.0	4.4-10.8	SL		5.3	
THUNNUS ALBACARES OR ALALUNGA	1	1	5.6		SL								0.3	
PRIONOTUS CAROLINUS	2	2	6.2	4.8- 7.7	SL		3	3	4.4	3.5- 4.8	SL		1.6	
BOTHUS OCELLATUS	10	10	9.0	3.2-14.6	SL		36	25	5.3	2.7- 8.1	SL		15.0	
CYCLOPSETTA FIMBRIATA	1	1	3.7		SL		6	5	4.9	3.2- 7.2	SL		2.3	
ETROPUS MICROSTOMUS							2	2	3.2	2.7- 3.6	SL		0.7	
SYACIUM PAPILLOSUM	11	11	4.5	2.7- 7.2	SL		98	25	5.0	3.0- 8.9	SL		36.0	
SYMPHURUS SP.							6	6	8.7	5.0-11.5	SL		2.0	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE						MURAENIDAE							
	OPHIDIIDAE						NETTASTOMATIDAE							
	ATHERINIDAE						CYCLOTHONE SP.							
	SERRANIDAE						SYNODONTIDAE							
	CARANGIDAE						PARALEPIDIDAE							
	GOBIIDAE						LOPHIIFORMES							
	TRIGLIDAE						OPHIDIIDAE							
	UNIDENTIFIED						SERRANIDAE							
							APOGONIDAE							
							CARANGIDAE							
							LABRIDAE OR SCARIDAE							
							SPHYRAENIDAE							
							URANOSCOPIDAE							
							BLENNIIDAE							
							CALLIONYMIDAE							
							GOBIIDAE							
							TRICHIURIDAE							
							SCORPAENIDAE							
							TRIGLIDAE							
							BALISTIDAE							
							TETRAODONTIDAE							
							UNIDENTIFIED							
N 1 29 09	SAMPLING DEPTH 0- 6M													
OPHICHTHUS GOMESI	1	1	79.7		TL								0.1	
ANCHOA HEPSETUS	84	46	8.3	4.4-20.1	TL								10.2	
LABIMUS FASCIATUS	2	2	5.8	5.7- 6.0	SL								0.2	
MICROPOGON UNDULATUS	17	17	3.3	2.5- 4.0	SL								2.1	
PRIONOTUS CAROLINUS	5	5	7.0	5.8- 7.8	SL								0.6	
SYACIUM PAPILLOSUM	1	1	11.7		SL								0.1	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	URANOSCOPIDAE													
	TRIGLIDAE													
N 2 29 09	SAMPLING DEPTH 0-15M													
ANCHOA HEPSETUS	17	17	8.1	5.1-13.7	TL								5.2	
LAMPANYCTUS ATER	1	1	9.2		SL								0.3	
MICROPOGON UNDULATUS	2	2	4.2	4.2- 4.3	SL								0.6	
ELTHYNNUS ALLETTERATUS	3	3	6.0	4.3- 8.1	SL								0.9	
SCOMBEROMORUS CAVALLA	1	1	7.2		SL								0.3	
BOTHUS OCELLATUS	1	1	6.8		SL								0.3	
SYACIUM PAPILLOSUM	3	3	5.5	4.7- 6.2	SL								0.9	
SYMPHURUS SP.	1	1	5.4		SL								0.3	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE													
	SYNODONTIDAE													
	PARALEPIDIDAE													
	LOPHIIFORMES													
	OPHIDIIDAE													
	SERRANIDAE													
	CARANGIDAE													
	URANOSCOPIDAE													
	CALLIONYMIDAE													
	GOBIIDAE													
	TRICHIURIDAE													
	TRIGLIDAE													
	BALISTIDAE													
	TETRAODONTIDAE													
	UNIDENTIFIED													

CRUISE DATE 06612 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10 M² LARVAE	EGGS
N 3 29 09	SAMPLING DEPTH 0-15M													
APTERICHTUS KENDALLI	1	1	55.5		TL								0.3	
MYRICHTHYS SP.	1	1	55.5		NL								0.3	
OPHICHTHUS GOMESI	1	1	65.3		TL								0.3	
ANCHOA HEPSETUS	112	53	8.9	4.0-17.8	TL								33.9	
LABRIMUS FASCIATUS	3	3	3.5	3.2- 3.7	SL								0.9	
MICROPOGON UNDULATUS	21	21	4.0	3.2- 4.6	SL								6.4	
SCOMBEROMORUS CAVALLA	1	1	5.0		SL								0.3	
PRIONOTUS CAROLINUS	3	3	4.5	4.3- 4.7	SL								0.9	
BOTHUS OCELLATUS	2	2	5.1	5.0- 5.1	SL								0.6	
CYCLOPSETTA FIMBRIATA	1	1	4.5		SL								0.3	
SYACIUM PAPILLOSUM	12	12	4.9	2.2-13.2	SL								3.6	
ADDITIONAL LARVAE CAUGHT	ANGUILLIFORMES													
	SYNODONTIDAE													
	LOPHIIFORMES													
	OPHIDIIDAE													
	CARAPIDAE													
	SERRANIDAE													
	CARANGIDAE													
	LABRIDAE OR SCARIDAE													
	BLENNIIDAE													
	CALLIONYMIDAE													
	GOBIIDAE													
	TRICHIURIDAE													
	TRIGLIDAE													
	BALISTIDAE													
	UNIDENTIFIED													
N 4 29 09	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ANCHOA HEPSETUS	4	4	10.9	8.5-12.5	TL		21	18	8.9	4.5-16.5	TL		8.2	
MYCTOPHIDAE							2	2	4.3	3.7- 5.0	SL		0.7	
BENTHOSEMA SUBORBITALE							1	1	5.6		SL		0.3	
DIAPHUS SP.							5	5	5.5	4.1- 8.5	SL		1.7	
HYGOPHUM REINHARDTI							1	1	6.3		SL		0.3	
HEMANTHIAS VIVANUS							1	1	4.1		SL		0.3	
MICROPOGON UNDULATUS							3	3	4.1	3.7- 4.3	SL		1.0	
SCOMBEROMORUS CAVALLA	3	3	8.3	7.9- 8.5	SL								1.0	
PRIONOTUS CAROLINUS							4	4	4.5	4.4- 4.6	SL		1.3	
BOTHUS OCELLATUS	12	11	5.1	3.9- 6.8	SL		12	10	5.0	2.6- 8.3	SL		7.6	
CYCLOPSETTA FIMBRIATA							2	1	7.2		SL		0.7	
SYACIUM PAPILLOSUM	8	7	7.2	5.2-11.7	SL		30	20	5.4	2.7-10.3	SL		12.4	
SYMPHURUS SP.	4	4	8.6	7.2-10.8	SL		8	7	8.8	6.3-11.4	SL		3.9	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE						OPHICHTHIDAE							
	SYNODONTIDAE						SYNODONTIDAE							
	LOPHIIFORMES						PARALEPIDIDAE							
	SERRANIDAE						LOPHIIFORMES							
	APOGONIDAE						OPHIDIIDAE							
	CARANGIDAE						CARAPIDAE							
	SPARIDAE						SERRANIDAE							
	POMACENTRIDAE						CARANGIDAE							
	LABRIDAE OR SCARIDAE						LABRIDAE OR SCARIDAE							
	GOBIIDAE						CALLIONYMIDAE							
	BALISTIDAE						GOBIIDAE							
	TETRAODONTIDAE						SCORPAENIDAE							
							TRIGLIDAE							
							BALISTIDAE							
							TETRAODONTIDAE							
							UNIDENTIFIED							

CRUISE DATE 06612 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M^2 LARVAE	EGGS
N 5 29 09	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
OPHICHTHUS GOMESI	3	3	31.7	23.0-44.0	TL	1	1	36.6		TL	1.2	
OPHICHTHUS OCELLATUS	1	1	43.6		TL	1	1	17.0		TL	0.6	
ANCHOA HEPSETUS	11	11	6.7	4.5- 9.7	TL	3	2	5.8	5.8- 5.8	TL	4.3	
MYCTOPHIDAE	1	1	2.9		SL	1	1	4.0		SL	0.6	
BENTHOSEMA SUBORBITALE						3	3	4.6	3.9- 5.1	SL	1.0	
CERATOSCOPELUS MADEFENSIS	1	1	8.4		SL						0.3	
CERATOSCOPELUS WARMINGI	1	1	8.4		SL	1	1	5.4		SL	0.6	
DIAPHUS SP.	2	2	8.1	7.1- 9.2	SL						0.7	
ELECTRONA RISSOI						1	1	6.2		SL	0.3	
LAMPANYCTUS ALATUS OR PHOTONOTUS						2	2	6.5	6.5- 6.6	SL	0.7	
LAMPANYCTUS CUPRINUS						3	3	7.3	6.3- 8.2	SL	1.0	
MYCTOPHUM AFFINE						1	1	6.9		SL	0.3	
MYCTOPHUM SELENOPS						1	1	7.4		SL	0.3	
HEMIANTHIAS VIVANUS	8	6	4.5	3.2- 5.8	SL	3	3	5.6	5.5- 5.8	SL	3.4	
AUXIS SP.	1	1	6.7		SL						0.3	
SCOMBEROMORUS CAVALLA	2	2	7.7	5.4-10.1	SL						0.7	
BOTHUS OCELLATUS	48	25	4.3	2.4- 7.7	SL	5	4	8.0	4.2-14.4	SL	16.1	
CYCLOPSETTA FIMBRIATA	3	3	5.4	4.6- 6.8	SL						1.0	
SYACIUM PAPILLOSUM	117	25	3.8	2.4- 7.7	SL	23	21	6.1	2.7-12.7	SL	42.8	
SYPHURUS SP.	19	18	4.1	2.9- 8.4	SL	14	13	5.2	3.3- 9.4	SL	10.4	
ADDITIONAL LARVAE CAUGHT	ANGUILLIFORMES					ANGUILLA ROSTRATA						
	MURAENIDAE					CONGRIDAE						
	CYCLOTHONE SP.					SYNODONTIDAE						
	SYNODONTIDAE					PARALEPIDIDAE						
	LOPHIIFORMES					LOPHIIFORMES						
	BREGMACEROTIDAE					BREGMACEROTIDAE						
	OPHIDIIDAE					OPHIDIIDAE						
	CARAPIDAE					CARAPIDAE						
	FISTULARIIDAE					SERRANIDAE						
	SERRANIDAE					GRAMMISTIDAE						
	GRAMMISTIDAE					POMACENTRIDAE						
	PRIACANTHIDAE					LABRIDAE OR SCARIDAE						
	APOGONIDAE					MUGILIDAE						
	CHAETODONTIDAE					CALLIONYMIDAE						
	LABRIDAE OR SCARIDAE					GOBIIDAE						
	CALLIONYMIDAE					ACANTHURIDAE						
	TRICHIURIDAE					GEMPYLIDAE						
	SCORPAENIDAE					SCORPAENIDAE						
	TRIGLIDAE					TRIGLIDAE						
	BALISTIDAE					BALISTIDAE						
	UNIDENTIFIED					UNIDENTIFIED						
P 1 20 10	SAMPLING DEPTH 0- 6M											
ANCHOA HEPSETUS	1	1	10.3		TL						0.1	
MICROPOGON UNDULATUS	7	6	4.6	3.8- 5.7	SL						0.8	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE											
	ATHERINIDAE											
	URANOSCOPIDAE											
	BLENNIIDAE											
	TRIGLIDAE											
	UNIDENTIFIED											
P 2 20 10	SAMPLING DEPTH 0- 6M											
ANCHOA HEPSETUS	2	2	31.1	30.0-32.2	TL						0.2	
MICROPOGON UNDULATUS	29	26	6.2	4.1- 9.2	SL						3.5	
PRIONOTUS CAROLINUS	7	7	6.9	5.9- 7.9	SL						0.8	
ETROPUS MICROSTOMUS	2	2	5.0	3.7- 6.3	SL						0.2	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE											
	SYNGNATHIDAE											
	SPARIDAE											
	BLENNIIDAE											
	TRIGLIDAE											
	UNIDENTIFIED											
P 3 20 10	SAMPLING DEPTH 0- 6M											
ANCHOA HEPSETUS	3	3	15.2	9.3-18.8	TL						0.4	
LARIMUS FASCIATUS	1	1	5.7		SL						0.1	
MICROPOGON UNDULATUS	6	4	5.0	4.1- 5.8	SL						0.7	
PRIONOTUS CAROLINUS	8	8	7.3	5.2- 8.1	SL						1.0	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE											
	SYNGNATHIDAE											
	URANOSCOPIDAE											
	BLENNIIDAE											
	CALLIONYMIDAE											
	GOBIIDAE											
	TRIGLIDAE											
	UNIDENTIFIED											

CRUISE DATE 0A612 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	NO. MEAS. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	LENGTHS (MM) MEAN	RANGE	NO. MEAS. EGGS	NO. PER 10M² LARVAE	EGGS
F 4 20 10	SAMPLING DEPTH 0-15M				SAMPLING DEPTH 18-24M					
ELOPS SAURUS	1	1	26.5	NL					0.3	
CALLECHELYS PERRYAE	2	2	36.7	33.0-40.5 NL					0.6	
MYRICHTHYS SP.	2	2	42.6	42.2-43.0 TL					0.6	
MYROPHIS PUNCTATUS	2	2	36.7	33.0-40.5 TL					0.6	
OPHICHTHUS GOMESI	4	4	58.5	41.5-74.5 TL					1.3	
ENGRAULIS EURYSTOLE	14	14	15.6	6.0-27.9 TL					4.5	
LARIMUS FASCIATUS					1	1	3.9	SL	0.2	
PRICNOTUS CAROLINUS	3	3	5.8	5.1- 6.5 SL					1.0	
BOTHUS OCELLATUS	11	10	11.6	5.9-17.5 SL	3	3	4.6	3.6- 5.9 SL	3.9	
CYCLOPSETTA FIMBRIATA	1	1	4.7	SL					0.3	
ETROPUS MICROSTOMUS	1	1	7.2	SL					0.3	
SYACIUM PAPILLOSUM	18	18	10.1	6.3-13.5 SL	2	1	9.1	SL	5.8	
SYMPHURUS SP.	1								0.3	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE CYCLOTHONE SP. VINCIGUERRIA SP. SYNODONTIDAE LOPHIIFORMES BREGMACEROTIDAE OPHIDIIDAE CARAPIDAE FISTULARIIDAE SYNGNATHIDAE SERRANIDAE APOGONIDAE CARANGIDAE LABRIDAE OR SCARIDAE URANOSCOPIDAE BLENNIIDAE CALLIONYMIDAE GOBIIDAE TRIGLIDAE TETRAODONTIDAE UNIDENTIFIED					CONGRIDAE SYNODONTIDAE BREGMACEROTIDAE OPHIDIIDAE CALLIONYMIDAE GOBIIDAE TRIGLIDAE UNIDENTIFIED					
F 5 20 10	SAMPLING DEPTH 0-15M				SAMPLING DEPTH 18-33M					
ENGRAULIS EURYSTOLE	7	2	12.1	5.6-18.6 TL	2	2	13.5	5.8-21.2 TL	2.8	
CERATOSCOPELUS MADERENSIS	1	1	6.4	SL					0.3	
CERATOSCOPELUS WARMINGI	1	1	8.3	SL					0.3	
DIAPHUS SP.	8	8	6.1	4.1- 8.8 SL	8	6	5.6	4.3- 7.1 SL	5.1	
UROPHYCIS SP.	1	1	3.5	NL					0.3	
HEMANTHIAS VIVANUS	9	7	6.3	4.7- 7.9 SL	5	3	4.6	3.7- 5.2 SL	4.4	
MICROPOGON UNDULATUS					1	1	4.3	SL	0.3	
ALEXIS SP.	1	1	9.0	SL					0.3	
BOTHUS OCELLATUS	52	22	6.4	3.1-11.1 SL	24	16	5.4	4.2- 6.5 SL	23.6	
CYCLOPSETTA FIMBRIATA	2	1	5.9	SL					0.7	
ETROPUS MICROSTOMUS					1	1	5.0	SL	0.3	
SYACIUM PAPILLOSUM	41	40	5.7	3.4-12.3 SL	8	7	5.6	2.6- 9.3 SL	15.0	
SYMPHURUS SP.	5	3	9.3	4.1-12.5 SL	3	3	5.5	3.5- 8.2 SL	2.5	
ADDITIONAL LARVAE CAUGHT	MURAENIDAE CYCLOTHONE SP. SYNODONTIDAE LOPHIIFORMES OPHIDIIDAE CAPROIDAE SERRANIDAE APOGONIDAE CARANGIDAE POMACENTRIDAE LABRIDAE OR SCARIDAE SPHYRAENIDAE CALLIONYMIDAE GOBIIDAE TRICHIURIDAE TRIGLIDAE BALISTIDAE UNIDENTIFIED					SYNODONTIDAE LOPHIIFORMES BREGMACEROTIDAE OPHIDIIDAE CARAPIDAE SERRANIDAE LABRIDAE OR SCARIDAE BLENNIIDAE CALLIONYMIDAE GOBIIDAE UNIDENTIFIED					

CRUISE DATE D6614 1566 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M2 LARVAE	EGGS
A 1 C4 12	SAMPLING DEPTH 0- 3M													
CLUPEA HARENGUS HARENGUS	27	23	20.8	10.4-25.0	TL								1.6	
GADUS MORHUA	2	2	4.9	4.6- 5.2	SL	1							0.1	0.1
MERLUCCIUS BILINEARIS	2	1	6.5		NL	0							0.1	0.0
AMMODYTES SP.	11	11	5.7	5.1- 6.2	TL								0.7	
PARALICHTHYS DENTATUS	3	3	7.9	5.0-11.5	SL	0							0.2	0.0
A 2 D4 12	SAMPLING DEPTH 0-15M													
CLUPEA HARENGUS HARENGUS	5	5	14.3	8.1-22.5	TL								1.5	
GADUS MORHUA	2	2	4.0	3.5- 4.4	SL	0							0.6	0.0
MERLUCCIUS BILINEARIS	2	2	5.6	5.4- 5.8	NL	0							0.6	0.0
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
	SPARIDAE													
A 3 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
CLUPEA HARENGUS HARENGUS	5	5	21.4	18.8-24.4	TL		5	5	21.2	17.4-24.7	TL		3.0	
ENGRAULIS MORDAX						0	3	3	4.3	3.8- 4.6	SL	0	0.5	0.0
GADUS MORHUA	8	8	4.1	3.7- 4.4	SL	73	6	6	4.3	3.7- 5.4	SL	85	3.4	36.2
MERLUCCIUS BILINEARIS	2	2	5.9	5.9- 6.0	NL	0	1	1	3.1		NL	0	0.8	0.0
PARALICHTHYS DENTATUS	1	1	7.0		SL	0						0	0.3	0.0
ADDITIONAL LARVAE CAUGHT	SPARIDAE													
A 4 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
CLUPEA HARENGUS HARENGUS	17	17	17.6	13.7-24.4	TL		19	19	17.5	14.4-22.5	TL		8.3	
ENGRAULIS MORDAX	1	1	3.9		SL	0	7	7	3.8	3.2- 4.7	SL	0	1.5	0.0
GADUS MORHUA						0	2	2	4.6	2.9- 6.2	SL	0	0.3	0.0
UROPHYCIS SP.							1	1	4.4		NL		0.2	
MERLUCCIUS BILINEARIS	5	5	5.4	4.9- 5.7	NL	0	6	6	5.0	4.2- 6.4	NL	0	2.5	0.0
PARALICHTHYS DENTATUS	6	6	5.3	4.1- 8.6	SL	0	15	15	4.5	3.3- 6.8	SL	0	4.3	0.0
ADDITIONAL LARVAE CAUGHT							UNIDENTIFIED							
A 5 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	23	23	16.4	10.6-21.5	TL		28	28	16.2	11.2-19.6	TL		16.2	
ENGRAULIS MORDAX	1	1	4.6		SL	0	2	2	3.9	3.9- 3.9	SL	0	1.0	0.0
GADUS MORHUA	1	1	7.6		SL	0	2	2	5.1	4.2- 5.9	SL	0	1.0	0.0
UROPHYCIS SP.	2	2	8.4	8.1- 8.7	NL								0.7	
MERLUCCIUS BILINEARIS						0	3	3	4.9	4.1- 5.5	NL	0	1.0	0.0
PARALICHTHYS DENTATUS						0	1	1	5.9		SL	0	0.3	0.0
A 6 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	30	30	16.0	11.9-19.9	TL		41	41	16.3	11.9-22.5	TL		22.7	
ENGRAULIS MORDAX	1	1	6.1		SL	0						0	0.3	0.0
GADUS MORHUA	7	7	4.0	3.4- 5.3	SL	1	6	6	3.7	3.2- 4.1	SL	2	4.1	1.0
POLLACHIUS VIRENS	4	4	6.0	5.1- 6.6	SL	0	2	2	5.5	3.9- 7.0	SL	0	1.9	0.0
MERLUCCIUS BILINEARIS	3	3	6.3	6.0- 6.6	NL	0	2	2	3.6	2.8- 4.4	NL	0	1.6	0.0
A 7 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS							3	3	18.3	17.5-18.8	TL		1.0	
POLLACHIUS VIRENS	1	1	9.1		SL	0						0	0.3	0.0
B 1 C3 12	SAMPLING DEPTH 0- 6M													
CLUPEA HARENGUS HARENGUS	6	6	15.8	8.4-22.5	TL								0.7	
ENGRAULIS MORDAX	2	2	2.9	1.9- 3.8	SL	0							0.2	0.0
GADUS MORHUA	3	3	3.4	3.2- 3.7	SL	16							0.4	1.9
MERLUCCIUS BILINEARIS	1	1	6.1		NL	0							0.1	0.0
AMMODYTES SP.	41	41	5.2	4.4- 6.9	TL								5.0	
PEPRILUS TRIACANTHUS	1	1	10.1		SL								0.1	
PARALICHTHYS DENTATUS	2	2	10.3	7.9-12.8	SL	0							0.2	0.0
SCOPHTHALMUS AQUOSUS	3	3	6.0	4.9- 7.7	SL								0.4	
B 2 C3 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
CLUPEA HARENGUS HARENGUS	6	6	17.3	12.0-23.0	TL		9	9	18.1	11.4-24.4	TL		3.3	
ENGRAULIS MORDAX	1	1	5.6		SL	0	1	1	4.9		SL	0	0.5	0.0
GADUS MORHUA	8	7	4.2	3.4- 5.3	SL	51	3	3	4.1	3.9- 4.6	SL	62	2.9	25.7
POLLACHIUS VIRENS	1	1	3.4		SL	0	1	1	4.2		SL	0	0.5	0.0
MERLUCCIUS BILINEARIS	1	1	3.6		NL	0	2	2	5.6	3.0- 8.2	NL	0	0.6	0.0
ETRUMEUS MICROSTOMUS	1	1	5.0		SL								0.3	
PARALICHTHYS DENTATUS						0	1	1	5.9		SL	0	0.2	0.0
SCOPHTHALMUS AQUOSUS	6	6	4.2	3.7- 5.2	SL		1	1	3.9		SL		2.0	

CRUISE DATE 06614 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M 2 LARVAE	EGGS
B 3 C3 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	3	3	23.7	21.8-25.0	TL		5	5	21.0	18.8-23.9	TL		2.6	
ENCHELYOPUS CIMBRIUS	2	2	5.5	5.4- 5.6	SL	0						0	0.7	0.0
GADUS MORHUA	10	9	4.4	3.9- 5.7	SL	59	9	9	4.4	3.8- 5.3	SL	45	6.0	32.7
POLLACHIUS VIRENS	1	1	3.4		SL	0	1	1	3.5		SL	0	0.6	0.0
UROPHYCIS SP.	1	1	3.7		NL		2	2	7.0	2.7-11.3	NL		1.0	
MERLUCCIUS BILINEARIS	19	18	5.5	3.2- 7.2	NL	0	25	25	5.9	4.2- 7.6	NL	0	14.0	0.0
AMMODYTES SP.	1	1	5.1		TL								0.3	
ETROPUS MICROSTOMUS							1	1	6.7		SL		0.3	
PARALICHTHYS DENTATUS	12	12	7.1	4.0-11.3	SL	0	21	21	6.2	3.6-10.1	SL	0	10.6	0.0
SCOPHTHALMUS AQUOSUS	9	9	4.9	3.3- 7.1	SL		14	14	4.5	2.9- 6.9	SL		7.4	
B 4 C3 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	15	15	18.7	15.0-22.5	TL		27	25	18.7	13.7-23.1	TL		13.5	
ENCHELYOPUS CIMBRIUS	4	4	3.5	2.7- 4.6	SL	0	3	3	3.8	2.8- 5.1	SL	0	2.2	0.0
GADUS MORHUA						0						1	0.0	0.3
POLLACHIUS VIRENS	3	3	3.3	3.3- 3.4	SL	0	2	2	4.1	3.5- 4.6	SL	0	1.6	0.0
UROPHYCIS SP.							1	1	8.5		NL		0.3	
MERLUCCIUS BILINEARIS	4	4	4.1	2.9- 6.5	NL	0	5	5	8.7	4.5-23.2	NL	0	2.9	0.0
PARALICHTHYS DENTATUS	5	5	6.3	5.1- 7.5	SL	0	2	2	5.1	4.9- 5.4	SL	0	2.2	0.0
B 5 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	68	37	15.5	11.0-20.0	TL		109	48	14.9	12.0-20.0	TL		56.7	
ENCHELYOPUS CIMBRIUS	1	1	4.2		SL	0						0	0.3	0.0
POLLACHIUS VIRENS	1	1	3.9		SL	0	1	1	3.7		SL	0	0.6	0.0
MERLUCCIUS BILINEARIS	2	2	8.8	5.7-11.9	NL	0						0	0.7	0.0
PARALICHTHYS DENTATUS	1	1	5.5		SL	0	1	1	6.3		SL	0	0.6	0.0
B 6 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CALLECHELYS PERRYAE							1	1	67.5		NL		0.3	
MYROPHIS PUNCTATUS							1	1	67.5		TL		0.3	
CLUPEA HARENGUS HARENGUS	29	28	15.5	13.0-19.0	TL		35	34	15.6	13.0-20.0	TL		20.4	
MERLUCCIUS BILINEARIS	1	1	8.5		NL	0	1	1	6.5		NL	0	0.6	0.0
ADDITIONAL LARVAE CAUGHT GOBIIDAE														
B 7 C4 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	8	8	15.7	14.0-18.0	TL		18	17	16.1	12.0-20.0	TL		8.4	
ENCHELYOPUS CIMBRIUS						1						0	0.0	0.3
GADUS MORHUA						0	3	3	7.2	5.8- 8.1	SL	0	1.0	0.0
POLLACHIUS VIRENS	2	2	6.4	4.6- 8.2	SL	0	5	4	4.7	4.1- 5.1	SL	0	2.3	0.0
C 1 C3 12	SAMPLING DEPTH 0- 6M													
CLUPEA HARENGUS HARENGUS	2	2	7.0	1.5-12.5	TL								0.2	
GADUS MORHUA	1	1	3.5		SL	3							0.1	0.4
UROPHYCIS SP.	2	2	5.5	5.5- 5.6	NL								0.2	
PARALICHTHYS DENTATUS	1	1	4.4		SL	0							0.1	0.0
SCOPHTHALMUS AQUOSUS	4	4	5.2	4.4- 5.8	SL								0.5	
C 2 C3 12	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	1	1	22.0		TL								0.1	
GADUS MORHUA	19	18	3.3	2.8- 3.7	SL	248							2.3	30.1
UROPHYCIS SP.	2	2	6.3	6.0- 6.7	NL								0.2	
PRIONOTUS CAROLINUS	1	1	6.0		SL								0.1	
PARALICHTHYS DENTATUS	4	4	4.9	3.8- 6.0	SL	0							0.5	0.0
SCOPHTHALMUS AQUOSUS	2	2	5.7	5.6- 5.7	SL								0.2	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
C 3 C3 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
BREVOORTIA TYRANNUS	1	1	21.5		TL								0.3	
CLUPEA HARENGUS HARENGUS	1	1	16.5		TL								0.3	
ENCHELYOPUS CIMBRIUS	1	1	14.7		SL	0						0	0.3	0.0
GADUS MORHUA	6	5	3.0	2.8- 3.4	SL	56	2	1	3.5		SL	46	2.2	24.6
POLLACHIUS VIRENS	2	1	3.3		SL	0						0	0.6	0.0
UROPHYCIS SP.							1	1	3.3		NL		0.2	
MERLUCCIUS BILINEARIS						0	1	1	5.1		NL	0	0.2	0.0
PARALICHTHYS DENTATUS	6	6	6.1	3.9- 8.7	SL	0	12	12	6.0	3.3- 9.3	SL	0	3.8	0.0
SCOPHTHALMUS AQUOSUS	2	2	7.0	6.5- 7.5	SL		8	8	5.0	4.0- 6.0	SL		1.9	
ADDITIONAL LARVAE CAUGHT UNIDENTIFIED														
C 4 C3 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ENCHELYOPUS CIMBRIUS	1	1	15.5		SL	0	1	1	4.4		SL	0	0.6	0.0
GADUS MORHUA	4	4	3.8	3.5- 4.1	SL	5	1	1	2.3		SL	4	1.5	2.8
UROPHYCIS SP.	1	1	6.8		NL		1	1	5.8		NL		0.6	
MERLUCCIUS BILINEARIS	5	5	15.6	4.1-56.9	NL	0	8	8	5.0	3.6- 7.4	NL	0	4.2	0.0
ETROPUS MICROSTOMUS	1	1	5.0		SL		1	1	4.6		SL		0.6	
PARALICHTHYS DENTATUS	7	7	6.5	4.4- 8.0	SL	0	10	10	7.2	3.3- 9.1	SL	0	5.4	0.0
SCOPHTHALMUS AQUOSUS	8	8	5.1	3.3- 6.9	SL		11	11	5.4	3.7- 7.3	SL		6.1	

CRUISE DATE 06614 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	NO. PER 10M^2 LARVAE	 EGGS
C 5 C2 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CLUPEA HARENGUS HARENGUS	1	1	10.0		TL						0.3	
ENGRAULIS EURYSTOLE	1	1	12.2		TL						0.3	
GADUS MORHUA						1				0	0.0	0.3
UROPHYCIS SP.	1	1	3.8		NL	2	2	7.6	5.4- 9.9 NL		1.0	
MERLUCCIUS BILINEARIS	25	25	5.7	3.5- 7.4	NL	0 22	22	9.7	3.5- 8.4 NL	0	14.8	0.0
ETROPUS MICROSTOMUS	2	2	6.4	5.1- 7.7	SL						0.7	
PARALICHTHYS DENTATUS	8	8	6.4	4.4- 9.4	SL	1 6	6	8.4	6.5-10.6 SL	0	4.4	0.3
SCOPHTHALMUS AQUOSUS	3	3	7.0	6.0- 9.0	SL						1.0	
C 6 C2 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CLUPEA HARENGUS HARENGUS	1	1	23.0		TL	1	1	18.5	TL		0.6	
ENCHELYOPUS CIMBRIUS						0 1	1	4.1	SL	0	0.3	0.0
GADUS MORHUA	1	1	5.7		SL	0 1				0	0.6	0.0
POLLACHIUS VIRENS	2	2	3.1	2.9- 3.2	SL	0 1	1	3.7	SL	0	0.9	0.0
MERLUCCIUS BILINEARIS	19	15	7.3	3.1-33.9	NL	0 21	21	5.1	3.1- 7.7 NL	0	12.7	0.0
CITHARICHTHYS ARCTIFRONS	1	1	4.8		SL	2	2	12.3	11.9-12.6 SL		1.0	
ETROPUS MICROSTOMUS	1	1	8.0		SL						0.3	
PARALICHTHYS DENTATUS	14	14	6.9	4.4- 9.7	SL	0 8	8	5.9	3.2- 8.4 SL	0	6.9	0.0
SCOPHTHALMUS AQUOSUS	2	2	4.7	4.4- 5.0	SL	8	8	5.6	4.8- 6.2 SL		3.3	
ADDITIONAL LARVAE CAUGHT						UNIDENTIFIED						
C 7 C2 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CLUPEA HARENGUS HARENGUS	13	13	16.6	15.0-21.5	TL	38	38	17.1	14.8-21.3 TL		16.6	
CERATOSCOPELUS MADERENSIS	7	7	7.6	6.3- 9.9	SL	5	5	7.7	6.8- 8.5 SL		3.8	
DIAPHUS SP.	1	1	7.2		SL						0.3	
ENCHELYOPUS CIMBRIUS						0 2	2	4.6	3.3- 5.8 SL	0	0.7	0.0
POLLACHIUS VIRENS						0 1	1	4.8	SL	0	0.3	0.0
MERLUCCIUS BILINEARIS	17	15	7.1	3.2-12.8	NL	0 7	7	11.6	4.4-43.1 NL	0	7.4	0.0
CITHARICHTHYS ARCTIFRONS						1	1	10.1	SL		0.3	
PARALICHTHYS DENTATUS	1	1	8.0		SL	0 1	1	8.3	SL	0	0.6	0.0
ADDITIONAL LARVAE CAUGHT						GOBIIDAE						
C 8 C2 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CERATOSCOPELUS MADERENSIS	16	16	7.2	5.0- 8.9	SL	13	13	8.1	6.8-10.4 SL		9.1	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE					MUGILIDAE GOBIIDAE						
D 1 C1 12	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	2	2	21.7	20.0-23.5	TL						0.2	
GADUS MORHUA	1	1	3.9		SL	0					0.1	0.0
MICROPOGON UNDULATUS	1	1	8.6		SL						0.1	
PRIONOTUS CAROLINUS	2	2	5.8	5.6- 6.0	SL						0.2	
PARALICHTHYS DENTATUS	3	3	11.7	11.1-12.0	SL	0					0.4	0.0
SCOPHTHALMUS AQUOSUS	4	4	8.3	7.6- 9.2	SL						0.5	
D 2 C1 12	SAMPLING DEPTH 0- 6M											
ENGRAULIS EURYSTOLE	1	1	17.5		TL						0.1	
GADUS MORHUA						5					0.0	0.6
PEPRILUS TRIACANTHUS	1	1	50.4		SL						0.1	
PRIONOTUS CAROLINUS	1	1	7.6		SL						0.1	
PARALICHTHYS DENTATUS	4	4	10.5	9.3-11.0	SL	0					0.5	0.0
SCOPHTHALMUS AQUOSUS	20	20	6.5	3.8- 9.7	SL						2.4	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE											
D 3 C1 12	SAMPLING DEPTH 0-15M											
GADUS MORHUA	3	3	3.4	3.3- 3.4	SL	55					0.9	16.7
PARALICHTHYS DENTATUS	16	16	5.2	3.5- 8.6	SL	0					4.8	0.0
SCOPHTHALMUS AQUOSUS	170	50	4.6	2.9-11.3	SL						51.5	
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
C 4 C2 12	SAMPLING DEPTH 0-15M											
GADUS MORHUA	5	5	3.1	3.0- 3.2	SL	52					1.5	15.8
UROPHYCIS SP.	6	6	3.5	2.7- 4.4	NL						1.8	
PARALICHTHYS DENTATUS	22	22	5.2	4.1- 6.5	SL	0					6.7	0.0
SCOPHTHALMUS AQUOSUS	190	50	4.6	2.7- 7.0	SL						57.6	
D 5 C2 12	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
GADUS MORHUA	2	2	3.7	3.7- 3.7	SL	8				3	0.6	2.9
UROPHYCIS SP.	30	23	3.5	2.3- 5.4	NL	16	14	4.4	2.5- 9.2 NL		11.8	
CITHARICHTHYS ARCTIFRONS	1	1	4.0		SL						0.3	
ETROPUS MICROSTOMUS	3	3	4.9	4.7- 5.1	SL						1.0	
PARALICHTHYS DENTATUS	59	59	4.8	2.8- 7.3	SL	0 41	41	5.1	3.1-11.0 SL	0	24.8	0.0
SCOPHTHALMUS AQUOSUS	169	50	4.0	2.8- 6.0	SL	105	50	4.1	2.7- 6.2 SL		68.9	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE SERRANIDAE UNIDENTIFIED											

CRUISE DATE 06614 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
C 6 02 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS							2	2	19.2	18.5-20.0	TL		0.7	
ENCHELYOPUS CIMBRIUS	2	2	5.2	3.4- 7.0	SL	0	3	3	5.1	3.7- 6.3	SL	0	1.6	0.0
GADUS MORHUA	1	1	5.2		SL	0	3	3	5.0	4.7- 5.2	SL	0	1.3	0.0
UROPHYCIS SP.	2	2	3.8	3.7- 4.0	NL		8	7	5.3	3.0-15.1	NL		3.3	
MERLUCCIUS BILINEARIS	18	17	4.8	3.1- 6.9	NL	0	18	17	5.1	2.7- 6.5	NL	0	11.4	0.0
PEPRILUS TRIACANTHUS							1	1	30.0		SL		0.3	
CITHARICHTHYS ARCTIFRONS	3	3	6.1	5.4- 6.6	SL		3	3	9.0	5.7-12.1	SL		1.9	
ETROPUS MICROSTOMUS	1	1	6.7		SL		1	1	4.7		SL		0.6	
PARALICHTHYS DENTATUS	7	7	7.2	4.7- 8.9	SL	0	23	23	5.6	3.7- 9.2	SL	0	9.8	0.0
SCOPHTHALMUS AQUOSUS	8	8	5.2	4.0- 6.5	SL		56	48	4.9	2.9- 6.7	SL		21.1	
ADDITIONAL LARVAE CAUGHT							SPARIDAE							
							UNIDENTIFIED							
C 7 02 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	1	1	18.0		TL								0.3	
ENCHELYOPUS CIMBRIUS	1	1	5.4		SL	0						0	0.3	0.0
MERLUCCIUS BILINEARIS	1	1	6.2		NL	0	1	1	6.1		NL	0	0.6	0.0
CITHARICHTHYS ARCTIFRONS	1	1	6.6		SL								0.3	
PARALICHTHYS DENTATUS						0	2	2	4.5	4.5- 4.6	SL	0	0.7	0.0
SCOPHTHALMUS AQUOSUS	1	1	3.9		SL		2	2	5.6	5.3- 5.8	SL		1.0	
C 8 02 12	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CLUPEA HARENGUS HARENGUS	2	2	18.0	17.0-19.0	TL		3	3	17.0	16.0-17.5	TL		1.6	
CERATOSCOPELUS MADERENSIS							7	7	6.1	5.4- 6.7	SL		2.3	
UROPHYCIS SP.	1	1	2.8		NL								0.3	
PARALICHTHYS DENTATUS						0	3	3	7.8	7.1- 8.6	SL	0	1.0	0.0
E 1 09 11	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	5	5	19.9	18.5-20.5	TL								0.6	
SCOPHTHALMUS AQUOSUS	2	2	5.8	4.7- 6.8	SL								0.2	
ADDITIONAL LARVAE CAUGHT	LABRIDAE OR SCARIDAE													
	GOBIIDAE													
	SCORPAENIDAE													
E 2 09 11	SAMPLING DEPTH 0- 6M													
PRIONOTUS CAROLINUS	1	1	26.7		SL								0.1	
PARALICHTHYS DENTATUS						4							0.0	0.5
SCOPHTHALMUS AQUOSUS	12	12	5.5	3.3- 7.5	SL								1.5	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
	GOBIIDAE													
E 3 10 11	SAMPLING DEPTH 0- 6M													
GADUS MORHUA						2							0.0	0.2
PARALICHTHYS DENTATUS	1	1	8.2		SL	27							0.1	3.3
SCOPHTHALMUS AQUOSUS	27	27	4.0	2.9- 5.4	SL								3.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	GOBIIDAE													
E 4 10 11	SAMPLING DEPTH 0-15M													
PRIONOTUS CAROLINUS	1	1	5.8		SL								0.3	
PARALICHTHYS DENTATUS	6	6	6.0	4.6- 7.2	SL	17							1.8	5.2
SCOPHTHALMUS AQUOSUS	4	4	3.6	3.0- 4.7	SL								1.2	
E 5 10 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS SP.	1	1	4.9		NL								0.3	
PEPRILUS TRIACANTHUS	4	4	24.0	14.2-42.5	SL								1.3	
PRIONOTUS CAROLINUS	1	1	4.4		SL								0.3	
PARALICHTHYS DENTATUS						7						25	0.0	10.4
E 6 10 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS SP.	11	9	4.5	1.5- 8.2	NL		3	3	3.2	2.5- 3.8	NL		4.3	
MERLUCCIUS BILINEARIS	1	1	3.6		NL	1	4	1	3.8		NL	0	1.6	0.3
PRIONOTUS CAROLINUS							1	1	5.2		SL		0.3	
CITHARICHTHYS ARCTIFRONS	1	1	4.4		SL		3	3	4.7	4.4- 5.4	SL		1.3	
PARALICHTHYS DENTATUS	2	2	6.4	6.3- 6.5	SL	8	9	9	5.4	3.1- 6.8	SL	7	3.6	4.7
SCOPHTHALMUS AQUOSUS	1	1	2.9		SL		3	3	3.2	3.0- 3.3	SL		1.3	
E 7 10 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS SP.	15	12	9.8	6.8-25.0	NL								5.0	
MERLUCCIUS BILINEARIS	1	1	29.6		NL	0	2	2	5.0	4.0- 6.1	NL	0	1.0	0.0
PEPRILUS TRIACANTHUS							4	4	30.1	23.6-40.3	SL		1.3	
CITHARICHTHYS ARCTIFRONS	2	2	12.8	11.3-14.3	SL		8	8	8.6	5.1-14.3	SL		3.3	
PARALICHTHYS DENTATUS						0	1	1	7.0		SL	0	0.3	0.0
SCOPHTHALMUS AQUOSUS							1	1	7.6		SL		0.3	

CRUISE DATE 06614 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL MEAS.	 LENGTHS (MM) MEAN	 RANGE	 MEAS.	NO. EGGS	NO. PER 10M 2 LARVAE	 EGGS
E 8 19 11	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CERATOSCOPELUS MADERENSIS						1	1	7.2	SL		0.3	
LOPHIUS AMERICANUS	1	1	4.6		TL						0.3	
UROPHYCIS SP.	2	1	17.2		NL	1	1	3.8	NL		0.9	
MERLUCCIUS BILINEARIS	1	1	23.8		NL	1	1	6.0	NL	0	0.6	2.7
ADDITIONAL LARVAE CAUGHT						GOBIICAE						
F 1 11 11	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	1	1	21.0		TL						0.1	
ANCHOA MITCHILLI	2	2	36.2	21.5-51.0	TL						0.2	
MICROPOGON UNDULATUS	1	1	9.4		SL						0.1	
PARALICHTHYS DENTATUS	1	1	10.1		SL	0					0.1	0.0
ADDITIONAL LARVAE CAUGHT	GOBIIDAE											
F 2 11 11	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	3	3	20.7	19.5-21.5	TL						0.4	
ANCHOA MITCHILLI	6	6	56.0	50.0-60.0	TL						0.7	
MICROPOGON UNDULATUS	5	5	11.9	9.9-13.7	SL						0.6	
PARALICHTHYS DENTATUS	3	3	11.2	10.5-12.1	SL	0					0.4	0.0
SCOPHTHALMUS AQUOSUS	2	2	7.4	5.4- 9.3	SL						0.2	
F 3 11 11	SAMPLING DEPTH 0-15M											
BREVOORTIA TYRANNUS	2	2	15.2	15.0-15.5	TL						0.6	
ANCHOA MITCHILLI	4	4	62.0	59.5-65.0	TL						1.2	
PARALICHTHYS DENTATUS	2	2	10.5	10.5-10.6	SL	0					0.6	0.0
SCOPHTHALMUS AQUOSUS	6	6	5.8	5.1- 6.7	SL						1.8	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE											
F 4 11 11	SAMPLING DEPTH 0-15M											
UROPHYCIS SP.	1	1	3.1		NL						0.3	
CENTROPRISTIS STRIATA	1	1	5.2		SL						0.3	
PRIONOTUS CAROLINUS	1	1	5.5		SL						0.3	
ETROPUS MICROSTOMUS	1	1	4.7		SL						0.3	
PARALICHTHYS DENTATUS	1	1	9.0		SL	14					0.3	4.2
SCOPHTHALMUS AQUOSUS	6	6	3.7	2.7- 5.0	SL						1.8	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE											
F 5 11 11	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
GADUS MORHUA					0					1	0.0	0.2
UROPHYCIS SP.	4	2	3.2	3.2- 3.3	NL	2	2	2.9	2.8- 3.1	NL	1.6	
MERLUCCIUS BILINEARIS	2	2	3.1	2.5- 3.8	NL	0				0	0.6	0.0
PRIONOTUS CAROLINUS	1	1	4.8		SL						0.3	
CITHARICHTHYS ARCTIFRONS						2	2	8.6	5.1-12.0	SL	0.3	
ETROPUS MICROSTOMUS						1	1	4.0		SL	0.2	
PARALICHTHYS DENTATUS					17	8	8	3.8	3.3- 5.5	SL	0	1.3	5.5
SCOPHTHALMUS AQUOSUS						7	6	3.1	2.8- 3.7	SL	1.1	
F 6 10 11	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
UROPHYCIS SP.	11	8	6.7	3.7-17.0	NL	12	12	6.4	3.3-14.7	NL	7.3	
MERLUCCIUS BILINEARIS	4	4	15.9	8.5-24.2	NL	0 4	4	8.2	6.0-12.9	NL	0 2.5	0.0
CITHARICHTHYS ARCTIFRONS	4	4	6.6	5.1- 7.6	SL	8	8	10.7	4.7-21.1	SL	3.9	
ETROPUS MICROSTOMUS						2	2	6.2	6.0- 6.3	SL	0.7	
PARALICHTHYS DENTATUS	3	3	5.7	4.6- 6.9	SL	51 6	6	7.1	4.6-10.5	SL	3 2.9	17.0
SCOPHTHALMUS AQUOSUS	3	3	3.4	2.7- 4.1	SL	3	3	6.3	3.6- 8.2	SL	1.9	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE											
F 7 18 11	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CERATOSCOPELUS MADERENSIS						3	3	7.9	6.6- 9.8	SL	1.0	
MERLUCCIUS BILINEARIS	36	36	29.5	20.4-36.5	NL	0 61	61	28.6	16.7-39.3	NL	0 31.1	0.0
CITHARICHTHYS ARCTIFRONS						2	2	15.5	15.4-15.6	SL	0.7	
ADDITIONAL LARVAE CAUGHT						GOBIIDAE						
G 1 11 11	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	100	55	20.7	17.0-29.0	TL						12.1	
G 2 11 11	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	5	5	16.5	14.5-18.0	TL						0.6	
MICROPOGON UNDULATUS	2	2	6.1	5.9- 6.4	SL						0.2	
PARALICHTHYS DENTATUS	1	1	10.3		SL	0					0.1	0.0
SCOPHTHALMUS AQUOSUS	4	4	6.0	4.7- 7.1	SL						0.5	

CRUISE DATE 06614 1566 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
G 3 11 11	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	5	5	18.6	15.0-24.0	TL								1.5	
ANCHOA MITCHILLI	1	1	70.0		TL								0.3	
UROPHYCIS SP.	2	2	3.4	2.0- 4.9	NL								0.6	
ETROPUS MICROSTOMUS	1	1	10.9		SL								0.3	
PARALICHTHYS DENTATUS	6	6	10.2	6.4-11.4	SL	0							1.8	0.0
SCOPHTHALMUS AQUOSUS	12	12	4.8	3.1- 6.2	SL								3.6	
G 4 11 11	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	1	1	5.0		TL								0.3	
UROPHYCIS SP.	3	3	5.2	2.3- 9.3	NL								0.9	
ETROPUS MICROSTOMUS	5	5	6.7	4.0- 9.1	SL								1.5	
PARALICHTHYS DENTATUS	7	7	3.4	2.7- 3.9	SL	43							2.1	13.0
SCOPHTHALMUS AQUOSUS	14	14	2.9	2.4- 4.2	SL								4.2	
G 5 11 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS	1	1	9.2		TL								0.3	
UROPHYCIS SP.	20	16	6.0	2.6-20.0	NL		17	13	3.3	1.9- 6.1	NL		11.7	
MERLUCCIUS BILINEARIS	4	4	12.7	3.8-22.6	NL	1	1	1	7.3		NL	0	1.5	0.3
PRICNOTUS CAROLINUS							1	1	6.0		SL		0.3	
CITHARICHTHYS ARCTIFRONS							3	3	9.9	4.3-13.4	SL		1.0	
ETROPUS MICROSTOMUS	1	1	8.4		SL		2	2	5.5	5.7- 6.0	SL		1.0	
PARALICHTHYS DENTATUS	8	8	4.5	2.7- 7.3	SL	105	2	2	4.6	4.4- 4.8	SL	9	3.1	35.0
SCOPHTHALMUS AQUOSUS	5	5	2.6	2.5- 3.2	SL								1.7	
G 6 12 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CERATOSCOPELUS MADEREENSIS	3	3	7.9	7.6- 8.3	SL		1	1	9.0		SL		1.2	
UROPHYCIS SP.	31	24	5.9	4.0- 8.1	NL		20	16	4.6	1.7- 7.1	NL		16.0	
MERLUCCIUS BILINEARIS	6	6	15.2	5.7-24.6	NL	8	9	9	7.0	2.5-17.9	NL	2	4.8	3.1
PEPRILUS TRIACANTHUS	1	1	23.2		SL		1	1	16.3		SL		0.6	
CITHARICHTHYS ARCTIFRONS	32	32	8.0	6.1-10.0	SL		29	29	8.4	5.6-14.6	SL		19.3	
PARALICHTHYS DENTATUS						10						1	0.0	3.3
SCOPHTHALMUS AQUOSUS	1												0.3	
SYACIUM PAPILLOSUM							1	1	6.6		SL		0.3	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE													
	GOBIIDAE													
H 1 12 11	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	1	1	15.0		TL								0.1	
ADDITIONAL LARVAE CAUGHT	SYNGNATHIDAE													
H 2 12 11	SAMPLING DEPTH 0- 6M													
UROPHYCIS SP.	2	1	4.3		NL								0.2	
SCOPHTHALMUS AQUOSUS	1	1	4.7		SL								0.1	
H 3 12 11	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	1	1	5.7		TL								0.1	
UROPHYCIS SP.	5	4	4.8	3.2- 6.7	NL								0.6	
PARALICHTHYS DENTATUS						1							0.0	0.1
SCOPHTHALMUS AQUOSUS	1	1	2.7		SL								0.1	
H 4 12 11	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	2	2	13.7	13.5-14.0	TL								0.6	
UROPHYCIS SP.	16	15	6.0	3.5-10.7	NL								4.8	
PRICNOTUS CAROLINUS	2	2	6.1	5.5- 6.7	SL								0.6	
CITHARICHTHYS ARCTIFRONS	3	3	10.6	8.7-11.6	SL								0.9	
ETROPUS MICROSTOMUS	18	18	8.8	5.7-11.6	SL								5.5	
PARALICHTHYS DENTATUS	3	3	6.3	5.1- 7.1	SL	11							0.9	3.3
H 5 12 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS							2	2	5.3	5.0- 5.7	TL		0.7	
UROPHYCIS SP.	127	28	5.4	2.2- 9.8	NL		8	6	5.0	3.1- 7.6	NL		42.3	
MERLUCCIUS BILINEARIS	2	2	6.8	6.6- 7.0	NL	0	1	1	7.1		NL	0	0.9	0.0
CENTROPRISTIS STRIATA	1	1	7.5		SL								0.3	
PRICNOTUS CAROLINUS	2	2	6.1	5.3- 7.0	SL								0.7	
CITHARICHTHYS ARCTIFRONS	3	3	8.7	6.3-12.0	SL		7	7	8.8	6.3-12.6	SL		3.2	
ETROPUS MICROSTOMUS	9	9	6.3	4.3- 8.1	SL								3.0	
PARALICHTHYS DENTATUS	15	15	5.2	3.2- 7.5	SL	34	1	1	4.4		SL	21	5.0	17.2
SCOPHTHALMUS AQUOSUS	2	2	4.8	4.4- 5.2	SL								0.7	
H 6 12 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS SP.	18	17	3.2	1.5- 4.9	NL		25	21	3.2	1.5- 7.7	NL		13.7	
MERLUCCIUS BILINEARIS						1	3	3	4.7	3.9- 5.2	NL	3	1.0	1.3
CITHARICHTHYS ARCTIFRONS	1	1	5.1		SL		6	6	5.7	4.7- 6.6	SL		2.3	
PARALICHTHYS DENTATUS	2	2	4.9	4.9- 5.0	SL	0	1	1	2.9		SL	0	0.9	0.0
SCOPHTHALMUS AQUOSUS							1	1	3.1		SL		0.3	
ADDITIONAL LARVAE CAUGHT							GOBIIDAE							

CRUISE DATE 06614 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
F 7 12 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
BREVOORTIA TYRANNUS	1	1	19.0		TL								0.3	
CERATOSCOPELUS MADERENSIS	2	2	7.7	7.1- 8.4	SL		2	2	9.0	7.9-10.2	SL		1.3	
UROPHYCIS SP.	1	1	1.6		NL		29	24	3.2	1.3- 5.1	NL		10.0	
MERLUCCIUS BILINEARIS						5	4	4	5.6	2.4-10.4	NL	5	1.3	3.2
PERRILUS TRIACANTHUS	1	1	29.2		SL								0.3	
CITHARICHTHYS ARCTIFRONS							6	6	6.2	3.9-10.9	SL		2.0	
ADDITIONAL LARVAE CAUGHT	CONGRIDAE SYNODONTIDAE						GOBIIDAE							
J 1 12 11	SAMPLING DEPTH 0- 6M													
MICROPOGON UNDULATUS	1	1	10.9		SL								0.1	
PARALICHTHYS DENTATUS	2	2	10.8	10.7-10.9	SL	0							0.2	0.0
ADDITIONAL LARVAE CAUGHT	GOBIIDAE													
J 2 13 11	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	1	1	20.5		TL								0.1	
PRIONOTUS CAROLINUS	1	1	16.0		SL								0.1	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE													
J 3 13 11	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	1	1	10.6		TL								0.1	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE													
J 4 14 11	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	6	6	9.3	7.4-12.5	TL								1.8	
UROPHYCIS SP.	12	12	4.5	2.2- 8.7	NL								3.6	
CITHARICHTHYS ARCTIFRONS	1	1	10.0		SL								0.3	
ETROPUS MICROSTOMUS	2	2	8.8	7.9- 9.7	SL								0.6	
PARALICHTHYS DENTATUS	6	6	6.2	3.7-11.4	SL	17							1.8	5.2
SCOPHTHALMUS AQUOSUS	6	6	3.4	2.7- 4.0	SL								1.8	
J 5 14 11	SAMPLING DEPTH 0-15M													
UROPHYCIS SP.	25	23	11.7	3.0-27.5	NL								7.6	
MERLUCCIUS BILINEARIS	1	1	6.7		NL	0							0.3	0.0
CITHARICHTHYS ARCTIFRONS	1	1	10.6		SL								0.3	
ETROPUS MICROSTOMUS	7	7	7.6	6.1- 8.7	SL								2.1	
PARALICHTHYS DENTATUS	2	2	7.1	5.2- 9.1	SL	2							0.6	0.6
J 6 14 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
CERATOSCOPELUS MADERENSIS							1	1	7.9		SL		0.2	
UROPHYCIS SP.	8	8	4.2	2.2- 6.7	NL		31	25	5.4	2.6- 9.1	NL		7.5	
MERLUCCIUS BILINEARIS	1	1	7.6		NL	0	2	2	8.2	7.6- 8.8	NL	0	0.6	0.0
CITHARICHTHYS ARCTIFRONS	8	8	6.6	5.9- 8.7	SL		27	27	7.2	5.7-10.0	SL		6.8	
PARALICHTHYS DENTATUS	2	2	6.9	6.4- 7.5	SL	25	1	1	7.7		SL	17	0.8	10.4
J 7 14 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
UROPHYCIS SP.							9	5	2.7	1.4- 4.0	NL		3.0	
MERLUCCIUS BILINEARIS						0	3	3	4.8	3.2- 6.3	NL	0	1.0	0.0
CITHARICHTHYS ARCTIFRONS							1	1	6.4		SL		0.3	
PARALICHTHYS DENTATUS						0	1	1	3.7		SL	2	0.3	0.7
SCOPHTHALMUS AQUOSUS	1						1	1	4.5		SL		0.6	
ADDITIONAL LARVAE CAUGHT							LOPHIIFORMES							
K 1 18 11	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	17	17	15.1	4.4-22.0	TL								2.1	
UROPHYCIS SP.	1	1	4.9		NL								0.1	
MERLUCCIUS BILINEARIS	1	1	3.1		NL	0							0.1	0.0
PARALICHTHYS DENTATUS						1							0.0	0.1
SCOPHTHALMUS AQUOSUS	7	7	2.9	2.4- 3.5	SL								0.8	
K 2 18 11	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	1	1	12.5		TL								0.3	
UROPHYCIS SP.	1	1	1.6		NL								0.3	
PARALICHTHYS DENTATUS	2	2	4.5	3.5- 5.6	SL	18							0.6	5.5
SCOPHTHALMUS AQUOSUS	28	26	3.0	2.2- 5.8	SL								8.5	
K 3 18 11	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	1	1	6.0		TL								0.3	
UROPHYCIS SP.	3	3	3.7	3.4- 4.1	NL								0.9	
ETROPUS MICROSTOMUS	2	2	8.7	7.1-10.3	SL								0.6	
PARALICHTHYS DENTATUS	12	12	4.0	2.6- 5.5	SL	63							3.6	19.1
SCOPHTHALMUS AQUOSUS	2	2	3.8	2.3- 5.2	SL								0.6	
ADDITIONAL LARVAE CAUGHT	GOBIIDAE													

CRUISE DATE C6614 1966 STA. D M SPECIES ANALYZED	LARVAE NUMBER TOTAL MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	LARVAE NUMBER TOTAL MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
K 4 18 11	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
BREVOORTIA TYRANNUS						2 2	11.5	10.6-12.5	TL		0.3	
ANCHOA HEPSETUS	3 3	18.8	16.0-21.0	TL		30 30	18.8	10.6-25.0	TL		5.8	
UROPHYCIS SP.	11 8	5.6	3.3-12.3	NL		37 26	7.6	1.7-15.8	NL		9.4	
CITHARICHTHYS ARCTIFRONS	3 3	7.3	6.1- 8.3	SL		4 4	8.0	6.1- 6.5	SL		1.6	
ETROPUS MICROSTOMUS	5 5	9.5	8.7-11.3	SL		16 16	8.8	6.0-11.6	SL		4.1	
PARALICHTHYS DENTATUS	1 1	8.2		SL	0					0	0.3	0.0
ADDITIONAL LARVAE CAUGHT						GOBIIDAE						
K 5 18 11	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
BREVOORTIA TYRANNUS	1 1	13.1		TL							0.3	
ANCHOA HEPSETUS	3 3	14.0	12.5-16.0	TL		1 1	15.5		TL		1.1	
UROPHYCIS SP.	10 5	3.9	2.9- 5.2	NL		17 16	5.2	3.9- 7.1	NL		5.8	
PRICNOTUS CAROLINUS						1 1	15.4		SL		0.2	
CITHARICHTHYS ARCTIFRONS	11 11	9.0	5.3-13.9	SL		23 23	8.0	5.3-12.7	SL		7.1	
ETROPUS MICROSTOMUS	3 3	8.8	5.7-12.0	SL		9 9	8.0	6.1-11.9	SL		2.4	
PARALICHTHYS DENTATUS	2 2	5.0	4.6- 5.4	SL	1	3 3	6.7	6.4- 7.3	SL	0	1.1	0.3
K 6 17 11	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
UROPHYCIS SP.	15 12	3.3	2.0- 4.8	NL		15 13	2.7	1.6- 4.2	NL		9.5	
MERLUCCIUS BILINEARIS					13					4	0.0	5.2
PARALICHTHYS DENTATUS					23					16	0.0	12.2
ADDITIONAL LARVAE CAUGHT	GOBIIDAE UNIDENTIFIED					GOBIIDAE						
K 7 17 11	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
UROPHYCIS SP.						8 7	3.6	3.0- 4.7	NL		2.7	
MERLUCCIUS BILINEARIS					0					2	0.0	0.7
PEPRILUS TRIACANTHUS	5 5	24.1	13.1-32.1	SL							1.7	
PARALICHTHYS DENTATUS					18					11	0.0	5.1
SCOPHTHALMUS AQUOSUS						1 1	3.2		SL		0.3	
ADDITIONAL LARVAE CAUGHT						UNIDENTIFIED						
L 1 17 11	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	3 3	10.5	10.2-11.9	TL							0.4	
UROPHYCIS SP.	6 7	9.2	7.2-15.2	NL							0.7	
PARALICHTHYS DENTATUS	2 2	3.3	3.2- 3.4	SL	23						0.2	2.8
SCOPHTHALMUS AQUOSUS	4 4	2.9	2.6- 3.1	SL							0.5	
L 2 17 11	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	2 2	13.7	10.5-17.0	TL							0.2	
ANCHOA HEPSETUS	1 1	25.0		TL							0.1	
UROPHYCIS SP.	6 5	7.6	4.0-11.3	NL							0.7	
PARALICHTHYS DENTATUS	7 7	3.6	3.1- 5.0	SL	308						0.8	37.3
ADDITIONAL LARVAE CAUGHT	UNIDENTIFIED											
L 3 17 11	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-24M						
BREVOORTIA TYRANNUS						1 1	11.9		TL		0.2	
UROPHYCIS SP.	26 23	7.6	3.4-10.5	NL		8 7	3.3	2.4- 6.7	NL		9.3	
MICROPOGON UNDULATUS						1 1	4.0		SL		0.2	
CITHARICHTHYS ARCTIFRONS	1 1	5.1		SL		2 2	5.7	4.7- 6.7	SL		0.6	
ETROPUS MICROSTOMUS	2 2	8.0	7.9- 8.1	SL		2 2	7.2	6.3- 8.1	SL		0.9	
PARALICHTHYS DENTATUS	4 4	4.3	3.2- 5.0	SL	53	2 2	4.3	3.7- 5.0	SL	9	1.6	17.7
L 4 17 11	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
CERATOSCOPELUS MADERENSIS	1 1	5.8		SL							0.3	
UROPHYCIS SP.	39 31	4.8	1.8-16.0	NL		14 11	6.2	4.4- 7.9	NL		16.4	
PEPRILUS TRIACANTHUS	1 1	20.7		SL							0.3	
CITHARICHTHYS ARCTIFRONS	16 16	6.9	5.7- 8.6	SL		12 12	8.2	6.1-14.0	SL		8.8	
ETROPUS MICROSTOMUS	1 1	9.3		SL		1 1	7.3		SL		0.6	
PARALICHTHYS DENTATUS	1 1	4.4		SL	0	2 2	6.5	6.2- 6.5	SL	5	1.0	1.7
ADDITIONAL LARVAE CAUGHT	CALLIONYMIDAE					GOBIIDAE						
L 5 17 11	SAMPLING DEPTH 0-15M					SAMPLING DEPTH 18-33M						
UROPHYCIS SP.	4 3	2.6	1.9- 3.4	NL		5 5	3.1	2.6- 3.8	NL		2.9	
MERLUCCIUS BILINEARIS					0	1 1	4.3		NL	1	0.3	0.3
PARALICHTHYS DENTATUS					8					6	0.0	4.4
SCOPHTHALMUS AQUOSUS						1 1	4.1		SL		0.3	
ADDITIONAL LARVAE CAUGHT						GOBIIDAE						
M 1 16 11	SAMPLING DEPTH 0- 6M											
BREVOORTIA TYRANNUS	43 43	9.7	6.6-14.0	TL							5.2	
ANCHOA HEPSETUS	2 2	20.0	15.5-24.5	TL							0.2	
ENGRAULIS EURYSTOLE	11 11	32.5	30.5-36.5	TL							1.3	
UROPHYCIS SP.	5 4	8.4	5.3-14.4	NL							0.6	
PARALICHTHYS DENTATUS					20						0.0	2.4

CRUISE DATE 06614 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
# 2 16 11	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	67	37	8.0	5.0-11.4	TL								8.1	
UROPHYCIS SP.	39	19	7.1	3.7-11.3	NL								4.7	
PRIONOTUS CAROLINUS	1	1	7.2		SL								0.1	
CITHARICHTHYS ARCTIFRONS	4	4	11.1	10.3-11.6	SL								0.5	
ETROPUS MICROSTOMUS	24	24	8.5	7.3-11.3	SL								2.9	
PARALICHTHYS DENTATUS	22	22	5.2	2.7- 7.0	SL	113							2.7	13.7
# 3 17 11	SAMPLING DEPTH 0-15M													
ELOPS SAURUS	2	2	25.6	23.5-27.8	NL								0.6	
OPHICHTHUS OCELLATUS	1	1	57.5		TL								0.3	
ANCHOA HEPSETUS	1	1	19.0		TL								0.3	
UROPHYCIS SP.	11	9	4.0	3.2- 6.0	NL								3.3	
MICROPOGON UNDULATUS	13	13	6.4	4.6- 8.2	SL								3.9	
PRIONOTUS CAROLINUS	1	1	7.1		SL								0.3	
CITHARICHTHYS ARCTIFRONS	20	20	9.0	7.0-12.0	SL								6.1	
ETROPUS MICROSTOMUS	4	4	9.3	7.7-11.3	SL								1.2	
PARALICHTHYS DENTATUS	3	3	6.9	6.5- 7.5	SL	44							0.9	13.3
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE													
	PARALEPIDIDAE													
	OPHIDIIDAE													
	BLENNIIDAE													
	GOBIIDAE													
	TRICHIURIDAE													
# 4 16 11	SAMPLING DEPTH 0- 6M													
ELOPS SAURUS	1	1	23.8		NL								0.1	
BREVOORTIA TYRANNUS	10	10	9.8	6.5-11.4	TL								1.2	
ANCHOA HEPSETUS	4	3	15.7	13.5-17.5	TL								0.5	
ENGRAULIS EURYSTOLE	1	1	15.5		TL								0.1	
HYGOPHUM BENOITI HA HYGOMI	1	1	7.4		SL								0.1	
UROPHYCIS SP.	32	28	3.5	1.6- 7.3	NL								3.9	
MERLUCCIUS BILINEARIS	1	1	2.9		NL	0							0.1	0.0
MICROPOGON UNDULATUS	23	22	4.5	2.7- 6.2	SL								2.8	
PRIONOTUS CAROLINUS	5	5	5.6	5.3- 5.8	SL								0.6	
BOTHUS OCELLATUS	1	1	4.7		SL								0.1	
CITHARICHTHYS ARCTIFRONS	3	3	8.0	6.3- 9.6	SL								0.4	
ETROPUS MICROSTOMUS	39	39	5.5	3.1-10.3	SL								4.7	
PARALICHTHYS DENTATUS	10	10	4.6	3.2- 6.9	SL	2							1.2	0.2
SYACIUM PAPILLOSUM	2	2	5.2	4.7- 5.7	SL								0.2	
SYNPHURUS SP.	2	2	12.3	12.3-12.3	SL								0.2	
ADDITIONAL LARVAE CAUGHT	SYNODONTIDAE													
	BREGMACEROTIDAE													
	OPHIDIIDAE													
	SERRANIDAE													
	CARANGIDAE													
	URANOSCOPIDAE													
	CALLIONYMIDAE													
	GOBIIDAE													
	SCORPAENIDAE													
	UNIDENTIFIED													

CRUISE DATE 06614 1966 STA. D M SPECIES ANALYZED

	********** LARVAE **********						********** LARVAE **********							
	NUMBER		LENGTHS (MM)			NO.	NUMBER		LENGTHS (MM)			NO.	NO. PER 10M	2
	TOTAL	MEAS.	MEAN	RANGE	MEAS.	EGGS	TOTAL	MEAS.	MEAN	RANGE	MEAS.	EGGS	LARVAE	EGGS
M 5 16 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ELCES SAURUS	1	1	28.3		NL								0.3	
CALLECHELYS PERRYAE	3	3	35.2	23.8-42.5	NL		2	2	40.8	38.4-43.3	NL		1.6	
MYROPHIS PUNCTATUS	3	3	35.2	23.8-42.5	TL		2	2	40.9	38.4-43.5	TL		1.6	
ANCHOA HEPSETUS	1	1	10.0		TL								0.3	
ENGRAULIS EURYSTOLE	30	20	8.2	3.4-20.5	TL		10	10	9.7	6.3-16.9	TL		12.3	
BENTHOSEMA GLACIALE	1	1	6.4		SL								0.3	
BENTHOSEMA SUBORBITALE	1	1	4.9		SL		1	1	7.7		SL		0.6	
CERATOSCOPELUS MADERENSIS							1	1	6.2		SL		0.3	
CERATOSCOPELUS WARMINGI	2	2	3.8	3.3- 4.3	SL		2	2	4.1	3.9- 4.4	SL		1.3	
DIAPHUS SP.	4	3	4.7	4.4- 4.9	SL		4	4	5.2	4.4- 6.1	SL		2.5	
HYGOPHUM REINHARDTI							1	1	5.8		SL		0.3	
HYGOPHUM TANNINGI							2	2	5.2	4.7- 5.7	SL		0.7	
LAMPANYCTUS ALATUS OR PHOTONOTUS							2	2	7.7	4.5-11.0	SL		0.7	
LAMPANYCTUS CUPRINUS							1	1	6.8		SL		0.3	
LEPIDOPHANES SP.	1	1	4.0		SL								0.3	
UROPHYCIS SP.	45	38	2.2	1.7- 3.9	NL		89	60	2.1	1.6- 3.6	NL		43.2	
HEMANTHIAS VIVANUS	2	1	4.7		SL		5	5	4.3	3.6- 5.0	SL		2.3	
LEIOSTOMUS XANTHURUS							2	2	3.5	3.4- 3.6	SL		0.7	
MICROPOGON UNDULATUS	9	9	4.5	3.6- 7.1	SL		28	28	3.9	2.3- 6.1	SL		12.0	
PRIONOTUS CAROLINUS	4	4	4.5	3.3- 7.0	SL		5	5	4.6	2.8- 7.0	SL		2.9	
BOTHUS OCELLATUS	25	22	5.2	2.9-10.7	SL		55	25	5.4	2.8- 9.7	SL		25.8	
CITHARICHTHYS ARCTIFRONS							1	1	13.1		SL		0.3	
CYCLOPSETTA FIMBRIATA	1	1	4.6		SL		1	1	6.4		SL		0.6	
ETROPUS MICROSTOMUS	14	14	3.6	2.6- 4.9	SL		10	10	4.3	3.1- 5.7	SL		7.5	
PARALICHTHYS DENTATUS	2	2	3.1	3.1- 3.2	SL	0	2	2	3.5	3.2- 3.8	SL	0	1.3	0.0
SYACIUM PAPILLOSUM	6	6	5.9	3.2-11.8	SL		7	7	5.7	4.2-11.5	SL		4.1	
SYMPHURUS SP.	19	17	4.5	2.9- 7.9	SL		16	14	4.8	2.8- 9.2	SL		11.0	
ADDITIONAL LARVAE CAUGHT	MORINGUIDAE						NURAENIDAE							
	CYCLOTHONE SP.						CYCLOTHONE SP.							
	SYNODONTIDAE						STOMIATIDAE							
	PARALEPIDIDAE						SYNODONTIDAE							
	OPHIDIIDAE						PARALEPIDIDAE							
	SERRANIDAE						BREGMACEROTIDAE							
	APOGONIDAE						OPHIDIIDAE							
	CARANGIDAE						SYNGNATHIDAE							
	LABRIDAE OR SCARIDAE						SERRANIDAE							
	SPHYRAENIDAE						APOGONIDAE							
	CALLIONYMIDAE						CARANGIDAE							
	GOBIIDAE						SPARIDAE							
	SCORPAENIDAE						LABRIDAE OR SCARIDAE							
	UNIDENTIFIED						MUGILIDAE							
							SPHYRAENIDAE							
							CALLIONYMIDAE							
							GOBIIDAE							
							SCORPAENIDAE							
							TRIGLIDAE							
							BALISTIDAE							
							UNIDENTIFIED							
N 1 16 11	SAMPLING DEPTH 0- 6M													
BREVOORTIA TYRANNUS	1	1	10.7		TL								0.1	
ANCHOA HEPSETUS	3	3	19.2	18.2-20.5	TL								0.4	
ENGRAULIS EURYSTOLE	3	3	34.0	32.2-37.1	TL								0.4	
UROPHYCIS SP.	2	2	2.2	1.5- 3.0	NL								0.2	
MICROPOGON UNDULATUS	10	10	3.6	3.0- 4.3	SL								1.2	
PARALICHTHYS DENTATUS	3	3	5.2	3.3- 6.7	SL	0							0.4	0.0
ADDITIONAL LARVAE CAUGHT	CALLIONYMIDAE													
	UNIDENTIFIED													
N 2 16 11	SAMPLING DEPTH 0-15M													
BREVOORTIA TYRANNUS	14	14	9.0	4.3-11.4	TL								4.2	
UROPHYCIS SP.	52	26	4.0	2.7- 9.1	NL								15.8	
LEIOSTOMUS XANTHURUS	3	3	4.6	4.6- 4.7	SL								0.9	
MICROPOGON UNDULATUS	87	86	4.8	3.2- 8.3	SL								26.4	
PRIONOTUS CAROLINUS	5	5	5.5	4.8- 6.4	SL								1.5	
BOTHUS OCELLATUS	1	1	3.7		SL								0.3	
CITHARICHTHYS ARCTIFRONS	1	1	10.0		SL								0.3	
ETROPUS MICROSTOMUS	10	10	5.3	3.4- 8.4	SL								3.0	
PARALICHTHYS DENTATUS	1	1	3.7		SL	25							0.3	7.6
SYMPHURUS SP.	1	1	3.8		SL								0.3	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	CARANGIDAE													
	CALLIONYMIDAE													
	TRIGLIDAE													
	UNIDENTIFIED													

CRUISE DATE DEEP 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER $10M^2$ LARVAE	EGGS
N 3 16 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
CALLECHELYS PERRYAE							1	1	57.5		NL		0.2	
MYROPHIS PUNCTATUS							1	1	57.5		TL		0.2	
OPHICHTHUS MELANOPORUS							1	1	53.0		TL		0.2	
OPHICHTHUS OCELLATUS	1	1	52.3		TL		1	1	44.0		TL		0.5	
OPHICHTHUS SP.							1	1	94.0		TL		0.2	
BREVOORTIA TYRANNUS	3	3	7.2	5.1-11.1	TL								1.0	
ANCHOA HEPSETUS	4	4	5.4	3.0- 9.3	TL								1.3	
CERATOSCOPELUS MADERENSIS							1	1	8.9		SL		0.2	
UROPHYCIS SP.	29	22	3.8	2.2- 6.0	NL		6	5	2.8	1.7- 3.4	NL		9.9	
CENTROPRISTIS STRIATA							2	2	10.3	7.6-13.0	SL		0.3	
LEIOSTOMUS XANTHURUS	3	3	4.1	3.8- 4.8	SL		6	6	3.4	2.5- 5.1	SL		1.9	
MICROPOGON UNDULATUS	53	51	4.0	2.1- 5.9	SL		49	45	3.9	2.3- 6.3	SL		24.2	
PRIONOTUS CAROLINUS							8	8	5.2	4.7- 5.7	SL		1.3	
BOTHUS OCELLATUS	1	1	4.0		SL								0.3	
CITHARICHTHYS ARCTIFRONS	1	1	7.6		SL		1	1	7.0		SL		0.5	
ETROPUS MICROSTOMUS	16	16	6.1	4.7- 8.3	SL		22	22	6.2	3.9- 9.7	SL		8.5	
PARALICHTHYS DENTATUS	2	2	4.0	3.4- 4.7	SL	0						0	0.6	0.0
SYACIUM PAPILLOSUM							2	2	8.7	8.3- 9.0	SL		0.3	
SYMPHURUS SP.							2	1	5.0		SL		0.3	
ADDITIONAL LARVAE CAUGHT	OPHICHTHIDAE CYCLOTHONE SP. SYNODONTIDAE MYCTOPHIDAE CARANGIDAE CALLIONYMIDAE GOBIIDAE SCORPAENIDAE TRIGLIDAE TETRAODONTIDAE						MORIAGUIDAE STOMIATIDAE SYNODONTIDAE OPHIDIIDAE SERRANIDAE GRAMMISTIDAE LABRIDAE OR SCARIDAE CALLIONYMIDAE GOBIIDAE STROMATEIDAE UNIDENTIFIED							

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N 4 16 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
CALLECHELYS PERRYAE	2	1	36.5		NL		12	12	31.6	22.7-40.5	NL		4.6	
MYROPHIS PUNCTATUS	2	1	36.5		TL		12	12	31.7	23.3-40.5	TL		4.6	
ENGRAULIS EURYSTOLE	16	16	8.2	1.9-21.2	TL		19	17	10.0	3.2-15.6	TL		11.1	
BENTHOSEMA SUBORBITALE	1	1	7.3		SL		2	2	6.8	5.1- 8.6	SL		1.0	
CERATOSCOPELUS MADERENSIS							1	1	6.6		SL		0.3	
CERATOSCOPELUS WARMINGI	2	2	5.1	4.4- 5.8	SL		1	1	4.9		SL		0.9	
DIAPHUS SP.	7	7	4.6	3.6- 5.9	SL		5	5	5.2	4.4- 6.2	SL		3.8	
DIOGENICHTHYS ATLANTICUS							1	1	4.5		SL		0.3	
HYGOPHUM REINHARDTI							1	1	5.0		SL		0.3	
LAMPANYCTUS ALATUS OR PHOTONOTUS	1	1	3.9		SL								0.3	
LAMPANYCTUS CUPRINUS	1	1	8.5		SL								0.3	
LAMPADENA SP.	1	1	9.8		SL								0.3	
UROPHYCIS SP.	9	9	3.3	2.1- 5.0	NL		3	3	2.5	1.7- 3.0	NL		3.7	
HEMANTHIAS VIVANUS							1	1	4.3		SL		0.3	
LEIOSTOMUS XANTHURUS	2	2	3.5	3.4- 3.6	SL								0.7	
MICROPOGON UNDULATUS	8	8	3.8	3.0- 6.4	SL		9	9	3.7	2.7- 4.5	SL		5.4	
PRIONOTUS CAROLINUS	8	8	4.9	4.5- 5.6	SL		6	6	4.6	3.7- 5.8	SL		4.4	
BOTHUS OCELLATUS	45	25	4.7	2.9- 9.1	SL		52	25	5.4	2.3-11.5	SL		30.8	
CYCLOPSETTA FIMBRIATA	1	1	5.4		SL								0.3	
ETROPUS MICROSTOMUS	15	15	4.0	3.0- 6.9	SL		24	24	4.0	2.7- 5.1	SL		12.5	
SYACIUM PAPILLOSUM	13	13	5.9	3.5- 9.7	SL		12	12	6.5	3.4-12.7	SL		7.9	
SYMPHURUS SP.	8	6	5.2	3.6- 7.4	SL		4	4	6.0	4.1-10.2	SL		3.7	
ADDITIONAL LARVAE CAUGHT	STOMIATIDAE SYNODONTIDAE LOPHIIFORMES OPHIDIIDAE SERRANIDAE APOGONIDAE CARANGIDAE SPARIDAE LABRIDAE OR SCARIDAE MUGILIDAE URANOSCOPIDAE BLENNIIDAE CALLIONYMIDAE GOBIIDAE TRIGLIDAE UNIDENTIFIED						MORINGUIDAE MURAENIDAE STOMIATIDAE SYNODONTIDAE CHLOROPHTHALMIDAE PARALEPIDIDAE LOPHIIFORMES BREGMACEROTIDAE OPHIDIIDAE SERRANIDAE PRIACANTHIDAE APOGONIDAE CARANGIDAE LABRIDAE OR SCARIDAE BLENNIIDAE CALLIONYMIDAE GOBIIDAE ACANTHURIDAE SCORPAENIDAE TRIGLIDAE UNIDENTIFIED							

CRUISE DATE 06614 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	LENGTHS (MM) MEAN	RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
N 5 16 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
ELCFS SAURUS							3	3	23.6	18.5-26.5	NL		1.0	
CALLECHELYS PERRYAE							1	1	62.6		NL		0.3	
MYRCPHIS PUNCTATUS							1	1	62.6		TL		0.3	
ENGRAULIS EURYSTOME	3	3	7.8	7.2- 8.3	TL		12	11	8.0	5.1-10.9	TL		4.9	
CERATOSCOPELUS MADERENSIS	1	1	7.1		SL		1	1	7.5		SL		0.6	
CERATOSCOPELUS WARMINGI							4	4	4.4	3.9- 4.7	SL		1.3	
DIAPHUS SP.	6	6	6.2	4.4-10.3	SL		4	4	4.6	4.0- 5.2	SL		3.1	
HYGOPHUM BENOITI							1	1	5.6		SL		0.3	
HYGOPHUM BENOITI OR HYGOPI							1	1	4.5		SL		0.3	
LAMPANYCTUS ALATUS OR PHOTONOTUS							1	1	4.1		SL		0.3	
UROPHYCIS SP.	5	5	2.9	1.9- 4.5	NL		6	6	2.6	1.6- 3.5	NL		3.5	
HEMANTHIAS VIVANUS	1	1	4.5		SL		3	3	4.2	4.0- 4.5	SL		1.3	
LEIOSTOMUS XANTHURUS	7	7	2.9	2.2- 3.4	SL		7	7	2.8	2.3- 3.1	SL		4.4	
MICROPOGON UNDULATUS	23	23	4.0	2.5- 8.8	SL								7.7	
PRIONOTUS CAROLINUS	1	1	4.5		SL		34	34	3.7	2.5- 6.7	SL		11.6	
BOTHUS OCELLATUS	33	27	5.2	2.2-13.2	SL		33	31	4.7	2.3- 8.7	SL		20.9	
ETROPUS MICROSTOMUS	16	16	3.6	2.7- 5.1	SL		26	26	4.0	2.7- 7.9	SL		13.5	
SCOPHTHALMUS AQUOSUS	1	1	4.2		SL								0.3	
SYACIUM PAPILLOSUM	3	3	5.0	4.3- 5.4	SL		8	8	5.2	3.2-12.2	SL		3.6	
SYMPHURUS SP.	8	8	4.4	3.2- 7.2	SL		6	6	4.7	3.3- 5.6	SL		4.4	
ADDITIONAL LARVAE CAUGHT	CONGRIDAE						MORINGUIDAE							
	OPHICHTHIDAE						CONGRIDAE							
	SYNODONTIDAE						STOMIATIDAE							
	PARALEPIDIDAE						SYNODONTIDAE							
	BREGMACEROTIDAE						CHLOROPHTHALMIDAE							
	OPHIDIIDAE						PARALEPIDIDAE							
	SERRANIDAE						BREGMACEROTIDAE							
	CARANGIDAE						OPHIDIIDAE							
	POMACENTRIDAE						SERRANIDAE							
	LABRIDAE OR SCARIDAE						CARANGIDAE							
	BLENNIIDAE						SPARIDAE							
	CALLIONYMIDAE						CHAETODONTIDAE							
	GOBIIDAE						POMACENTRIDAE							
	TRIGLIDAE						LABRIDAE OR SCARIDAE							
	UNIDENTIFIED						SPHYRAENIDAE							
							CALLIONYMIDAE							
							GOBIIDAE							
							TRIGLIDAE							
							UNIDENTIFIED							
P 1 15 11	SAMPLING DEPTH 0- 6M													
MYROPHIS PUNCTATUS	2	2	50.7	47.0-54.5	TL								0.2	
ANCHOA HEPSETUS	3	3	7.9	4.4- 9.7	TL								0.4	
MICROPOGON UNDULATUS	25	25	9.3	4.8-11.6	SL								3.0	
SYMPHURUS SP.	1	1	13.3		SL								0.1	
ADDITIONAL LARVAE CAUGHT	ANGUILLA ROSTRATA													
	SPARIDAE													
	GOBIIDAE													
	UNIDENTIFIED													
P 2 15 11	SAMPLING DEPTH 0- 6M													
CALLECHELYS PERRYAE	9	9	66.1	61.5-74.5	NL								1.1	
MYROPHIS PUNCTATUS	9	9	64.3	60.7-72.2	TL								1.1	
OPHICHTHUS OCELLATUS	1	1	75.5		TL								0.1	
ANCHOA HEPSETUS	2	2	11.6	10.1-13.1	TL								0.2	
UROPHYCIS SP.	1	1	3.6		NL								0.1	
MICROPOGON UNDULATUS	133	131	9.3	3.3-11.5	SL								16.1	
PRIONOTUS CAROLINUS	1	1	4.2		SL								0.1	
PARALICHTHYS DENTATUS	1	1	4.2		SL	0							0.1	0.0
SCOPHTHALMUS AQUOSUS	5	5	4.4	3.5- 5.6	SL								0.6	
SYMPHURUS SP.	3	3	14.8	14.3-15.6	SL								0.4	
ADDITIONAL LARVAE CAUGHT	SPARIDAE													
	GOBIIDAE													
P 3 15 11	SAMPLING DEPTH 0- 6M													
CALLECHELYS PERRYAE	4	4	65.9	59.5-71.0	NL								0.5	
MYROPHIS PUNCTATUS	4	4	65.9	61.3-70.5	TL								0.5	
OPHICHTHUS OCELLATUS	1	1	70.8		TL								0.1	
ANCHOA HEPSETUS	3	3	17.1	15.5-20.1	TL								0.4	
ENGRAULIS EURYSTOME	15	15	6.5	4.0- 9.3	TL								1.8	
UROPHYCIS SP.	18	17	4.8	3.1- 7.8	NL								2.2	
LEIOSTOMUS XANTHURUS	1	1	4.4		SL								0.1	
MICROPOGON UNDULATUS	250	247	5.1	2.9-10.1	SL								20.3	
PRIONOTUS CAROLINUS	9	9	4.5	3.5- 6.5	SL								1.1	
ETROPUS MICROSTOMUS	2	2	7.9	4.6-11.1	SL								0.2	
PARALICHTHYS DENTATUS	4	4	3.3	2.8- 3.6	SL	6							0.5	0.7
SCOPHTHALMUS AQUOSUS	3	3	2.6	2.2- 3.0	SL								0.4	
ADDITIONAL LARVAE CAUGHT	OPHIDIIDAE													
	CALLIONYMIDAE													
	GOBIIDAE													
	UNIDENTIFIED													

CRUISE DATE C6614 1966 STA. D M SPECIES ANALYZED	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	********** LARVAE ********** NUMBER TOTAL	MEAS.	MEAN	LENGTHS (MM) RANGE	MEAS.	NO. EGGS	NO. PER 10M² LARVAE	EGGS
P 4 15 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-24M							
OPHICHTHUS OCELLATUS							1	1	48.8		TL		0.2	
ANCHOA HEPSETUS	2	2	11.2	9.3-13.1	TL								0.6	
ENGRAULIS EURYSTOME	3	3	12.4	9.5-15.0	TL		6	4	14.0	4.9-23.1	TL		1.9	
CERATOSCOPELUS WARMINGI							1	1	3.6		SL		0.2	
UROPHYCIS SP.	30	29	4.0	2.8- 5.4	NL		4	4	3.8	3.3- 4.5	NL		9.9	
LEIOSTOMUS XANTHURUS	7	7	4.8	3.7- 5.3	SL		7	6	4.3	3.1- 4.7	SL		3.3	
MICROPOGON UNDULATUS	87	87	4.4	2.4- 7.8	SL		156	152	3.7	2.3- 8.1	SL		51.9	
PRIONOTUS CAROLINUS	9	9	5.7	4.8- 6.7	SL		46	23	3.9	2.1- 5.7	SL		10.2	
BOTHUS OCELLATUS	1	1	21.5		SL								0.3	
ETROPUS MICROSTOMUS	25	25	6.3	2.7-10.1	SL		7	7	4.2	3.1- 5.1	SL		8.8	
PARALICHTHYS DENTATUS						5						0	0.0	1.6
SYACIUM PAPILLOSUM	1	1	6.2		SL								0.3	
SYMPHURUS SP.	2	2	12.0	10.2-13.7	SL		2	2	11.5	9.4-13.6	SL		0.9	
ADDITIONAL LARVAE CAUGHT	CYCLOTHONE SP.						CYCLOTHONE SP.							
	SYNODONTIDAE						SYNODONTIDAE							
	OPHIDIIDAE						BREGMACEROTIDAE							
	SERRANIDAE						OPHIDIIDAE							
	APOGONIDAE						LABRIDAE OR SCARIDAE							
	CARANGIDAE						MUGILIDAE							
	SPARIDAE						CALLIONYMIDAE							
	LABRIDAE OR SCARIDAE						GOBIIDAE							
	SPHYRAENIDAE						TETRADONTIDAE							
	CALLIONYMIDAE						UNIDENTIFIED							
	GOBIIDAE													
	GEMPYLIDAE													
	TRICHIURIDAE													
	STROMATEIDAE													
	SCORPAENIDAE													
	TRIGLIDAE													
P 5 15 11	SAMPLING DEPTH 0-15M						SAMPLING DEPTH 18-33M							
OPHICHTHIDAE							1	1	47.8		TL		0.3	
CALLECHELYS PERRYAE							5	5	34.0	25.4-48.0	NL		1.7	
MYROPHIS PUNCTATUS							5	5	34.8	26.2-47.5	TL		1.7	
OPHICHTHUS OCELLATUS							1	1	75.0		TL		0.3	
ENGRAULIS EURYSTOME	25	22	8.7	4.9-12.2	TL		15	15	9.3	4.9-14.4	TL		12.5	
BENTHOSEMA SUBORBITALE	2	2	5.5	5.6- 6.2	SL								0.7	
CERATOSCOPELUS MADERENSIS	1	1	9.7		SL								0.3	
DIAPHUS SP.	1	1	6.2		SL		1	1	4.8		SL		0.6	
LAMPANYCTUS ALATUS OR PHOTONOTUS	1	1	4.9		SL								0.3	
NOTOSCOPELUS SP.							1	1	4.7		SL		0.3	
UROPHYCIS SP.	17	15	3.1	1.8- 4.8	NL		6	5	3.0	2.3- 4.1	NL		7.1	
HEMANTHIAS VIVANUS	7	7	3.6	2.8- 4.7	SL		2	2	4.5	4.8- 5.1	SL		2.8	
LEIOSTOMUS XANTHURUS	9	9	4.8	4.4- 6.1	SL		1	1	4.7		SL		3.0	
MICROPOGON UNDULATUS	26	25	4.6	2.9- 6.4	SL		25	25	4.7	3.1- 7.5	SL		16.1	
PRIONOTUS CAROLINUS	37	37	4.3	2.8- 8.1	SL		44	21	3.6	2.7- 5.3	SL		25.8	
BOTHUS OCELLATUS	41	25	6.0	3.7-10.3	SL		74	25	5.3	2.7-11.1	SL		37.0	
CYCLOPSETTA FIMBRIATA	1	1	8.4		SL								0.3	
ETROPUS MICROSTOMUS	46	25	5.1	3.3-11.4	SL		70	25	4.2	3.0- 5.7	SL		27.1	
SYACIUM PAPILLOSUM	7	6	6.9	3.1-11.3	SL		11	10	8.2	3.4-13.7	SL		5.8	
SYMPHURUS SP.	5	4	4.6	3.7- 6.8	SL		21	18	5.6	3.2-14.2	SL		8.5	
ADDITIONAL LARVAE CAUGHT	MORINGUIDAE						MORINGUIDAE							
	CYCLOTHONE SP.						SYNODONTIDAE							
	SYNODONTIDAE						PARALEPIDIDAE							
	PARALEPIDIDAE						LOPHIIFORMES							
	MYCTOPHIDAE						BREGMACEROTIDAE							
	BREGMACEROTIDAE						OPHIDIIDAE							
	OPHIDIIDAE						FISTULARIIDAE							
	SERRANIDAE						SERRANIDAE							
	CARANGIDAE						APOGONIDAE							
	SPARIDAE						CARANGIDAE							
	LABRIDAE OR SCARIDAE						POMACENTRIDAE							
	MUGILIDAE						LABRIDAE OR SCARIDAE							
	URANOSCOPIDAE						BLENNIIDAE							
	BLENNIIDAE						CALLIONYMIDAE							
	CALLIONYMIDAE						GOBIIDAE							
	GOBIIDAE						TRIGLIDAE							
	ACANTHURIDAE						UNIDENTIFIED							
	SCORPAENIDAE													
	UNIDENTIFIED													